

## ORIGINAL ARTICLE

# Investigation of Exercise Behavior Changes and Body Weight in The University students

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**Summary.** *Aim:* The aim of this research was to examine the stage of exercise behavior changes in students who were in different faculties. *Methods:* A total of 654 students from Çanakkale Onsekiz Mart University were included in this research. Stage of Exercise Behavior Change Questionnaire was used in the study. SPSS 20.0 package program was used for evaluation of scale data. The data are given in frequency and percentage distribution. *Results:* The percentage of students at continued to exercise stage in Faculty of Agriculture is %13,50, Faculty of Communication is 26,10%, Faculty of Education is 10,60%, Science Faculties is 13,90%, Faculty of Theology is 38,60, Faculty of Art is 16,30% and faculty of engineer is 16,50%. The percentage of students at precontemplation stage in Faculty of Agriculture is 11,50%, in Faculty of Communication is 16,30%, Faculty of Education is 16,50%, in Faculty of Science 13,90%, Faculty of Theology is 8,90%, Faculty of Arts is 20,70%, faculty of engineer is 17,50%. There was a significant difference between the faculties in the maintenance stage ( $p < 0,05$ ); there was no significant difference between the action, preparation, precontemplation, contemplation stages ( $p > 0,05$ ). As a result, the most students were in the Faculty of Theology at the maintenance stage. The units with the most students at the precontemplation stage were in the Faculty of Agriculture.

**Key words:** exercise behavior change steps, university students, exercise

## Introduction

Inactive lifestyles are an important factor in the development of cardiovascular diseases, diabetes and other common diseases. Currently, industrialization, technological advances and modern lifestyles have brought about physical inactivity and health problems.

Pastor et al. (1) recommended physical activity and exercise programs with many physical, mental, emotional, and social benefits within the scope of developing and protecting health. Additionally, the degree of physical activity or exercise habits shows variations at many ages whether in childhood, adolescence, or adulthood.

Many factors affecting dependence on exercise or preventing exercise affect the ability of individuals to plan in relation to this topic. For the creation of sports policies targeting national physical activity and exercise

programs, there is a need to determine the habits and tendency of individuals and to know factors preventing or encouraging people from participating in physical activity. Additionally, change stages in behavior related to exercise reveal how prepared they are to display regular and planned exercise behavior (2). These stages classify how prepared people are to change their behavior. These comprise precontemplation, contemplation, preparation, action, and maintenance stages (3).

Previously applied to university students (4,5,6,7), the results of this study are considered important by determining which stage university and faculty students are at in terms of creating campuses encouraging exercise or physical activity. It is considered important to support students at contemplation stage in terms of encouraging students with no ideas. The aim of the research is to investigate the exercise behavior change stages of students attending different faculties.

## Methods

### *Research group*

A total of 654 students attending from 7 faculties at Çanakkale 18 Mart University participated in 2017-2018 Education year to this study. The study included the Faculty of Agriculture (n=95), Faculty of Communication (n=96), Faculty of Education (n=85), Faculty of Science and Literature (n=100), Faculty of Theology (n=100), Faculty of Fine Arts (n=92) and Faculty of Engineering (n=86).

The study was conducted in accordance with the Declaration of Helsinki. All participants were fully informed about the protocol and signed the written informed consent form prior to participation.

### *Data collection tools*

A survey form was randomly distributed to 100 students and the returned survey forms were assessed. The "Physical Activity Stages of Change Questionnaire" (PASCQ) developed by Marcus and Lewis (8) aims to determine the exercise behavior stage of individuals. The survey attempts to determine the wishes of participants related to performing exercise and responses are given to four items in yes/no form. The individual's intent to perform exercise and exercise participation habits are divided into five separate exercise behavior stages according to responses to the items as: precontemplation, contemplation, preparation, action and maintenance. The validity and reliability studies for the Turkish version of the PASCQ were completed by Cengiz, Asci and İnce (9). The test-repeat test value (ICC=.80) was found to be high for reliability of the survey. Administration of the survey was completed in the spring semester of the 2017-2018 education year to volunteer students in their own faculties.

### *Statistical analysis*

The SPSS 20.0 program was used to assess the scale data. Data are given as frequency and percentage distributions. The chi-square test was used to determine the difference between stages according to faculty.

## Results

Gender, age, height, and weight distributions for students in the research are given in the table below.

