



# Effectiveness of an Educational Program on University Collegians' Perceptions of Healthy Exercise pattern

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### **ABSTRACT**

To find out the effectiveness of an educational program on university students' perceptions of a healthy exercise pattern. A quasi-experimental study to find out the exercise pattern of Mosul University students for the period from 9th November 2022 to 2nd January 2023, the sample of (60) students. The questionnaire consists of two parts: a part that measures social and demographic information and includes (6) items, and a part that measures healthy lifestyle data with regard to exercise pattern and includes (10) items. Determine the validity of the content of the questionnaire by presenting it to experts and using the half-division technique and calculating the Pearson correlation coefficient to determine the validity. The results of the data showed that all (60) students in the study sample did not have an adequate level of perception of the healthy physical activity pattern in the pre-test, while the results of the post-test after implementing the program were high, which shows that there is an improvement in their perceptions of the healthy physical activity pattern. The study showed that there was an improvement in perceptions of a healthy lifestyle related to exercise pattern in the study group compared to those in the control group. The study recommended the need to develop educational programs, lectures, courses and seminars on the benefits of a healthy exercise pattern that university students must follow to increase their perceptions that lead to changing their lifestyle and getting rid of wrong behaviors and habits.

**Keywords:** Effectiveness, Educational program, Dietary pattern, University students

### **INTRODUCTION**

Since college students are at a special point in their lives when they are open to learning and establishing their identities, health education in the context of higher education is an efficient and effective way to encourage lifelong healthy habits. The overall and average subscale scores for healthy lifestyle practices have increased significantly. Moreover, reports of favorable improvements in students' healthy living patterns after receiving an instruction to that end have been made. Since college students make up a sizable portion of the young population and are the primary target audience for health promotion campaigns, learning more about their views on what constitutes a healthy lifestyle and the factors that influence those views is crucial for ensuring their healthy development <sup>[1]</sup>.

Physical fitness during our present time has become of great importance in life in general due to its remarkable impact on improving people's health, and that many people now view physical and motor exercises as less important to their lives, forgetting that they are in dire need to perform physical effort and movement to gain physical fitness and prevention. One of the diseases of lack of movement, which has become one of the most dangerous diseases of our time, and that physical fitness has been associated with several areas, including the ability to achieve productivity in the field of work, personal health, strength and other areas, meaning that physical fitness has an important role and an essential element that people or individuals must enjoy for health <sup>[2]</sup>. Quality of life has become an important concept in evaluating health care, in adolescents' populations <sup>[3]</sup>. A significant development has occurred in the recent decades on the concept of sports, practicing exercise, and the need to practice it is necessary for its various benefits to health <sup>[4]</sup>.

Students may benefit from exercise in a number of ways, including better management of psychological stress responses, improved mood and self-esteem, enhanced physical and mental health, and enhanced quality of life <sup>[5]</sup>. The European Society of Cardiology (ESC) outlined what constitutes a healthy lifestyle: not smoking, not overeating, regular exercise, and keeping a healthy weight <sup>[6] [7]</sup>.

The scientific development in all aspects of life has led to a major change in the style and lifestyle that the individual lives after the lifestyle was characterized by movement and activity to carry out daily business, whether at home or outside, today it has become the individual, he lives in a state of lethargy and lack of

movement, because of his use of machines, which have become his representatives in performing work. Thus, the disruption of the locomotor system in this way in humans reflected negatively on all body systems<sup>[8]</sup>.

Regular participation in physical activities like walking, jogging, and strength training is recommended for healthy living. Regular exercise and cutting down on salt and alcohol consumption have long been recommended as ways to prevent and manage hypertension<sup>[9][10]</sup>.

Healthful lifestyle habits consist of six pillars: self-care, movement, eating well, social support, inner development, and stress control. Behaviors that put one's health at danger, such as smoking and not getting enough sleep, eating poorly, and not getting enough physical activity<sup>[11][12]</sup>.

Prior research on healthy lifestyles show that the vast majority of college students participate in few, if any, health-promoting behaviors and display behavioral health hazards, such as cigarette use, alcohol and drug abuse, poor food, and insufficient physical activity. These habits and their repercussions tend to follow people into adulthood, putting their health at risk<sup>[13]</sup>.

