HEALTH PROMOTING BEHAVIORS AND EXERCISE STAGES OF CHANGE LEVELS OF STUDENTS AT TRANSITION TO UNIVERSITY

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Approval of the Graduate School of Social Sciences

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ABSTRACT

HEALTH PROMOTING BEHAVIORS AND EXERCISE STAGES OF CHANGE LEVELS OF STUDENTS AT TRANSITION TO UNIVERSITY

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The purposes of this study were to examine (a) health promoting behaviors, (b) physical activity levels, (c) exercise stages of change levels, and (d) exercise preferences of students who had just entered the university by gender and residence. Participants were 438 students from Middle East Technical University (METU) English Preparatory school. Adolescent Health Promotion Scale (AHPS), International Physical Activity Questionnaire (IPAQ), Physical Activity Stages of Change Questionnaire (PASCQ), and Physical Activity Preferences Check-list were used for the data collection. Descriptive statistics, nonparametric statistical methods (Mann Whitney U test, Pearson chi-square test), and a one-way MANOVA were used for the data analysis. According to AHPS results, female students’ health promoting behaviors were better than those of male students except exercise behavior. Students living at home had higher scores on nutrition behavior and students living in dormitory had higher scores on stress management behavior (p <
According to the IPAQ results, male students were more physically active than female counterparts. Students who were living in dormitory had higher physical activity levels than students living at home ($p < .05$). PASCQ findings indicated no significant differences on the exercise stages of change levels by gender and residence ($p > .05$). In general, students were at pre-contemplation 9.2%, contemplation 39.3%, preparation 27.8%, action 14.5%, and maintenance 9.2% stages. Swimming, walking, and table tennis were the three most frequently preferred physical activities. In conclusion, female students had better health promoting behaviors than those of male students except exercise behavior. Female students and students living at home were more at risk of inactivity. Approximately 80% of the METU English Preparatory school students’ physical activity levels were not satisfactory for a healthy life. University physical activity facilities, extracurricular programs and the courses should be reconsidered to support the health promoting behaviors of these students.

**Keywords:** Health promoting behaviors, physical activity level, exercise stages of change, students in transition to university, university students.
ÖZ

ÜNİVERSİTEYE GEÇİŞTE ÖĞRENCİLERİN SAĞLIĞI GÜÇLENDİRİCİ DAVRANİŞLARI VE EGZERSİZ DAVRANİŞI DEĞİŞİM BASAMAK DÜZEYLERİ

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Bu çalışmanın amaçları üniversiteye yeni giren öğrencilerin (a) sağıloom güçlendirici davranış düzeylerini, (b) fiziksel aktiviteye katılım düzeylerini, (c) egzersiz davranışının değişim basamaklarını ve (d) tercih ettikleri spor aktivitelerini cinsiyet ve yaşadıkları yere göre incelemektir. Çalışmaya Orta Doğu Teknik Üniversitesi (ODTÜ) İngilizce Hazırlık okulundan 438 öğrenci katılmıştır. Verilerin toplanması için Sağlıklı Yaşam Ölçeği, Uluslararası Fiziksel Aktivite, Egzersiz Davranışının Değişim Basamakları ve Fiziksel Aktivite Tercihleri anketleri kullanılmıştır. Veri analizinde tanımlayıcı istatistik, Mann Whitney U, Pearson kare ve MANOVA testleri kullanılmıştır. Sağlıklı Yaşam Ölçeğine göre, kız öğrencilerin egzersiz davranışı dışında, sağlığı güçlendirici davranışların erkek öğrencilerden daha yüksek olduğu görülmüştür (p < .05). Erkek ve kız öğrencilerin...
beslenme ve stresle başa çıkabilme davranışları aynı seviyede bulunmuştur. Evde kalan öğrencilerin beslenme davranış puanlarının ve yurtta kalan öğrencilerin de stresle başa çıkabilme davranış puanlarının yüksek olduğu görülmüştür ($p < .05$). Fiziksel aktivite düzeyi ile ilgili bulgulara göre erkek öğrencilerin kızlarla göre daha aktif oldukları bulunmuştur. Yurtta kalan öğrencilerin evde kalanlara göre daha yüksek fiziksel aktivite düzeyine sahip olduklarını tespit edilmiştir. Egzersiz Davranışın Değişim Basamakları anketinin sonuçlarına göre cinsiyet ve yaşadıkları yere göre öğrenciler arasında anlamlı bir fark bulunmamıştır ($p > .05$).

Bütün katılımcıların verileri ele alındığında, %9,2’sinin eğitim öncesi, %39,3’unun eğitim, %27,8’inin hazırlık, %14,5’inin hareket ve %9,2’sinin devamlılık basamaklarında olduğu görülmüştür. Yüzme, yürüme ve masa tenisinin en çok tercih edilen üç fiziksel aktivite olduğunu belirlenmiştir. Sonuç olarak, kız öğrencilerin egzersiz davranış dışında sağlıklı güçlendirici davranışlarının erkek öğrencilerden daha iyi olduğu tespit edilmiştir. Kız öğrenciler ve yerleşke dışında kalan öğrencilerin daha çok risk altında olduğu görülmüştür. ODTÜ öğrencilerinin yaklaşık olarak %80’inin fiziksel aktivite düzeyi sağlıklı yaşam için gerekli olan düzeyin altındadır. Bu çalışmanın bulguları sonucunda üniversitedeki fiziksel aktivite ile ilgili imkanların, ders dış etkinliklerin ve derslerin öğrencilerin sağlıklı güçlendirici davranışlarını desteklemek için yeniden gözden geçirilerek gerekli düzenlemelerin yapılması önerilir.

**Anahtar Kelimeler:** Sağlığı güçlendirici davranışlar, fiziksel aktivite düzeyleri, egzersiz davranışının değişim basamakları, üniversiteye geçiş yapan öğrenciler, üniversite öğrencileri.
To My Husband
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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Promotion of healthy lifestyles has been gaining popularity as a tool for developing public health. Studies indicated that healthy lifestyles enhance lifelong health, increase quality of life, and decrease morbidity and mortality (Belloc & Berslow, 1972; DOH, 1997; Walker, Sechrist, & Pender, 1987). On the other hand, unhealthy lifestyles result in chronic diseases such as high cholesterol, osteoporosis, chronic heart disease, hypertension, colon cancer, and psychosocial health problems (Kesaniemi, Danforth, Jensen, Kopelman, Lefebvre, & Reeder, 2001; National Health Committee 1998; US Department of Health and Human Services (USDHHS) 1996).

Health promoting lifestyles include activities that are focused on improving the level of well-being. The focus of these activities is on the development of positive potential for physical, social, mental, intellectual or spiritual health (Pender & Barkaskas, 1992). Considering this multidimensional structure of health promotion (e.g. physical, social, mental, and intellectual), Chen, Wang, Yang, and Liou (2003) identified six health-promoting behaviors. These are (1) social support, (2) life appreciation, (3) health responsibility, (4) stress management, (5) nutrition, and (6) exercise behaviors.
In this classification, Chen et al. (2003) identified that social support behavior refers to relationship with others and people that individual is close. It includes behaviors such as caring people, concerning others, and sharing feelings with others. Life appreciation behavior refers to the development of positive behaviors toward having happy feeling and liking him/her self. It includes knowing own personal defects and weaknesses and tries to correct them. The third behavior is health responsibility. It is related with how individuals take care of their body with choosing the healthy foods, observing own body, visiting the health personnel about their health concerns, and making an effort to take care of their body hygiene. Stress management behaviors are based on observing emotional changes, determining the source of stress in their life, and setting their priorities. The fifth behavior is nutrition behavior. It is dealing with what kind of nourishment that they are eating such as not eating greasy food, including fiber in their meal, drinking enough water for staying healthy, eating regular meals and especially eating breakfast, and including five food groups in their diet. Lastly, exercise behavior describes individual’s physical activity participation level and healthy exercise habits such as including warm up, cool down, and stretching exercises in their exercise regimen.

Despite the documented benefits and given interest to the promoting health behaviors, recent studies have demonstrated that only small portion of the population have internalized the healthy lifestyle patterns (Chen, James & Wang, 2007; Lee & Loke, 2005; Eurobarometer, 2003). Studies indicated that poor health promoting behavior patterns were even quite common in youngsters who were considered to be in the top of their health (Chen, James & Wang, 2007; Coates, 1982; Leslie, Sparling, & Owen, 2001). For example, Chen, James and Wang (2007) found poor nutrition, stress management, health responsibility, and social support
behaviors in an American adolescence group, and low exercise and life appreciation levels in a Taiwanese adolescence group.

Studies also found that some of the health behaviors such as physical activity level dramatically decrease from adolescence to adulthood, as people get older (Eurobarometer, 2003; Wallace, Buckworth, Kirby, & Sherman, 2000). Especially, late adolescence and university years are seem to be very critical period for the increased level of risky health behaviors such as irregular meals and sleep patterns (CDC, 1997), inactivity (Leslie et al., 2001; Harrell, Gansky, Bradley, & Mcmurry, 1997), bad eating habits and risk-taking behaviors like illicit drug, alcohol and tobacco use, and sexual activity (Leenders, 1996; Sells & Blum, 1996). Recently, Lee and Loke (2005) have identified limited sense of health responsibility, low physical activity, and poor nutritional habits in university students.

Exercise behavior within the health promotion has a critical role due to strong association of it with the other health promoting behaviors (Phillips, Kiernan and King, 2001). This association implies the enhancement of the other health promoting behaviors by the development of a regular exercise habit. Therefore, to improve the physical activity levels of at risk populations firstly understanding the physical activity pattern by using the exercise adherence theories and then eliminating the perceived ecological barriers to exercise (interpersonal, institutional, public policy, and physical environmental) are recommended (Gyursick, Bray & Brittain., 2004; Irwin, 2004; Epstein, 1998).

Theories of exercise adherence include Health Belief Model, Theory of Reasoned Action, Self-Efficacy, Theory of Planned Behavior, and Stages of Change Model (Sperry, Lewis, Carlson, & Englar-Carlson, 2005). These theories are generally developed for understanding the general health behaviors such as smoking,
alcohol or drug addiction, and later applied to exercise behavior. The Health Belief Model is based on the individuals’ beliefs about the treat of ill health and pros and cons of taking action (Becker & Rosenstock, 1984). Theory of Reasoned Action is based on individual’s intentions about changing the behavior voluntarily and using these intentions for pretending the individual’s action (Ajzen & Fishbein, 1980). Thirdly, Self-Efficacy Theory is concerned with the belief that one has the essential source and capacity to achieve health behavior change (Bandura, 1986). Theory of Planned Behavior is based on behavioral intentions regarding a specific behavior, subjective norm, and perceived behavior control. Lastly, Stages of Change Model describes the readiness to change in terms of stages (Prochaska, Norcross, & DiClemente, 1994). Currently, the stages-of-change model has been accepted as the strongest model for understanding and predicting the exercise behavior.

In stages-of-change model, it is accepted that individuals show ordered progression when they are engaging in a new behavior. There are five stages that individuals follow in an ordered progression, Pre-contemplation, Contemplation, Preparation, Action, and Maintenance (Marcus, Selby, Niaura, & Rossi, 1992). Pre-contemplation stage includes an individual who does not exercise and is not planning to exercise within six months. Contemplation stage includes someone who does not exercise but is intending to exercise within six months. Preparation stage includes an individual who is planning to start exercise and has taken some initial steps toward it. Action stage includes an individual who has been exercising regularly but not more than six months. Lastly, Maintenance stage includes an individual who has been exercising regularly more than six months or more.

Previous studies examining the exercise stage of change level of different populations indicated that most of the individuals in lower stages, males are in
higher stages compared to the females, and there are differences among stage
distribution of the different ethnicities (Spencer, Adams, Malone, Roy, & Yost,
2006). Studies examining the university students found that most of the university
students were in lower stages such as Pre-contemplation, Contemplation, and
Preparation (Cengiz, 2007; Spencer et al., 2006; Wallace et al., 2000). According to
Koçak (2005) perceived heavy class schedule by the university students was the
main reason for the low physical activity participation.

