WOMEN HEALTH-RELATED PHYSICAL ACTIVITY PROGRAM PARTICIPANTS' PERCEIVED AUTONOMY SUPPORT AND BASIC PSYCHOLOGICAL NEEDS IN EXERCISE AT A UNIVERSITY SETTING

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

SHABNAM MEHRTASH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS

SEPTEMBER 2014

Approval of the Graduate School of Social Sciences

_____

Prof. Dr. Meliha ALTUNIŞIK
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

_____

Prof. Dr. Settar KOÇAK
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

_____

Assoc. Prof. Dr. Mustafa Levent İNCE
Supervisor

Examining Committee Members

Prof. Dr. Ayşe KİN İŞLER (HU, FSS) _____

Assoc. Prof. Dr. Sadettin KİRAZCI (METU, PES) _____

Assoc. Prof. Dr. Mustafa Levent İNCE (METU, PES) _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Shabnam Mehrtash

Signature: _____

ABSTRACT

WOMEN HEALTH-RELATED PHYSICAL ACTIVITY PROGRAM PARTICIPANTS' PERCEIVED AUTONOMY SUPPORT AND BASIC PSYCHOLOGICAL NEEDS IN EXERCISE AT A UNIVERSITY SETTING

Shabnam Mehrtash

M. S., Department of Physical Education and Sports

Supervisor: Assoc. Prof. Dr. Mustafa Levent İnce

September 2014, 102 Pages

Using self-determination theory and trans-theoretical model, the aim of this study was to examine the women health-related physical activity participants' perceived autonomy support and basic psychological needs in exercise in terms of their exercise stages of change (five stages including pre-contemplation, contemplation, preparation, action and maintenance) preferred physical activities (aerobic vs muscular endurance & flexibility), frequency of participation (weekly number of days in physical activity) and job type (student, administrative staff and academic staff) at a university setting. The sample consisted of 175 women participating in health related physical activity classes including Zumba, Power Step, Pilates, Free-style Tempo, Free Style Combat, Yoga and Total Body at a university (M age= 25.1, SD= 7.2). Participants completed the Perceived Autonomy Support, Basic Psychological Needs in Exercise Setting and Physical Activity Stages of Change Questionnaires. Data analyzed by using one-way ANOVA and one-way MANOVA.

Findings indicated that perceived autonomy support was significantly different by exercise stages of change (p<.05). Further analysis indicated that only the participants in the Action stage had higher perceived autonomy support from the participants in the Contemplation stage (p<.05). There was no significant difference between perceived autonomy support with participants' preferred physical activity, weekly frequency of exercise participation and job type (p>.05). Findings on psychological needs in exercise revealed that there was a significant difference by participants' preferred physical activities and job type (p<.05). Aerobic type physical activity participants had higher perceived basic psychological needs in exercise score than the participants of muscular endurance and flexibility type of activities (p<.05). Among type of jobs, administrative staff had higher perceived basic psychological needs in exercise scores than the scores of students (p<.05). No significant difference was found between the basic psychological needs in exercise scores of student and academic staff, and academic staff and administrative staff (p>.05). There was no significant difference in the basic psychological needs in exercise by participants' stages of change and weekly frequency of exercise (p>.05). In conclusion, findings indicated that participants' perceived autonomy is differed by exercise stages of change level, and basic psychological needs in exercise is differed by preferred physical activities and job type. In order to meet the needs of women health related physical activity program participants in the university setting, physical activity program providers and instructors should consider perceived autonomy support and basic psychological needs by exercise stages of change preferred physical activities and job type.

Keywords: Women, Health-Related Physical Activity, Perceived Autonomy Support, Basic Psychological Needs

ÖZ

ÜNİVERSİTE ORTAMINDA SAĞLIKLA İLGİLİ FİZİKSEL AKTİVİTE PROGRAMINA KATILAN KADINLARIN EGZERSİZDE ALGILANAN ÖZERKLİK DESTEĞI VE TEMEL PSİKOLOJİK İHTİYAÇLARI

Mehrtash, Shabnam

Yüksek Lisans, Beden Eğitimi ve Spor Bölümü

Tez Yöneticisi: Doç. Dr. Mustafa Levent İnce

Eylül 2014, 102 sayfa

Bu çalışmanın amacı; öz belirlenim kuramı ve transteorik modeli kullanarak üniversite ortamında sağlıkla ilgili fiziksel aktivite katılımcılarının egzersizde algılanan özerklik desteği ve temel psikolojik ihtiyaçlarının egzersiz değişim basamakları (eğilim öncesi, eğilim, hazırlık, eylem ve devamlılık), tercih edilen fiziksel aktiviteler (aerobik, kas dayanıklılığı ve esneklik), katılım sıklığı (fiziksel aktivitede bulunulan haftanın günleri) ve iş türüne (öğrenci, yönetici ve akademik personel) göre incelemektir. Örneklem, bir üniversitede Zumba, Freestyle Combat, Pilates, Powerstep ve Yogayı içeren sağlıkla ilgili fiziksel aktivite derslerine katılan 175 kadından (M yaş= 25.07, SD= 7.17) oluşmuştur. Katılımcılar Algılanan Özerklik Desteği, Egzersizde Temel Psikolojik İhtiyaçlar ve Uluslararası Fiziksel Aktivite

ölçeklerini doldurmuştur. Veri analizinde ANOVA ve MANOVA kullanılmıştır. Bulgular özerklik desteği algısının egzersiz değişim basamaklarına göre anlamlı bir şekilde farklı olduğunu ortaya koymuştur (p<.05). Daha ileriki analiz sadece Eylem aşamasında olan katılımcıların Eğilim aşamasında olanlardan daha yüksek algılanan özerklik desteğine sahip olduğunu göstermiştir (p<.05). Algılanan özerklik desteği ile katılımcıların fiziksel aktivite tercihleri, haftalık katılım sıklıkları ve iş türleri arasında anlamlı fark saptanmamıştır. (*p*>.05). Egzersizde temel psikolojik ihtiyaçlar ile ilgili bulgular katılımcıların aktivite tercihi ve iş türüne göre anlamlı fark olduğunu ortaya çıkarmıştır (*p*<.05). Aerobik fiziksel aktivite katılımcıları, kas dayanıklılığı ve esneklik aktiviteleri katılımcılarına göre daha yüksek egzersizde algılanan temel psikolojik ihtiyaç puanlarına sahiptirler (*p*<.05). Bu iş türleri arasında, idari işlerde çalışan personel, öğrencilerin puanlarından daha yüksek egzersizde algılanan temel psikolojik ihtiyaç puanlarına sahiptir. Egzersizde temel psikolojik ihtiyaçları puanlarında öğrenci ve akademik personel ve akademik personel ve idari personel arasında anlamlı bir fark bulunmamıştır (*p*>.05). Egzersizde algılanan temel psikolojik ihtiyaçlar ile katılımcıların egzersiz değişim basamakları ve aktivitelere haftalık katılım sıklığı arasında anlamlı bir fark saptanmamıştır (*p*>.05). Sonuç olarak, katılımcıların algıladıkları özerklik desteği egzersiz değişim basamaklarına göre; egzersizde temel psikolojik ihtiyaçları ise tercih ettikleri fiziksel aktivite ve iş türüne göre farklılık göstermektedir. Sağlıkla ilgili fiziksel aktivite programlarını sunanlar ve eğitmenler; sağlıkla ilgili fiziksel aktivite katılımcısı olan kadınların ihtiyaçlarını karşılamak için algılanan özerklik desteği ve temel psikolojik ihtiyaçları egzersiz değişim basamakları, tercih edilen fiziksel aktivite ve iş türüne göre değerlendirmelidirler.

Anahtar kelimeler: Kadınlar, Sağlık için Fiziksel Aktivite, Algılanan Özerklik Desteği, Temel Psikolojik İhtiyaçlar

To my parents

ACKNOWLEDGEMENT

While I was working on my thesis, I received a lot of guidance and support from people in the physical education and sports department and friends. There are so many people I would like to thank.

First and foremost, I would like to thank my wonderful parents, sister and brother for their love and continues mentorship which was key to my success. Their calls and advices kept me well in difficult times. Thank you for your supporting in my decision, to pursue this degree.

I would like to express my sincere gratitude and deep regards to my advisor, Assoc. Prof. Dr. Mustafa Levent İnce, for his exemplary guidance, monitoring and constant encouragement throughout this thesis. Countless advice and guidance time to time given by him will not be forgotten.

My sincere thanks must also go to the members of my thesis advisory: Prof. Dr. Ayşe Kin-Işler and Assoc. Prof. Dr. Sadettin Kirazcı. They generously gave their time to offer me valuable comments toward improving my work.

I would like to thank Dr. Mine Müftüler, who was always willing to help and give her best suggestions. Many thanks to Alper, Canan, Amine, Gizem and Tuba, who as a good friend, always helped me and guide me through writing my thesis. My research would not have been possible without their helps.

I cannot forget friends who went through hard times together, cheered me on, and celebrated each accomplishment. You made life memorable in Ankara, I thank you all.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER 1

1. INTRODUCTION

1.1. Background of the Study

Physical inactivity is a serious health problem of modern life. According to the Surgeon General's Report, Physical Activity and Health (USDHHS, 1996), majority of the adults are not sufficiently active and responsive about improving their health. Physical inactivity is one of the risk factors for improving the cardiovascular disease and chronic diseases (Bradley, McMurray, Harrell, & Deng, 2000). Lack of physical activity in daily life routine is one of the major reasons for different kinds of diseases such as obesity (Ross et al, 2000), diabetes (Figueroa, Baynard, Fernhall, Carhart & Kanaley, 2007), heart diseases (McCarley & Salai, 2007), cardiovascular illnesses (Hooper et al, 2001) different types of cancer (Mayer, Terrin, menon, Kreps, McCance, Parsons & Mooney, 2007), osteoporosis (Feldstein et al, 2007) and mental illnesses (Bhui & Bhgura, 2002). There was a large number of deaths caused by physical inactivity and poor diet (Mokdad, Marks, Stroup & Gerberding, 2004; Turkish National Burden of Disease, 2004). In addition, it is claimed that almost 35% of deaths related to cardiovascular diseases could be prevented by doing enough physical activity (Twisk, Kemper, & Van Mechelen, 2002).

According to Bar-Or (2000) most of the youths are not sufficiently active too, and they suffer from being overweight and unfit. In another investigation it is reported that almost 50% of the university students are not physically active in their leisure

time (Hasse, Steptoe, Sallis & Wardle, 2004). Similar results demonstrated about the Turkish adolescents (Cengiz, Ince & Cicek, 2009). During a self-reported study, it is concluded that majority of university students have limited intention for participating in physical activity (Cengiz, Ince & Cicek, 2009). According to Kelder et al., (1994) there is a positive relationship between doing physical activity during adolescents and doing physical activity during adulthood. People who are less active during adolescence, will have a less active life during adulthood (Hallal, Victora, Azevedo & Wells, 2006; Kelder, Perry, Klepp, Lytle, 1994; Trost, Pate, Sallis, Freedson Taylor, Dowda & Sirad, 2002).

Due to the importance of topic for public health, many international and national, governmental and nongovernmental institutions published guidelines for doing physical activity (e.g. ICCPAGA, Sallis, Patrick & Long, 1994; USDH, 1996; ACSM, 2013). For instance, Surgeon General 'Report on Physical Activity recommended a guideline for increasing the public health (1996). It was included 30-60 minutes of moderate intensity physical activity based on interests of individual, such as bicycling, brisk walk or dancing at least 5 days per week. However, during the evaluation of the level of physical activity among adults and it was indicated that 60% (Martinez, 1999; USDHHS, 1996; Sallis, Prochaska, and Taylor, 2000), or between 25% and 40% (USDHHS, 1996, USDHHS, 2002) were not physically active according to the guidelines. Similar evaluation conducted with Turkish adolescents in three different age groups. By a survey research conducted by Ministry of Health in Turkey with 48.000 people, the results about adults, revealed that 20% of them do not participate in physical activity at all, and 16% of them have lower level of physical activity based on the recommended guidelines. Among the adolescence, it is indicated that 15% of them never participate in physical activity and 14% of them participated in physical activity but their participation level was not according to the global recommendation (Ünüvar, Mollahaliloğlu &Yardım, 2006).

Worksite Health Promotion (WHP) is "an effort designed to facilitate behavior change and lifestyle choices which optimize health, in order to at least reduce preventable diseases and injuries" (Ramsay & Jones, 1998) which exists almost

thirty years (Kaufman & Chapman, 2004). The aim of many WHP programs is investing the ways of increasing the health factors and reducing the health care cost (Kaufman & Chapman, 2004; Pelletier, Martel-Peletier & Abramson, 2001).

Investigations showed that most of the participants who begin their exercise program including the WHP programs could not continue and drop out their physical activity after six months (Buckworth & Dishman, 2002; Patten, Armstrong, Martin, Sallis, & Booth, 2000). These kind of results, prompted the researchers to pay more attention to both level of physical activity and the reasons of drop out from physical activity in WHP settings.

