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**THE INFLUENCE OF PHYSICAL EDUCATION ON THE
ENGAGEMENT IN PHYSICAL ACTIVITY**

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Abstract

The current state of sports in the higher education institutions in Israel is far from ideal, and in the past decade has been in a state of decline. In Tel Aviv University and the Hebrew University in Jerusalem, the sports departments were closed almost entirely, in Ben-Gurion University of the Negev there are still few optional sports courses that students can take part in, and only in the Technion in Haifa there are some mandatory sports courses. In other colleges in Israel, there are only competitive sports teams. In 2001, the mandatory sport program in Tel Aviv University was cancelled due to budget cuts, thus saving 2 million Israeli Shekel (NIS) per year. Before the cancellation of the program, Tel Aviv University was one of the strongest competitors (normally ranking first or second place in any competition) among the academic institutions that took part in sports competition events. The study aimed to explore the significance of mandatory sports courses in undergraduate programs in higher education, and to investigate the impact of physical education units in higher education as a pedagogical program on promoting a culture of physical activity among students. The study employed a mixed-methods research approach, combining qualitative with quantitative research methods. In the first stage of the study, interviews with sports unit managers were employed, and in the second stage a closed-ended questionnaire was distributed to 200 participants. Content analysis was used to analyse the qualitative data while statistics were used to analyse the quantitative data.

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Keywords: Physical activity, physical education, motivation, adherence to physical activity, healthy lifestyle.



1. Introduction

Many studies have examined the role of physical culture and society life in establishing and influencing existing norms. One of the main ways to reproduce and sustain norms is education. The education system is a major channel whose mission is education for values. In fact, the face of society is most affected by the high level of the education system and the contents therein (Kirk, 1999).

Physical inactivity is a major risk factor for cardiovascular disease, stroke, hypertension, diabetes, obesity, osteoporosis, and some cancers. Approximately one million Americans die annually from cardiovascular diseases. Despite attempts by various health organizations and professionals to encourage changes in individuals' physical activity (PA) habits, a high proportion of American adults remain inactive (Morrow et al., 2004; Prochaska, Wright, & Velicer, 2008; Aşçi, 2003).

2. Problem Statement

Backman and Larsson (2014) aimed to study the impact of the physical education teacher (PETE) on how physical education (PE) is taught in schools. The research starting point was the assumption that the difficulties to challenge the main subjects in PE could lie in the difficulties to challenge specific epistemological assumptions of PE teachers. The study was based on 224 cases that were collected from 18 different course syllabi of six PE institutions in Sweden. The findings of the study demonstrated that the learning outcomes, regarding physical education, were very limited. In addition, the research found that in these PE institutions the knowledge of the teacher was limited and uneven.

Until 1970, the connection between sport and culture has only been discussed among anthropologists, but in the past few years many different academic fields such as sociology, psychology and linguistics, started taking interest in the matter as well.

According to many cultural and historical studies, sport has designed the identity of different groups, and therefore, it is very common in recent years to treat it as a valuable aspect of culture and society. Various aspects of modern sport that are reflected in the culture, such as organization, rules, regulations, striving for efficiency, and in many countries sport is used to bridge social differences. Sport promotes the group identity, it teaches moral norms, and encourages mankind to push their boundaries in search of excellence.

In the past few years, sport has also become the bridge to different achievements such as general health, quality of life, and healthy lifestyle.

Cultural norms strengthen societal unity, because they lead to stability that gives different meanings their homogeneity (Girginov, 2010).

Studies that measured the impact of sport on educational achievement among elementary school, high school and higher education students, have shown that exercise has a positive influence on cognition and concentration. The studies have found that a connection exists between physical fitness and cognitive functionality. This connection can be explained by psychological and physiological mechanisms.

Some researchers also showed that by doing physical exercise, one is also contributing to their neural development, self-esteem and to a lower level of stress and anxiety. Some studies also show that the level of attention among students is higher during psychical activity than during a lesson.

Other researchers also found a significant connection between academic achievement and physical activities (both in mathematics and English subjects). The connection between the two, according to the mentioned studies is based on few factors –

1. Motivation: by being motivated, the students will be expected to reach higher physical and academic achievements.
2. Health: a person who performs physical activities has a good general health, something that could have an effect on their academic achievements.
3. Concentration: Many studies have shown that by doing physical activity, one can improve their concentration, and by that improve their academic achievements.

Doing physical exercise also helps to maintain mental balance because by doing so, one can ease the effects of stress, depression and anxiety which can have a huge negative impact on academic achievements. Physical activity also has an influence on brain function (cognitive aspects).