Even though there have been studies examining the university students each
health promoting behaviors (Lee et al., 2005; Hawks, Madanat, Merrill, Goudy, &
Miyagawa, 2002), there is a lack of knowledge about the behaviors of students who
just graduated from high school and entered to universities. However, understanding
the health promoting behaviors of these students is very important because they are
supposed to be the well-educated group of the general adolescence population. They
fulfilled the rigorous academic criteria to be accepted for the undergraduate
education in the universities. Considering the main goal of the primary, secondary
and high school education, stating education of the whole (body and mind), it can be
argued that students would have already gained and maintained the good health
behaviors in all dimensions. However, our current knowledge level on healthy
lifestyle behaviors of this specific population has been away from answering this
argument.

1.2 Statement of the Problem

Previous studies in health promoting behaviors indicated a high level of risky
health behaviors in university students. Especially, sedentary lifestyles and low
physical activity level were the most critical findings of these studies. Other studies
examining the physical activity behavior as a health promoting factor found that
physical activity level dramatically decrease from high school to university years. These studies also indicated that there are gender differences, and showed the influence of the living with or away from family in some of the health promoting factors.

Although health-promoting behaviors of the university students were examined in several studies, there is a lack of knowledge about those behaviors of the students who has just entered the university. The research problem of this study was to examine the health promoting behaviors, and especially the physical activity levels, exercise stages of change levels, and exercise preferences of Middle East Technical University (METU) English Preparatory School students with respect to gender (male and female) and residence (dormitory and home).

1.3 Research Questions

The following research questions guided this study:

1. Is there a difference in the health promoting behaviors of METU English Preparatory School students by gender?

2. Is there a difference in the health promoting behaviors of METU English Preparatory School students by residence?

3. Is there a difference in the physical activity levels of METU English Preparatory School students by gender?

4. Is there a difference in the physical activity levels of METU English Preparatory School students by residence?

5. Is there a difference in the exercise stages of change levels of METU English Preparatory School students by gender?
6. Is there a difference in the exercise stages of change levels of METU English Preparatory School students by residence?

7. What kind of physical activity do the METU English Preparatory School students prefer?

1.4 Significance of the Study

There has been a lack of knowledge about the health promoting behaviors, and more specifically the physical activity level, exercise stage of change level, and exercise preferences of students who has just entered the university. Moreover, effects of gender, and living in or out of campus on these behaviors are unknown for this specific population.

This study would provide necessary information to evaluate the health promoting behaviors of these students at the very beginning of university education without too much interaction with the university context. Based on this knowledge, it would be possible to make an evaluation about effectiveness of their prior education on these characteristics. In addition, policy makers, health and sports directories, curriculum specialist, and instructors related with university health promotion could use these data to create health promotion programs and physical activity courses that would meet the needs and interests of students.

1.5 Assumptions of the Study

It is assumed that participants of this study completed the Adolescent Health Promoting Scale, International Physical Activity Questionnaire, Exercise Stages of Change Questionnaire, and Physical Activity Preference List truthfully.
1.6 Limitations of the Study

There were several limitations in this study that need to be taken into consideration when interpreting the data. Firstly, the participants of this study were METU English Preparatory School students. Therefore, findings can only be generalized to this population. Secondly, questionnaires were applied at the third week of the semester, and included the effect of these three weeks on the participants in university setting.

1.7 Definitions of Terms

Students at transition from high school to university: Students who has just started to university. In this study, it refers to METU English Preparatory School students.

Health promoting behaviors: It is a “behavior motivated by the desire to increase well-being and actualize human health potential” (Pender, Murdaugh, & Parsons, 2002). They are social support, life appreciation, health responsibility, stress management, nutrition and exercise behaviors (Chen et al, 2003)

Physical activity: It is any form of bodily movement produced by skeletal muscles that result in expenditure of energy. Physical activity may include a planned activity like walking, running, basketball or daily activities such as yard work etc. (IPAQ, 2005).

Physical activity levels: These are categorized in three levels, low, moderate and high level, based on the “International Physical Activity Questionnaire” scoring method (Craig, Marshall, Sjostrom, Bauman, & Booth, 2003).
Exercise stages of change: It is the stages of readiness to change of individuals’ physical activity behavior (Marcus et al., 1992). The stages were classified according to the readiness to change. There are five stages: pre-contemplation, contemplation, preparation, action, and maintenance.

Physical activity preference: Physical activities that the students want to participate in.
CHAPTER 2

REVIEW OF LITERATURE

This chapter presents the relevant literature to healthy lifestyle, studies in health promoting behaviors, exercise behavior within health promotion behavior, theories and models of health behavior change, and physical activity preferences.

2.1 Healthy Lifestyle

2.1.1 Health and health promotion

Health is attaining and maintaining a state of complete social, physical, and mental well-being and not having disease or infirmity (Sperry et al., 2005). World Health Organization (2003) defines health promotion as a process of “enabling people to increase control over, and to improve, their health”. This behavior change process requires a multidimensional approach including development of physical, emotional, social, spiritual, and intellectual characteristics (Fahey, Insel, & Walton, 2007).

2.1.2 Health promoting behaviors

Based on the multidimensional health modeling, health-promoting behaviors are categorized as social support, life appreciation, health responsibility, stress management, nutrition, and exercise behavior (Chen et al., 2003) (Figure 1). All these six health behaviors support the quality of life of the individuals (Belloc & Berslow, 1972; DOH, 1997; Walker et al., 1987). All of them should be developed
in a holistic manner. If one of them is neglected other dimension will be effected negatively (Fahey et al., 2007).

Figure 1 Health promoting behaviors.

2.2 Studies in Health Promoting Behaviors

Recent studies examining the adolescence and university students’ health behaviors reported serious risky health behaviors such as irregular meals and sleep patterns (CDC, 1997), inactivity (Harrell et al. 1997), bad eating habits and risk-taking behaviors like illicit drug, alcohol and tobacco use in both population (Leenders, 1996: Sells et al., 1996).
Studies on general adolescence population found the positive influence of having normal body shape, being close to family and being female on the most of the health promoting behaviors (Chen, Wang, & Chang, 2006; Chen, Shiao, & Gau, 2007; Chen, Chou, & Yang, 2005) (Table 1).

Chen et al. (2006) stated that non-overweight adolescents had a significantly higher healthy behavior than the overweight adolescents on the life appreciation, health responsibility, social support, stress management, and exercise behavior. Recently, Chen, Shiao, and Gau (2007) have found that adolescents who lived with both parent have scored higher than adolescent with single parent in health-related behavior. The former had significantly higher scores on nutrition, social support, health responsibility, and life appreciation behavior.

Chen et al. (2005) showed that the average-weight adolescents had significantly higher mean scores on social support, health responsibility, exercise behavior, and overall Health Promotion scores than those of the overweight adolescents. They also had a higher score on health responsibility behavior than underweight adolescents. Except exercise behavior, girls had higher scores than boys on social support, health responsibility, life appreciation, stress management, and overall health promotion scores. The results of this study showed that overweight adolescents engaged in fewer health promoting activities.

Studies in the university students found low health responsibility regardless of gender, lower physical activity and better nutrition behaviors in female students population, and cross cultural differences (Lee & Loke, 2005; Hawks et al., 2002)

A study by on Hong Kong university students found that male university students engaged more frequently in physical exercise than female university students. Moreover, only a small proportion of the students had a sense of health
responsibility. Female students had better nutritional behavior than male students. However, male students had better stress management behaviors than female students.

Hawks et al. (2002) indicated significant differences between US and Japanese university students in the practice of certain health behaviors. Japanese students had higher scores on nutrition and health behaviors while US students had higher scores on exercise behaviors. Stress management behavior did not differ between US and Japanese students.

Dawson, Schneider, Fletcher, & Bryden (2007) found significant difference between genders in terms of engaging in both positive and negative health-related behaviors. Male students engage in negative health-related behavior more than female students. However, male students exercise and social support behavior were better than female students.

2.2.1. Students at transition from high school to university

Even though health-promoting behaviors of adolescence population and university students were examined in the above-mentioned studies, there is very limited knowledge about the behaviors of students at transition from high school to university. However, this group is very unique because they represent the well-educated adolescence population who has higher intellectual and academic capacities in general. They are also not influenced by the neither physical nor academic context of the universities that may affect the health behaviors.

Transition from high school to university is an important part of these young adults’ life. Their lifestyles are starting to change according to their new life in university. Transition to university is a process rather than a single event. It is
special for each individual (Bray & Born, 2004). It can be identified as a change, indefiniteness, and adaptation to a number of new experiences in the university.

In this part of their life, their habits, daily routines, interactions between new friends, and environments are changing. During transition, routines and habits that they developed in more stable environment of high school and home will be broken down.

Table 1 A summary of recent studies in health promoting behaviors.

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Participants</th>
<th>Data collection instrument</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawks et al. (2002)</td>
<td>594 Us college students and 629 Japanese students</td>
<td>The Health Promoting Lifestyle Profile</td>
<td>Japanese students had higher scores on nutrition and health responsibility while US students had higher scores on exercise behavior.</td>
</tr>
<tr>
<td>Lee et al. (2005)</td>
<td>247 University students 107 male and 140 female</td>
<td>Health Promotion Lifestyle Profile</td>
<td>Male students had better stress management and exercise behavior than females. Females were better in nutrition behavior than males.</td>
</tr>
<tr>
<td>Chen et al. (2005)</td>
<td>583 adolescents 279 boys and 304 female</td>
<td>Adolescent Health Promotion Scale</td>
<td>Overweight adolescents engaged in fewer health promoting activities than underweight and average weight adolescents. Except exercise behavior, girls had higher scores than boys on social support, health responsibility, life appreciation, stress management, and AHP total scores.</td>
</tr>
<tr>
<td>Chen et al. (2006)</td>
<td>660 Adolescents, 351 male and 309 female</td>
<td>Adolescent Health Promotion Scale</td>
<td>Non overweight adolescents had better health-related behaviors than overweight adolescents.</td>
</tr>
<tr>
<td>Chen et al. (2007)</td>
<td>546 Adolescents 51.2% male and 48.8% female</td>
<td>Adolescent Health Promotion Scale</td>
<td>Adolescents who lived with both parent scored higher than adolescent with single parent in health-related behavior.</td>
</tr>
<tr>
<td>Dawson et al. (2007)</td>
<td>638 undergraduate students 166 male and 472 female</td>
<td>16 forced-choice questions about overall health and various health-related behaviors</td>
<td>Male students engage in negative health-related behavior more than female students and male students exercise and social support behavior were better than female students.</td>
</tr>
</tbody>
</table>
2.3 Exercise Behavior within Health Promoting Behaviors

Exercise behavior has an important role on physical and psychological health of the individuals. Therefore developing exercise behavior within health promoting behaviors will have a positive impact on the other health promoting behaviors too.

The benefits of physical activity in preventing from many acute diseases and improving one’s own health have been studied in various studies (Surgeon General Physical Activity and Health Report, 1996). People who are inactive can improve their health by becoming even moderately active on a regular basis. Surgeon General Report (2006) stated that people does not need to do strenuous physical activity in order to achieve health benefits. Health benefits could be achieved by only increasing the duration, frequency or intensity of physical activity. Involving and maintaining of regular physical activity have an important role of staying healthy. People who do not participate in any kind of physical activity have the highest risk of death and disability so that engaging in any amount of physical activity is preferable to none. Physical activity should be a part of our daily life routine (USDHHS, 2000).

The USDHHS (1996) outlined eleven positive benefits of regular physical activity. They are;

1. Reducing the risk of premature death.
2. Reducing the risk of cardiovascular disease.
3. Reducing the risk of Type 2 Diabetes.
4. Reducing the risk of developing high blood pressure.
5. Reducing high blood pressure.
6. Reducing the risk of colon cancer.
7. Reducing feelings of depression and anxiety.