Nahas, Goldfine and Collins, (2003) claimed that considering about the psychological factor of exercise motivation rather than the other factors like: physical, physiological, social and cultural might be helpful to increase participation in exercise regularly (Nahas, Goldfine & Collins, 2003). According to Vallerand and Thill (1993) motivation can be defined as "hypothetical construct used to described the internal and external forces that initiate, direct, intensify and perpetuate behavior". In recent years, self-determination theory has been performed to different investigations related to adherence in physical activity and exercise. It is a theoretical framework which is used in researches about motivation in different context. Self-determination theory acts as a multidimensional approach used for finding the reason of participation not only for people who adherence to exercise and adopted it as a lifelong activity but also for whom adherence to an exercise and drop it out (Deci & Ryan, 1985; Ryan & Deci, 2000). It is claimed that individual behavior might be intrinsically, extrinsically or amotivated form of motivation in any context. Intrinsic motivation is described as adherence freely in exercise just for fun or enjoyment (Deci & Ryan, 1985). Extrinsic form of motivation is related to perform an activity for gaining the outcomes (e.g., praise or rewards). Amotivation is related to lack of motivation to participation in an activity (Deci & Ryan, 1985). It is assumed that intrinsic form of motivation is more self-determined than extrinsic motivation (Deci & Ryan, 1985). The results revealed that adults with more self-determined form of motivation through their exercise participation, had more intention to participation

regularly than people with extrinsic purposes (Chatzisarantis & Biddle, 1998; Landry & Solmon, 2004; Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Comparing the genders' indicated that male students reported higher external regulation and amotivation, while female students reported higher degrees of intrinsic motivation (Li, 1999).

One of the sub-theories of Self-determination theory is "Basic Psychological Needs in Exercise" which described three essential internal psychological needs for growing and feeling well, which they are: the need for autonomy, need for competence and need for relatedness (Ryan & Deci, 2000).

Based on Deci and Ryan (2002), basic psychological needs are not only relevant to internal nourishments but also is related to desires or goals which after achieving them causes growth, increasing the autonomous motivation and developing the well-being (Deci & Ryan, 1985, 2002; Deci, Koestner & Ryan, 2001).

Besides internal factors that could be influential in participant's behavior, external factors might be important to facilitate or prevent the integration of participants in their lifestyle activity (Deci & Ryan, 2002). In sport centers, instructor and participants act closely together and develop relationships and interaction upon each other. The participants need to ask and learn about their instructor's knowledge and experiences and instructors need to teach and impart their knowledge and experience to participants (Antonini, Philippe & Seiler, 2006). Participant's perception about their environment is important about shaping their motivation. If they find the environment more autonomy supportive they will feel autonomous rather than controlled (Gagne, 2003). Furthermore, perceptions of autonomy support by different factors, like: coach, fitness instructor and peer could increase the internalizing the three psychological needs in health related program participants (Ryan & Deci, 2000).

In most of the studies related to self-determination, the effect of different factors like: environment, instructor or coach and peer about autonomy-supportive behavior in participants' psychological need were investigated. According to an investigation by

Edmunds, Ntoumanis & Duda (2007), it is revealed that instructors has an effective role on participant's exercise behavior which comprised by engaging to physical activity regularly with high motivation (Edmunds, Ntoumanis & Duda, 2007; Mageau & Vallerand, 2003; Smith, Ntoumanis & Duda, 2007, Edmunds, Ntoumanis & Duda, 2006). The participants perception of his/her instructor's behavior have a direct relationship with participant's three basic psychological needs (Gagne, Ryan & Bargmann, 2003; Grolnick, Ryan & Deci, 1991). In addition, Wilson and Rogers (2008) claimed that instructor's supportive behavior might be positively influential to increase the participants intrinsic motivation and internalizing the extrinsic motivation. Participants with high self-determined regulation reported higher tendency to enjoy exercises, feeling well and higher degrees of adoptive behavior than participants who have lower self-determined regulation (Puente & Anshel, 2010). There exists a similar findings about developing the leisure time physical activity in Turkey. It was examined the effect of perceived autonomy support from teacher and students, on autonomous motivation in physical education context and leisure time physical activity through an intervention. The outcomes of this research indicated the positive effect of the intervention on increasing the autonomous motivation to adherence in physical activity in education setting (Müftüler, 2013).

Although the benefits of regular physical activity has been well-established, but majority of women are inactive. It is reported in a research that level of physical activity is very low when it is compared with men's (Pate, Pratt, Blair, Haskell, Macera, Bouchard, & Wilmore, 1995).

Based on a study by the Behavioral Risk Factor Surveillance System about 135,000 adults, the percentage of physical inactivity by women (29.9%) is higher than men (25.7%) (BRFSS). In addition, it is reported by BRFSS, regular physical activity in women (19.5%) is lower than men (21.8%). Another study by Marcus and colleagues performed an investigation about level of physical activity in women. The outcomes of this study revealed that only 27% of the sample participated in physical activity regularly (Marcus, Bock, Pinto, Forsyth, Robert & Traficante, 1998).

According to a study, intensity can differ by gender. Women participate in more moderate physical activity whereas men engaging in more vigorous physical activity (Bergman, Grjibovski, Hagstromer, Bauman & Sjostrom, 2008. In an investigation it is indicated that most of the women think that leisure time physical activity is waste of time (Im, Lee, Hwang, Yoo, Chee, Stuifbegen & Chee, 2010) which is kind of problem.

Studies revealed that there exists different factors (e.g., personal, environmental or social) which are correlated with autonomous form of motivation and participants' basic psychological needs in exercise domain. For example, based on the Trans-theoretical model of motivation, people in different exercise stages of change need different motivational approaches from their instructors. According to this model persons' exercise behavior could identify from beginning through regular participation as a series of stages (Prochaska, DiClimente & Norcross 1982). The relationship between regular physical activity participation and stages of change has been argued in different investigations (Mullen, Markland & Ingledew, 1997; Landry & Salmon, 2004). According many empirical studies, the person who is in higher stages of change has autonomous form of motivation, conversely, person with lower stages of change has controlled form of motivation (Markland & Ingledew, 1997; Landry & Salmon, 2004; Rose, Parfitt & Williams, 2005).

Besides exercise stages of change, knowing about degree of participation (frequency) is essential for increasing our understanding about exercise participation behavior. In a research about university students, frequency was evaluated in different types of activity (e.g., Aerobics, Swimming & Weight lifting). The outcomes revealed that students with higher frequency of participation has more intrinsic motivation than students with less frequency of adherence (Li, 1999).

For achieving more information about physical activity participation behavior, type of activity and job type might be essential factors. About job type, it is claimed that each person might impact by work climate can affect person's intrinsic motivation by satisfying the three basic psychological needs (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Based on this investigation, it is realized that different kinds

of jobs could impact the participants' psychological needs. It means decrease and increase the satisfaction of three needs by supporting or controlling the person's feeling.

Willson et al, (2003) claimed that self-determined participation are amenable to the social context and type of activity. Therefore, perceived autonomy support and basic psychological needs in exercise might change according to the values and norms of social context.

Considering the above mentioned arguments, the aim of this study was to examine women health-related physical activity participants' perceived autonomy support and basic psychological needs in exercise in terms of their exercise stages of change, preferred physical activities, frequency of participation and job type at a university as a WHP setting.

1.2. **Purpose of the Study**

The purpose of this study was to examine the women health-related physical activity program participants' perceived autonomy support and basic psychological needs in exercise in terms of their exercise stages of change (five stages including pre-contemplation, contemplation, preparation, action and maintenance) preferred physical activity (aerobic vs muscular endurance & flexibility), frequency of participation (weekly number of days in physical activity) and job type (student, academic staff and administrative staff) at a university setting.

1.3. **Research Questions**

Following research questions and sub-questions were guided this study to achieve the purpose of the study.

1. What is the health-related physical activity program participants' perceived autonomy support in exercise setting at a university context?

Sub-Question 1.1. Do the health-related physical activity program participants' perceived autonomy support in exercise setting differ by exercise stages of change?

Sub-Question 1.2. Do the health related physical activity program participants' perceived autonomy support in exercise setting differ by type of preferred exercise?

Sub-Question 1.3. Do the health related physical activity program participants' perceived autonomy support in exercise setting differ by weekly frequency of participation in exercise?

Sub-Question 1.4. Do the health-related physical activity program participants' perceived autonomy support in exercise setting differ by job type?

2. What is the health related physical activity program participants' perceived basic psychological needs in exercise setting at a university context?

Sub-Question 2.1. Do the health-related physical activity program participants' basic psychological needs in exercise setting differ by exercise stages of change?

Sub-Question 2.2. Do the health-related physical activity program participants' basic psychological needs in exercise setting differ by type of preferred exercise?

Sub-Question 2.3. Do the health-related physical activity program participants' basic psychological needs in exercise setting differ by weekly frequency of participation in exercise?

Sub-Question 2.4. Do the health-related physical activity program participants' basic psychological needs in exercise setting differ by job type?

1.4. **Significance of the Study**

In this study perception of university students, administrative staff and academic staff about autonomy support and basic psychological needs by exercise stages of change, frequency of participation and type of preference activity and participant's job type were checked. Findings may assist to providing the information about the difference of exercise participants who have high level of physical activity with

students who have lower level of physical activity. In addition, the preference physical activity type with respect to job type, would be recognized. Therefore, based on the results of this study, health related physical activity program providers and instructors could improve their programs and offer different types of physical activity to meet participants' demands and needs.

1.5. **Assumptions**

This study is a survey study by self-report questionnaires. It is assumed that all the participants in this study answered the scales: Perceived Autonomy Support in Exercise Context", "Basic Psychological Need Satisfaction in Exercise Context", and "Exercise Stage of Change Questionnaire" truthfully.

1.6. **Limitations of the Study**

This study had some limitations that need to pay attention through defining the data. Firstly, the sample of this study were the participants of METU sport centers, therefore results can be only interpreting and generalizing to this population. Secondly, the number of male participants in health-related physical activity programs was low, in this way through the analyzing data we had to ignore them.

1.7. **Definitions of the Terms**

Within the context of this study, the terms used were defined as follows:

Weekly frequency of exercise: The number of session which participants engage in a physical activity per week (Shephard, 2003). For example a participants may adherence to an activity with a frequency of three or four times a week. It is indicated the participants' insistence in exercise adherence.

Aerobic exercises: There are activities like jogging, running cycling and swimming, which causes strengthening the heart and lungs, and increasing the body's utilization of oxygen.

Muscular endurance: The ability of repeated contractions by a muscle or group of muscles against a resistance for a given period of time.

Flexibility: the ability of moving the joint or group of joints effectively.

Physical activity: Bodily movement to improving the skeletal muscles which it needs using energy (ACSM, 2013).

*Exercise stages of change***:** There are five stages of change: Pre-contemplation (no intention to exercise), contemplation (have intention to exercise but has not participated yet), preparation (have just started to exercise), action (participate in regular exercise more than one month, less than six months) and maintenance (participate in regular exercise more than six months). These stages are readiness for changing the person's physical activity behavior (Marcus et al., 1992).

Autonomy: A feeling for choosing, and feeling free for self-direction or self-sufficiently (Ryan & Deci, 2000).

Competence: Person's tendency to interact well in a context and feeling capable to exercise or express his/her capacity effectively to meet the environment demands (La Guardia & Ryan, 2000).

Intrinsic Motivation: Participating in a behavior for reasons which is originated within self (e.g., personal interest and satisfaction) (Ryan & Deci, 2000).

Extrinsic Motivation: It refers to external desire such as rewards, grades or money for a person to fulfill the given task.

Relatedness: Seeking a connection with others in social settings or particular manner of desire to be connected (La Guardia & Ryan, 2000).

Self-determination theory: "is a macro theory of human motivation and personality, concerning people's inherent growth tendencies and their psychological needs." (Deci & Ryan, 1985).

Basic Psychological needs in Exercise: it is a central tenets of self-determination theory. According to this sub-theory each individual has three basic psychological needs such as competence, autonomy and relatedness. With satisfying these three internal needs, growth, optimal function and developing health will be obtained (Ryan & Deci, 2000).

Perceived autonomy support: Central to self-determination theory which is used for concept of control versus autonomy support to determine the quality of social environment which obtained by teacher, instructor, or parent. Hypothesis is that autonomy supportive context might facilitate self-determined motivation and developing the health (Ryan & Deci, 2000).

CHAPTER 2

2. LITERATURE REVIEW

Physical inactivity has become a widespread public health problem, especially in modern industrialized societies and countries that has urbanization and economic growth. Population in modern western society used to be dependence on the technology, using a high amount of calories from fast food, declination in leisure-time activities and increasing the sedentary lifestyle (Katzmarzyk & Mason, 2009). Unfortunately, having inactive lifestyle causes almost 1.9 million deaths each year globally (Donnelly, Blair, Jakicic, Manore, Rankin & Smith, 2009). However increasing the level of physical activity is a global strategy for decreasing the deaths and diseases (WHO, 2004). Nowadays physical activity paradigm has been focused on health related concept for promoting the healthy lifestyle. Increasing the level of physical activity among children and adolescence, might be influential in adult age to be physically active (Welk, 1999).

2.1. **Physical Activity Guidelines**

It is more than a decade that experts recommended some guidelines for enhancing the engaging physical activity. First one is related to International Consensus Conference which according to that all adolescents have to do moderate physical activity almost every day or minimum three days a week for 20 minutes (Johansson, & Lundberg, 1997).

Two years later National Institutes of Health Consensus Development Panel (1997) suggested 30 minutes of moderate-intensity of physical activity according to the person's capacity, need and interest almost all days of the week for improving function of cardiovascular system in adolescents. In another investigation, it is reported that each person should engage in 30 minutes physical activity of moderate-intensity all days of the week (Nelson, Rejeski, Blair, Duncan, Judge, King and Castaneda-Sceppa, 2007).