There are few unrelated factors that need to be mentioned, namely, the students' family background and their socioeconomic status, and other factors such as parental education and income (Chomitz et al., 2009).

One can find support for the concept of “a sound mind in a sound body” in the results of a study that aimed to examine the effect of standardized physical fitness measures on standardized tests of reading and mathematics achievement (Siegel, 2006). In the study, Fitnessgram scores were correlated with the Stanford Achievement Test (SAT) scores for 884,715 fifth, seventh and ninth grade students in the California public school system during 2002. The study examined the correlation of various fitness achievements (aerobic capacity, body composition, curl-ups, trunk lifts, upper body strength and flexibility) with standardized reading and math scores. A clear positive trend was found between the students' Fitnessgram scores and their reading and mathematics achievements.

By looking at the studies, we can learn that improvement in physical activity has a direct positive affect on the improvement in math and reading, but while the correlations were statistically significant, they were rather small between physical fitness and reading and physical fitness and math. A different analysis of the research findings indicates some gender differences regardless of socio-economic status (SES). Some interaction effects were more common among women than among men, and among students who came from a higher SES than among students who came from lower SES (Siegel, 2006).

It is possible that there are other reasons for these results. For example, a person who comes from a higher SES is more likely to generally have better health and because of that, it is more likely that they will reach better physical achievements.

In 2006, Siegel claimed that although it is a known fact that physical fitness improves academic achievement, it also improves general health which might be the actual main reason for the improvement regarding the academic achievements.

Epidemiological evidence indicates that the capacity of physical activity declines from high school to college (Bray & Born, 2004), and among students in colleges who do regular activities there is a higher level of health and fitness.

One specific research shows that according to students' reports, only 38% of students in college take part in regular activities and only 20% take part in regular moderate activities. In high schools on the other

hand, 65% of students take part in regular activities and 26% take part in regular moderate activities. In addition, almost 50% of students reported that the capacity of their physical activities has decreased after graduation.

In the last decades, physical activity has been transformed from intense aerobic exercise to less intense exercise, that can be combined with everyday activities. For example, walking, or climbing stairs, both are common among college students and adults.

Therefore, the next logical step will be the development of physical activity that includes recreational sport activities that will be implemented in the day to day life (Arun, Nagarajan, Auriff, & Velkumar, 2013; Beville, 2010).

3. Research Questions

3.1. Main Research Question

Will physical activity courses make students more physically active and increase their health awareness and motivation to exercise?

3.2. Subsidiary Research Questions

What perceptions exist regarding the significance of mandatory pedagogical sports courses in undergraduate programs in higher education?

What is the impact of physical education units in higher education as a pedagogical program on promoting a culture of physical activity among students?

4. Purpose of the Study

The research aims were:

- 4.1.** To examine the significance of mandatory sports courses in undergraduate programs in higher education.
- 4.2.** To investigate the impact of physical education units in higher education as a pedagogical program on promoting physical activity among students.

5. Research Methods

5.1. Research Hypotheses

A hypothesis is a theoretical statement used to organize the research model and to present the connection between research variables or differences between populations. The hypotheses are temporary answers to the research questions. The hypotheses are validated and corroborated as long as the research findings support them. The hypotheses provide alternative answers to the research question. The accepted wording of a research hypothesis includes an independent variable (explanatory variable) and a dependent variable (variable that is been explained). (Nachmias-Frankfort & Nachmias, 2008).

In this research, four research hypotheses were formulated, all of which deal with the differences between students who participated in a mandatory sports course and those who did not.

Research Hypothesis 1

The first research hypothesis states that a difference will be found between students who took part in a mandatory sports course and students who did not, in their motivation level during sports activities.

For the first research hypothesis, the independent variable is - sports units as part of the curriculum in higher education, and the dependent variable is their level of motivation.

Research Hypothesis 2

The second research hypothesis states that a difference will be found between students who took part in a mandatory sports course and students who did not, in their persistence level in performing sports activities.

For the second research hypothesis, the independent variable is - sports units as part of the curriculum in higher education, and the dependent variable is the grade of adherence to physical activity (PA).

Research Hypothesis 3

The third research hypothesis states that a difference will be found between students who took part in a mandatory sports course and students who did not, in their health awareness level.

For the third research hypothesis, the independent variable is - sports units as part of the curriculum in higher education, and the dependent variable is the grade about awareness to a healthy lifestyle.

Research Hypotheses 4

The fourth research hypothesis states that a difference will be found between students who took part in a mandatory sports course and students who did not, in their level of interest in physical activity.

For the fourth research hypothesis, the independent variable is - sports units as part of the curriculum in higher education, and the dependent variable is the grade about the students auto-involvement in physical activity (PA).