9. Building and maintaining healthy bones, muscles, and joints.

10. Helping older adults become stronger and better able to move about without falling.


Benefits of various types of physical activity on improving overall health of the individuals are well documented (Meeks, Heits, & Page, 2003). Benefits of cardiovascular endurance activities showed that these types of activities improve lung and heart function, the function of immune system, metabolic rate, and psychological well being to make the individual to have greater defense against acute and chronic depression. Moreover, they have positive effects in lowering the risk of developing diabetes by improving insulin sensitivity, reducing certain types of cancers, increasing high density lipoproteins (HDL), lowering the levels of low density lipoproteins (LDL), and decreasing the risk of developing cardiovascular disease. Physical activity has an important role in preventing coronary heart disease (CHD) (USDHHS, 2000). Especially developing countries CHD is leading to cause death and disability. Physically inactive people have a tendency to develop CHD in 2 times higher than people who participated in a regular physical activity. People who have other risk factor for CDH can also benefit from physical activity.

Performing muscular strength and endurance activities has also been showed to have positive effects on health. Engaging these activities helps sustain correct posture, decreases the risks of low back pain and injury, and improves body composition by increasing muscle mass and decreasing fat tissue (Meeks, et al., 2003). Research also indicates that strength exercise may decrease the risk of osteoporosis and development of hip fractures (Rogers & Evans, 1993). Moreover,
positive benefits of flexibility exercises on overall health including prevention low back pain and injuries to muscle and joints, reducing the likelihood of accidents, and avoiding and relieving symptoms related with arthritis has also been stated (Fahey et al., 2007).

Researcher showed that PA has an important role in reducing anxiety and various stress in adults (Bhui, 2000; Dunn, Trivedi, & O’Neal, 2001). Regular vigorous PA helps someone in the psychological well-being, decreases the levels of anxiety, depression, stress, and negative mood, and increases levels of positive mood as well as numerous indices of cognitive functioning (Petruzello, Landers, Hatfield, Kubitz, & Salazar, 1991; North, McCullagh, & Tran, 1990; Crews & Landers, 1987; McDonald & Hodgson, 1991; Etnier, Salazar, Landers, Petruzello, Han, & Nowell, 1997). Researchers found a significant relationship between physical activity and reducing stress in an acceptable means (Nguyen-Michel, Unger, Hamilton, & Spruijt-Metz, 2006). Indications have also been showed that physical activity in childhood and adolescence may positively influence health status during childhood and adolescence as well as throughout adulthood (Blair, Cheng & Holder, 2001; Malina, 2001). In conclusion, benefits of physical activity mentioned above, it can be said that other health promoting behavior described previously can be improved and by developing a regular exercise habit.

2.3.1 Physical activity levels of adults and university students

Despite the well-documented benefits of physical activity, few individuals participate in regular physical activity. Engaging in any types of physical activity declines as age or grade in school increases and generally people who have lower levels of education and income are least active in their leisure time. In the US, only about 23 % of adults reported regular, vigorous physical activity that include large
muscle groups in dynamic movement for 20 minutes or longer and 3 or more days per week. Furthermore, 15% of adults reported physical activity for 5 or more days per week for 30 minutes or longer. In addition, 40% reported that they do not participate in any regular physical activity (USDHHS, 2000).

Studies in European population revealed similar results that more than half of the population (57.4%) did not participate vigorous physical activity (Eurobarometer, 2003). According to the Turkish National Burden of Disease Report (2004), 35% of the male and 71% of the female population was physically inactive between the ages of 15-29 years old.

Studies focusing on the university students’ physical activity level found that 50% of them were inactive or exercising below the recommended level (Pinto & Marcus, 1995; Reed & Phillips, 2005; Savci, Öztürk, Arikan, İnal-İnce, & Tokgözoğlu, 2006; Sinclair, Hamlin, & Steel, 2005; Suminski, Petosa, Utter, & Zhang, 2002; Steptoe, Wardle, Fuller, Holte, Justo, Sanderman, & Wichstrom, 1997). Gender difference, lower level in female students, was also reported in many studies (Cengiz, 2007; Douglas, Collins, & Warren, 1997; Savci et al., 2006; Steptoe et al., 1997).

Physical activity facilities of the universities and the awareness level of the students about them were found to be an important factor for the students to participate in physical activity. Reed and Wilson (2006) stated that the majority of the students (73%) who were aware of the recreational facilities of the university used them. However, few of them engaged in the recommended activity levels necessary to gain a significant health benefit.

Considering the Turkish university context, studies showed that more than 50% of the university students were moderately active and the researchers stated that
university students have significantly low physical activity levels (Savci et al., 2006 & Cengiz, 2007).

There were few studies about physical activity levels of students in transition to university. Recently, Bray and Born (2004) found a significant decline in physical activity level among students transitioning from the last two months of high school to the first two months of university.

2.4 Theories and Models of Health Behavior Change

There have been several theories and models improved to describe the health behaviors and their changes (Sperry et al., 2005). There are most commonly five theories and models used for analyzing behavior change (Sperry et al., 2005). Those can be classified as follows; Health Belief Model, Theory of Reasoned Action, Self-Efficacy, Theory of Planned Behavior, and Transtheoretical Model (includes Stages of Change Model). Currently, the Transtheoretical model (stages-of-change model) is accepted as the strongest model to understand and predict the exercise behavior.

Figure 2 Health behavior change theories and models.
2.4.1 The trans-theoretical model (TTM)

Transtheoretical Model is a theoretical model of behavior change that has been the basis for developing effective interventions to promote health behavior change. TTM is an integrative model of behavior change (Prochaska & DiClemente, 1983; Prochaska, DiClemente, & Norcross, 1992). The model explains how people modify a problem behavior or acquire a positive behavior.

Prochaska, DiClemente and Norcross (1994) developed the Trans-Theoretical Model to determine the nature of behavior change. TTM has been applied to a variety of problem behaviors. These include smoking cessation, low fat diet, weight control, drug abuse, alcohol abuse, stress management and exercise.

TTM is series of stages that individuals move through when they attempt to change their behaviors (Prochaska & Velicer, 1997). It is suggested that individuals should show ordered progression within these stages when they are engaging in a new behavior. Stages of change in TTM have five stages that individuals move through when engaging in intentional behavioral change (Prochaska, DiClemente, & Norcross, 1994). The stage construct is important, because it represents a temporal dimension of exercise behavior. These five stages are Pre-contemplation, Contemplation, Preparation, Action, and Maintenance (Prochaska, DiClemente, & Norcross, 1992).

In the pre-contemplation stage, individuals have no intention to change behavior. They are not aware of their problems and not considering serious change to their behavior. They are not going to change their behavior in the near future. However in the contemplation stage, individuals are considering the change. Individuals intend to change their behaviors within six months. Individuals intend to take more-or-less immediate steps to change their behavior in the preparation stage.
They may have already minor adjustments to their intentions about behavior change. They may have an intention about changing their behavior within one month. This stage can also be called as decision-making stage. In action stage individuals actively engage in new behavior. This stage is the last stable stage. Individuals have already changed their behavior at least within six months. The last stage, maintenance, is a static stage. Individuals gain behavioral change over time. This stage extends six months to a lifetime period.

2.4.2. Exercise stages of change

Marcus et al. (1992) has modified the stages-of-change model for exercise. The five stages have been modified according to exercise behavior of change. These are; (1) Pre-contemplation stage: Individuals are not exercising and they are not thinking and aware of exercising in the next six months. (2) Contemplation stage: Individuals are not exercising but intending to exercise within six months. (3) Preparation stage: Individuals are currently exercising but not on a regular basis. (4) Action stage: Individuals are currently exercising regularly less than six months. (5) Maintenance stage: In this stage individuals are exercising regularly more than six months.

2.4.3 Exercise stages of change levels of adults and university students

Exercise stages of the changes have been studied in different populations (Cengiz, 2007; Nigg & Corneya, 1998; Wakui, Shimomitsu, Odagiri, Inoue, Takamiya, & Ohya, 2002; Prapavessis, Maddison, & Brading, 2004; Juniper, Oman, Hamm, & Kerby, 2004). These studies, in general, indicated that males in higher stages as compared to the females. However, most of the population was in lower stages.
Similar to the general population findings, studies examined the exercise stages of change level of university students indicated that most of students were in lower stages (pre-contemplation, contemplation and preparation) (Cengiz, 2007; Wallace et al, 2000; Wakui et al, 2002; Cardinal, Tuominen, & Rintala, 2004; Juniper et al, 2004; Keating, Guan, Huang, Deng, Wu, & Qu, 2005b). In addition, male students were in higher stages as compared to stages of male students (Wallace et al 2000; Wakui et al, 2002).

In Turkey, there was only one study about exercise stages of change and that examined the university students (Cengiz, 2007). In this study, Cengiz (2007) found that there was a difference between male and female students exercise stages. More male (25.2%) were in the Maintenance stage than female (15.6%). According to gender, most of the students were in the pre-contemplation (15.2%), contemplation (31.4%), and preparation stage (25.3%). He also examined the influence of living in and on campus on exercise stages of change and found no difference.

2.5 Physical Activity Preferences

Physical activity preferences may vary according to the facilities, social and economical status, age, gender, and residence (Blank, DePauw, Peavy & Meadows, 1993; Heath & Smith, 1994). Various studies indicate that when young adults are active they most frequently reports activities such as running, jogging or walking, weight lifting, aerobic exercises, bicycling and swimming (Blank et al., 1993; Heath & Smith, 1994; USDHHS, 1996).

Leenders Sherman, and Ward.(2003) showed that students enrolled in physical activities mostly to learn new activity, have fun, improve skills, improve
fitness, and exercise regularly. In addition, active girls choose more formal activities while boys preferred non-formal activities (Mota & Esculas, 2002).

In Turkish context, Cengiz’s (2007) study showed that university students mostly preferred swimming, soccer, walking, basketball, and cycling. Moreover, female students mostly preferred dancing and tennis while male students preferred football and basketball.
CHAPTER 3

METHOD

This chapter presents information about the design and sampling, participants, instrumentation, data collection procedures, and data analysis.

3.1 Design and Sampling

Survey method was used in this study. The study was conducted at METU English Preparatory School in Ankara. The total number of the students in English Preparatory school was 2,992 at the study time (2006-2007 fall semester). Students were studying in one of the four main groups based on their English level in the Preparatory School. These were beginner, elementary, intermediate, and upper intermediate classes and from these groups stratified random sampling method used to select the classes. In each group 24, 44, 50, and 8 classes were studying, respectively.

Six classes from the beginner, 9 classes from the elementary, 11 classes from the intermediate, and 2 classes from the upper intermediate groups were chosen in order to reach the 10% of each group. Totally 28 classes were selected randomly. The data were collected in the third week of the school. The intention was to collect the data from the participants as early as possible at the beginning of semester. The participants who were in their second year in the English Preparatory School and
foreign students were excluded from the study. The findings of the study can be generalized to METU English Preparatory school students.

3.2 Participants

Total number of the participants was 438 in this study. Two hundred and two of them were female (46.1%) and 236 of them were male (53.9%). The mean age of the participants was 18.19 ± 0.91 years old and the median was 18 years old. Two hundred and twenty-six of the students were living in dormitory (51.6%), 212 of them were living at home (48.4%) (Table 2).

Table 2 Demographic characteristics of the study participants.

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3.3 Instrumentation

In this study, data collection instrument included 4 independent parts. These were (Appendix):

1. Adolescent Health Promotion Scale (AHPS)
2. International Physical Activity Questionnaire (IPAQ)
3. Physical Activity Stages of Change Questionnaire (PASCQ)

4. Physical Activity Preferences Check-list.

3.3.1 Adolescent health promotion scale (AHPS)

AHPS is a multidimensional scale that assesses the health promoting behaviors (Chen et al., 2003). Original English AHPS is a 40-item, 5-point likert-type self-report instrument which has six sub-scales; social support, life appreciation, health-responsibility, stress-management, nutrition behavior, and exercise behavior.

Initially, two independent translators translated original AHPS questionnaire into Turkish. Having a consensus on each item of the Turkish version, a third translator translated the Turkish version into the English. Then, three experts from physical activity field and one expert from the measurement and evaluation field examined the Turkish questionnaire. The final Turkish version was administered to ten university students for face validity. The participants rated all items as clear.