In 1998 Health Education Author Symposium stated that 30 minutes of physical activity daily in moderate or higher level, could help people in different ages to have a healthy bone, muscular strength and flexibility (Fairclough & Stratton, 2005). American College of Sports Medicine (Jakicic, Clark, Coleman, Donnelly, Foreyt, Melanson, & Volpe, 2001) added heart rate range for their guideline and suggested 20 minutes of physical activity with 40% to 85% of heart rate for promoting the health.

With advancing the technology, sedentary lifestyle is increased. Therefore the recent guidelines increased the duration of physical activity. For example: according to the Institute of Medicine Dietary Intakes each person with normal weight and BMI should participate in a moderate-intensity physical activity 60 minutes in all days of the week (Brooks, Butte, Rand, Flatt & Caballero, 2004).

Another guideline also recommended the same duration to reach the normal body weight and body mass index (Macek, Mitola, 2006). Physical Activity Guideline for Americans (PAGA), increase the duration of the activity to 150 minutes for moderate physical activity and 75 minutes for vigorous physical activity or combination of them (Tucker, Welk & Beyler, 2011). Although this recommendation is similar to previous guidelines but it is almost flexible and changeable according to the person's capacity. All these guidelines has been determined to receive the health benefits of physical activity and protected people against different kinds of diseases.

2.2. **Level of Physical Activity among Adolescents and Adults**

But whether these guidelines could have a significant effect on level of physical activity among adolescents or not? Or, did the rate of participation to physical activity increases? For answering this kind of questions experts examined the level of physical activity after determining these guidelines to find out the prevalence and tend of adolescents to physical activity.

A National Longitudinal study (Gordon-Larsen, Nelson & Papkin, 2004) collected data from adolescents who registered to moderate and vigorous activity course by a questionnaire. After analyzing the data, results indicated that majority of adolescents didn't met the physical activity guideline. There is another phone survey study with adolescents and their parents for assessing the participation rate according to the guidelines. The results represented that neither female nor male students met the guidelines recommendation (Butcher, Sallis, Mayer and Woodruff, 2008).

An investigation which was conducted by accelerometer, reported that only 10% of U.S. adults met the physical activity guideline (Troiano, Berrigan, Dodd, Mâsse, Tilert, & McDowell, 2008). However Branum, Simon and Lukas (2012) evaluated the prevalence and trends of adults to physical activity by National Health Interview Survey (NHIS) between years of 1998 until 2008. It is indicated that the level of physical activity increases when we comparing with 1998 till 2008 (43.5% aerobically active adults, 28.4% highly active).

A survey study by Troiano et al. (2008) indicated that only 8% between ages of 12-15 years old students and 7.6% of between 16-19 year olds students participated in physical activity according recommended guideline. A research by (Song, Carroll, & Fulton, 2013) during a self-report survey study with 6547 adolescents stated that fewer than 20% of the adolescents met the recommended guidelines of physical activity by guidelines. Similar results exist in Turkey. It is reported by National Burden of Disease in Turkey (NBDT, 2004) that only 29% of the female and 66% of male participated in moderate physical activity.

Although during the years between 1998 until 2013 a progress has been made, but majority of the people are not enough physically active yet and this declination rate

is high between ages of 15-24 (Nigg & Corneya, 1998). In addition, high rate of dropout the physical activity is related to adolescence (Sallis et al, 1993). Therefore there are much more steps for improving the levels of physical activity among the young people.

2.3. **Physical Activity Level among Women**

Although the benefits of regular physical activity has been well-established but majority of women are inactive. It is reported that level of physical activity is very low when it is compared with men's (Pate, Pratt, Blair, Haskell, Macera, Bouchard, & Wilmore, 1995).

Based on a study by the Behavioral Risk Factor Surveillance System about 135,000 adults, the percentage of physical inactivity by women (29.9%) is higher than men (25.7%) (BRFSS, 1998). In addition, it is reported by BRFSS, regular physical activity in women (19.5%) is lower than men (21.8%). Another study by Marcus and colleagues performed an investigation about level of physical activity in women. Outcomes of this study revealed that only 27% of the sample participated in physical activity regularly (Marcus, Bock, Pinto, Forsyth, Roberts & Traficante, 1998).

According to a study, intensity can differ by gender. Women participate in more moderate physical activity whereas man engaging in more vigorous physical activity (Bergman, Grjibovski, Hagstromer, Bauman & Sjostrom, 2008). Belza reported in his study that women who reported doing more physical activity during a week leisure time physical activity is less common (Belza, Walwick, Schwartz, LoGerfo Shiu-Thornton & Taylor, 2004). It is reported that most of the women think that leisure time physical activity is waste of time (Im, Lee, Hwang, Yoo, Chee, Stuifbegen & Chee, 2010).

2.4. **Role of Motivation in Participation in Exercise Context**

Finding the factors which are attracted people to participate in a physical activity was an attention point for many studies in exercise domain (Dishman, 2001; Biddle, 1995; Hagger & Chatzisarantis, 2009). Some of these factors might be influential in adherence and participation are psychological, physiological, physical and social environment (King, 2001). But investigators are interested in the influence of psychological factors on participant's behavior (Ryan & Deci, 2000).

Psychological factor might help researchers to recognize the exerciser's psychological antecedents and then identifying the processes that might impact exercisers' behavior. Thus, researchers are focused on factors that might give motivation to adherence and continue their physical activity regularly. Identifying these procedures needed for developing the interventions and improving the quality of exercise context (Hagger & Chatzisarantis, 2009).

In past time, investigators focused on the ways of increasing the motivation to adherence in exercise regularly as a unitary phenomenon (Bandura, 2000). While, in recent years investigators focused on quality of person's motivation which is vary in their internal qualities and regular procedure (Deci & Ryan, 2008). It is stated that the nature of motivation which causes an activity can vary more among people in long term activity than short term activity (Roberts, Treasure & Conroy, 2007).

Motivation as a polysemic concept might be hard to define, because it is unobservable. For example, a person who continue his/her exercise for a long time, is a very motivated person. But, it is only kind of an assumption. It is not clear that if he/she is intrinsically motivated or extrinsically motivated to participate in the leisure activity.

To realize why a person engage in an activity is only one behavioral dimension of motivation. In this way, according to Vallerand and Till (1993), "a kind of intrinsically and extrinsically forces that initiate, direct, intensify and perpetuate behavior is motivation". It seems that exploring motivation in exercise context might be ideal way of realizing that why people participate or not in an activity, and how could we encourage them to participate regularly (Vallerand & Thill, 1993).

Motivation for adherence in an activity are the amount of individual's target for participating in a specific domain of behavior. Goal content defines as "classifications of outcomes or states that individual approach or avoid" (Austin & Vancouver, 1996). Motivation has an important role in form a different behavioral outcomes in various domains such as: choosing food (Steptoe & Wardle, 1999), smoking (Hughes, Goldstein, Hurt & Shiffman, 1999), volunteering (Clary & Snyder, 1999) and exercise (Ingledew, Markland & Medley, 1998).

According to Fredrick and Ryan 'instrument, it was possible to recognize the interest, competence and participation in exercise motives (Fredrick & Ryan, 1993). In addition, Ryan, Fredrick, Lepas, Rubio and Sheldon could determine the enjoyment, appearance, competence, fitness and social motives from each other (Ryan, Fredrick, Lepes, Rubio & Sheldon, 1997). Whereas, Markland & Ingledew (1997) could develop a different instrument that made it possible to measure the participation motives not only is appropriate for individuals who are regularly participate but also for people who likes but do not participate yet.

Motivation in exercise domain depends on type, intensity and stage of participation in exercise (Frederick, Morrison, & Manning, 1996; Frederick & Ryan, 1993; Ingledew et al., 1998; Ryan et al., 1997). According to an investigation, fitness participants differ from sport participants in their type of motivation (Fredrick & Ryan, 1993). Fitness participants have higher body-related motivation such as: losing weight, increase volume of muscular and being fit. Whereas, sport participants have higher interest, enjoyment and competence motivation (Fredrick and Ryan, 1993). Another longitudinal study by Ryan et al. (1997) indicated that participants with higher rate of adherence differ from participants with lower rate of adherence in their type of motivation. Ingledew et al. (1998) reported that participants who are in early stages of change weight losing and looks fit is important while in progression stages' participants, enjoyment and interest might be important.

2.5. **Self-Determination Theory and Behavioral Regulation**

Behavioral regulations is used for finding the cause of action based on perception while motivation is related to the content of goals for engaging. It is developed within a framework of self-determination theory by Edward L. Deci and Richard M. Ryan (Ryan & Deci, 2000) during the past decades which comprises both rational and organismic issues to address motivated behavior in all dimensions of life.

Self-determination theory is a macro theory which is receiving attention in health related exercise psychology research such as: human motivation, personality and emotion. Self-determination theory has a continuum form of process which made it possible to progress from controlled form of regulation to more autonomous form of regulation. The reason for taking part in an activity are related to autonomy support of intrinsic motivation and different forms of extrinsic motivation. Intrinsic motivation is a kind of autonomous regulation in SDT and related to engage in an activity for only satisfaction, interesting and enjoyment of participation (e.g. "I exercise because it's fun") (Ryan & Deci, 2000). It means that people who are intrinsically motivated, adherence in activities for their own internal reasons not for reward or such external issues. Conversely, it can be extrinsically motivated when their participation is related to gain a reward or preventing from punishments (Deci & Ryan 1991).

External motivation involves four types of behavioral regulation: integrated regulation, identified regulation, introjected regulation and external regulation. Integrated regulation is the most self-determined form of extrinsic motivation. Individual's values, needs and goals have been made the person's behavior. Person with high integrated regulation might exercise regularly because doing exercise is important aspect in his/her life but for one reason such as: reaching to a healthy body. Identified regulation is the second type of extrinsic motivation which person engaging to physical activity for promoting her health because s/he is aware of the benefits of physical activity (e.g. "I value the benefits of exercise"). Thus, identified regulation becomes instrumental rather than internal. The third form of extrinsic motivation is introjected regulation. This kind of motivation is presented for preventing from feeling guilt or shame and to experience pride. A person with

introjected regulation participates to an exercise to keep him/herself from feeling of guilt as a consequence of not doing physical activity. This form of regulation becomes controlled form of motivation rather than self-determined form. External motivation is least self-determined form of extrinsic motivation. A person who has extrinsic motivation engages in physical activity because of expecting to gain a desired results from others.

The third form of motivation in SDT after intrinsic motivation and extrinsic motivation is "amotivation" which describes as absence of motivation or the lack of intention and propose to engage in an action.

It has been realized that amotivation external and introjected regulation are classified as controlled motivation and identified, integrated and intrinsic regulation are classified as autonomous motivation.

Normally, the autonomous motivation is identified as permanent form of engagement of behavior which has been found in exercise context (Mullan & Markland, 1997; Wilson, Rodgers, Blanchard, & Gessell, 2003; Wilson, Rodgers, Fraser & Murray, 2004). According to an investigation by Markland and Ingledew, tend to lose weight ("I must exercise to lose weight") demands a controlling form of motivation which causes decreasing the time period of participation. While, if only personal challenges cause participation motive, autonomous motivation tend to be experienced ("I want to exercise to be with friend") which long term participation will be appeared (Markland & Ingledew, 2007).

It is concluded from an investigation that pressure about losing weight having healthy body has a negative effect on autonomous motivation whereas enjoyment in exercise have a positive effect on autonomous motivation (Markland & Hardy, 1997). A study about relationships between personality and behavioral regulation in exercise context indicated that all of the participants in sports center are in maintenance stage (Ingledew, Markland & Shappard, 2004) (Figure 1).

Type of motivation	Amotivation	Extrinsic Motivation				Intrinsic motivation
Type of regulation	Non-regulation	External	Introjection	Identified	Integration	Intrinsic
Perceived locus of causality	Impersonal	External	Somewhat external	Somewhat internal	Internal	Internal
Position on the autonomy continuum	← Controlled motivation			Autonomous motivation →		
Defining features	Lack of propose to participation in an activity	Participate in an activity to meet an external expectation	Participation to avoid from feeling guilt and shame	Feeling personally valued and important with participation	Participation is important for reaching to his/her goals	Participation is based on enjoyment and interest

Figure 1. Overview of the Self-Determination Theory as a Continuum Process Based on Ryan and Deci (2000)

2.6. **Perceived Autonomy Support**

Distinction between autonomous and controlling types of motivation is central to self-determination theory. It is such a continuum process which motivated behavior happens with progressing through that. Autonomous motivation causes participating in a behavior because of personal satisfaction about essential psychological needs such as: relatedness, autonomy and competence. This motivation which is related to internal contingency consists of intrinsic motivation, integrated regulation and identified regulation. These three types of motivation represents motivation to adherence in an activity for fun or interest. Identified regulation, Introjected regulation are types of motivation related to internal pressures which came from

preventing or avoiding from feeling shame and guilt or desire to gaining reward or pride. External regulation is related to extrinsic form of motivation. The opposite side of the intrinsic motivation on this continuum process, is external regulation influences participating in a behavior for external pressures (e.g., gaining reward or prevent from punishment). According to Ryan and Deci (2000) persistence in a behavior comes from intrinsic motivation, integrated regulation and identified regulation which represented the autonomous form of motivation. It is stated that each social setting which supports the autonomous kind of motivation, provides interests in encouraging opportunity, informational feedback, meaningful rationale, recommending encouragement, listening and answering to questions (Deci, Ryan & Williams, 1996; Reeve & Jang, 2006). The higher level of perceived autonomy support given by others, the higher autonomous forms of motivation and persistence in a behavior in different contexts (Gagne & Deci, 2005) such as exercise settings (Hagger & Orbell, 2003; Koka & hein, 2003; Vansteenkiste, Simons, Lens, & Sheldon, 2004; Wilson & Rodgers, 2008).