Health education in a university setting is the best and most cost-effective way to teach people how to live healthy lives, because college students are in a unique stage of learning and developing their personalities. The averages of both the total and the subscale scores for healthy lifestyle behaviors have gone up by a lot. In addition, students' healthy lifestyle habits have gotten better after they were taught how to do so. University students make up a big part of the young population and are the main group that needs to be taught about the importance of healthy lifestyles. To help them grow up healthy, it is important to find out what they think about healthy lifestyles and what factors affect them<sup>[14]</sup>.

## METHODOLOGY

### Study design and setting

A quasi-experimental (pre-posttest) design carried out at the University of Mosul, ( College of Political Science and the College of Civil Engineering). Study sample was (60) students selected from (300) students to find out their Perceptions of Healthy Dietary Pattern. Sampling technique to selection students were non-probability (purposive sample).

### Ethics

After getting the approval of the College of Nursing Council for the study, a detailed description including the objectives of the study has been submitted to the Ministry of Planning (Central Statistical Organization), an approval was obtained from the university of mousl for conducting the study at the colleges in Mosul city. Additional unwritten agreements are obtained from the subjects of study for their participation in the study. Each and every student was guaranteed confidentiality and the anonymity of his or her identity.

### Procedure and tool for data collection

Questionnaire format contents part (1) socio-demographic characteristics which includes (age, gender, Marital status, Family monthly income, Residents, Grade), also the questionnaire contain part (2) Students' perceptions of a healthy physical activity pattern which includes (10) items. The data collection was through direct interview technique by researcher with participant of students from 9<sup>th</sup> November 2022 to 2<sup>nd</sup> January 2023. Constructed the study instrument (questionnaire).

A panel of thirteen (13) experts with at least five (5) years of expertise in their respective fields reviews the questionnaire's clarity, relevance, and appropriateness to determine the content validity of an early-stage instrument. Pearson Correlation Coefficient is used to determine the questionnaire's reliability a correlation coefficient is calculated ( $r=0.833$ ).

### Analysis of statistical data

Analysis: Frequency distributions, percent, mean, standard deviation, T-test, and AVOVA were used to examine and evaluate the outcomes of the research using the statistical package (SPSS) version 26. A P-value of 0.05 or less was regarded as statistically significant.

## RESULTS

**Table 1: Distribution of the sample according to their socio-demographic characteristics**

SDVs	Classification	Study group		Control group		Sig.
		No.	%	No.	%	
Age	19 years old	11	36.7	8	26.7	.450
	20 years old	9	30.0	11	36.7	
	21 years old	10	33.3	11	36.7	
	M ± SD	19.9 ± 0.85		20.1 ± 0.80		
Gender	Male	15	50.0	14	46.7	.721

	Female	15	50.0	16	53.3	
Marital status	Single	28	93.3	26	86.7	.831
	Married	2	6.7	4	13.3	
Family monthly income	<300 thousand dinars	2	6.7	2	6.7	.911
	300-600 thousand dinars	4	13.3	4	13.3	
	501-900 thousand dinars	11	36.7	13	43.3	
	>900 thousand dinars	13	43.3	11	36.7	
Residents	Urban	18	60.0	18	60.0	.275
	Rural	12	40.0	12	40.0	
Grade	Second	10	33.3	10	33.3	1.000
	Third	10	33.3	10	33.3	
	Fourth	10	33.3	10	33.3	

No.= Number; %= Percentage

Findings show participants age, the mean age for participants in study group is 19.9 ( $\pm 0.85$ ) and the mean age in control group is 20.1 ( $\pm 0.80$ ). In terms of gender, (50%) were male and (50%) were female participants the study group, while the female participants (53.3%) in control group. Marital status related findings, the single were predominated in both study and control groups (93.3% and 86.7%) respectively. In regards with monthly income, most of participants expressed >900 thousand dinars (43.3%) in study group and (43.3%) expressed 501-900 thousand dinars in control group. In terms of residents, the more than half of participants were urban residents (60%) for both study and control with no differences between study and control groups based all sociodemographic characteristics ( $p > 0.05$ ).