5.2. Research Assumptions

The following assumptions are made regarding this study:

A difference will be found between students who participated in a mandatory sports course and students who did not participate in such a course, in their motivation to take part in physical activities and their health awareness.

A difference will be found between students who participated in a mandatory sports course and students who did not participate in such a course, in their persistence level in performing physical activity.

5.3. Research Variables

1. Motivation for physical activity
2. Adherence to physical activity
3. Lifestyle physical activities
4. Extra-curricular participation in sports units in higher education

5.4. Research Design

Table 01. The current research design.

	Aim	Research tool	Research population	Data Analysis
Stage 1: Qualitative Research	To explore the significance of mandatory sports courses in under-graduate programs in higher education.	Semi-structured interviews.	10 Sports units managers and directors.	Content Analysis
Stage 2: Quantitative Research	To investigate the impact of physical education units in higher education as a pedagogical program on promoting a culture of physical activity among students. To test Hypothesis 1 regarding the impact of sports units in higher education (HE) on motivation to engage in physical activity (PA) and awareness to healthy lifestyle. To test Hypothesis 2 regarding the impact of sports units in HE on adherence to PA.	Closed-ended questionnaire	100 students who were exposed to sports units at the university. 100 students who were not exposed to sports units at the university.	Statistics

5.5. Research Population and Sampling

The research population included students and sport coordinators. For the qualitative part of the research, 10 sports instructors and sports center coordinators from 10 higher academic institutions in Israel were interviewed. The goal of the interviews was to gather information regarding the students' usage in the sports facilities on campus. The sampling method is a deliberate sampling among the most active institutions in Israel, which take part in students' sports competitions.

Table 02. Research Population Profile.

Name/code	Age	Gender	Education	Prior engagement in sport activity	Current employment
D-1	55	Male	MA	Previously a rowing coach and a professional athlete	The principal of the physical education department at the Open University
K-2	63	Male	MA	Senior basketball coach and physical education teacher	CEO of the physical education department at the Interdisciplinary Center Herzliya

L-3	26	Female	B.Ed	Professional Triathlon	Coordinator of the physical Education department at Tel-Aviv University.
H-4	60	Male	M.Ed	Senior coach and senior volleyball instructor.	Physical Education lecturer at Ohalo College.
R-5	37	Male	B.Ed	Senior Volleyball instructor.	Manager of the sports department at Ben-Gurion University.
Z-6	41	Male	B.Ed	Sports coordinator and football coach.	Manager of the sports department at Rupin College.
B-7	44	Male	M.Ed	Senior volleyball coach.	Manager of the sports department at The Technion.
S-8	54	Male	B.Ed	Senior Basketball player in the Israeli national team.	Manager of the sports department at The Management College.
D-9	56	Male	M.Ed	Previously a football player and now a football coach.	Sports coordinator in Givat Washington College.
A-10	38	Female	M.Ed	Olympian swimmer.	Sports coordinator in Kiryat Ono College.

6. Findings

6.1. The Impact of Compulsory Sport Courses on Motivation According to Answers of Students at the Technion Institute

The students that took part in a mandatory course have been asked six direct questions regarding the influence of the course. From these questions, three are with regard to motivation. The different answers are displayed in table 03.

Table 03. Impact of compulsory sport courses according to testimonies of students at the Technion Institute.

Item	Average	Standard deviation	Percentage of those who agree
3. I learned that sports makes me feel good	3.21	0.81	85.1%
4. I learned that sports contributes to my health	3.12	0.69	84.8%
5. I got to know a new sport	2.61	1.17	43.3%

The score average in the table shows that the main influence of the mandatory sports course is that the students have learned that sports is good for them, and it contributes to their health.

6.2. Positive Motivation: Reasons Perceived as Contributing to Physical Activity Among Students

To identify the motivation level and its sources, 20 potential reasons were presented to the students. The different answers regarding each reason are presented in table 04.

Table 04. Reasons perceived by student as contributing to physical activity using a comparison between students who passed compulsory sports course (Technion) and students who did not take a compulsory sports course (Tel Aviv University).