According to Hagger et al. supporting from others such as physical education teacher, coaches, and exercise instructors might be influential for increasing the person's autonomous motivation. It is examined in different contexts and gained different kinds of results. In exercise area it is indicated that instructor might act as an autonomy supportive source in physical education context (Hagger & Orbell. 2003).

Perceived autonomy support scale was used in sport contexts and the results represented that it is an essential aspect for athletes' perceptions about their instructors on need satisfaction, motivational orientations and even performance (Amorose & Anderson-Butcher, 2007; Gillet, Vallerand, Amoura, & Baldes, 2010). The effects of autonomy support examined in female participants and examined the participants' behavior through autonomy supportive intervention. The results indicated not only increasing of perceived autonomy support from exercise instructor but also enhancing in physical activity adherence after finishing the intervention (Moustaka, Vlachopoulos, Kabitsis & Theodorakis, 2012). The validation of

perceived autonomy support scale for Exercise settings (PASSES) has been evaluated in different settings with different sources (e.g.; physical education teacher, peer, parents, and physical activity instructor). Results support the validity of this scale to use for measuring the perceived autonomy support in exercise settings in young people (Hagger et al. 2007).

2.7. **Basic Psychological Needs**

Basic psychological needs theory, concerns about the relationship between basic psychological needs, psychological health and wellbeing (Deci & Ryan, 2002). Deci and Ryan claimed that there are three basic psychological needs such as competence, autonomy and relatedness (Deci & Ryan, 1985, 2002; Ryan & Deci, 2000). These needs are necessary, universal for growth, developing and feeling connected with others in their social environment. Need for competence means that each person have a desire to be effective and experience of being winner. The need for autonomy is determined by desire to participate in an activity based on his/her own behavior. Finally, the need for relatedness is identified by a kind of desire to have a connection with others or feeling of belonging to a society (Deci & Ryan, 1985). SDT claimed that all psychological needs will be satisfied if a high self-determined form of regulation guides behavior. Conversely, three psychological basic needs will be thwarting if a low self-determined form of regulation guides that. Basic psychological needs theory is one of the sub-theories of SDT which made it possible to examine the degree of fulfillment of three psychological needs in exercise-related context (Vlacholpoulos and Michaildou, 2006).

Basic psychological needs in exercise scale (BPNES) has been developed by Velachopolous and Michaildou (2006). In a research, it is evaluated the importance of basic psychological needs for motivating the participants to adherence regularly. The outcomes reported that three psychological needs play an important role in motivating participants to engage continuously (Wilson, Mack, Muon & E. LeBlanc, 2007). There is an investigation by Wilson and Mackl (2009) with 143 exercise participants, using perceived autonomy support scale for comparing the three

psychological needs. The results indicated that need for competence and autonomy are greater than the need for relatedness in participation in exercise (Wilson & Mackl, 2009). During a longitudinal study, the importance of satisfaction of autonomy competence and relatedness in exercise setting were examined. The findings revealed that it satisfaction of these three needs is essential for predicting the participants future intention to adherence regularly (Edmunds, Ntomanis, & Duda, 2007).

2.8. **Trans-Theoretical Model (TTM)**

Self-determination consists a continuum process, identified as moving from controlled motivation to autonomous motivation. Autonomous motivation represents the more self-determined form of motivation, conversely, controlled motivation represents the less self-determination form of motivation. In exercise context, it is assumed that participants can move through this continuum process, and change their lifestyle from sedentary to regularly engaging to physical activity. Dishman (1982) pointed about importance using an instrument for measuring the participants' stage of exercise behavior. Regarding his recommendation, several investigators have recognized the trans-theoretical model which is useful framework (Kirk, Mutrie, MacIntyre, & Fisher, 2003; Prochaska, DiClemente & Norcross, 1992). These investigators claimed that stage of physical activity has a direct effect on person's motivation behavior. If person had high level of activity we could conclude that s/he participates in physical activity regularly and has autonomous motivation.

Trans-Theoretical Model is one of the theories of Health Behavior Change, developed by Prochaska, Diclemente and Norcross (1992) to identifying the nature of behavior change. It is used for different behaviors such as: weight control, smoking, managing the stress and engaging in exercise. It is involved from series of stages that person move through them during the changing the behavior (Prochaska & Velicer, 1997). It is claimed that through the intentional function, behavioral change and progression through the stages will be happened (Prochaska, DiClemente, & Norcross, 1992). These stages are: (1) pre-contemplation, (2)

Contemplation, (3) Preparation, (4) Action, and (5) Maintenance (Prochaska, DiClemente, & Norcross, 1992).

Person who have no intention to change in near future his/her behavior, is in pre-contemplation stage. In Contemplation stage, person is aware about existing the problem and thinking seriously about changing the position, but there is no commitment for taking an action. Preparation stage is related to individuals who aware of problem and seriously thinking about taking action for changing the behavior. If person changed his behavior, environment and experiences to diminish the problem, he/she is in action stage. Action stage determines by modifying the behavior successfully for a 1 day until 6 months, so s/he will be classified in action stage. Maintenance stage extends changing behavior from 6 months or more even life long period.

2.9. **Stages of Change in Exercise Context**

Stages of change model has been modified by Marcus, Selby, Niaura and Rossi (1992) for exercise context as follows: (1) Pre-contemplation stage: person who is in Pre-contemplation stage, does not exercise at all and does not thinking about changing his/her exercise behavior. (2) Contemplation: person who is thinking about doing exercise but did not participated in exercise yet (3) pre-paration: person is aware about the benefits of exercise and participating to exercise but not regularly (4) action: person used to exercise regularly but less than six months (5) maintenance: person who participate regularly in an exercise more than six months (Marcus Selby, Niaura & Rossi, 1992).

2.10. **Exercise Stages of Change Levels among University Students**

In many studies have been examined the exercise stages of change for different populations. Most of them, reported that higher stages of change is related to males when it is compared with female students' stages of change (Cengiz, Ince & Cicek,

2009; Nigg & Corneya, 1998; Wakui, Shimomitsu, Odagiri, Inoue, Takamiya, & Ohya, 2002; Prapavessis, Maddison, & Brading, 2004). The stages of change level of university students evaluated and the outcome indicated that majority of students were in pre-contemplation, contemplation and preparation stages (lower stages) (Cengiz, Ince & Cicek, 2009; Wallace, Buckworth, 2001; Cardinal, Tuominen, & Rintala, 2004; Keating, Guan, Huang, Deng, Wu, & Qu, 2005).

In Turkey, the exercise stages of change was examined among the university students in general and based on their gender. The results indicated that exercise stages of change between male and female students are different from each other. Most of the male students were in maintenance stage (25.2%) which was higher than females rate (15.25) (Cengiz, Ince & Cicek, 2009). In general, the percentage of each stage has been reported for all students as follows: 15.2% of the students were in pre-contemplation stage, 31.4% of the students were in contemplation stage, 25.3% of them were in preparation stage (Cengiz, Ince & Cicek, 2009).

CHAPTER 3

3. METHOD

This chapter documents the method used to conduct the present study and outlines the reasons for the appropriateness of these methods in carrying out the investigation. The chapter includes information about the design and sampling, data collection procedures data collection instrument and data analysis.

3.1. **Design and Sampling**

This study was a survey type of study. The study setting was Middle East Technical University (METU), Sports Directory, health-related physical activity program. Under the health-related physical activity program, as a WHP, METU

Sports Directory was offering Latin Aerobic, Zumba, Free-style Tempo, Free-style Combat, High-low Aerobics, Basic Step, Power Step, Total-Body, Pilates, Physio-gym and Yoga classes for the university students, administrative staff and academic staff during this study period. The total number of participants who were registered in those classes in spring semester 2013-2014 was 1697 persons.

Data was collected from 230 Zumba, Power Step, Pilates, Free-style Tempo, Free Style Combat, Yoga and Total Body class participants who were volunteer to participate in this study. In Latin Aerobic Zumba, Power Step, Tempo, Free-style Combat and Total Body classes the main health related fitness emphasis was on

aerobic endurance. In Yoga and Pilates the main emphasis was on muscular endurance and flexibility.

3.2. Data Collection Procedures

Data collection was performed in spring semester 2013 – 2014. After the approval of the study by METU Human Subjects Ethics Committee (Appendix A), researcher visited the Zumba, Power Step, Pilates, Tempo, Free Style Combat, Yoga and Total Body Step classes offered by the METU Sports Directory under the health related physical activity program.

Researcher explained the aims of study and ask for the volunteer participation. Volunteer participants completed the questionnaires related with the study at the end of their classes, and returned it to researcher. Participants completed the questionnaires approximately in 15 min.

3.3. Participants

At the beginning of the study 230 university students and university staff were reached for data collection. Data was initially screened for incomplete responses. 5 cases as an outlier were removed from the data. Then 9 male respondents and 41 respondents at Pre-contemplation stage were removed from the data. Total number of participants in this study was 175 women. Of the 175, 134 of them were students, 23 of them were academic staff, and 18 of them were administrative staff. Frequency of participants by exercise stages of change, type of activity, weekly frequency of participation in exercise and job type are presented in the table 1.

Table 1

Characteristics of the Participants

Variable	Category	*n*	*%*
Exercise Stages of Change	Contemplation	43	24.6
	Preparation	30	17.1
	Action	36	20.6
	Maintenance	66	37.8
Type of Activity	Aerobic	83	47.4
	Strength & Flexibility	92	52.6
Weekly Frequency of Activity *	1	33	18.9
	2	112	64.0
	3	14	8.0
	4	9	5.1
	5	6	3.4
Job Type	Student	134	76.6
	Academic staff	23	13.1
	Administrative staff	18	10.3

* One missing case

3.4. **Data Collection Instruments**

Quantitative data collection was conducted in this study with three Instruments: (1) Perceived Autonomy Support for Exercise Settings Scale (PASESS), (2) Basic Psychological Needs in Exercise Setting (BPNES), (3) Physical Activity Stages of Change Questionnaire (PASCQ). These instruments are described in detail below.

3.4.1. Perceived Autonomy Support for Exercise Settings Scale (PASESS)

Role of autonomous forms of motivation for encouraging the people to adherence and taking part in a physical activity has been highlighted in recent years (Ryan,

Fredrick, Lepes, Rubio, & Sheldon, 1997). Different kinds of scales have been designed as a climate questionnaire in various contexts such as: learning context (Black & Deci, 2000), health context (Williams, Cox, Kouides & Deci, 1999), work Context (Baarad, Deci, & Ryan, 2004) and exercise and sport context (Hagger & Orbell, 2003). In this study Perceived Autonomy Support for Exercise Settings (PASES) scale was used for measuring the perception of autonomy support about health related fitness instructor in exercise settings and developed by Hagger, Chatzisarantis, Hein, Pihu, Soos, & Karsai, (2007). This scale is a 7-point Likert scale, ranging from 1(strongly disagree) to 7(strongly agree). The scores presented the degree to which one is significant others (e.g., fitness instructor or coach) provided choice and accepted the person's exercise decisions. It is one-dimensional scale and consists 12 items (e.g.; my health related exercise instructor encourages me to do active sports and/or vigorous exercise in my free time). Regarding to a cross-cultural investigation validity of this scale was checked. The results indicated that perceived autonomy support scale is valid for using in exercise settings for young people (Hagger, Chatzisarantis, Hein, Pihu, Soos & Karsai, 2007). This scale translated in Turkish language by Müftüler and İnce (2012) and reliability and validity for Turkish version assessed by using internal consistency coefficients and confirmatory factor analysis. Results from 324 university students about instructor indicated good reliability scores (α=.97) and fit indexes were satisfied (χ^2=107; df =41; p<.001; CFI =.98; TLI =.98; RMSEA =.07).

3.4.2. Basic Psychological Needs in Exercise Setting (BPNES)

One of the central roots of the self-determination theory is Basic Psychological Needs in Exercise Setting (Deci & Ryan, 2002). According to that each person have a basic psychological needs for relatedness, competence and autonomy. Basic Psychological Needs in Exercise Setting Scale (BPNESS) is a self-report instrument developed by Vlachopoulos and Michailidou (2006). It has designed with 12 items for assessing to which psychological needs related to autonomy (4 items), competence (4 items) and relatedness (4 items) are satisfied in exercise context

(Ryan & Deci, 2000). An example item for each sub-scale is demonstrated as follow: ("The exercise program I follow is highly compatible with my choices and interests") for autonomy, ("I feel I have been making a huge progress with respect to the end result I pursue") for competence and ("I feel extremely comfortable when with the other exercise participants") for relatedness. It is a 5-point Likert scale anchored by 1(I don't agree at all) and 5 (I completely agree). In a cross-cultural investigation the results provided the permission for reliability and validity of this scale across the cultures (Vlachopoulos & Michailidou, 2009). The Cronbach's alpha values was measured and it was .92 for Relatedness, .84 for Autonomy and .81 for Competence. It was translated into Turkish language by a group of bilingual researchers and evaluated the reliability and validity of that for 686 Turkish university students (M_{age}=30.78 years, *SD*=8.64) (Vlachopoulos, Asci, Cid, Ersoz, González-Cutre, Moreno-Murcia, & Moutão, 2013). Internal consistency for each subscale in the Turkish population is reported as following; α= .62 for autonomy, α = .77 for competence, and α = .69 for relatedness (Vlachopoulos, Asci, Cid, Ersoz, González-Cutre, Moreno-Murcia, & Moutão, 2013).