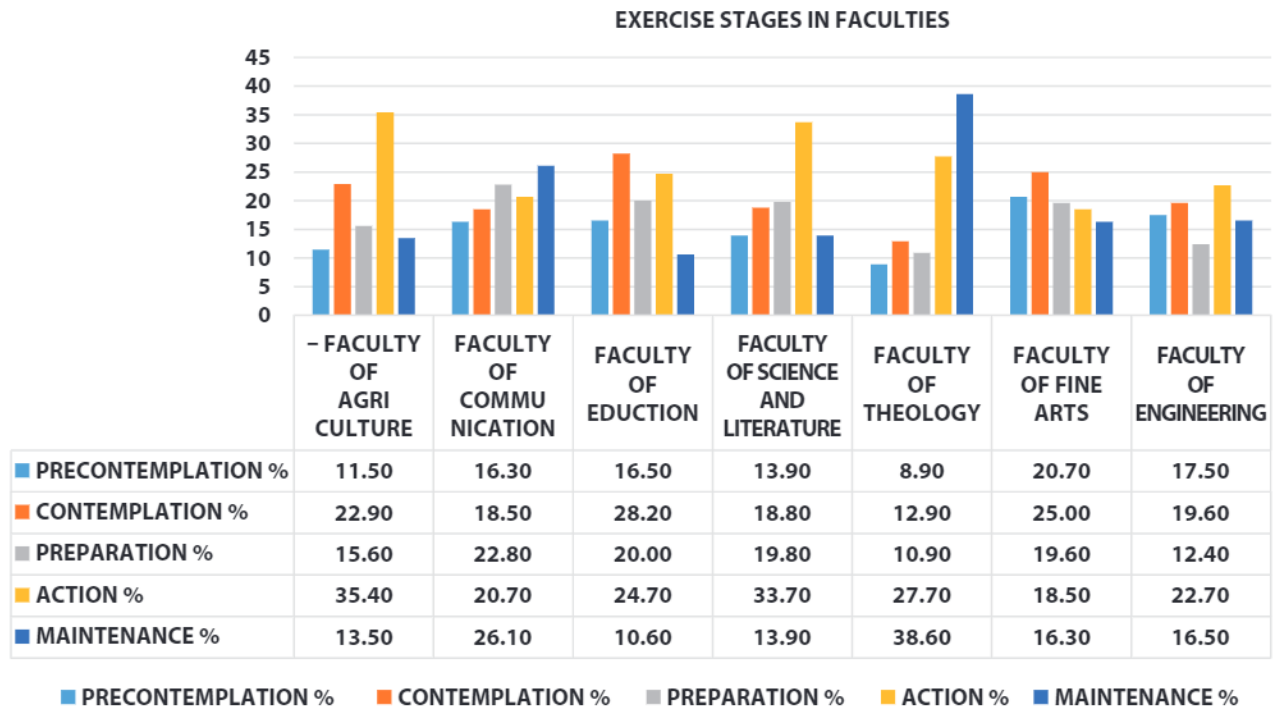
It was found that of students in the Faculty of Agriculture 13.50% were in the maintenance stage, 35.40% were in the action stage, 15.60% were in the preparation stage, 22.90% were in the contemplation stage and 11.50% were in the precontemplation stage. In the Faculty of Communication 26.10% were in the maintenance stage, 20.70% were in the action stage, 22.80% were in the preparation stage, 18.50% were in the contemplation stage and 16.30% were in the precontemplation stage. In the Faculty of Education, 10.60% were in the maintenance stage, 24.70% were in the action stage, 20.00% were in the preparation stage, 28.20% were in the contemplation stage and 16.50% were in the precontemplation stage. In the Faculty of Science and Literature 13.90% were in the maintenance stage, 33.70% were in the action stage, 19.80% were in the preparation stage, 18.80% were in the contemplation stage and 13.90% were in the precontemplation stage. In the Faculty of Theology 38.60% were in the maintenance stage, 27.70% were in the action stage, 10.90% were in the preparation stage, 12.90% were in the contemplation stage and 8.90% were in the precontemplation stage. In the Faculty of Fine Arts 16.30% were in the maintenance stage, 18.50% were in the action stage, 19.60% were in the preparation stage, 25% were in the contemplation stage and 20.70% were in the precontemplation stage. In the Faculty of Engineering 16.50% were in the maintenance stage, 22.70% were in the action stage, 12.40% were in the preparation stage, 19.60% were in the contemplation stage and 17.50% were in the precontemplation stage.

Comparisons between the faculties found significant difference ( $p < 0.05$ ) in the maintenance stage ( $X^2 = 35.612$ ,  $sd = 6$ ,  $p = 0.000$ ), with no significant differences ( $p > 0.05$ ) for the action ( $X^2 = 12.214$ ,  $sd = 6$ ,  $p = 0.057$ ), preparation ( $X^2 = 7.943$ ,  $sd = 6$ ,  $p = 0.242$ ), contemplation ( $X^2 = 8.623$ ,  $sd = 6$ ,  $p = 0.196$ ) and precontemplation ( $X^2 = 7.073$ ,  $sd = 6$ ,  $p = 0.314$ ) stages. Comparisons with vocational colleges found significant differences ( $p < 0.05$ ) for maintenance ( $X^2 = 15.879$ ,  $sd = 7$ ,  $p = 0.026$ ) and precontemplation ( $X^2 = 34.584$ ,  $sd = 7$ ,  $p = 0.000$ ) stages, with no significant differences