Reason	Tel Aviv University (N = 100)		Technion (N = 100)		p	t
	Average	Std. deviation	Average	Std. deviation		
1. To maintain physical health	3.56	.73	3.73	.482	0.085	1.737
2. To maintain mental health	3.44	.73	3.52	.614	0.600	0.526
3. To maintain a normal weight	2.64	1.32	3.09	.956	0.016	2.411
4. Recommendation from a doctor/ coach/ therapist	1.03	1.23	1.59	1.189	0.008	2.688
5. Fear of neglecting myself	2.19	1.22	2.58	1.01	0.069	1.830
6. To increase and maintain physical fitness	3.18	.94	3.11	.85	0.598	0.528
7. To “look good”	2.62	1.19	2.86	.89	0.168	1.386
8. To vent out aggression	2.32	1.35	2.71	.89	0.058	1.911
9. To release stress	2.83	1.19	2.71	.94	0.441	0.733
10. To release anxieties	2.30	1.40	2.23	1.13	0.716	0.365
11. To disconnect from the annoyances of daily life	2.53	1.30	2.67	.91	0.141	0.612
12. To feel the joy of victory	2.04	1.32	2.33	1.14	0.278	1.080
13. To feel an improvement in achievement	2.59	1.29	2.55	1.10	0.790	0.267
14. To feel I have reached my maximum effort	2.70	1.29	2.59	1.10	0.454	0.750
15. To make new friends	.95	1.09	1.62	1.01	0.000	3.726
16. To meet friends	1.22	1.24	1.73	.93	0.006	2.641
17. To meet a partner	.51	.85	.91	.89	0.301	2.819
18. I enjoy doing sports	3.42	.86	3.55	.70	0.000	2.819
19. People do sports in my social environment	2.18	1.25	2.50	.86	0.097	1.670
20. My family members do sports	1.32	1.34	2.20	.94	0.000	4.458

Reviewing Table 04, we can learn that students who had taken a compulsory sports course (Technion Institute students) identify the following reasons as contributing to physical activity to a higher level than did students who did not take sports a course: “maintaining normal weight,” “recommendation of a physician/coach/therapist,” “meet friends,” “meet a partner,” and “people in my family surroundings who participate in sports activities” (see Figure 01).

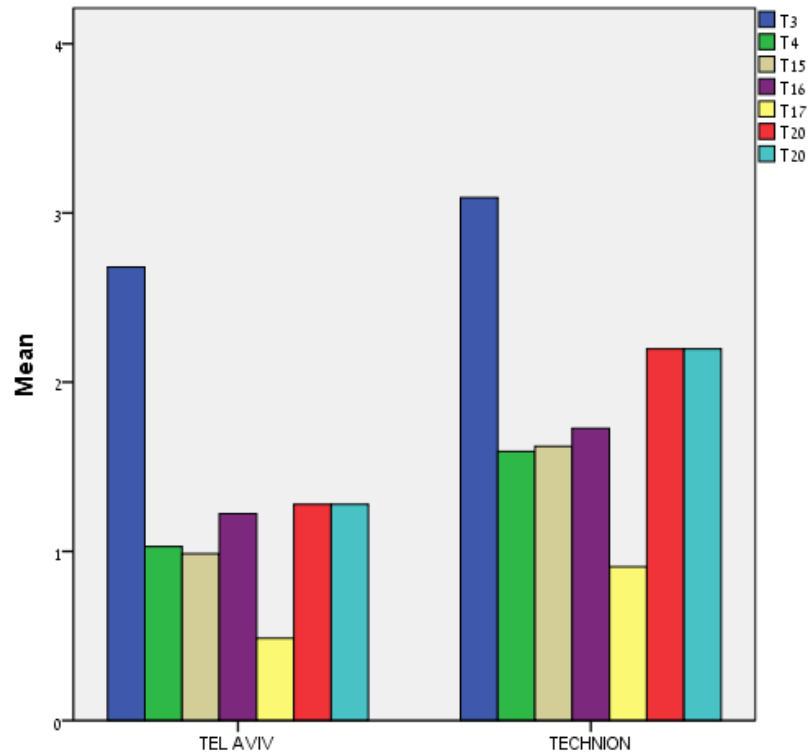


Figure 01. Differences between Technion Institute and Tel Aviv University students' indicating positive motivation with a significant difference between student groups.

6.3. Negative Motivation: The Perceived Reasons for Reducing Physical Activity Among Students

As a part of the examination of motivation level, some factors for reducing it were also examined. The students were presented with 15 reasons that can reduce physical activity, the distribution of students' responses to the reduction of each cause are presented in Table 05.

Table 05. Reasons perceived as reducing physical activity among the students, using a comparison between students who had taken a compulsory sports course (Technion), and students who did not take a compulsory sports course at all (Tel Aviv University).