3.4.3. Physical Activity Stages of Change Questionnaire (PASCQ)

Physical activity stages of change questionnaire was used for evaluating the participants' physical activity stages. This questionnaire developed by Marcus, Selby, Niaura, and Rossi (1992). It is a kind of binary type questionnaire. The participants answer to each question with yes or no based on their physical activity participation. It made possible to classify the participants to five different groups according to soring algorithm: pre-contemplation (unaware about their problematic behavior and lack of intention to take part in an activity), contemplation (there is an intention to change the behavior within the six months but there isn't any commitment to participate to any action), preparation (intention to take part to an activity in the next month without successful taken action in past year), action (behavior is changed and person participated to an activity from one day to six months), And, maintenance (continuation in an activity from six months ago until

lifetime period) This questionnaire has five items, (e.g., I am currently active.) It is translated into Turkish language by Cengiz, Asci and Ince (2010) and presented the reliability and validity of Turkish version for university students (r= .80).

3.5. **Data Analysis**

Firstly, descriptive statistics were performed and means and standard deviation were reported. Assumptions were checked for all research questions by appropriate tests. This investigation involves two questions with four sub-questions. The first four questions were analyzed by One-Way ANOVA while the second four sub-questions were analyzed by One-Way MANOVA. There exists one dependent variables with more than two independent variables for first research question. The dependent variable is total score of "Perceived Autonomy Support in Exercise Setting" (Hagger et al., 2007) scale. In this way, One-way ANOVA would be appropriate for analyzing the data for first research question. In second research question because it consists three dependent variables and more than two independent variables, One-way MANOVA was performed. The dependent variable in second research question was total score of three sub-scale of Psychological Needs in Exercise settings (Vlachopoulos & Michailidou, 2006) separately which are related to Autonomy, Competence and Relatedness. Statistical software SPSS version 21 (SPSS Inc., Chicago, IL, USA) was used for analyzing the data ($p<.05$).

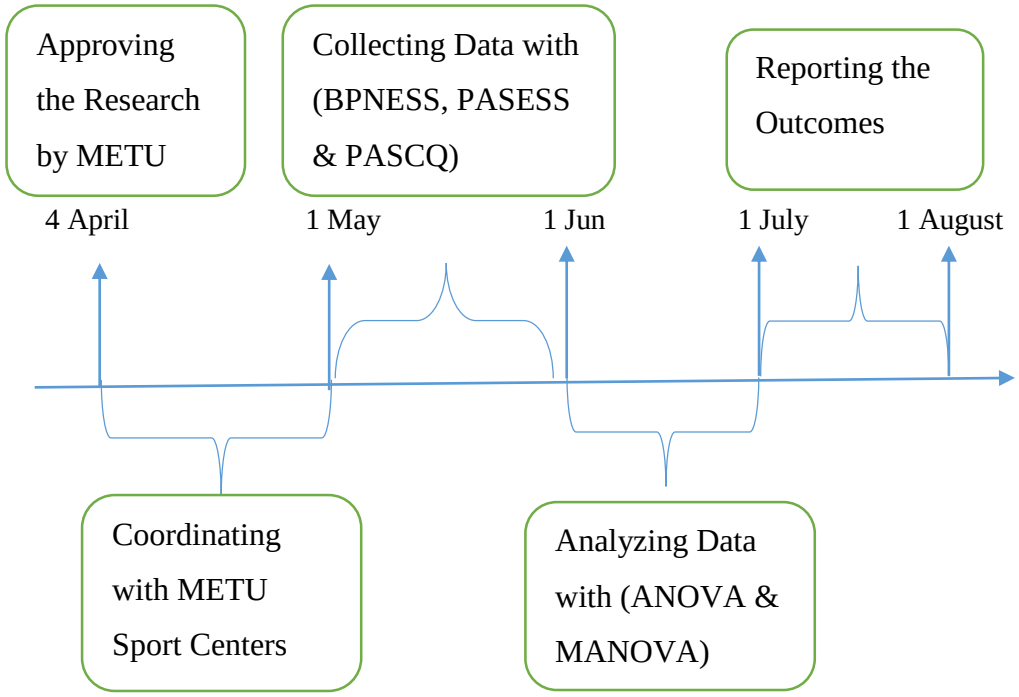

Figure 2. Flow Chart of Assessment and Design of the Study

CHAPTER 4

4. RESULTS

In this section, current study findings about the health-related physical activity program participants' perceived autonomy support and basic psychological needs in exercise setting by exercise stages of change, type of preferred activity, weekly frequency of exercise and job type at a university setting are presented. For each research question, firstly descriptive statistics and appropriateness for the related statistical analysis (ANOVA & MANOVA normality and homogeneity assumptions) are reported and then the results of the inferential statistical analysis are presented.

4.1. **Research Question 1:**

What is the health related physical activity program participants' perceived autonomy support in exercise setting at a university context?

Perceived Autonomy Support & Exercise Stages of Change

The independent variable, Physical Activity Stages of Change (PASC), included five stages: pre-contemplation, contemplation, preparation, action and maintenance (Marcus, Selby, Niaura, and Rossi, 1992). But before beginning the analysis the participants who were in the first stage was ignored, because pre-contemplation stage

group represents the people who are unaware about their problematic behavior and lack of intention to take part in an activity. The dependent variable is Perceived Autonomy Support for Exercise Settings (PASES) about fitness instructor (Hagger et al., 2007). Because this research question consists one dependent variable, and four independent variables, one-way ANOVA was conducted for analyzing this research question.

Null Hypothesis 1: Using an ANOVA, there will not a significant differences between participant's perceived autonomy supports in exercise setting (PASES) and exercise stages of change.

Descriptive statistics like number of participants in each stage, mean (*M*) and standard deviation (*SD*) were presented in Table 2. It is understood from table that the highest mean value is related to the action stage (*M*=72.06, *SD*=1.16, n=36) and the lowest mean value is related to contemplation stage (*M*=65.33, *SD*=1.40, n=43).

Table 2

Descriptive Statistics about PASES Scores by Stages of Change

Stages	*n*	*M*	*SD*
Contemplation	43	65.33	9.18
Preparation	30	69.50	10.91
Action	36	72.06	6.95
Maintenance	66	70.02	10.5

To examine the normality, Kolmogorov-Smirnov and Shapirowilks test, Skewness and Kurtosis test, were checked. Results indicated that normality of distribution were met for this study (Appendix C).

Levene's test was used to examine the homogeneity of variances. The results indicated that homogeneity of variance assumption was not violated F= (3, 171) =1.98, p>.05.

Now, because all of the assumptions such as normality of distribution and homogeneity of variances were met for this study, one-way ANOVA test was conducted to find out whether there is a significant difference between dependent variable "perceived autonomy support in exercise setting" and independent variable "exercise stages of change" among health related physical activity program participants. The results for one-way ANOVA was significant, F (3, 171) =3.68, p<.05, η^2=.02 (Table 3). Therefore our Null hypothesis was rejected, it means there was a significant difference between health-related physical activity program participants' Perceived Autonomy Support in Exercise Setting and participants' exercise stages of change. The strength of relationship between perceived autonomy support of participants and four stages of change assessed by η^2, which has small effect, 2% of the variance is accounted by the differences among stages (Table 3).

Table 3

One-Way ANOVA Summary Table for PASES Scores with Exercise Stages of Change

Source	*SS*	*df*	*MS*	*F*	*p*	η^2
Between Groups	985.58	3	328.53	3.69	.01*	.02
Within Groups	15245.82	171	89.16			
Total	854105.00	175				

*p<.05

Because there were more than two independent variables, Post-hoc test has been applied for finding the significant mean difference among the independent variables. According to the results, in contemplation stage, action stages of change have significantly higher mean value. More over in action stage, contemplation stages of change had a significantly higher mean value than the other stages. It means, health-related physical activity program participants who were in Action stage had higher perceived autonomy support from the participants in the Contemplation stage (p <.05).

Perceived Autonomy Support & Type of Activity

There were two groups of activity which were categorized in aerobic types of exercise (A) and groups of activities which can improve the strength and flexibility (SF). Aerobic types of activity which was related to aerobic exercises were: Free-style Tempo, Zumba, Power Step, Total Body and Free Style Combat. Activities related to enhancing the Strength and Flexibility were: Pilates and yoga. Because there were one dependent variable "health related physical activity program participants' perceived autonomy support in exercise setting" and two independent variables, "type of preferred exercise", one-way ANOVA has been conducted.

Null Hypothesis: Using One-Way ANOVA: there will not a significant differences between Perceived Autonomy Support in Exercise Setting and type of preferred exercise.

Descriptive statistics for these two types of exercise has been reported in table 4. It is concluded that type A which is related to aerobic type of exercise has a higher mean value (*M*=70.51, *SD*=8.72) than type SF that related to the strength and flexibility exercises (*M*=68.01, *SD*=10.34).

Table 4

Descriptive Statistics for PASES and Type of Preference Activity

Type	*Mean*	*SD*	*N*
Aerobic	70.51	8.72	83
Strength & Flexibility	68.01	10.34	92

Before interpreting the ANOVA test, checking about assumptions such as: normality and homogeneity of variances, was performed. For examine the normality, four methods were used. Kolmogorov-Smirnov and Shapirowilks, Skewness and Kurtosis test, Q-Q Plots and Histograms were checked. Results indicated that normality of distribution met for this study (Appendix C).

Levene's Test was used to examine the homogeneity of variances. The homogeneity of variances assumption was not violated F (1, 173) =1.70, p>.05.

The one-way ANOVA test was conducted and the results indicated that there was non-significant differences between variables, F (2, 173) =2.95, p>.05. Since there wasn't significant results in one-way ANOVA, the null hypothesis retained. It means there isn't any significant difference between dependent variable, Perceived autonomy support in exercise, and two types of exercise: "aerobic" and "strength and flexibility" (Table 5).

Table 5

One-Way ANOVA Summary Test Related to PASES and Type of Activity

Source	*SS*	*df*	*MS*	*F*	*p*
Type	271.66	1	271.66	2.95	.09
Error	15959.00	173	92.25		
Total	16231.40	175			

Perceived Autonomy Support & Weekly Frequency of Exercise

In order to find out whether there is a significant difference between health-related physical activity program participants perceived autonomy support in exercise and their weekly frequency of participation in exercise, one way ANOVA was conducted. The dependent variable was Perceived autonomy support for exercise setting (PASES, Hagger et al., 2007). Independent variable consisted the weekly frequency of participation in an exercise session: 1 (only one session per week), 2 (two sessions per week), 3 (three sessions per week), 4 (Four sessions per week) and 5 (Five sessions per week). One person did not answer to question related to number of sessions of participation per week, therefore, the total number for question 3 was 174.

Null Hypothesis: Using One-Way ANOVA, there will not be a significant differences between perceived autonomy support in exercise and weekly frequency of participation in exercise.

Descriptive statistics for these two types of activity has been reported in table 6.

Table 6

Descriptive Statistics for PASES and Weekly Frequency of Participation in Exercise

Weekly frequency Participation in exercise	*M*	*SD*	*n*
1	68.06	9.29	33
2	69.49	9.78	112
3	65.86	10.82	14
4	74.00	6.20	9
5	68.00	8.74	6

According to the descriptive statistics results, people who participate in four sessions per week had higher mean value (*M*=74.00, *SD*=6.20) followed by 2 sessions participation (*M*=69.49, *SD*=9.78). People who participated 3 sessions per week had lower mean value (*M*=65.86, *SD*=10.82) followed by 5 sessions of participation (*M*=68.00, *SD*=8.74).

Before interpreting the ANOVA test, normality and homogeneity of variances were checked. For examine the normality, four methods were used. Kolmogorov-Smirnov and Shapiro-Wilk test, Skewness and Kurtosis test, Q-Q Plots and Histograms were checked. Results indicated that normality of distribution met for this study (Appendix C).

Levene's Test was used to examine the homogeneity of variances. The homogeneity of variances assumption was not violated F (4, 169) = .78, p>.05. Non-significant

results indicated that homogeneity of variances was also met for this research question. Therefore ANOVA test could be interpreted.

The one-way ANOVA test was conducted and findings indicated that there was not a significant difference between dependent variable and independent variables, F (4, 169) =1.15, p>.05 (Table 7).

Table 7

ANOVA Summary Table for PASES and weekly Frequency of Participation in an Activity

Source	*SS*	*df*	*MS*	*F*	*p*
Between-Group	423.34	4	105.84	1.15	.34
Within-Group	15587.58	169	92.23		
Total	16010.93	173			

Since the results of ANOVA was not significant, there was no need to conducting the Post-hoc test.

Non-significant results indicated that the null hypothesis for this study retained. In other words, there was not any significant differences between perceived autonomy support in exercise setting and participant's weekly frequency of participation in exercise.

Perceived Autonomy Support & Job Type

In order to find out whether there is a significant difference between job types among health related physical activity program participants in terms of perceived autonomy support, one way ANOVA was conducted.

Dependent variable for this study was Perceived Autonomy Support for Exercise Setting (PASES, Hagger et al., 2007). Independent variable was type of job or

profession which participants have. The participants consisted of three groups based on their job including: student, academic staff and administrative staff.

Null Hypothesis: Using ANOVA, there will not be significant differences between perceived autonomy support in exercise setting and their job type.

Descriptive statistics such as mean and standard deviation was reported through the table 8. Findings presented that administrative staff has higher mean value (*M* = 71.06, *SD*=8.91, *N*=18) and academic staff has lower mean value (*M*=68.87, *SD*= 12.06, *N*=23). In order to number of population, students number (*M*=69.00, *SD*= 9.37, *N*=134) is higher than academic staff and administrative staff (Table 8).