**Table 2: Overall Evaluation of Collegians' Perceptions toward Exercise for the Study and Control Groups at the pre-test and the post test I and II**

Exercise	Study Group				Control Group			
	Low N (%)	Moderate N (%)	High N (%)	M $\pm$ SD	Low N (%)	Moderate N (%)	High N (%)	M $\pm$ SD
Pre test	24 (80.0)	5 (16.7)	1 (3.3)	14.03 $\pm$ 4.06	25 (83.3)	4 (13.3)	1 (3.3)	13.35 $\pm$ 3.54
Post test I	1 (3.3)	8 (26.7)	21 (70.0)	25.3 $\pm$ 4.60	26 (86.7)	3 (10.0)	1 (3.3)	13.27 $\pm$ 3.41
Post test II	4 (13.3)	9 (30.0)	17 (56.7)	24.2 $\pm$ 5.18	23 (76.7)	5 (16.7)	2 (6.7)	14.23 $\pm$ 4.60

"Level of Assessment (Low=10-16.66, Moderate=16.67-23.33, High=23.34-30"

In study group, findings showed that the university students expressed a low responses towards perceptions of exercise at the pre-test period 14.03 ( $\pm 4.06$ ) (before education program). While, at the post-test I (after education program), findings showed that the university students expressed a high responses towards perceptions of exercise 25.3 ( $\pm 4.60$ ). After a month has been passed (post test II), university students expressed a same responses of post test I 24.2 ( $\pm 5.18$ ).

In control group, findings showed that the university students expressed a low responses towards perceptions of exercise at the pre-test period 13.35 ( $\pm 3.54$ ), at the post-test I, findings showed that the university students expressed a low responses towards perceptions of exercise 13.27 ( $\pm 3.41$ ) and after a month has been passed, university students at the post test II expressed a same responses of pre-post test I 14.23 ( $\pm 4.60$ ).

**Table 3: Comparative Differences between of the Overall Evaluations of Collegians' Perceptions toward Exercise for the Study and Control Groups at the pre-test and the post test I and II**

Periods	Weighted	M	SD	Std. Error	t-value	d.f	Sig.
Pre-test	Study	1.4033	.40640	.07420	.508	58	.613
	Control	1.3533	.35402	.06464			
Post-test I	Study	2.5300	.46100	.08417	11.490	58	.000
	Control	1.3267	.34133	.06232			
Post-test II	Study	2.4200	.51822	.09461	7.873	58	.000
	Control	1.4233	.46065	.08410			

M: Mean, SD: Standard deviation, t: t-test, d.f: Degree of freedom, Sig.: Significant level

This table shows that there is a no statistical significant difference between study and control groups in the pre-test period ( $t=.508$ ;  $p= .613$ ). While, there is a statistical significant difference between the study and control groups at the post-test I ( $t=11.490$ ;  $p= .000$ ) and II periods ( $t=7.873$ ;  $p= .000$ ). With respect to the statistical mean, the study results indicate that there is an improvement in the such perceptions of healthy life-style related to exercise in study group as compared with those who are control group.

**Table 4: Comparative Differences between Collegians' Perceptions toward Exercise for the Study and Control Groups at the pre-test and the post test I and II**

Groups	Exercise (I)	Exercise (J)	Mean Differences (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Study Group	Pre-test	Post-test I	-1.12667-*	.11984	.000	-1.3649-	-.8885-
		Post-test II	-1.01667-*	.11984	.000	-1.2549-	-.7785-
	Post-test I	Pre-test	1.12667*	.11984	.000	.8885	1.3649
		Post-test II	.11000	.11984	.361	-.1282-	.3482
	Post-test II	Pre-test	1.01667*	.11984	.000	.7785	1.2549
		Post-test I	-.11000-	.11984	.361	-.3482-	.1282
Control Group	Pre-test	Post-test I	.02667	.10045	.791	-.1730-	.2263
		Post-test II	-.07000-	.10045	.488	-.2696-	.1296
	Post-test I	Pre-test	-.02667-	.10045	.791	-.2263-	.1730
		Post-test II	-.09667-	.10045	.339	-.2963-	.1030
	Post-test II	Pre-test	.07000	.10045	.488	-.1296-	.2696
		Post-test I	.09667	.10045	.339	-.1030-	.2963

Participants' perceptions of exercise in the study group at the pretest time statistically differs from such perceptions in the posttest I ( $p= .000$ ) and posttest II ( $p= .000$ ). Such perceptions in the posttest I statistically differs from that in the pretest time ( $p= .000$ ); and not differs from that in posttest II ( $p= .631$ ). Such perceptions in the posttest II statistically differs from that in the pretest time ( $p= .000$ ) and that no differs in the posttest I ( $p= .631$ ).