Reason	Tel Aviv University (N = 100)		Technion (N = 100)		p	t
	Average	Std. deviation	Average	Std. deviation		
1. Physical activity is not important enough for me	.54	.99	2.42	1.45	0.000	8.979
2. I don't know how to exercise on my own	.67	1.03	.91	.73	0.114	1.592
3. I don't have enough time because of my school workload	3.07	1.02	1.74	1.11	0.000	4.469
4. I don't have enough time because of other tasks and activities	2.5	1.14	1.94	1.03	0.000	3.585
5. No exercise framework	1.10	1.20	1.00	.85	0.376	0.888

6. Fear of injuries	.54	.98	.68	.84	0.422	0.805
7. My friends are not physically active	.38	.73	1.17	.71	0.000	6.227
8. My family members are not physically active	.33	.71	1.11	.94	0.000	5.373
9. I can't keep my resolution to exercise	1.09	1.07	1.24	.99	0.405	0.835
10. Right now there are more important things in my life	1.62	1.21	1.45	.94	0.528	0.663
11. Health restrictions	.63	.99	.74	.79	0.416	0.816
12. Sports facilities are too far away/inaccessible	.76	1.09	.72	.76	0.839	0.203
13. Financial cost	1.16	1.27	.67	.79	0.013	2.530
14. Sports did not help me in the past	.18	.68	.45	.68	0.031	2.179
15. As a child I was not taught to do exercise and now it's too late	.21	.63	1.56	1.15	0.000	9.107

Reviewing Table 05, we learn that among students who had taken a compulsory sports course (Technion Institute students) the following reasons for reducing physical activity were identified at a statistically significant higher average level compared to students who did not take a sports course (Tel Aviv University students): “Physical activity is not important enough for me”, “My friends are not physically active”, “Sports did not help me in the past”, “as a child I was not taught to do exercise and now it’s too late”

In contrast, among students who had not taken a compulsory sports course (Tel Aviv University students), the following reasons for reducing physical activity were identified at a statistically significant higher average level compared to the students who had taken a compulsory sports course (Technion Institute students): “I don’t have enough time because of my school workload”, “I don’t have enough time because of other tasks and activities”, and “financial cost” (see Figure 02).

Generally, the main perceived reasons for reducing physical activity among students are the same among both students at the Technion Institute and Tel Aviv University: “I don’t have enough time because of my school workload”, “I don’t have enough time because of other tasks and activities”. The students at the Technion Institute’s major reason for the reduction also appears to be: “physical activity is not important enough for me”.

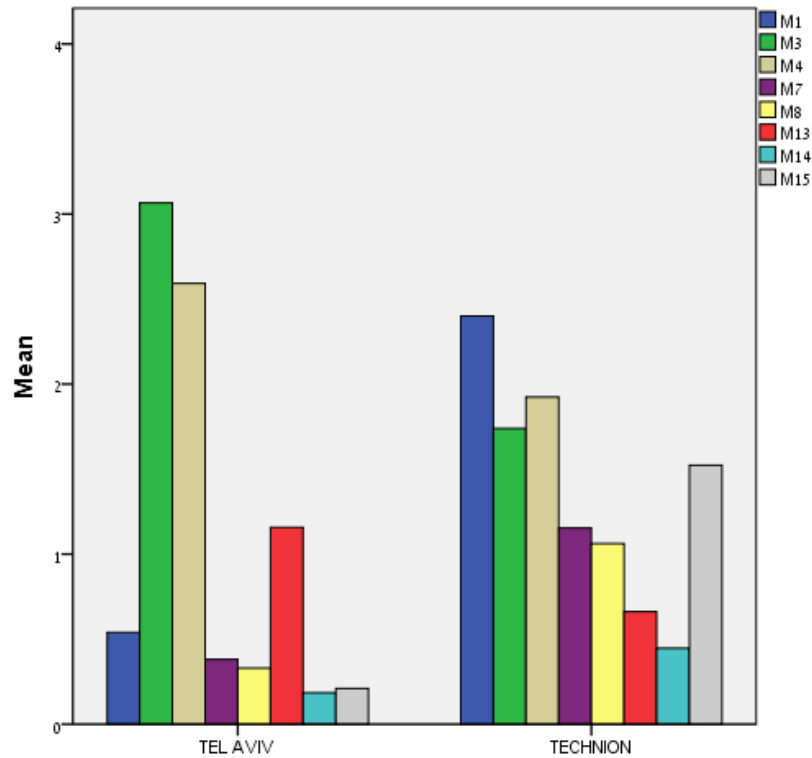


Figure 02. The differences between Tel Aviv University students and Technion Institute students in items indicating negative motivation (items with a significant difference between the student groups).

Table 06. Years engaged in physical activity at least twice a week: Tel Aviv University students vs. Technion Institute.