Factor analysis for the current study participants on the Turkish version of the scale supported a 6-factor model as in the original one. These 6 factors accounted 50.4% of the total variance. Six of the 40 items in the Turkish scale did not load to any of the factors. These items were “Drink at least 1500 lt water daily”, “Make and effort to stand or sit up straight”, “Brush my teeth and use dental floss after meals”, “Enjoy keeping in touch with relatives”, Sleep for 6-8 hours each night”, and “I try not to lose control when things happen that are unfair”. These items were eliminated from the questionnaire, and new questionnaire included 34 items. The factor loadings of the all items were higher than .40 with their own sub-scale except item 13 and item 25. Even though, factor loadings of these two items
were .36 with their own sub-scale, lower than .40, these items retained in the questionnaire because they did not load to any of the other factors, and content of the items were conceptually parallel to the related sub-scale. The final Turkish version of the AHPS included 5 items in social support, 5 items in life appreciation, 8 items in health-responsibility, 7 items in stress-management, 4 items in nutrition behavior, and 5 items in exercise behavior subscales.

In social support subscale, five items were “Talk about my troubles to others”, “Make and effort to have good friendships”, “I talk about my concerns with others”, “I care about other people”, and “I share my feelings with others”. In life appreciation subscale, five items were “I usually think positively”, “Make and effort to feel happy and content”, “Make an effort to like myself”, “Make an effort to believe that my life has purpose”, and “Make an effort to smile and laugh every day”. There were 8 items in health-responsibility subscale and they were “I choose food without too much oil”, “Discuss my health concerns with a health personnel”, “Observe my body at least monthly”, “Read food labels when I shop”, “Make an effort to choose foods without preservatives”, “I watch my weight”, “Read writings about health information”, and “Wash hands before meals”. The fourth subscale, stress management, had 7 items, “Make an effort to understand my strengths, weaknesses and accept them”, “Make an effort to correct my defects”, “Make an effort to know what is important for me”, “Make an effort to feel interesting and challenged every day”, “Make an effort to watch my mood changes”, “Make an effort to determine the source of my stress”, and “Make schedules and set priorities”. The four items for nutrition behavior subscale were “I eat breakfast daily”, “I eat three meals daily”, “Include dietary fiber (e.g. fruits, vegetables)”, and “Each meal includes five food groups (bread, meat, milk, fruit, vegetables)”. The last subscale,
exercise behavior, had 5 items, “Perform stretching exercise daily”, “Exercise rigorously 30 minutes at least 3 times per week”, “Participate in physical fitness program at school weekly”, “Warm up before rigorous exercise”, and “Make an effort to spend time daily for relaxation”. Factor loadings of each item are given in Table 3.

Test-retest reliability of the scale was examined by applying the instrument to 27 university students 10 days apart. Results indicated that test-retest intra-class correlation coefficient for each subscale was changing between .80 and .90 (social support = .80, life appreciation = .81, health-responsibility = .88, stress-management = .86, nutrition behavior = .93, exercise behavior = .85, and total AHPS score = .90).
Table 3 Factor loadings and factor structure of adolescence health promotion scale.

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3.3.2 International physical activity questionnaire (IPAQ)

IPAQ is a validated instrument to determine the participants’ physical activity level (Craig et al., 2003). IPAQ measures the frequency, duration, and level of intensity of physical activity in the last seven days across all contexts and allows for the calculation of metabolic equivalents (MET). MET presents the weekly amount of physical activity. It is a product of frequency, duration, and intensity of the physical activity performed in the last seven days. Physical activity related METs as hours per week (MET-hours/week) were calculated according to the existing guidelines (IPAQ, 2005). Based on the self-reported MET, frequency and intensity of the physical activity, people can be classified into a low, moderate and high level of physical activity group (Appendix).

Low (sedentary, inactive) group included the participants who reported lower than 600 MET-min/week of exercise participation, moderate level of physical activity group included the participants who reported 601-3000 MET-min/week of exercise participation, and physically active group (high, recommended level) included the participants who reported more than 3000 MET-min/week of exercise participation.

In this study, participants’ PA level was evaluated through Turkish short version of IPAQ (Öztürk, 2005). Translation and validation study of Turkish version for the university students indicated an evidence for construct validity, criterion validity (accelerometer-IPAQ short form) (r = .30), and test retest stability (r = .69) (Öztürk, 2005).
3.3.3 Physical activity stages of change questionnaire (PASCQ)

PASCQ is a validated instrument to assess individuals’ level of readiness to participate physical activity (Marcus et al., 1992; Marcus and Lewis, 2003). It is a binary type (yes/no) questionnaire. Participants answer each question related with their physical activity participation as yes or no. Based on their responses, they classified in five different stages (Pre-contemplation, contemplation, preparation, action, and maintenance) by using a scoring algorithm.

Turkish version of PASCQ was used in this study (See Cengiz, 2007) (Appendix). Test-retest reliability of the Turkish version was high (ICC = .80).

3.3.4 Physical activity preferences check-list

In order to determine the physical activity preferences of the participants, a physical activity list including 36 different exercises or sports was given to the participants. They selected the activities that they preferred to participate. Participants had a chance of selecting more than one activity. They were also free to add other physical activities if they did not exist in the given list (Appendix)

3.4 Data collection procedures

Prior to study, permission from the directory of METU Social Sciences Institute, and the directory of English Preparatory School were obtained. Then, researcher contacted the instructor of each class and asked for the convenient time to apply. After that, researcher visited each class, explained the aim of study to students, and asked them for voluntary participation. Volunteer students filled the questionnaires.
3.5 Data Analysis

For the data analysis, descriptive and inferential statistics were performed in this study. The descriptive approach involved frequencies, percentages and cross-tabulation.

The inferential approach included both parametric and nonparametric methods. Multivariate Analyses of Variance (MANOVA) was used for the analysis of health promoting behaviors by gender and residence. Nonparametric methods were used for the analysis of physical activity and exercise stages of change levels.

There were two reasons for using nonparametric test for these analyses. First reason was the unequal variances between groups (e.g. in physical activity level), and second reason was the presence of nominal data (e.g. exercise stage of change levels).

More specifically, physical activity level difference with regard to gender, and residence Mann Whitney U test was used. Analyses of exercise stage of changes with regard to gender, and residence were performed using the Pearson chi-square test. Analysis of physical activity preferences with regard to gender and residence were examined using descriptive statistical methods (frequency and percentage).
CHAPTER 4

RESULTS

Adolescence Health Promotion Scale (AHPS), International Physical Activity Questionnaire (IPAQ), Physical Activity Stages of Change Questionnaire (PASCQ), and Physical Activity Preferences Questionnaire were administered to 438 METU English Preparatory School students. Descriptive statistics, MANOVA, Mann Whitney U, and Pearson chi-square were used for the data analyses where appropriate. Results for each research question are presented below.

4.1 Demographic Characteristics

The demographic information of the participants was collected from the socio-demographic part of the questionnaire. Male participants (53.9%) were slightly more than female participants (46.1%). The results showed that participants living in dormitory (51.6%) were slightly higher than participants living at home (48.4%). A total of 264 participants (60.03%) were 18 years old, 76 of them (17.4%) were 19 years old, and 69 of them (15.8%) were at the age of 17. The mean age of the participants was 18.19 years (Table 2).
4.2 Research Question 1. Is there a difference in the health promoting behaviors of METU Preparatory School students by gender?

According to descriptive results, females’ social support ($M = 19.28, SD = 3.38$), life appreciation ($M = 19.59, SD = 3.84$), and health responsibility ($M = 26.33, SD = 5.66$) behaviors were better than those of males, ($M = 17.52, SD = 3.73$), ($M = 18.58, SD = 4.21$), and ($M = 23.02, SD = 5.91$) respectively. However males’ exercise behavior ($M = 10.65, SD = 4.67$) was better than those of females, ($M = 9.44, SD = 4.11$). Stress management (male $M = 25.46, SD = 4.77$ and female $M = 26.36, SD = 4.51$) and nutrition behavior (male $M = 13.77, SD = 2.91$ and female $M = 14.18, SD = 2.75$) scores were similar (Table 4).

Table 4 Mean and standard deviation of health promotion scores of the study participants based on gender.

<table>
<thead>
<tr>
<th>Health promoting behaviors</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (n = 199)</td>
<td>Female (n = 177)</td>
<td>Total (n = 376)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Social support *</td>
<td>17.52</td>
<td>3.73</td>
<td>19.28</td>
<td>3.38</td>
<td>18.35</td>
</tr>
<tr>
<td>Life appreciation *</td>
<td>18.58</td>
<td>4.21</td>
<td>19.59</td>
<td>3.84</td>
<td>19.05</td>
</tr>
<tr>
<td>Health responsibility *</td>
<td>23.02</td>
<td>5.91</td>
<td>26.33</td>
<td>5.66</td>
<td>24.58</td>
</tr>
<tr>
<td>Stress management</td>
<td>25.46</td>
<td>4.77</td>
<td>26.36</td>
<td>4.51</td>
<td>25.89</td>
</tr>
<tr>
<td>Nutrition</td>
<td>13.77</td>
<td>2.91</td>
<td>14.18</td>
<td>2.75</td>
<td>13.96</td>
</tr>
<tr>
<td>Exercise *</td>
<td>10.65</td>
<td>4.67</td>
<td>9.44</td>
<td>4.11</td>
<td>10.08</td>
</tr>
</tbody>
</table>

*significant difference ($p < .05$)

Possible maximum and minimum scores (max-min): social support (5-25), life appreciation (5-25), health responsibility (8-40), stress management (7-35), nutrition behavior (4-20), exercise behavior (5-25), total health-promotion score (34-170).
A one-way MANOVA was conducted to determine the effect of gender on six health promoting behaviors. According to assumptions check for MANOVA, the sample size of the study, which was high, and participants were randomly selected therefore independent observation has not been violated.

In order to check the normality assumption of the dependent measures, Kolmogorov-Smirnov, Shapiro-Wilk tests, and skewness and kurtosis values were used. Results indicated that only for health responsibility scores of both male and female students, the normality assumption was not violated in the Shapiro-Wilk tests. However, skewness and kurtosis values were close to zero for all levels (between ±3) therefore the dependent variables were distributed normally and acceptable. The normality assumption has not been violated.

Box’s M test was used to examine assumption. According to Box’s M test, the homogeneity of population covariance matrices assumption has not been violated. (Box’s M = 23.80, $F_{(21,49)} = 1.11$, $p > .05$). Moreover homogeneity of population covariance has not been violated according to Levene’s Test (Table 5).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$F$</th>
<th>df1</th>
<th>df2</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>2.45</td>
<td>1</td>
<td>374</td>
<td>.11</td>
</tr>
<tr>
<td>Life appreciation</td>
<td>1.82</td>
<td>1</td>
<td>374</td>
<td>.17</td>
</tr>
<tr>
<td>Health responsibility</td>
<td>.23</td>
<td>1</td>
<td>374</td>
<td>.62</td>
</tr>
<tr>
<td>Stress management</td>
<td>1.39</td>
<td>1</td>
<td>374</td>
<td>.23</td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>.52</td>
<td>1</td>
<td>374</td>
<td>.46</td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>2.47</td>
<td>1</td>
<td>374</td>
<td>.11</td>
</tr>
</tbody>
</table>

*significant difference ($p < .05$)
Dependent variables of the study (six health promoting behaviors) were interval therefore interval/ratio scale on dependent variables assumption has not been violated.

According to the MANOVA results, there was a significant main effect for gender, Wilks’ $\Lambda = .84$, $F_{(6,369)} = 11.79, p < .05$. The multivariate $\eta^2$ based on Wilks’ $\Lambda$ was quite strong, .16 (Table 6).

Table 6 Multivariate tests of independent variables based on gender.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>$F$</th>
<th>$df$</th>
<th>df</th>
<th>$p$</th>
<th>$r^2$</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Wilks' Lambda</td>
<td>1.00</td>
<td>11.79</td>
<td>6</td>
<td>369</td>
<td>.00</td>
<td>.16</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*significant difference ($p < .05$)

Analyses of variances (ANOVA) on each dependent variable were conducted as follow-up tests to MANOVA. The ANOVA on social support ($F_{(1,374)} = 22.72, p < .05, \eta^2 = .05$), life appreciation ($F_{(1,374)} = 5.84, p < .05, \eta^2 = .01$), health responsibility ($F_{(1,374)} = 30.57, p < .05, \eta^2 = .07$), and exercise behavior ($F_{(1,374)} = 7.05, p < .05, \eta^2 = .01$) were significant. However, the ANOVA on stress management ($F_{(1,374)} = 75.86, p > .05$) and nutrition behavior ($F_{(1,374)} = 15.51, p > .05$) were not significant (Table 7).
Table 7 Test of between-subjects effects based on gender.