For the control group, the perceptions of exercise in the pretest time does not statistically differ from such perceptions in the posttest I ( $p= .719$ ) and that in the posttest II ( $p= .488$ ). Such perceptions in the posttest I does not statistically differ from that in the pretest time ( $p= .791$ ) and that in the posttest II ( $p= .399$ ). Ultimately, such perceptions in the posttest II does not statistically differ from that in the pretest time ( $p= .488$ ) and that in the posttest I ( $p= .399$ ).

## DISCUSSION

The age mean for participants in study group is 19.9 ( $\pm 0.85$ ) and the mean age in control group is 20.1 ( $\pm 0.80$ ). In terms of gender, (50%) were male and (50%) were female participants the study group, In regards with monthly income, most of participants expressed >900 thousand dinars (43.3%) in study group and (43.3%) expressed 501-900 thousand dinars in control group. There was no statistically significant differences between study and control groups based all sociodemographic characteristics ( $p > 0.05$ ).

The studies show students' responses about their perceptions of physical activity, as it was found that there is a weakness in their perceptions of the pattern of physical activity, as a result of academic pressure and their lack of sufficient time to practice that activity.

A total of 259 medical students between the ages of 18 and 22 were surveyed in Bangalore using the International Physical Activity Questionnaire (IPAQ). According to the results, 43.2% of the students participated in a moderate amount of physical exercise, 15.4% participated in a low amount of physical activity, and 41.3% participated in a high amount of physical activity<sup>[15]</sup>.

In the interval before the tests, the studies demonstrate no statistically significant differences between the study and control groups. Whereas, the post-test II intervals and I show a statistically significant difference between the study and control groups. The study's findings suggest that, on average, people in the experimental group had more positive attitudes about the health benefits of exercise than those in the control group.

Pre- and post-test results were similar for the experimental and control groups, indicating that the students in the experimental group benefited significantly from the teaching. This finding demonstrates that the students' health-related attitudes and beliefs have improved as a direct consequence of the instruction they have received. In the control group, no changes were seen in the results<sup>[16][17]</sup>.

Participants' perceptions of exercise in the study group at the pretest time statistically differs from such perceptions in the posttest I and posttest II. Such perceptions in the posttest I statistically differs from that in the

pretest time and not differs from that in posttest II . Such perceptions in the posttest II statistically differs from that in the pretest time and that no differs in the posttest I .

For the control group, the perceptions of exercise in the pretest time does not statistically differ from such perceptions in the posttest I and that in the posttest II. Such perceptions in the posttest I does not statistically differ from that in the pretest time and that in the posttest II . Ultimately, such perceptions in the post test. The current study shows that there are clear differences in the perceptions of students before and after the program through the tests that were conducted for them, and this indicates that students need continuous programs in order to maintain their health by preventing many diseases caused by inactivity and lack of such physical activities.

The current review identified 41 studies that investigated the impact of lifestyle interventions aimed at improving health outcomes (specifically physical activity, nutrition, and weight) among college students. A number of studies demonstrated multiple significant impacts on health outcome variables. At least fifty percent of studies on physical activity and nutrition reported significant outcomes, indicating that the majority of studies yielded positive findings. 18/29 studies examining physical activity found significant effects, including increased physical activity minutes, an increase in the number of days participating in physical activity and also in exercise duration, increased METs and PAR-Q scores, and a reduction in exercise barriers. In addition, meta-analysis results suggest that studies focusing on moderate physical <sup>[18]</sup>.

### CONCLUSIONS

The study concluded that there is a weakness in the students' perceptions of the healthy exercise pattern in the pre-test for both the control and control groups, but after applying the program to the study group, there became a clear difference in the students' perceptions of the healthy exercise pattern in the post-test

### RECOMMENDATIONS

The study recommended the need to develop educational programs, lectures, courses and seminars on the benefits of a healthy exercise pattern that university students should follow to increase their perceptions that lead to changing their lifestyle and getting rid of wrong behaviors and habits.

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