Number of years of physical activity	Tel Aviv University	Technion
Less than a year	%8	%10.4
Between one and three years	%14.7	%17.9
Over 3 years	%77.3	%71.6

Table 06 shows the percentage of students engaged regularly in physical activities at least twice a week. The comparison is between students who had taken a compulsory sports course (Technion Institute students) and students who did not take a compulsory sports course (Tel Aviv University students).

The difference in the percentage of students who engages regularly in physical activities at least twice a week is not statistically significant ($X^2 = 0.615, p = 0.735$).

In both academic institutions, the distribution of students regarding the duration of physical activities is similar: 10% reported engaging in physical activity at least twice a week for less than a year, approximately 15% reported engaging in physical activity at least twice a week for between one year and three years, and approximately 75% reported engaging in physical activity at least twice a week for over 3 years.

Table 07. A comparison regarding health awareness between students who had taken a compulsory sports course (Technion institute students) and students who had not taken a compulsory sports course (Tel Aviv University students).

Reason	Tel Aviv University (N = 100)		Technion (N = 100)		t	p
	Average	Std. deviation	Average	Std. deviation		
1. I read articles about sports	1.45	1.42	2.65	1.060	5.628	0.000
2. I follow an organized training program	1.83	1.33	2.52	1.041	3.359	0.001
3. I encourage others to exercise	2.81	1.22	3.02	.81	1.149	0.256
4. My nutrition habits are mostly healthy	2.81	1.09	3.03	.78	1.347	0.180
5. I am against passive or active smoking	3.24	1.05	3.62	.65	2.676	0.008
6. I have a good quality of sleep	2.58	.99	3.14	.67	3.067	0.000
7. I try to reduce the stress in my life	2.70	.99	2.80	.76	0.748	0.456
8. It is not only important but it is necessary to exercise	3.51	.76	3.56	.63	0.656	0.573
9. I rarely eat unhealthy food	2.04	.99	2.55	.78	3.059	0.003
10. I feel bad when I don't exercise	3.17	1.11	3.12	.95	0.308	0.758
11. I organize my day so that I have time for physical activity	2.50	1.26	2.78	.80	0.159	0.112
12. I find ways to exercise even on vacations	2.42	1.34	2.61	.92	1.009	0.315
13. I find time to exercise, even during busy times in life	2.34	1.26	2.53	.86	0.955	0.341
14. I find solutions to exercise even when I'm outside the house	2.37	1.27	2.52	.88	0.845	0.400
15. I find solutions to exercise even when my life is out of the routine	2.25	1.19	2.53	.93	1.484	0.140

Reviewing Table 07, we learn that on average, students who had taken a compulsory sports course (Technion institute students) had a higher level of health awareness on the following statements: “I read articles about sports”, “I am against passive or active smoking”, “I have a good quality of sleep” and “I rarely eat unhealthy food” (see Figure 03).

Generally, both students who had taken a compulsory sports course (Technion institute students) and students who had not taken a compulsory sports course (Tel Aviv University students) expressed health awareness with a high average agreement on the following statements: “It is not only important but it is necessary to exercise”, “I am against passive or active smoking”, and” I feel bad when I don't exercise.” Among the Technion institute students, another answer that is one of the most agreed upon is – “I have a good quality of sleep”.