<table>
<thead>
<tr>
<th>Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support*</td>
<td>290.34</td>
<td>1</td>
<td>290.34</td>
<td>22.72</td>
<td>.00</td>
<td>.05</td>
</tr>
<tr>
<td>Life appreciation*</td>
<td>95.61</td>
<td>1</td>
<td>95.61</td>
<td>5.84</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Health responsibility*</td>
<td>1028.74</td>
<td>1</td>
<td>1028.74</td>
<td>30.57</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>Stress management</td>
<td>75.86</td>
<td>1</td>
<td>75.86</td>
<td>3.49</td>
<td>.06</td>
<td>.00</td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>15.51</td>
<td>1</td>
<td>15.51</td>
<td>1.92</td>
<td>.16</td>
<td>.00</td>
</tr>
<tr>
<td>Exercise behavior*</td>
<td>137.74</td>
<td>1</td>
<td>137.74</td>
<td>7.05</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>4777.90</td>
<td>374</td>
<td>12.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life appreciation</td>
<td>6121.09</td>
<td>374</td>
<td>16.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>12582.53</td>
<td>374</td>
<td>33.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>8108.66</td>
<td>374</td>
<td>21.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>3017.03</td>
<td>374</td>
<td>8.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>7306.70</td>
<td>374</td>
<td>19.53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Corrected Total

<table>
<thead>
<tr>
<th>Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support</td>
<td>5068.24</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life appreciation</td>
<td>6216.71</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>13611.27</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>8184.52</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>3032.55</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>7444.44</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant difference ($p < .05$)

Standardized gender based health promoting behavior scores for each subscale out of 5 is given in Figure 3.
4.3 Research Question 2. Is there a difference in the health promoting behaviors of METU Preparatory School students by residence?

According to descriptive results, students’ living in dormitory stress management behavior ($M = 26.37, SD = 4.59$) was better than those of students living at home ($M = 25.36, SD = 4.71$). While students’ living at home nutrition behavior ($M = 14.66, SD = 2.56$) was better than those of students living in dormitory ($M = 13.32, SD = 2.93$). Social support (dormitory $M = 18.49, SD = 3.75$ and home $M = 18.20, SD = 3.59$), life appreciation (dormitory $M = 19.17, SD = 4.16$ and home $M = 19.93, SD = 3.97$), health responsibility (dormitory $M = 24.52, SD = 3.80$ and home $M = 24.21, SD = 3.90$), health promoting behaviors

![Figure 3 Gender based health promoting behavior levels (standardized scores over five; 1 low, 5 high).](image)

6.45 and home $M = 24.65, SD = 5.53$), and exercise behavior (dormitory $M = 10.05, SD = 3.34$ and home $M = 10.11, SD = 4.58$) scores were similar (Table 8).

Table 8. Mean and standard deviation of health promotion scores of the study participants based on residence.

<table>
<thead>
<tr>
<th>Health promoting behaviors</th>
<th>Residence</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dormitory (n = 197)</td>
<td>Home (n = 179)</td>
<td>Total (n = 376)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>18.49 (3.75)</td>
<td>18.20 (3.59)</td>
<td>18.35 (3.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life appreciation</td>
<td>19.17 (4.16)</td>
<td>18.93 (3.97)</td>
<td>19.05 (4.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>24.52 (6.45)</td>
<td>24.65 (5.53)</td>
<td>24.58 (6.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management *</td>
<td>26.37 (4.59)</td>
<td>25.36 (4.71)</td>
<td>25.89 (4.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition *</td>
<td>13.32 (2.93)</td>
<td>14.66 (2.56)</td>
<td>13.96 (2.84)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>10.05 (4.34)</td>
<td>10.11 (4.58)</td>
<td>10.08 (4.45)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant difference ($p < .05$)

Possible maximum and minimum scores (max-min): social support (5-25), life appreciation (5-25), health responsibility (8-40), stress management (7-35), nutrition behavior (4-20), exercise behavior (5-25), total health-promotion score (34-170).

A one-way MANOVA was conducted to determine the effect of residence on six health promoting behaviors. According to assumptions check for MANOVA, the sample size of the study, which was high, and participants were randomly selected therefore independent observation has not been violated.

In order to check the normality assumption of the dependent measures, Kolmogorov-Smirnov, Shapiro-Wilk tests, and skewness and kurtosis values were used. Results indicated that only for health responsibility scores of students living at home, the normality assumption was not violated in the Shapiro-Wilk tests.
However, skewness and kurtosis values were close to zero for all levels (between ±3) therefore the dependent variables were distributed normally and acceptable. The normality assumption has not been violated.

Box’s M test was used to examine assumption. According to Box’s M test, the homogeneity of population covariance matrices assumption has not been violated. (Box’s M = 22.13, \( F_{(21,50)} = 1.03, p > .05 \)). Moreover homogeneity of population covariance except for health responsibility behavior has not been violated according to Levene’s Test (Table 9).

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>.56</td>
<td>1</td>
<td>374</td>
<td>.45</td>
</tr>
<tr>
<td>Life appreciation</td>
<td>1.20</td>
<td>1</td>
<td>374</td>
<td>.27</td>
</tr>
<tr>
<td>Health responsibility</td>
<td>4.97</td>
<td>1</td>
<td>374</td>
<td>.02</td>
</tr>
<tr>
<td>Stress management</td>
<td>.40</td>
<td>1</td>
<td>374</td>
<td>.52</td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>.329</td>
<td>1</td>
<td>374</td>
<td>.07</td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>.17</td>
<td>1</td>
<td>374</td>
<td>.67</td>
</tr>
</tbody>
</table>

*significant difference (p < .05)

Dependent variables of the study (six health promoting behaviors) were interval therefore interval/ratio scale on dependent variables assumption has not been violated.

According to the MANOVA results, there was a significant main effect for residence, Wilks’ \( \Lambda = .92, F_{(6,369)} = 5.23, p < .05 \). The multivariate \( \eta^2 \) based on Wilks’ \( \Lambda \) was not strong, .07 (Table 10).
Table 10 Multivariate tests of independent variables based on residence.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>$F$</th>
<th>$df$</th>
<th>$df_{Error}$</th>
<th>$p$</th>
<th>$r^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence</td>
<td>Wilks' Lambda</td>
<td>.92</td>
<td>5.23</td>
<td>6</td>
<td>369</td>
<td>.00</td>
<td>.07</td>
</tr>
</tbody>
</table>

Analyses of variances (ANOVA) on each dependent variable were conducted as follow-up tests to MANOVA. The ANOVA on stress management ($F_{(1,374)} = 4.44, p < .05, \eta^2 = .01$) and nutrition behavior ($F_{(1,374)} = 21.81, p < .05, \eta^2 = .05$) were significant. However, the ANOVA on social support ($F_{(1,374)} = 7.65, p > .05$), life appreciation ($F_{(1,374)} = 5.38, p > .05$), health responsibility ($F_{(1,374)} = 1.60, p > .05$), and exercise behavior ($F_{(1,374)} = .41, p > .05$) were not significant (Table 11).
Table 11 Test of between-subjects effects based on residence.

<table>
<thead>
<tr>
<th>Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>7.65</td>
<td>1</td>
<td>7.65</td>
<td>.56</td>
<td>.45</td>
<td>.00</td>
</tr>
<tr>
<td>Life appreciation</td>
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<td>1</td>
<td>5.38</td>
<td>.32</td>
<td>.56</td>
<td>.00</td>
</tr>
<tr>
<td>Health responsibility</td>
<td>1.60</td>
<td>1</td>
<td>1.60</td>
<td>.04</td>
<td>.83</td>
<td>.00</td>
</tr>
<tr>
<td>Stress management*</td>
<td>95.18</td>
<td>1</td>
<td>95.18</td>
<td>4.40</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td>Nutrition behavior*</td>
<td>167.10</td>
<td>1</td>
<td>167.10</td>
<td>21.81</td>
<td>.00</td>
<td>.05</td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>.41</td>
<td>1</td>
<td>.41</td>
<td>.02</td>
<td>.88</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>5060.59</td>
<td>374</td>
<td>13.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life appreciation</td>
<td>6211.32</td>
<td>374</td>
<td>16.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>13609.67</td>
<td>374</td>
<td>36.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>8089.34</td>
<td>374</td>
<td>21.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>2865.44</td>
<td>374</td>
<td>7.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>7444.02</td>
<td>374</td>
<td>19.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>5068.24</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life appreciation</td>
<td>6216.71</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>13611.27</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>8184.52</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition behavior</td>
<td>3032.55</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise behavior</td>
<td>7444.44</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant difference (p < .05)

Standardized residence based health promoting behavior scores for each subscale out of 5 is given in Figure 4.
4.4 Research Question 3. Is there a difference in the physical activity levels of METU Preparatory School students by gender?

A Mann-Whitney U test was conducted to evaluate the current PA levels of the participants with respect to gender by using IPAQ MET scores. The results of the test were significant, $U = 14242.00$, $z = -3.71$, $p < .05$ (Table 12). There was a small effect size $r = .19$ (Rosenthal, 1991). Male students’ physical activity level was higher than that of female students.
Table 12 Results of the Mann-Whitney U test for physical activity in terms of gender.

<table>
<thead>
<tr>
<th></th>
<th>Mann-Whitney U Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender</td>
</tr>
<tr>
<td>IPAQ (MET-min/week)</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
</tbody>
</table>

* Significant difference (p < .05)

According to descriptive statistics results, there were 385 students ($M = 2404.3$ and $SD = 2139.3$) and 213 of them were male ($M = 2801.8$ and $SD = 2465.6$) and 172 of them were female ($M = 1912.1$ and $SD = 1516.6$) (Table 13).

Table 13 Physical activity levels (MET) in terms of gender.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male (n=213)</th>
<th>Female (n=172)</th>
<th>Total (n=385)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level (MET-min/week)</td>
<td>2801.8</td>
<td>1912.1</td>
<td>2404.3</td>
</tr>
<tr>
<td>Median</td>
<td>2004.0</td>
<td>1386.0</td>
<td>1644.0</td>
</tr>
</tbody>
</table>

Categorized physical activity levels of the participants in terms of gender according to the IPAQ classification as low, moderate and high are presented in Table 14. There were 236 male and 202 female students. Most of the students (57.5%) were moderately active and in similar way male (57.7%) and female (57.4%) students were moderately active. Female students (30.7%) were physically inactive than male students (14.8%) and more male students (27.5%) were physically active than female students (11.9%).
Table 14 Categorized physical activity levels in terms of gender.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>Categories f (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Physical activity level</td>
<td>Male</td>
<td>(n=236)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>(n=202)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>(n=438)</td>
</tr>
</tbody>
</table>

4.5 Research Question 4 Is there a difference in the physical activity levels of METU Preparatory School students by residence?

A Mann-Whitney U test was conducted to evaluate the current PA levels of the participants with respect to residence by using IPAQ MET scores. The results of the test were significant, \( U = 16046.5, z = -2.264, p < .05 \) (Table 15). There was a small effect size \( r = .11 \) (Rosenthal, 1991). Students who were living in dormitory were more physically active than the students who were living at home.

Table 15 Results of the Mann-Whitney U test for physical activity levels (MET) with respect to residence.

<table>
<thead>
<tr>
<th>Mann-Whitney U Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence</td>
</tr>
<tr>
<td>IPAQ (MET-min/week)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* Significant difference (\( p < .05 \))
According to descriptive statistics results, there were 198 students living in dormitory ($M = 2579.4$ and $SD = 2230.4$) and 187 students living at home ($M = 2219.0$ and $SD = 2027.9$) (Table 16).