Table 8

Descriptive Statistics for PASES and Participants' Job Type

Type of job	*M*	*SD*	*n*
student	69.00	9.38	134
Academic-staff	68.87	12.07	23
Administrative-staff	71.06	8.61	18

Before interpreting the ANOVA, normality and homogeneity of variances were checked. For examining the normality, 4 methods were used. Kolmogorov-Smirnov Test, Shapiro-Wilk Test, Q-Q Plot and Histogram were checked. All of the results indicated that normality assumption was met for this study (Appendix C).

Levene's test was used for evaluating the homogeneity of variance. The homogeneity of variance assumption was not violated (F= 1.28, p>.05). Non-significant results indicated that the homogeneity of variances assumption was also met for this question.

Therefore one-way ANOVA test was interpreted. The results of the ANOVA test was not significant F (2, 172) =.37, p>.05 (Table 9). Therefore the null hypothesis

was retained. It means there was not a significant difference between perceived autonomy support in exercise setting and participants' job type.

Table 9

One-Way ANOVA Test Results for PASESS and Job Type

	SS	*df*	*MS*	*F*	*p*
Between groups	69.84	2	34.92	.37	.69
Within groups	16161.55	172	93.96		
Total	16231.39	174			

4.2. **Research Question 2:**

What is the health related physical activity program participants' perceived basic psychological needs in exercise setting at a university context?

Basic Psychological Needs in Exercise & Exercise Stages of Change

The dependent variable was "Basic Psychological Needs in Exercise (BPNES)" which it involves three sub-scales related to Autonomy, Competence and Relatedness (Vlachopoulos and Michailidou, 2006).

The independent variable was exercise stages of change which was examined by (PASCQ). It consists from five different stages: pre-contemplation, contemplation, preparation, action, and maintenance. In this study pre-contemplation groups has been ignored because they were unaware about their problematic behavior and lack of intention to take part in an activity (Marcus, Selby, Niaura & Rossi, 1992).

There were more than two dependent variables and more than two independent variables, one-way MANOVA was performed. With MANOVA, the difference of basic psychological needs in exercise of participants by four stages of change were

presented. The effects of the independent variables on the dependent variables has been checked also.

Null Hypothesis: Using MANOVA, there is no significant difference between participants' basic psychological needs in exercise and exercise stages of change.

Descriptive statistics has been presented below in Table 10.

Table 10

Descriptive Statistics for BPNES and Exercise Stages of Change

Dependent variable	*Stage*	*M*	*SD*	*n*
BPNES-Autonomy	contemplation	15.79	1.95	43
	Preparation	16.53	1.91	30
	Action	16.14	2.21	36
	Maintenance	16.56	2.47	66
	Total	16.28	2.21	175
BPNES-Competence	Contemplation	15.40	2.18	43
	Preparation	15.47	1.91	30
	Action	15.47	1.91	30
	Maintenance	16.32	2.39	66
	Total	15.85	2.30	175
BPNES-Relatedness	Contemplation	14.28	2.22	43
	Preparation	14.97	2.77	30
	Action	15.39	2.90	36
	Maintenance	15.55	2.57	66
	Total	15.10	2.62	175

BPNES= Basic Psychological Needs in Exercise Setting

As it is observed from table 10, for the dependent variable (basic psychological needs in exercise for autonomy) mean value for maintenance stage was the highest (*M*= 16.56, *SD*=2.47) followed by preparation stage (*M*=16.53, *SD*=1.91).

For the dependent variable (basic psychological needs in exercise for competence) maintenance stage had the higher mean value (*M*=16.32, *SD*=2.39), followed by preparation stage (*M*=15.47, *SD*=1.91) and action stage (*M*=15.47, *SD*=1.91).

For dependent value basic psychological needs in exercise for relatedness sub-scale, maintenance had the highest mean value (*M*=15.55, *SD*=2.57) followed by action stage (*M*=15.40, *SD*=2.90).

In order to continue with analyses, firstly assumption has been checked. All variables were independent of each other. For one-way MANOVA, three assumptions were checked. First of all, multivariate normality was checked by Mardia's test. For the present study, Mardia's test indicated non-significant score (.39) thus multivariate normality assumption was not violated.

In MANOVA homogeneity of variance was checked by Box's M test for equality of covariances. It was expected that the results give us a non-significant scores through this test. For this study, the results of Box's M test was non-significant *F* (24, 1416.919) =1.07, *p*>.05 (Appendix C).

In MANOVA, it is assumed that each dependent variable have similar variances for all groups which is tested by Levene's test. In this study, results indicated that Levene's test were not significant for all three dependent variables. The results of Levene's test for BPNES-Autonomy were non-significant *F* (4, 170) =1.54, *p*>.05, for BPNES-Competence *F* (4, 170) =1.06, *p*>.05, for BPNES-Relatedness *F* (4, 170) =2.04, *p*>.05.

According to the findings obtained by Levene's test, non-significant results indicated that the homogeneity of variances assumption was also met for this research question. Therefore, the MANOVA result indication the effectiveness of the independent variables on the dependent variables was interpreted with using the wilk's Lambda's value (Tabachnick & Fidell, 2007).

After performing the MANOVA analysis, it is concluded that the interaction between independent variables (four stages of change) was non-significant, F (12, 444.778) =411.452, p>.05.

Since we did not achieve a statistically significant result, further follow up tests would not perform.

Thus, the results indicated that null hypothesis retained for this question. In other words, there was non- significant difference between health-related physical activity program participants' basic psychological needs in exercise setting and exercise stages of change.

Basic Psychological Needs in Exercise & Type of Preferred Exercise

There were three dependent variables and two independent variables. In this study, dependent variable consisted from three sub-scales: Autonomy, Competence and Relatedness, related to Basic Psychological Needs in Exercise Setting scale (BPNES), Vlachopoulos and Michailidou, 2006).

There were two independent variables including: Aerobic types of activity (A) and Strength and Flexibility types of activity (SF). In order to find the answer for this question, one-way MANOVA was conducted.

Null Hypothesis: Using MANOVA, there will not be a significant difference between participant's basic psychological needs in exercise setting and participant's type of preferred exercise.

The descriptive statistics information about participants' basic psychological needs in exercise and their type of preferred exercise was shared below in table 11.

Table 11

Descriptive Statistics for BPNES and Type of Preference Activity

Dependent variable	*Type*	*Mean*	*SD*	*n*
BPNS-Autonomy	Aerobic	16.55	2.17	83
	Strength&Flexibility	16.03	2.23	92
	Total	16.28	2.21	175
BPNES-Competence	Aerobic	16.29	2.05	83
	Strength&Flexibility	15.46	2.45	92
	Total	15.85	2.30	175
BPNES-Relatedness	Aerobic	15.60	2.64	83
	Sttrength&Flexibility	14.65	2.54	92
	Total	15.10	2.62	175

BPNES= Basic Psychological Needs in Exercise Setting

Findings related to descriptive statistics revealed that basic psychological needs in exercise setting in Autonomy sub-scale, Aerobic type of exercise had higher mean value (*M*=16.55, *SD*=2.17) than the Strength and flexibility type of exercise (*M*=16.02, *SD*=2.23). In dependent variable, basic psychological needs in exercise related to Competence, mean value of Aerobic type of exercise was higher (*M*=16.29, *SD*= 2.05) than Strength and Flexibility type (*M*=15.46, *SD*=2.45). In dependent variable, basic psychological needs in exercise related to Relatedness, Aerobic type of exercise had higher mean value (*M*=15.60, *SD*=2.64) than Strength and Flexibility type of exercise (*M*=14.65, *SD*=2.54).

In order to continue the analyses, assumptions about normality of distribution and homogeneity of variances should be checked at first. For one-way MANOVA, three assumptions were reported. First of all, multivariate normality was checked by

Mardia's test. For the present study, Mardia's test indicated a significant score (.39), thus multivariate normality assumption was violated.

In addition, for the homogeneity of variance matrix assumption, Box's M test were used. According to the findings, results of the Box's M test was not significant F (6, 210705) =.95, p>.05. Therefore, homogeneity of variance matrices assumption was not violated (Appendix C). In this way, in further analyzing, the Wilks'Lambda's value would be used for reporting the MANOVA results.

According to Levene's test, results was non-significant for BPNES-Autonomy (F (1,173) =.31, p>.05), for BPNES-Competence (F (1,173) =3.73, p>.06) and also for BPNES-Relatedness (F (1, 173) =.16, p>.05).

Because of non-significant results in Levene's test, the homogeneity of variances assumption was also met for this study.

Value of Wilk's Lambda was significant (F (3,171) =2.73, p<.05, η^2=.05). Which means there was a significant interaction among dependent variables. In addition 5% of the variance has a significant interaction but it has small effect (Cohen, 1988).

After this step the univariate analysis conducted to find out which dependent variable affected more by independent variable.

The results of univariate analysis indicated that only two dependent variables affected more by independent variable. Basic psychological needs in exercise related to Competence was significant F (1, 171) =5.88, p<.05. In addition, basic psychological needs in exercise related to relatedness was significant F (1, 171) =5.88, p<.05.

No need to conduct post-hoc test because only two independent variables investigated throughout the present study. According to the mean value it is concluded that aerobic type of exercise participants had higher perceived basic psychological needs in exercise score than the participants of muscular endurance and flexibility type of exercise.

Basic Psychological Needs in Exercise & Weekly Frequency of Activity

There are more than two dependent variables, and since there are five independent variables, it becomes one-way MANOVA.

This study involves three dependent variables, Autonomy, Competence and Relatedness of Basic Psychological Needs in exercise setting scale (Vlachopoulos and Michailidou, 2006).

Independent variable consisted of weekly frequency of exercise participation including: 1 (only one session per week), 2 (two sessions per week), 3 (three sessions per week), 4 (Four sessions per week) and 5 (Five sessions per week). Through the analyzing, the possible effect of these five independent variables on three dependent variables have been examined.

Null Hypothesis: Using MANOVA, it will not be a significant difference between participant's basic psychological needs in exercise setting and weekly frequency of exercise participation.

First of all, descriptive statistics including: mean, standard deviation was shared below (Table 12).

Table 12

Descriptive Statistics for BPNES and Frequency of Exercise Participation

	Days	*M*	*SD*	*n*
BPNES-Autonomy	1	15.89	2.00	33
	2	16.28	2.23	112
	3	16.71	2.16	14
	4	16.89	2.09	9
	5	16.33	3.50	6
	Total	16.27	2.21	174

Continued from Table 12

	Days	*M*	*SD*	*n*
BPNES-Competence	1	14.82	2.35	33
	2	15.97	2.22	112
	3	16.71	1.98	14
	4	16.22	2.73	9
	5	16.50	2.59	6
	Total	15.84	2.30	174
BPNES-Relatedness	1	14.21	2.53	33
	2	15.19	2.62	112
	3	15.36	2.84	14
	4	15.67	1.80	9
	5	16.33	2.94	6
	Total	15.08	2.61	174

According to the results, for dependent variable "BPNES-Autonomy" independent variable "4" has higher mean value (*M*=16.89, *SD*=2.09) and independent variable "1" has lower mean value (*M*=15.88, *SD*=2.00). About dependent variable "BPNS-Competence" independent variable "3" has higher mean value (*M*=16.71, *SD*=1.98) and independent variable "1" has lower mean value (*M*= 14.82, *SD*=2.35). About dependent variable "BPNS-Relatedness" independent variable "4" has higher mean value (*M*=15.67,*SD*=1.80) and independent variable "1" has lower mean value (*M*=14.21, *SD*=2.53).

For all the measurements, they were independent of each other. Also all variables were on ratio scale. Three assumptions were reported here. In order to continue with the analyses as planned, firstly assumption checks were completed. The multivariate normality was checked by Mardia's test. For the present study, Mardia's test indicated significant score (.39), thus multivariate normality assumption was violated.

In addition, for homogeneity of variance matrix assumption, Box's M test was used. The Box's M test results indicated the non-significant result (p >.05) (Appendix C). In this way, in further analyzing, Wilks' Lambda's value was appropriate to use.

According to the findings obtained from Levene's test, the results were not significant. It means, homogeneity of variance was not violated (p >.05). With non-significant results in our assumption of MANOVA, it could be confident in continuing the analyzing. According to the value of the Wilk's Lambda results, the interaction was non-significant F (12, 442.132) =1.24, p>.05.

Therefore, it was reasonable to interpret the univariate ANOVA results. Follow up test which was Bonferroni correction was carried out. Alpha level was divided to the number of dependent variables according to this procedure. In this study there were three dependent variables. So, new alpha levels for all dependent variables became .016 (.05/3= .016). Afterwards, analysis of variances (ANOVA) on each dependent variable were performed as follow-up tests as suggested by Field (2009). Utilizing the Bonferroni method, each ANOVA was tested at the .016 level. In the follow-up studies through one-way ANOVA, results of univariate analysis showed that weekly frequency of exercise participation had not significant effect on basic psychological need satisfaction related to autonomy F (4, 169) =1.86, p>.016, on basic psychological need satisfaction related to competence F (4,169) =.71, p>.016 and on basic psychological needs related to relatedness F (4, 169) =.62, p>.016. Because both multivariate and univariate analyses indicated no statistically significant difference between dependent variables and independent variables, null hypothesis was retained. It means that there is no significant differences between participant's basic psychological needs in exercise and their weekly frequency of exercise participation in activity.