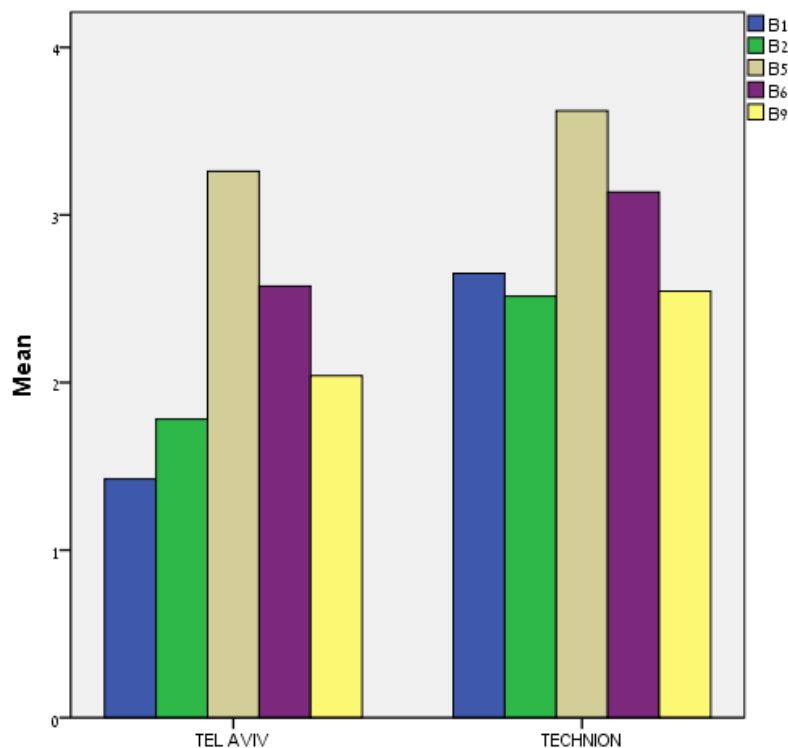


Figure 03. Differences between students who had taken a compulsory sports course (Technion institute students) and students who had not taken a compulsory sports course (Tel Aviv University students) in items indicating health awareness (items with a significant difference between student groups).

Table 08. The impact of compulsory sports course according to statements by students at the Technion Institute.

Item	Average	Standard deviation	Percentage of those who agree
1. I started to exercise regularly	2.94	.86	70.1%
2. I increased the amount of my physical activity	3.36	.88	86.6%
6. I continued to practice the sports from the course	2.99	1.161	59.7%

Table 08 shows that the main influence of the mandatory sports course, according to the Technion institute students, is that it increased the capacity of their physically activities.

6.4. Summary of Findings Emerging from the Research Hypotheses

Hypothesis 1: There will be a difference between students who had taken a compulsory sports course and students who did not take a course in the level of motivation for physical activity.

The research hypothesis was confirmed with regard to positive motivation. students who had taken a sports course had a higher level of positive motivation, compared with students who did not take a sports course (see Figure 06).

The higher motivation of students who had taken a sports course (Technion Institute students) is expressed by the following statements: “to maintain a normal weight,” “recommendation of a doctor/ coach/ therapist,” “to meet friends,” “to meet a partner,” and “My family does sports.”

Regarding negative motivation, the findings also show that negative motivation was higher among students who had taken a sports course, compared with students who did not take a sports course.

Hypothesis 2: There will be a difference between students who had taken a compulsory sports course and students who did not take a sports course in their persistence level in performing sports activities.

The research hypothesis was not confirmed. The difference of percentage between the institutions and students who are engaged in regular activity at least twice a week, was not statistically significant ($X^2 = 0.615, p = 0.735$). In both institutions, the distribution of students about the duration they performed is similar: 10% less than a year, approximately 15% between one year and three years, approximately 75% over 3 years.

Hypothesis 3: There will be a difference between students who had taken a compulsory sports course and students who did not take a sports course on the matter of health awareness.

The research hypothesis was confirmed. A statistically significant difference was found in the level of health awareness, which was higher among students who had taken a sports course, compared with students who did not take a sports course (see Figure 06).

The higher health awareness of students who had taken a sports course (Technion Institute students) is expressed by the following statements: “I read articles about sports,” “I am against passive or active smoking,” “I have a good quality of sleep,” “I rarely eat unhealthy food.”

Hypothesis 4: There will be a difference between students who had taken a compulsory sports course and students who did not take a sports course regarding the level of personal involvement in physical activity.

The research hypothesis was not confirmed. No significant difference was found between students who had taken a compulsory sports course and students who did not take a compulsory sports course regarding the volume and the frequency of their physical activities.

In some types of sports there was a clear difference between the two groups: there were types of sports that were in higher capacity in Tel Aviv university and some that were in higher capacity in the Technion institute. According to the results, in Tel Aviv university there is a higher capacity of sports activities regarding weights, climbing stairs, and walking daily compared to the Technion institute. In the Technion institute, on the other hand, there is a higher capacity of sports activities regarding swimming and ball games compared to Tel Aviv university.