**Table 1.** Demographic characteristics of university students

	n	Gender				Age		Height		Weight	
		Female	%	Male	%	x	±	x	±	x	±
Faculty of Agriculture	95	46	47.9	50	52.1	21.18	1.9	188.15	13.72	68.82	18.39
Faculty of Communication	96	46	50.0	46	50.0	21.86	2.18	170.6	9.29	65.84	13.27
Faculty of Education	85	51	60.0	34	40.0	20.99	1.74	170.61	9.22	65.42	13.62
Faculty of Science and Literature	101	56	55.4	45	44.6	21.25	1.82	170.59	8.27	67.23	12.54
Faculty of Theology	100	51	50.5	50	49.5	21.88	2.09	166.74	18.82	64.79	14.49
Faculty of Fine Arts	92	56	60.9	36	39.1	21.59	1.99	169.14	10.88	68.7	15.63
Faculty of Engineering	86	49	50.5	48	49.5	21.53	1.96	168.64	19.44	68.18	16.84

Age, gender, height and weight distributions for faculty students in the research are given in Table 1.



**Figure 1.** Exercise Stages in Faculties

( $p > 0.05$ ) identified for action ( $X^2=13.997$ ,  $sd=7$ ,  $p=0.051$ ), preparation ( $X^2=7.012$ ,  $sd=7$ ,  $p=0.428$ ) and contemplation ( $X^2=8.241$ ,  $sd=7$ ,  $p=0.312$ ) stages.

## Discussion and Conclusion

Exercise behaviors change forms five stages. These are the maintenance stage, action stage, preparation stage, contemplation stage and precontemplation stage. Precontemplation is the stage of not performing exercise and not considering beginning exercise within the next six months. Contemplation involves not exercising but considering beginning exercise within the next six months. Preparation is the stage where exercise is performed, even if not regularly, and exercise is planned for the next 30 days. Action is the stage of performing regular exercise for a period of less than six months. Maintenance is the stage of completing regular exercise for a period longer than six months. When research on the topic is investigated, Oral & Aktop (2014) hypothesized that there would be a difference between PES students and students from other faculties in terms of exercise change stage and identified a significant difference between faculties after administering a survey. While students attending PES had nearly equal distribution for all exercise change stages, with highest distribution in the preparation stage (32.2%), the majority of other faculties were determined to be in the precontemplation stage (32.8%).

Using the Physical Activity Stages of Change Questionnaire, the exercise change stage of university students was identified according to faculty. The distribution in the research findings showed that in the Faculty of Agriculture 13.50% were in the maintenance stage, 35.40% were in the action stage, 15.60% were in the preparation stage, 22.90% were in the contemplation stage and 11.50% were in the precontemplation stage; in the Faculty of Communication 26.10% were in the maintenance stage, 20.70% were in the action stage, 22.80% were in the preparation stage, 18.50% were in the contemplation stage and 16.30% were in the precontemplation stage; in the Faculty of Education, 10.60% were in the maintenance stage, 24.70% were in the action stage, 20.00% were in the preparation stage, 28.20% were in the contemplation stage and 16.50%

were in the precontemplation stage; in the Faculty of Science and Literature 13.90% were in the maintenance stage, 33.70% were in the action stage, 19.80% were in the preparation stage, 18.80% were in the contemplation stage and 13.90% were in the precontemplation stage; in the Faculty of Theology 38.60% were in the maintenance stage, 27.70% were in the action stage, 10.90% were in the preparation stage, 12.90% were in the contemplation stage and 8.90% were in the precontemplation stage; in the Faculty of Fine Arts 16.30% were in the maintenance stage, 18.50% were in the action stage, 19.60% were in the preparation stage, 25% were in the contemplation stage and 20.70% were in the precontemplation stage and in the Faculty of Engineering 16.50% were in the maintenance stage, 22.70% were in the action stage, 12.40% were in the preparation stage, 19.60% were in the contemplation stage and 17.50% were in the precontemplation stage. When placed in order, the faculty with most students in the maintenance stage was the Faculty of Theology, and the faculty with most students in the precontemplation stage the Faculty of Fine Arts (Figure 1).

University students spend a large portion of their time on campus, in lectures and laboratories and it is considered that factors such as the available physical activity/exercise facilities on campus or in their own faculties, the distance to the place of exercise, ease of access or motivating effects of exercise affect individual ideas about exercising. When organizing the weekly lecture program for the unit with least exercise of the Faculty of Education, gaps left in the intense lecture program to encourage students to exercise may change these results. There is a need for many free-time trainers (sporting recreation leaders) to develop health and physical fitness of large groups. According to European Union criteria about this topic, there is a clear need to train participation-type trainers, in addition to performance sports trainers, with the aim of developing the health and physical fitness of a broad range of individuals from healthy people to those with disabilities, and from young to old during free time activities (10).

Comparison between faculties at the end of the study found a significant difference in terms of maintenance stage; with no significant differences for the action, preparation, contemplation and precontemplation stages.

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