Table 16 Physical activity levels (MET) in terms of residence.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Residence</th>
<th>$M$</th>
<th>$SD$</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level (MET-min/week)</td>
<td>Dormitory</td>
<td>2579.4</td>
<td>2230.4</td>
<td>2052.5</td>
</tr>
<tr>
<td></td>
<td>Home</td>
<td>2219.0</td>
<td>2027.9</td>
<td>1434.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2404.3</td>
<td>2139.3</td>
<td>1644.0</td>
</tr>
</tbody>
</table>

Categorized physical activity levels of the participants in terms of residence according to the IPAQ classification as low, moderate and high are presented in Table 17. There were 226 students living in dormitory and 212 at home. Most of the students (57.5%) were moderately active and in similar way students living in dormitory (59.7%) and at home (55.2%) were moderately active. Students living at home (25.9%) were physically inactive than students living in dormitory (18.6%) and students living in dormitory (21.7%) were physically active than students living at home (18.9%).
Table 17 Categorized physical activity levels in terms of residence.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Residence</th>
<th>Categories f (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Physical activity level</td>
<td>Dormitory (n=226)</td>
<td>42 (18.6)</td>
</tr>
<tr>
<td></td>
<td>Home  (n=212)</td>
<td>55 (25.9)</td>
</tr>
<tr>
<td></td>
<td>Total (n=438)</td>
<td>97 (22.1)</td>
</tr>
</tbody>
</table>

4.6 Research Question 5. Is there a difference in the exercise stages of change levels of METU Preparatory School students by gender?

Chi-square analysis indicated that there were no significant differences between male and female students in exercise stages of change, Pearson $\chi^2 (4, N = 433) = .97 (p > .05)$. Descriptive statistics (frequency and percentages) are presented in Table 18. In general most of the students (76.3%) were in the lower stages, pre-contemplation (9.2%), contemplation (39.3%), and preparation stage (27.8%). However, small portion of them (23.7%) was in higher stages, action (14.5%) and maintenance (9.2%). Male (76.0%) and female (76.5%) students were mostly in lower stages, pre-contemplation (male 9.9% and female 8.5%), contemplation (male 39.9% and female 38.5%), and preparation (male 26.2% and female 29.5%). According to gender, a small portion of male (24%) and female students (23.5%) were in higher stages, action (male 14.1% and female 15.0%) and maintenance (male 9.9% and female 8.5%).
Table 18 Exercise stages of change levels based on gender.

<table>
<thead>
<tr>
<th>Exercise stages of change levels</th>
<th>Male (n=233)</th>
<th>f (%)</th>
<th>Female (n=200)</th>
<th>f (%)</th>
<th>Total (n=433)</th>
<th>f (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-contemplation</td>
<td>23</td>
<td>9.9</td>
<td>17</td>
<td>8.5</td>
<td>40</td>
<td>9.2</td>
</tr>
<tr>
<td>Contemplation</td>
<td>93</td>
<td>39.9</td>
<td>77</td>
<td>38.5</td>
<td>170</td>
<td>39.3</td>
</tr>
<tr>
<td>Preparation</td>
<td>61</td>
<td>26.2</td>
<td>59</td>
<td>29.5</td>
<td>120</td>
<td>27.8</td>
</tr>
<tr>
<td>Action</td>
<td>33</td>
<td>14.1</td>
<td>30</td>
<td>15.0</td>
<td>63</td>
<td>14.5</td>
</tr>
<tr>
<td>Maintenance</td>
<td>23</td>
<td>9.9</td>
<td>17</td>
<td>8.5</td>
<td>40</td>
<td>9.2</td>
</tr>
</tbody>
</table>

4.7 **Research Question 6.** Is there a difference in the exercise stages of change levels of METU Preparatory School students by residence?

Chi-square analysis indicated that there were no significant differences in the exercise stages of change levels by residence of students, Pearson $\chi^2 (4, N = 433) = 5.74 (p > .05)$. Descriptive statistics (frequency and percentages) are presented in Table 19. Students living in dormitory (79.2%) and at home (73.0%) were mostly in lower stages, pre-contemplation (dormitory 11.2% and home 7.2%), contemplation (dormitory 37.4% and home 41.2%), and preparation (dormitory 30.6% and home 24.6%). According to residence, a small portion of students living in dormitory (20.8%) and at home (27.0%) were in higher stages, action (dormitory 13.1% and home 16.1%) and maintenance (dormitory 7.7% and home 10.9%).

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Table 19 Exercise stages of change levels and residence.

<table>
<thead>
<tr>
<th>Exercise stages of change levels</th>
<th>Dormitory (n=222)</th>
<th>Home (n=211)</th>
<th>Total (n=433)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-contemplation</td>
<td>25 11.2</td>
<td>15 7.2</td>
<td>40 9.2</td>
</tr>
<tr>
<td>Contemplation</td>
<td>83 37.4</td>
<td>87 41.2</td>
<td>170 39.3</td>
</tr>
<tr>
<td>Preparation</td>
<td>68 30.6</td>
<td>52 24.6</td>
<td>120 27.8</td>
</tr>
<tr>
<td>Action</td>
<td>29 13.1</td>
<td>34 16.1</td>
<td>63 14.5</td>
</tr>
<tr>
<td>Maintenance</td>
<td>17 7.7</td>
<td>23 10.9</td>
<td>40 9.2</td>
</tr>
</tbody>
</table>

4.8 Research Question 7. What kind of physical activity do the METU Preparatory School’s students prefer?

The findings showed that most preferred activity was swimming (60.0%). Other four most preferred activities were walking (40.4%), table tennis (37.7%), cycling (34.7%), and tennis (34.2%).

According to gender, male students mostly preferred swimming (60.1%), soccer (57.2%), basketball (48.7%), table tennis (47.4%), and cycling (33.8%). On the hand, female students mostly preferred swimming (59.9%) walking (53.4%), dancing (45.0%), tennis (44.5%), and cycling (35.6%).

The finding showed that both students living in dormitory and living at home preferred the same activities like swimming, walking, table tennis, cycling, tennis and soccer (Table 20).
Table 20 Descriptive results of preferred sports activities.

<table>
<thead>
<tr>
<th></th>
<th>Gender f (%)</th>
<th>Residence f (%)</th>
<th>Total f (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (n = 236)</td>
<td>Female (n = 202)</td>
<td>In campus (n = 226)</td>
</tr>
<tr>
<td>Swimming</td>
<td>142 60.1</td>
<td>121 59.9</td>
<td>139 61.5</td>
</tr>
<tr>
<td>Walking</td>
<td>69 29.2</td>
<td>108 53.4</td>
<td>91 40.2</td>
</tr>
<tr>
<td>Table tennis</td>
<td>112 47.4</td>
<td>53 26.2</td>
<td>87 38.4</td>
</tr>
<tr>
<td>Cycling</td>
<td>80 33.8</td>
<td>72 35.6</td>
<td>86 38.1</td>
</tr>
<tr>
<td>Tennis</td>
<td>60 25.4</td>
<td>90 44.5</td>
<td>78 34.5</td>
</tr>
<tr>
<td>Soccer</td>
<td>135 57.2</td>
<td>5 2.4</td>
<td>79 34.9</td>
</tr>
<tr>
<td>Basketball</td>
<td>115 48.7</td>
<td>25 12.3</td>
<td>77 34.0</td>
</tr>
<tr>
<td>Dancing</td>
<td>20 8.4</td>
<td>91 45.0</td>
<td>60 26.5</td>
</tr>
<tr>
<td>Volleyball</td>
<td>43 18.2</td>
<td>65 32.1</td>
<td>57 25.2</td>
</tr>
<tr>
<td>Billiard</td>
<td>74 31.3</td>
<td>17 8.4</td>
<td>46 20.3</td>
</tr>
<tr>
<td>Bowling</td>
<td>50 21.1</td>
<td>38 18.8</td>
<td>45 19.9</td>
</tr>
<tr>
<td>Body-building</td>
<td>65 27.5</td>
<td>5 2.4</td>
<td>36 15.9</td>
</tr>
<tr>
<td>Mountain clim.</td>
<td>33 13.9</td>
<td>31 15.3</td>
<td>37 16.3</td>
</tr>
<tr>
<td>Ice-Skating</td>
<td>21 8.9</td>
<td>38 18.8</td>
<td>36 15.9</td>
</tr>
<tr>
<td>Archery</td>
<td>25 10.5</td>
<td>15 7.4</td>
<td>15 6.6</td>
</tr>
<tr>
<td>Skating</td>
<td>22 9.3</td>
<td>18 8.9</td>
<td>18 7.9</td>
</tr>
<tr>
<td>Aerobic</td>
<td>3 1.2</td>
<td>35 17.3</td>
<td>22 9.7</td>
</tr>
<tr>
<td>Rowing</td>
<td>29 12.2</td>
<td>9 4.4</td>
<td>20 8.8</td>
</tr>
<tr>
<td>Badminton</td>
<td>14 5.9</td>
<td>22 10.8</td>
<td>22 9.7</td>
</tr>
<tr>
<td>Yoga</td>
<td>7 2.9</td>
<td>26 12.8</td>
<td>18 7.9</td>
</tr>
<tr>
<td>Track &amp; field</td>
<td>25 10.5</td>
<td>5 2.4</td>
<td>23 10.1</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>5 2.1</td>
<td>23 11.3</td>
<td>17 7.5</td>
</tr>
<tr>
<td>Fencing</td>
<td>10 4.2</td>
<td>15 7.4</td>
<td>12 5.3</td>
</tr>
<tr>
<td>Teakwondo</td>
<td>20 8.4</td>
<td>3 1.4</td>
<td>12 5.3</td>
</tr>
<tr>
<td>Aikido</td>
<td>18 7.6</td>
<td>5 2.4</td>
<td>11 4.8</td>
</tr>
<tr>
<td>Boxing</td>
<td>18 7.6</td>
<td>1 0.4</td>
<td>12 5.3</td>
</tr>
<tr>
<td>Handball</td>
<td>14 5.9</td>
<td>2 0.9</td>
<td>9 3.9</td>
</tr>
<tr>
<td>Karate</td>
<td>9 3.8</td>
<td>7 3.4</td>
<td>10 4.4</td>
</tr>
<tr>
<td>Golf</td>
<td>12 5.1</td>
<td>3 1.4</td>
<td>10 4.4</td>
</tr>
<tr>
<td>American football</td>
<td>13 5.5</td>
<td>2 0.9</td>
<td>10 4.4</td>
</tr>
<tr>
<td>Baseball</td>
<td>14 5.9</td>
<td>0 -</td>
<td>7 3.1</td>
</tr>
<tr>
<td>Weight lifting</td>
<td>12 5.1</td>
<td>1 0.4</td>
<td>7 3.1</td>
</tr>
<tr>
<td>Ice-hockey</td>
<td>10 4.2</td>
<td>3 1.4</td>
<td>6 2.6</td>
</tr>
<tr>
<td>Wrestling</td>
<td>12 5.1</td>
<td>0 -</td>
<td>6 2.6</td>
</tr>
<tr>
<td>Triathlon</td>
<td>4 1.7</td>
<td>4 1.9</td>
<td>4 1.7</td>
</tr>
<tr>
<td>Judo</td>
<td>4 1.7</td>
<td>3 1.4</td>
<td>3 1.3</td>
</tr>
</tbody>
</table>
CHAPTER 5

DISCUSSION

The purpose of this study was to examine the health promoting behaviors, and specifically the physical activity levels, exercise stages of change levels, and exercise preferences of METU English Preparatory School students with respect to gender and residence. In this chapter, findings for each research question are discussed.

5.1 Research Question 1. Is there a difference in the health promoting behaviors of METU Preparatory School students by gender?

The findings indicated that female students’ health responsibility, life appreciation, and social support behavior were better than those of males. Male students’ exercise behavior score was higher than those of female students. There were no significant difference in stress management and nutrition behavior of female and male students. Regardless of gender differences, the results showed that exercise and health responsibility behaviors were the poorest health behaviors of students at transition to university (See Figure 2).