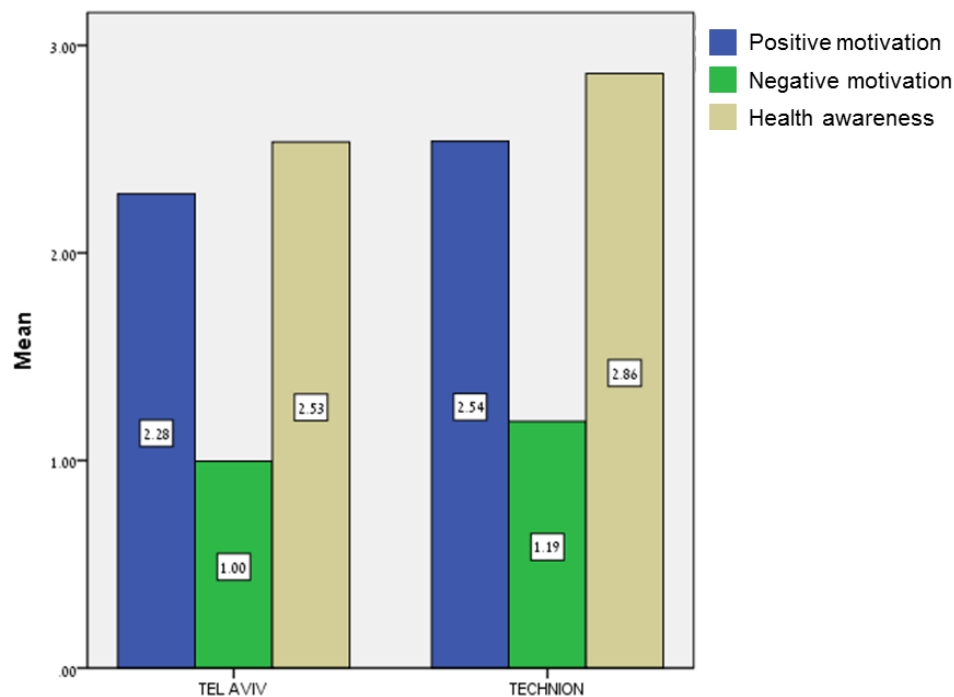


Figure 04. Differences between Tel Aviv University students and Technion Institute students in index variables: positive motivation, negative motivation, and health awareness.

7. Conclusion

On the conceptual level, the research findings show that participation in physical activity as part of the structured curriculum in higher education institutions does not result in increased physical activity nor in the continuation of physical activity after graduation. Rather, participation in physical activity as part of the higher education curriculum increases positive motivation for exercise and reduces the negative motivation for physical activity, as well as raises awareness of the importance of physical activity. In other words, the change in perception and understanding of the importance of physical activity increases the participation in physical activity during academic studies. The cognitive-consciousness change is what promotes physical activity as a culture throughout life and establishes it as a healthy lifestyle.

The conclusions would have been clearer had we seen a significant and clear changes in the amount of physical activity, in the adherence to exercise, and in quantitative data that would highlight the differences between students who underwent compulsory sports courses as part of the curriculum and those who did not. Rather, the conclusion that there was no significant difference in terms of quantity, but in terms of motivation and physical awareness, signifies a change in perception, a change that is considered very desirable to the people who work in the field of physical activity.

References

- Arun, B., Nagarajan, M. S., Auriff, M., & Velkumar, S. T. (2013). A correlation study to analyze the relationship between glossphobia and physical activity in undergraduate collegiate students. *International Journal of Pharmaceutical Science and Health Care*, 1(3), 52-59.
- Aşçı, F. H. (2003). The effects of physical fitness training on trait anxiety and physical self-concept of female university students. *Psychology of Sport and Exercise*, 4(3), 255-264.

- Backman, E. & Larsson, H. (2014). What should a physical education teacher know? An analysis of learning outcomes for future physical education teachers in Sweden. *Physical Education and Sport Pedagogy*, Epub ahead of print. 1-16.
- Beville, J. M. (2010). *A theory-based investigation of leisure time physical activity among college students*. Dissertation, (Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy), The University of Alabama.
- Bray, S. R., & Born, H. A. (2004). Transition to university and vigorous physical activity: Implications for health and psychological well-being. *Journal of American College Health*, 52, 181-188.
- Chomitz, V. R., Slining, M. M., McGowan, R. J., Mitchell, S. E., Dawson, G. F., & Hacker, K. A. (2009). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the northeastern United States. *Journal of School Health*, 79(1), 30-37.
- Girginov, V. (2010). Culture and the study of sport management. *European Sport Management Quarterly*, 10(4), 397-417.
- Kirk, D. (1999). Physical culture, physical education and relational analysis. *Sport, Education and Society*, 4(1), 63-73.
- Morrow Jr., J. R., Krzewinski-Malone, J. A., Jackson, A. W., Bungum, T. J., FitzGerald, S. J. (2004). American adults' knowledge of exercise recommendations. *Research Quarterly for Exercise and Sport*, 75(3), 231-237.
- Nachmias-Frankfort, C., & Nachmias, D. (2008). *Research methods in the social sciences*. New York, NY: Worth Publishers.
- Prochaska, J. O., Wright, J. A., & Velicer, W. F. (2008). Evaluating theories of health behavior change: A hierarchy of criteria applied to the transtheoretical model. *Applied Psychology*, 57(4), 561-588.
- Siegel, D. (2006). Physical fitness and academic achievement. *Journal of Physical Education, Recreation & Dance*, 77(2), 9-9.