Basic Psychological Needs in Exercise & Job Type

There were more than two dependent variables and more than two independent variables. In this way, one-way MANOVA was performed for analyzing the data in

this study. As underlined above, three dependent variables are three sub-scale of Basic Psychological Needs in Exercise, including: Autonomy, Competence and Relatedness (BPNES, Vlachopoulos and Michailidou, 2006).

Independent variable for this research question was health related physical activity program participant's job type, including: (1) student (2) academic-staff (3) administrative-staff. With MANOVA, the possible effect of these three independent variables on the dependent variables was examined.

Null Hypothesis: Using MANOVA, there will not be a significant difference between basic psychological needs in exercise and participant's job type.

The descriptive statistics information is shared below in table 13.

Table 13

Descriptive Statistics for BPNES and Type of Job

	Type of occupation	*M*	*SD*	*n*
BPNES-Autonomy	Student	16.07	1.18	134
	Academic-Staff	16.61	2.19	23
	Administrative-Staff	17.44	2.15	18
	Total	16.28	2.21	175
BPNES-Competence	Student	15.67	2.24	134
	Academic-Staff	15.87	2.28	23
	Administrative-Staff	17.17	2.48	18
	Total	15.85	2.30	175
BPNEES-Relatedness	Student	14.80	2.54	134
	Academic-Staff	15.48	2.64	18
	Administrative-Staff	16.89	2.59	18
	Total	15.10	2.62	175

For the dependent variable "Basic Psychological Needs in Exercise Setting "related to Autonomy sub-scale, independent variable, administrative-staff had higher mean value (*M*=17.44, *SD*=2.15) and independent variable, student had lower mean value (*M*=16.07, *SD*= 2.18). For dependent variable Basic Psychological Needs in Exercise Setting related to Competence, as an independent variable, administration-personal, had the highest mean value (*M*=17.17, *SD*=2.48), and student had the lowest mean value (*M*=15.67, *SD*=2.24). Finally, for dependent variable Basic Psychological Needs in Exercise Setting related to Relatedness, as an independent variable, administration-personal, had the highest mean value (*M*=16.89, *SD*=2.59) and Student had the lowest mean value (*M*=14.80, *SD*= 2.54).

In order to continue with the analyses as planned, firstly assumption checks were completed. For one-way MANOVA, three assumptions were reported here.

First of all, multivariate normality was checked by Mardia's test. For the present study, Mardia's test indicated significant score (.39), thus multivariate normality assumption was violated. For all the measurements, they were independent of each other. For the homogeneity of variance matrix assumption, Box's M test was performed. According to the findings, the test was not significant *F* (12, 10537.407) =.97, *p*>.05. Therefore homogeneity of variance matrix met for this study (Appendix C). In further analyzing, the Wilk's Lambada's value was used.

The results of Levene's test represented non-significant results for BPNES-Autonomy, *F* (2, 172) =.26, *p*>.05, for BPNES-Competence, *F* (2, 172) =.19, *p*>.05 and also for BPNES-Relatedness, *F* (2, 172) =.02, *p*>.05. So the homogeneity of variance assumption was met for this study.

After checking the assumptions, further analysis was interpreted. According to the value of Wilk's Lambda, the interaction was significant (*F* (6, 340) = 2.15, *p*<.05, η^2=.04). It means job type explained 4% of variance on the basic psychological need satisfaction of the participants which is small effect (Cohen, 1988). Next step was to check the main effects since the interaction was significant, to find out which dependent variable affected by independent variable. According to the results, all

three dependent variables have a significant value: basic psychological needs related to autonomy F (2, 172) = 3.47, p<.05, basic psychological needs related to competence F (2, 172) = 3.45, p<.05 and for basic psychological needs related to relatedness F (2, 172) = 5.59, p<.05.

The Post-hoc test was necessary, because the variable had more than two independent variables. Among type of jobs, administrative-staff had higher perceived basic psychological needs in exercise scores than the scores of students (p<.05). No significant difference was found between the basic psychological needs in exercise scores of student and academic staff, and academic staff and administrative staff (p>.05). In another words, among job types, administrative-staff had higher perceived basic psychological needs in exercise scores than the scores of students (p<.05) and no significant difference was found between the basic psychological needs in exercise scores of student and academic staff, and academic staff and administrative staff (p>.05).

CHAPTER 5

5. DISCUSSION

The aim of this research was to examine the health related physical activity program participants' perceived autonomy support and basic psychological needs in exercise at university setting in terms of participants' stages of change, weekly frequency of exercise participation, preferred type of exercise and participants' type of job at a university setting. In this chapter, the outcomes for each research question is discussed.

5.1. Research Question 1:

What is the health related physical activity program participants' perceived autonomy support in exercise setting at a university context in terms of exercise stages of change, type of preference activity, weekly frequency of activity and job type?

The results indicated that there exists a significant difference between health related physical activity program participants' perceived autonomy support and their exercise stages of change and there is no significant difference between health related physical activity program participants and their preferred type of physical activity, weekly frequency of activity and job type. Further analysis indicated that

among the exercise stages of change, action stage is significantly higher than contemplation stage.

Different studies indicated that autonomous form of motivation associated by increasing the exercise stages of change. For example, Mullan, Markland and Ingledew (1997) explored the relationship between self-determined exercise behavior and stage of change in exercise in adults. The results indicated that self-determination increases with moving from lower stages of change to upper stages. Moreover, it is indicated that action and maintenance stages of change was distinguished between participants who have intrinsic motivation, and identified regulation which represented the autonomous form of motivation (Mullan, Markland & Ingledew, 1997).

Similar outcomes were found by investigation from nine health clubs by Thogersen-Ntoumani and Ntoumanis (2006). They were reported that participants who classified in maintenance stage of change, their level of intrinsic motivation is higher than the lower stages of change, such as preparation and action (Thogersen-Ntoumani & Ntoumanis, 2006).

Through a cross-sectional survey study with 409 university students, the relationship between exercise regulation and stage of change has been examined. It was concluded that participants who were in early stages, had less self-determined motivation, than participants with higher stages of change (Daley & Duda, 2006).

According to a research review Teixeira et al. (2012) claimed, all studies related to stages of change and autonomous regulations identified that autonomous regulation might be increased through stages. But just one research reported that increasing from preparation and action to maintenance stage happened in identified regulation whereas maintenance stage is significantly higher than preparation and action stage for intrinsic motivation (Teixeira, Carraca, Markland, Silva & Ryan, 2012).

Both the results of this study and previous studies presented the coordination of stages of change with autonomous motivation. Higher mean value of action stages of change indicated that most of the health related physical activity program

participants are based on consciousness and goal setting, and exercise setting support their autonomy well. But more investigation is needed for determining the stage of regulation which was one of the limitations for this study.

About type of preferred exercise, results indicated that there exists non-significant difference between participants' perceived autonomy support and their type of preferred exercise. Ryan and Connell (1989) stated that intrinsic and extrinsic form of motivation have been implicated in predicting the individuals exercise engagement. Most of the participants engage in an exercise for instrumental reasons such as developing their health and fitness, increasing their muscular endurance or strength or losing weight. Different kinds of activity (e.g., running, swimming) could be chosen by participants, but certain activity sometimes might be boring to continue. Therefore, participation in these kinds of activity depends on what can be obtained from that (e.g., improving health). There exists lack of investigation related to this study, so further investigation is needed in this domain.

About weekly frequency of activity, findings indicated non-significant difference between health-related physical activity program participants' perceived autonomy support and their weekly frequency of exercise.

According to a research about 598 male and female university students who participated in self-determined context in different kinds of exercise for weight training, aerobics and swimming indicated that students who participate more have higher level of motivation classified in autonomous form of motivation, such as: intrinsic motivation and identified regulation (Li, 1999). In another research, relationship between frequency and various behavioral regulation was examined. The results indicated that identified regulation and integrated regulation, which are kinds of autonomous motivation, have a positive influence on exercise frequency (Duncan, Hall, Wilson & Jenny, 2010).

Without a doubt, regular health related physical activity program participants, are aware about psychological and physiological benefits of physical activity and also have personal values identified with other aspects that associated with regular

frequency and routine exercise. We could argued that results of the current study revealed that participants of this study did not identified their personal values (Identified regulation) or did not aware about the benefits of regular physical activity for body psychologically and physiologically (Integrated regulation).

There exists a notion claimed that short-term participation in an activity among university students requires extrinsic motivation while prolonged adherence requires intrinsic motivation (Mullan, Markland & Ingledew, 1997, Ryan, Fredrick, Lepes, Rubio & Sheldon, 1997). It means that internalizing the participants' reasons for regular participation in exercise need a period of time. With this point of view, another reason for non-significant conclusion in this study, might be related to time limitation. Based on previous researches, we could claim that the time period of exercise course in university setting in this study is not enough for internalizing the reasons for engaging regularly and representing the autonomous motivation.

About job type, findings revealed that there is no significant difference between participants' perceived autonomy support and their type of job.

There exists some evidence indicated that climate of school, home or work place could affect people's self-determined motivation. Undermining intrinsic motivation will be happened if social climate gives feeling of pressure and control, while increasing in intrinsic motivation will be happened if social climate gives individual feeling of Informational and supportive (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Deci, Schwartz, Sheinman, & Ryan, 1981; Deci, Connell, & Ryan, 1989). Therefore, the type of job, as a work climate, could be influential in forming the type of motivation in persons' attitude about participation in exercise. The non-significant results for this study indicated that work climate of participants in present study was not influential to form their type of motivation including autonomous or controlling form of motivation.

There is a need for further investigations for evaluating the difference between fitness participants' perceived autonomy support and their type of job.

5.2. **Research Question 2:**

What is the health related physical activity program participants' basic psychological needs in exercise at university context in terms of (1) exercise stages of change (2) type of preferred exercise (3) weekly frequency of exercise (4) job type?

Findings indicated that there exists a significant difference between health related physical activity program participants' basic psychological needs in exercise and their preference type of activity and job type but non-significant difference achieved between health related physical activity participants' basic psychological needs and their exercise stages of change and weekly frequency of activity. Further analysis presented that aerobic type of physical activity participants had higher perceived basic psychological needs in exercise score than the participants of muscular endurance and flexibility type of physical activities. Furthermore, among job type, student and administrative staff had higher perceived basic psychological needs in exercise scores than academic staff.

According to Mullan, Markland & Ingledew (1997) there is a positive relationship between self-determined exercise behavior and exercise stages of change. In other words, increasing in stage of change might be influential for increasing the persons' self-determination (Mullan, Markland & Ingledew, 1997).

Non-significant results indicated that basic psychological needs in exercise of participants in this study do not change with their stage of change which is not parallel with previous studies. Although the results of descriptive statistics indicated higher mean value in maintenance stage for all three basic needs but the final outcome of MANOVA showed that it is not much effective.

The results of this study represented a significant difference between basic psychological need satisfaction and type of preferred activity in exercise context.

Ryan and Connell (1989) claimed that intrinsic and extrinsic form of motivation in self-determination theory have been implicated in predicting the individuals exercise engagement. Most of the participants engage in an exercise for instrumental reasons such as developing their health and fitness, increasing their muscular endurance or

strength or losing weight. Different kinds of activity (e.g., running, swimming) could be chosen by participants, but certain activity sometimes might be boring to continue. Therefore, participation in these kinds of activity depends on what can be obtained from that (e.g., improving health). The results of this study presented that aerobic type (A) of activity is significantly higher than strength and flexibility type (SF). It means that in university setting health-related physical activity participants program preferred aerobic type of activity more than strength and flexibility. There exists lack of investigation related to this study, so further investigation is needed in this domain.

About weekly frequency of activity, Outcomes indicated that there exists a non-significant difference between these two variables opposite of the hypothesis for this study.

Based on previous research (Mullen, Markland & Ingledew, 1997), it was hypothesized that frequency of adherence in an activity will be associated by greater psychological needs. According to Deci and Ryan (1985, 2002) satisfaction of three basic psychological needs including: autonomy, relatedness and competence might help to internalizing the autonomous motivation and regular participation in exercise and increasing well-being.

Because regular participation in health-related physical activity program is depend on satisfying the three basic psychological needs in person, so we could argued that non-significant results for this study could be related to lack of satisfaction in need for autonomy, need for relatedness and need for competence, in addition, it could be related to lack of time for internalizing the motivation.

About job type, outcome of this study showed that there exists a significant difference between participants' basic psychological need satisfaction and their job type in exercise setting. Further analyzing indicated that student and administrative staff had higher perceived basic psychological needs in exercise scores than academic staff.

In different investigation it is reported that different climate can affect person's intrinsic motivation obtaining from satisfying the three basic psychological needs (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Deci, Schwartz, Sheinman, & Ryan, 1981; Deci, Connell, & Ryan, 1989). Based on this research we could claim that in this study different kind of jobs which represented by different work climate, could impact the participant's psychological needs. In another words, work climate could increase or decrease the satisfaction of three needs by supporting or controlling the person's feeling. Significant results in this study means that different job types could impact individuals' three internal needs. There is a lack of investigation related to basic psychological need satisfaction and participant's type of job. In this way further research should be focused on this topic.

CHAPTER 6

6. CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusions and implications for health related physical activity programs at university settings and further research studies.

6.1. Conclusion

Research Question 1.

What is the health related physical activity program participants' perceived autonomy support in exercise level at a university context?

Findings indicated that there was a significant difference between participants' perceived autonomy support and their exercise stages of change ($p<.05$). According to the post-hoc analysis, only participants' in action stage had higher perceived autonomy support from the participants in contemplation stage. There was no significant difference between perceived autonomy support and type of preference activity, weekly frequency of activity and job type ($p>.05$).