Higher health promoting behaviors in female university population, except exercise behavior, were reported previously in several studies (Dawson et al., 2007; Spear & Kulbok, 2001). Spear & Kulbok, (2001) stated that females were more ready to practice positive health behaviors, take less risk, visit health personnel more
often, report more symptoms, and show greater knowledge and interest in health matters. Findings of the current study support their arguments for perceived health responsibility, life appreciation, and social support behavior of Turkish female students who were at transition from high school to university. In addition, poor exercise scores of the female students as compared to male students supported the findings of previous studies examining different populations in other countries and in Turkey (Cengiz, 2007; Savcı et al, 2006; Lee et al., 2005; Leenders et al., 2003).

One interesting findings of the current study was the low health responsibility beside the poor exercise behavior in students at transition to university, regardless of gender difference (See Figure 2). This finding implies the weaknesses of early education in family and formal school environment, primary, secondary and high schools, to stimulate health responsibility and exercise behaviors.

5.2 Research Question 2. Is there a difference in the health promoting behaviors of METU Preparatory School students by residence?

According to the results, except nutrition and stress management behavior, other dimensions did not show any significant difference between the students who live in dormitory and at home. Students who were living at home had better nutrition behavior than those of students living in dormitory. It may be argued that most of the students living at home were living with their family, relatives, or friends. This living environment could make them eat regularly. On the other hand, living in dormitory may not give them an opportunity to eat regularly and eat healthy food. Previously, Shaikh and Deschamps (2006) found similar result and stated that living
in the university residence away from family can be a problem for nutrition behavior.

Current study also revealed that students who live in dormitory had a better stress management than students who live at home. According to Shaikh and Deschamps (2006), living in the university residence may cause stress because of nutrition problem, difficulty to concentrate, loss of energy, fatigue, and frequent headaches. They also underscored the noise in the university residence, being homesick, and not getting alone well with the roommate as a cause of stress. However, this study did not support their findings.

The reason for this difference may be related with the length of the dormitory life of the current study participants. The dormitory life was very new for them (3-4 weeks). They had not been feeling those stressful conditions yet. At the very beginning of living in dormitory, students may be in a relaxed mood due to being away from the control of others and feeling independent. To have a stronger opinion, there is a need for follow up the students’ stress level and stress management in the following months and years of the dormitory life.

5.3 Research Question 3. Is there a difference in the physical activity levels of METU Preparatory School students by gender?

The findings of the current study showed that physical activity levels of the male students’ were significantly higher than female students. According to the IPAQ classification (physically inactive, moderately active, physically active), most of the students were in moderately active category, regardless of gender (approximately 60%). Moreover, more male students were in physically active
group (male 27.5%, female 11.9%), while more female students were in physically inactive group (female students 30.7%, male students 14.8%).

These findings were inconsistent with a study examining the students at transition from high school to university by Bray and Brown (2004). They found no significant differences between the male and female students physical activity participation level. However, many studies, examining the university population, reported lower physical activity level in female students as compared to those of male students in other countries and in Turkey (Cengiz, 2007; Savcı et al., 2006; Mota & Esculas, 2002; Sanchez, Norman, Sallis, Calfas, Cella, & Patrick, 2007; Jago, Anderson, Baranowski, & Watson, 2005; Suminski et al., 2002). Current study findings were consistent with these studies.

Even though the male students’ physical activity level was higher than those of the female students’ in this study, their physical activity level were also unsatisfactory according to the recommended level in ACSM (2000). Therefore, inactivity is not only a problem for females but also for males in this population.

5.4 Research Question 4. Is there a difference in the physical activity levels of METU Preparatory School students by residence?

According to the findings, students who were living in dormitory had higher physical activity level than students who were living at home. Although it is their third week in the university, the findings indicated that living in dormitory positively influenced the physical activity participation of these students. METU has many physical activity opportunities and extracurricular activities. Students who live in
dormitory have more time to use these opportunities. It can be argued that these students were aware of them and started to use.

This finding was in line with a previous study that found higher physical activity level in university students living in dormitory (Cengiz, 2007). Based on these studies, it can be said that living in dormitory has a positive effect on students’ physical activity level.

5.5 Research Question 5. Is there a difference in the exercise stages of change levels of METU Prep School students by gender?

Analysis of exercise stages of change level did not show a significant difference between male and female students. According to the exercise stages of change levels, most of the students were in the contemplation (39.3%) and preparation stages (27.8%).

Previously, two studies indicated a difference in the exercise stages of change level of male and female students in university students (Wallace et al, 2000; Cengiz, 2007). However, current study failed to indicate that difference in the students at transition to university.

Based on the current study findings, it can be said that majority of the students at transition to university were not exercising regularly but they were planning to participate physical activity, and they had intention to exercise.
5.6 Research Question 6. Is there a difference in the exercise stages of change levels of METU Prep School students by residence?

The findings showed that there was no significant difference in the exercise stages of change levels of the students living in dormitory and living at home. Majority of the students living in dormitory (73.0%) and living at home (79.2%) were in the lower stages (pre-contemplation, contemplation, and preparation).

This result was parallel to the findings of Cengiz (2007) who could not find a difference in the exercise stages of change level of university students living in dormitory and at home. These findings imply that there is no effect of living in dormitory or at home on the exercise stages of change levels of university students.

5.7 Research Question 7. What kind of physical activity do the METU Prep School’s students prefer?

The findings revealed that male student mostly preferred swimming (60.1%), soccer (57.2%), basketball (48.7%), table tennis (47.4%), and cycling (33.8%). On the other hand, female students mostly preferred swimming (59.9), walking (53.4%), dancing (45.0%), tennis (44.5%), and cycling (35.6%). In general, swimming (60.0%), walking (40.4%), table tennis (37.7%), cycling (34.7%), tennis (34.2%), soccer (32.0%), and basketball (32.0%) were the most preferred physical activities. Cengiz (2007) found a similar physical activity preference in university students.

Male students’ preference of soccer and basketball, female students’ preference of dancing and tennis can be attributed to the popularity of these sports for each gender at transition to university. These gender specific physical activity preferences are critical in preparation of learning experiences for the each gender within the university context (Nahas, Goldfine, & Collins, 2003).
Current study found that living in dormitory and at home did not influence the most frequently preferred activities. This finding was similar to the findings of Cengiz (2007) in university students.
CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This study examined health promoting behaviors, physical activity levels, exercise stages of change levels, and exercise preferences of 438 METU English Preparatory school students who were at transition from high school to university, with respect to gender and residence. In this chapter, conclusions and recommendations were presented based on the findings of the current study.

6.1 Conclusions

6.1.1 Research questions 1 and 2

Is there a difference in the health promoting behaviors of METU Preparatory School students by gender and residence?

Findings revealed that there were differences on health promoting behaviors with respect to gender. Female students had higher perceived health responsibility, life appreciation and social support behavior scores than the male students. However, male students had higher perceived exercise behavior score than the female counterparts. In stress management and nutrition behavior, there were no significant differences between male and female students’ scores. These findings showed that perceived health promoting behaviors were better in female students except exercise behavior.
Findings related with residence indicated that students who were living in dormitory had better stress management behaviors as compared to same characteristics of the students living at home. However, students living at home had better perceived nutrition behaviors than the as those of students living in dormitory. In other dimensions of health promoting behavior, health responsibility, life appreciation, social support and exercise behavior score, there were no significant differences with respect to residence.

In general, the lowest perceived health promoting behavior with both gender and residence was exercise behavior.

6.1.2 Research questions 3 and 4

Is there a difference in the physical activity levels of METU Prep School students by gender and residence?

The findings of the study revealed significant difference on physical activity levels of the participants with respect to gender. Male were more physically active than female students. Findings showed that METU English Preparatory school students were moderately active regardless of the gender.

There was a significant difference on physical activity level of the participants based on residence. Students living in dormitory were more physically active than the students living at home.

6.1.3 Research Questions 5 and 6

Is there a difference in the exercise stages of change levels of METU Preparatory School students by gender and residence?

According to the findings, there was no significant difference in the exercise stages of change levels of male and female students. Overall most of the students, male and female, were in the lower stages (pre-contemplation, contemplation, and
preparation). This finding indicated that only a small portion of the students were regular exercise participants with a strong intention to be physically active regardless of their gender. In addition, living in campus or out campus did not influence the exercise stages of change levels of the students.

6.1.4 Research Question 7

What kind of physical activity do the METU Prep School’s students prefer?

Male student mostly preferred swimming, soccer, basketball, table tennis, and cycling. However female students preferred swimming, walking, dancing, tennis, and cycling. Students living in dormitory and at home preferred similar sports activities (swimming, walking, table tennis, cycling, tennis and soccer).

6.2 Recommendations

The following recommendations for future studies would enhance current knowledge toward increasing the health promotion behaviors, the physical activity level and exercise stages of change levels of students at transition from high school to university;

1. Priority in the health promotion should be given to improve the male students’ health responsibility, life appreciation, social support, and female students’ exercise behavior characteristics. In addition, nutrition behaviors of students living in campus, and the stress management of the students living out campus require more attention. Learning environment within the university should be reorganized to support related characteristics of these students.
2. Female students and students living out campus were more at risk of inactivity. Physical activity interventions in the universities (courses, extracurricular activities) should focus on the needs of these groups.

3. Students were at the lower exercise stages of change levels, especially at contemplation and preparation levels which indicated an intention to exercise but not started, regardless of gender and residence. Learning experiences should focus on the stage specific needs of these students.

4. Male students mostly preferred swimming, soccer, basketball, table tennis, and cycling. Female students preferred swimming, walking, dancing, tennis, and cycling. Learning experiences to improve health promoting behaviors and physical activity level of the students should include these activities.

5. Further studies should focus on the assessment of health behaviors in high school and university students in Turkey.

6. Replication of this study at other universities across the country would enhance generalization of the findings of this study.

7. Future studies should examine the psychosocial influences such as preparation to the university entrance exams, family beliefs, role of the early formal education, and peer influence over the health promoting behaviors of students at transition to university.
REFERENCES


Cengiz, C. Physical activity and exercise stages of change levels of Middle East Technical University students. [Bilim Uzmanlığı Tezi]. Ankara: Middle East Technical University; 2007.


APPENDICES
20.09.2006

BİDEN EĞİTİMİ VE SPOR BÖLÜMÜ BAŞKANLIĞI'NA

Yabancı Diller Yüksekokulu öğrencilerine tez çalışmasında kullanmak üzere uygulamak istediğim "Ulullararası Fiziksel Aktivite Formu ve Fiziksel Aktiviteye Katılım Durumu" anketiyle ilgili gerekli izinin verilmesini bilgilerinize arz ederim.

Saygılarımla.

Zeynep Ebeş
Beden Eğitimi ve Spor
Yüksek Lisans Öğrencisi

Ek 1: Uluslararası Fiziksel Aktivite Formu ve Fiziksel Aktiviteye Katılım Durumu.
APPENDIX B

Formal Correspondence

YABANCI DİLLER YÜKSEK OKULU MÜDÜRLÖĞÜNÜ,


Saygılarımı.

Prof.Dr. Reza KORKUŞUZ
Beden Eğitimi ve Spor
Bölümü Başkanı

EK:Dilekçe(1)
Anket Örneği (1)
APPENDIX C

ÖĞRENCİ ANKETİ

Değerli Katılımcı,

Bu çalışmanın amacı sizlerin fiziksel aktivite düzeyini, fiziksel aktivitene katılım durumunuzu, katılmayı tercih ettiginiz fiziksel aktiviteleri belirlemek ve sağlıklı yaşam alışkanlıklarınızı değerlendirmektir.

Verdiğiniz bilgilerden ODTÜ Beden Eğitimi ve Spor Bölümü tarafından sunulacak seçmeli derslerin yapılmasını ve ODTÜ Spor Müdürlüğü tarafından sportif etkinliklerin oluşturulması ve değerlendirilmesinde yararlanacaktır.

Konuya ilişkin sorulara vereceğiniz samimi cevaplarınızı çalışmayı yönlendirecektir. Tüm verileri çalışma yürüten kişi tarafından gizliliği korunan sahlı tutulacaktır.

Bu çalışmaya katılmayı kabul ettiginiz ve zaman ayıracağını için şimdiiden çok teşekkür ederim.

ODTÜ Beden Eğitimi ve Spor Bölümü
Yüksek Lisans Öğrencisi
Zeynep Ebem

A. KİŞİSEL BİLGİLER

Cinsiyetiniz  :  □ Erkek  □ Kadın

Yaşınız  :  ........

Uyruğunuz  :  ........

Mezun olduğunuz lisenin türü:

□ Normal lise  □ Meslek lisesi  □ Öğretmen liseleri  □ Diğer: ..........................

Liseden hangi yıl mezun olduğunuz?  .................

Hazırlıkta kaçınıncı yılınız  :  □ 1  □ 2

Kaldığınız yer:  □ Yurta kalıyorum  □ Evde kalıyorum
B. SAĞLIKLI YAŞAM ÖLÇEĞİ

Yönerge: Bu anket sizin sağlınızı ilgili yaşam tarzınızı ve kişisel alışkanlıklarınızı hakkında maddeler içermektedir. Her bir maddeyi dikkatlice okuyarak, ilgili ölçekte size en uygun olan düzeyi daire içine alınız.

<table>
<thead>
<tr>
<th></th>
<th>% 10</th>
<th>% 30</th>
<th>% 50</th>
<th>% 70</th>
<th>% 90</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Her zaman</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1. Her gün kahvaltı yaparım.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Günlde üç öğün yemek yerim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Lifli yiyecekleri (meyve, sebze vb) beslenmeme dahil ederim</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Her öğünüme beş yiyecek grubunun (ekmek, et, süt, meyve, sebze) dahil ederim</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Çok yağlı olmayan yiyecekler seçmeye çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Sorunlarınızı hakkında başkalarıyla konuşurum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Sağlıklı ile ilgili endişelerimi sağlık personeli ile tartırsam.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Vücuduğu anda en az bir kez gözlemlemem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Alışveriş yaparken yiyeceklerin etiketlerini (içeriklerini) okurum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Katkı madde içermeyen yiyecekleri seçmek için özen gösteririm.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Kiloma dikkat ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Sağlıklı bilgileri hakkında yazılardan okurum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Yemeklerden önce elli elli'rm.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Genelde olumlu düşünürüm.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Kendimi mutlu ve memnun hissetmek için çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Kendimi sevmek için çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Güçlü ve zayıf yönlerimi anlamak ve bunları kabul etmek için çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. Eksik yönlerimi düzeltmek için çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Kendim için neyin önemli olduğunu anlamaya gayret ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Her gün heyecan ve mücadele hissi duymak için çaba sarf ederim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. Hayatımın bir anıam olduğunu inanırım.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
22. Her gün gülmsemek ve gülmek için çaba sarf ederim. | 1 | 2 | 3 | 4 | 5
23. İyi arkadaşlıkları edinmek için çaba sarf ederim. | 1 | 2 | 3 | 4 | 5
24. Endişelerimle ilgili başkalarıyla konuşurum. | 1 | 2 | 3 | 4 | 5
25. Başkalarını önemserim. | 1 | 2 | 3 | 4 | 5
26. Başkalarıyla duygularımı paylaşırım. | 1 | 2 | 3 | 4 | 5
27. Günlük olarak esnetme (cimnastik) egzersizleri yaparım. | 1 | 2 | 3 | 4 | 5
28. Haftada en az üç gün 30dk. şiddetli egzersiz yaparım. | 1 | 2 | 3 | 4 | 5
29. Okulda haftalık olarak fiziksel uyguluk (fitness) programlarına katılırım. | 1 | 2 | 3 | 4 | 5
30. Şiddetli egzersizlerden önce isınma yaparım. | 1 | 2 | 3 | 4 | 5
31. Kaslarını rahatlatmak için her gün zaman ayırmaya çaba sarf ederim. | 1 | 2 | 3 | 4 | 5
32. Duyusal değişikliklerimi izlemek için çaba sarf ederim. | 1 | 2 | 3 | 4 | 5
33. Yaşadığım her stresli durumun kaynağı belirlemek için çaba sarf ederim. | 1 | 2 | 3 | 4 | 5
34. Plan yaparım ve önceliklerimi belirlerim. | 1 | 2 | 3 | 4 | 5

Puanlama işlemesi

**Beslenme puanı** : 1, 2, 3 ve 4’üncü soruların toplami.

**Sağlık sorumluluğu puanı** : 5, 7, 8, 9, 10, 11, 12 ve 13’üncü soruların toplami.

**Hayati takdir puanı** : 14, 15, 16, 21 ve 22’inci soruların toplami.

**Sosyal destek puanı** : 6, 23, 24, 25 ve 26’inci soruların toplami.

**Egzersiz puanı** : 27, 28, 29, 30, ve 31’inci soruların toplami.

**Stress yönetimi puanı** : 17, 18, 19, 20, 32, 33 ve 34’üncü soruların toplami.

**Toplam puan** : Beslenme, sağlık sorumluluğu, hayati takdir, sosyal destek, egzersiz ve stress yönetimi puanlarının toplamı.
C. FİZİKSEL AKTİVİTEYE KATILIM DURUMU

Bu bölümdeki sorular genel olarak sizin orta düzeyde fiziksel aktiviteye katılım durumunuzla ilgilidir.

**Orta düzeyde** fiziksel aktiviteler nefes alımında ve kalp atımında biraz artış gözlenen aktivitelerdir. Ritimli yürütüş, dans, bahçe işleri, düşük şiddette yüzme veya arazide bisiklet sürme gibi etkinlikler orta düzeyde aktivite olarak değerlendirilir.

Orta düzeyde fiziksel aktivitenin **düzenli sayılabilmesi** için, aktivitenin haftada 5 veya daha fazla günde 30 dakika veya daha fazla olması gerekir. Örneğin, 30 dakika sürende yürütüş yapabilir veya 10 dakikalık 3 farklı aktivite ile 30 dakikayı doldurabilirsiniz.

Lütfen her soru için **Evet** veya **Hayır** seçeneğini işaretleyiniz.

<table>
<thead>
<tr>
<th>Soru</th>
<th>Evet</th>
<th>Hayır</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Şu anda <strong>orta düzeyde</strong> fiziksel aktiviteye katılmaktayım.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Gelecek 6 ayda orta düzeyde fiziksel aktiviteye katılmamımı arttırmak niyetindeyim.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2 Şu anda <strong>düzenli</strong> olarak orta düzeyde fiziksel aktivite yapmaktağım</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3 Son 6 aydır <strong>düzenli</strong> olarak orta düzeyde fiziksel aktiviteye katılmaktayım</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4 Geçmişte, en az 3 aylık dönemde <strong>düzenli</strong> olarak orta düzeyde aktivitelere katıldım</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**Puanlama İşlemseli:**

**Eğilim Öncesi (EÖ)=** 1. soru=Hayır; 2. soru=Hayır
**Eğilim (E)=** 1. soru=Hayır; 2. soru=Evet
**Hazırlık (H)=** 1. soru=Hayır; 2. soru=Evet
**Hareket (HT)=** 1. soru=Evet; 3. soru=Evet; 4. soru=Hayır
**Devamlılık (D)=** 1. soru=Evet; 3. soru=Evet; 4. soru=Evet
D. ULUSLARARASI FİZİKSEL AKTİVİTE ANKETİ

Bu bölümdeki sorular son 7 gün içerisinde fiziksel aktivitede harcanan zamanla ilgilidir.

Lütfen son 7 günde yaptığınız şiddetli fiziksel aktiviteleri düşünün. (işte, evde, bir yerden bir yere giderken, boş zamanlarınızda yaptığınız spor, egzersiz veya eğlence vb.)

Şiddetli fiziksel aktiviteler yoğun fiziksel efor gerektiren ve nefes alıp verme temposunun normalden çok daha fazla olduğu aktivitelerdir. Sadece herhangi bir zamanda 

1. **Geçen 7 gün** içerisinde kaç gün ağır kaldırma, kazma, aerobik, basketbol, futbol, veya hızlı bisiklet çevirmesi gibi şiddetli fiziksel aktivitelerden yaptınız?
   
   **Haftada_____gün**
   □ Şiddetli fiziksel aktivite yapmadım. → (3.soruya gidin.)

2. Bu günlerin birinde şiddetli fiziksel aktivite yaparak genellikle ne kadar zaman harcadınız?

   **Günde_____saat**
   **Günde_____dakika**
   □ Bilmiyorum/Emin değilim.

3. **Geçen 7 günde** yaptığınız orta dereceli fiziksel aktiviteleri düşünün. Orta dereceli aktivite orta derece fiziksel güç gerektiren ve normalden biraz sık nefes alıma neden olan aktivitelerdir. Yalnız bir seferde en az 10 dakika boyunca yaptığınız fiziksel aktiviteleri düşünün.

   **Geçen 7 gün** içerisinde kaç gün hafif yük taşımaya, normal hızda bisiklet çevirmeye, halk oyunları, dans, bowling veya çiftler tenis oyunu gibi orta dereceli fiziksel aktivitelerden yaptınız? Yürüme hariç.

   **Haftada_____gün**
3. Bu günlerin birinde orta dereceli fiziksel aktivite yaparak genellikle ne kadar zaman harcadınız?
   Günde ____ saat
   Günde ____ dakika
   □ Bilmiyorum/Emin değilim.

5. Geçen 7 günde yürüyerek geçirdiğiniz zamanı düşünün. Bu işyerinde, evde, bir yerden bir yere ulaşım amacıyla veya sadece dinlenme, spor, egzersiz veya hobi amacıyla yaptığınız yürüyüş olabilir.

   Geçen 7 gün, bir seferde en az 10 dakika yürüdüğünüz gün sayısı kaçtır?
   Haftada ____ gün
   □ Yürümedim. → (7.soruya gidin.)

6. Bu günlerden birinde yürüyerek genellikle ne kadar zaman geçirdiniz?
   Günde ____ saat
   Günde ____ dakika
   □ Bilmiyorum/Emin değilim.

7. Son soru, geçen 7 günde hafta içinde oturarak geçirdiğiniz zamanlarla ilgilidir. İşte, evde, çalışırken ya da dinlenirken geçirdiğiniz zamanlar dahildir. Bu masanızda, arkadaşınızı ziyaret ederken, okurken, otururken veya yatarak televizyon seyrettiğinizde oturarak geçirdiğiniz zamanları kapsamaktadır.

   Geçen 7 gün içerisinde, günde oturarak ne kadar zaman harcadınız?
   Günde ____ saat
   Günde ____ dakika
   □ Bilmiyorum/Emin değilim.
Puanlama İşlemseli:

MET-Yürüyüş-dakika/hafta = 3.3 x yürüyüş dakika x yürüyüş gün sayısı

Orta Düzeyde MET-dakika/hafta = 4.0 x orta-düzyeyde aktivite dakika x orta-düzyey gün sayısı

Yüksek Düzey MET-dakika/hafta = 8.0 x yüksek-düzyey dakika x yüksek-düzyey gün sayısı

Toplam Fiziksel Aktivite MET-dakika/hafta = toplam Yürüyüş + Orta Düzyey + Yüksek-Düzyey-dakika/hafta değerleri.
E. Tercih Edilen Fiziksel Aktiviteler

Bu bölümde lütfen yapmayi tercih ettiğiniz spor aktivitelerini işaretleyiniz (Birden fazla tercih yapabilirsiniz).

☐ Yüzme  ☐ Boks  ☐ Aikido  ☐ Beyzbol
☐ Bisiklet  ☐ Aerobik  ☐ Judo  ☐ Dağcılık
☐ Voleybol  ☐ Cimnastik  ☐ Tekvando  ☐ Eskrim
☐ Futbol  ☐ Kayak  ☐ Karate  ☐ Triatlon
☐ Basketbol  ☐ Buz Pateni  ☐ Güreş  ☐ Golf
☐ Bowling  ☐ Buz Hokeyi  ☐ Yoga  ☐ Vücut Geliştirme
☐ Hentbol  ☐ Bilardo  ☐ Badminton  ☐ Okçuluk
☐ Dans  ☐ Tenis  ☐ Masa Tenisi  ☐ Kürek
☐ Halter  ☐ Atletizm  ☐ Yürüyüş  ☐ Amer. Futbolu

☐ Diğer ..................................................

Anketimiz sona ermişdir. Teşekkürler