Null Hypothesis 1: Using an ANOVA, there will not a significant differences between participant's perceived autonomy supports in exercise setting and exercise stages of change. **Rejected**

Null Hypothesis 2: Using an ANOVA, there will not a significant differences between participants' perceived autonomy supports in exercise setting and type of preferred physical activity. **Retained**

Null Hypothesis 3: Using an ANOVA, there will not a significant differences between participants' perceived autonomy supports in exercise setting and weekly frequency of exercise participation. **Retained**

*Null Hypothesis 4***:** Using an ANOVA, there will not a significant differences between participants' perceived autonomy supports in exercise setting and their job types. **Retained**

Research Question 2.

What is the health related physical activity program participants' perceived basic psychological needs in exercise at a university context?

Findings on psychological needs in exercise revealed that there was a significant difference between health related physical activity program participants' preferred type of exercise and their job type ($p<.05$). Further analysis presented that Aerobic type exercise participants had higher basic psychological needs in exercise score than the participants of muscular endurance and flexibility type of exercises. Among job type, Post-hoc analysis revealed that administrative staff had higher basic psychological needs in exercise scores than the scores of students. No significant difference was found between the basic psychological needs in exercise scores of student and academic staff, and academic staff and administrative staff. There was no significant difference in the basic psychological needs in exercise by participants' exercise stages of change and weekly frequency of exercise participation ($p>.05$).

Null Hypothesis 1: Using MANOVA, there was not a significant differences between participants' basic psychological needs in exercise and their exercise stages of change. **Retained**

Null Hypothesis 2: Using MANOVA, there was not a significant differences between participants' basic psychological needs in exercise and their type of preferred exercise. **Rejected**

Null Hypothesis 3: Using MANOVA, there was not a significant differences between participants' basic psychological needs in exercise and their weekly frequency of exercise participation. **Retained**

Null Hypothesis 4: Using MANOVA, there was not a significant differences between participants' basic psychological needs in exercise and their job type. **Rejected**

6.2. Implications for Health-Related Physical Activity Programs Providers and Instructors

Based on the results of the first question there was a significant difference between women health-related physical activity program participants' perceived autonomy support and their exercise stages of change. Therefore, it is suggested that health-related physical activity providers and instructors pay more attention to provide an autonomy supportive climate by the needs of each participants' stages of change.

In second question, the results indicated that there is a significant difference between health-related physical activity program participant's basic psychological needs in exercise and their type of preferred exercise and job type. Thus, it is suggested that health-related physical activity program providers and instructors, consider more about strength and flexibility type of exercise participants' basic psychological needs. Because, according to the results, aerobic type of activity met the participant's basic psychological needs more than strength and flexibility type of exercise. In addition, they should consider about their participants 'needs and demands based on their job type. According to the results, Basic psychological needs in exercise scores for administrative staff was higher than students and academic staff. Thus, women

health-related physical activity program providers and instructors should consider more about students and academic staff ‘three basic psychological needs including competence, autonomy and relatedness.

6.3. **Recommendations for Future Studies**

Replication of this research with adding “Behavioral Regulation in Exercise Context” (BREQ, Mullan, Markland & Ingledew, 1997) scale, is recommended for identifying the continuum of behavioral regulation in exercise context and for measuring the external, introjected, identified and intrinsic forms of regulation among the exercise participants. Although in this study autonomous motivation and controlled motivation could recognize but the determining the type of regulation was impossible.

Increasing the number of participants with extending the society to include more people with different background, could increase the generalizability of the findings.

REFERENCES

ACSM (2013). *American College of Sports Medicine's Guidelines for Exercise Testing and Prescription*. Lippincott: Williams & Wilkins.

Ahluwalia, I. B., Holtzman, D., Mack, K. A., & Mokdad, A. (2003). Observations from the CDC. Health-Related Quality of Life among Women of Reproductive Age: Behavioral Risk Factor Surveillance System (BRFSS), 1998-2001. *Journal of Women's Health, 12*(1), 5-9.

Antonini Philippe, R., & Seiler, R. (2006). Closeness, co-orientation and complementarity in coach athlete relationships: what male swimmers say about their male coaches? *Psychology of Sport and Exercise*, *7*(2), 159-171.

Amorose, A. J., & Anderson-Butcher, D. (2007). Autonomy-supportive coaching and self-determined motivation in high school and college athletes: A test of self-determination theory. *Psychology of Sport and Exercise*, *8*(5), 654-670.

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological bulletin*, *120*(3), 338.

Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic Need Satisfaction: A Motivational Basis of Performance and Weil-Being in Two Work Settings1.*Journal of Applied Social Psychology*, *34*(10), 2045-2068.

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, *9*(3), 75-78.

Bar-Or, O. (2000). Juvenile obesity, physical activiaty, and lifestyle changes. *The Physician and Sports Medicine, 28*.

Bergman, P., Grjibovski, A. M., Hagströmer, M., Bauman, A., & Sjöström, M. (2008). Adherence to physical activity recommendations and the influence of socio-demographic correlates a population-based cross-sectional study. *BMC Public Health*, *8*(1), 367.

Belza, B., Walwick, J., Schwartz, S., LoGerfo, J., Shiu-Thornton, S., & Taylor, M. (2004). Peer Reviewed: Older Adult Perspectives on Physical Activity and Exercise: Voices From Multiple Cultures. *Preventing Chronic Disease*, *1*(4).

Bhui, K., & Bhugra, D. (2002). Explanatory models for mental distress: implications for clinical practice and research. *The British Journal of Psychiatry*, *181*(1), 6-7.

Biddle, S. (1995). Exercise and psychosocial health. *Research Quarterly for Exercise and Sport*, *66*(4), 292-297.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education*, *84*(6), 740-756.

Bradley, C. B., McMurray, R. G., Harrell, J. S., & Deng, S. (2000). Changes in common activities of 3rd through 10th graders: the CHIC study. *Medicine and Science in Sports and Exercise*, *32*(12), 2071-2078.

Brooks, G. A., Butte, N. F., Rand, W. M., Flatt, J. P., & Caballero, B. (2004). Chronicle of the Institute of Medicine physical activity recommendation: how a physical activity recommendation came to be among dietary recommendations. *The American Journal of Clinical Nutrition*, *79*(5), 921S-930S.

Branum, A. M., Simon, A. E., & Lukacs, S. L. (2012). Among children with food allergy, do socio demographic factors and healthcare use differ by severity? *Maternal and Child Health Journal*, *16*(1), 44-50.

Buckworth, J., & Dishman, R. K. (2002). Determinants of exercise and physical activity. *Exercise psychology. Champaign: Human Kinetics*, 191-209.

Butcher, K., Sallis, J. F., Mayer, J. A., & Woodruff, S. (2008). Correlates of physical activity guideline compliance for adolescents in 100 US cities. *Journal of Adolescent Health*, *42*(4), 360-368.

Cardinal, B. J., Tuominen, K. J., & Rintala, P. (2004). Cross-cultural comparison of American and Finnish college students' exercise behavior using trans-theoretical model constructs. *Research Quarterly for Exercise and Sport*, *75*(1), 92-101.

Cengiz, C., Aşçı, F. H., & Ince, M. L. (2010). Egzersiz Davranışı Değişim Basamakları Anketi. *Türkiye Klinikleri Spor Bilimleri Dergisi*, *2*(1), 32.

Cengiz, C., Ince, M. L., & Çiçek, Ş. (2009). Exercise Stages of Change in Turkish University Students by Sex, Residence, and Department 1. *Perceptual and Motor Skills*, *108*(2), 411-421.

Chatzisarantis, N. L., & Biddle, S. J. (1998). Functional significance of psychological variables that are included in the Theory of Planned Behavior: a Self-Determination Theory approach to the study of attitudes, subjective norms, perceptions of control and intentions. *European Journal of Social Psychology*, *28*(3), 303-322.

Clary, E. G., & Snyder, M. (1999). The motivations to volunteer theoretical and practical considerations. *Current Directions in Psychological Science*, *8*(5), 156-159.

Daley, A. J., & Duda, J. L. (2006). Self-determination, stage of readiness to change for exercise, and frequency of physical activity in young people. *European Journal of Sport Science*, *6*(4), 231-243.

Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, *74*(4), 580.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research In Personality*, *19*(2), 109-134.

Deci, E. L., & Ryan, R. M. (1991, January). A motivational approach to self: Integration in personality. In *Nebraska Symposium on Motivation* (Vol. 38, pp. 237-288).

Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research*, *71*(1), 1-27.

Deci, E. L., & Ryan, R. M. (2002). Overview of self-determination theory: An organismic dialectical perspective. *Handbook of Self-Determination Research*, 3-33.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macro theory of human motivation, development, and health. *Canadian Psychology*, *49*(3), 182.

Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences*, *8*(3), 165-183.

Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology*, *73*(5), 642.

Dishman, R. K. (2001). The problem of exercise adherence: Fighting sloth in nations with market economies. *Quest*, *53*(3), 279-294.

Dishman, R. K. (1982). Compliance/adherence in health-related exercise. *Health Psychology*, *1*(3), 237.

Donnelly, J. E., Blair, S. N., Jakicic, J. M., Manore, M. M., Rankin, J. W., & Smith, B. K. (2009). American College of Sports Medicine Position Stand. Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. *Medicine and Science in Sports and Exercise*, *41*(2), 459-471.

Duncan, L. R., Hall, C. R., Wilson, P. M., & Jenny, O. (2010). Exercise motivation: a cross-sectional analysis examining its relationships with frequency, intensity, and duration of exercise. *International Journal of Behavioral Nutrition and Physical Activity*, *7*(7), 1-9.

Edmunds, J., Ntoumanis, N., & Duda, J. L. (2007). Adherence and well-being in overweight and obese patients referred to an exercise on prescription scheme: A self-determination theory perspective. *Psychology of Sport and Exercise*, *8*(5), 722-740.

Edmunds, J., Ntoumanis, N., & Duda, J. L. (2006). A test of self-determination theory in the exercise domain. *Journal of Applied Social Psychology*, *36*(9), 2240-2265.

Fairclough, S., & Stratton, G. (2005). 'Physical education makes you fit and healthy'. Physical education's contribution to young people's physical activity levels. *Health Education Research*, *20*(1), 14-23.

Feldstein, A. C., Vollmer, W. M., Smith, D. H., Petrik, A., Schneider, J., Glauber, H., & Herson, M. (2007). An outreach program improved osteoporosis management after a fracture. *Journal of the American Geriatrics Society*, *55*(9), 1464-1469.

Figueroa, A., Baynard, T., Fernhall, B., Carhart, R., & Kanaley, J. A. (2007). Impaired post exercise cardiovascular autonomic modulation in middle-aged women with type 2 diabetes. *European Journal of Cardiovascular Prevention & Rehabilitation*, *14*(2), 237-243.

Frederick, C. M., & Ryan, R. M. (1993). Differences in motivation for sport and exercise and their relations with participation and mental health. *Journal of Sport Behavior*, *16*(3), 124-146.

Fredrick, C. M., Morrison, C., & Manning, T. (1996). Motivation to participate, exercise affect, and outcome behaviors toward physical activity. *Perceptual and Motor Skills*, *82*(2), 691-701.

Gagne, M. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology*, *15*(4), 372-390.

Gagne, M., Ryan, R. M., & Bergmann, K. (2003). Autonomy Support and Need Satisfaction in the Motivation and Well-Being of Gymnasts," *Journal of Applied Sport Psychology*, 15, 372-390.

Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, *83*(4), 508.

Gordon-Larsen, P., Nelson, M. C., & Popkin, B. M. (2004). Longitudinal physical activity and sedentary behavior trends: adolescence to adulthood. *American Journal of Preventive Medicine*, *27*(4), 277-283.

Gagne, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331-362.

Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2010). Influence of coaches' autonomy support on athletes' motivation and sport performance: A test of the hierarchical model of intrinsic and extrinsic motivation. *Psychology of Sport and Exercise*, *11*(2), 155-161.

Haase, A., Steptoe, A., Sallis, J. F., & Wardle, J. (2004). Leisure-time physical activity in university students from 23 countries: associations with health beliefs, risk awareness, and national economic development. *Preventive Medicine*, *39*(1), 182-190.

Hagger, M., Chatzisarantis, N. L., Hein, V., Soós, I., Karsai, I., Lintunen, T., & Leemans, S. (2009). Teacher, peer and parent autonomy support in physical education and leisure-time physical activity: A trans-contextual model of motivation in four nations. *Psychology and Health*, *24*(6), 689-711.

Hagger, M. S., Chatzisarantis, N. L., Hein, V., Pihu, M., Soós, I., & Karsai, I. (2007). The perceived autonomy support scale for exercise settings (PASSES):

Development, validity, and cross-cultural invariance in young people. *Psychology of Sport and Exercise, 8*(5), 632-653.

Hagger, M. S., & Orbell, S. (2003). A meta-analytic review of the common-sense model of illness representations. *Psychology and Health, 18*(2), 141-184.

Hallal, P. C., Victora, C. G., Azevedo, M. R., & Wells, J. C. (2006). Adolescent physical activity and health. *Sports Medicine, 36*(12), 1019-1030.

Haskell, W. L., Lee, I. M., Pate, R. R., Powell, K. E., Blair, S. N., Franklin, B. A., & Bauman, A. (2007). Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Circulation, 116*(9), 1081.

Hooper, L., Summerbell, C. D., Higgins, J., Thompson, R. L., Capps, N. E., Smith, G. D. & Ebrahim, S. (2001). Dietary fat intake and prevention of cardiovascular disease: systematic review. *Bmj, 322*(7289), 757-763.

Hughes, J. R., Goldstein, M. G., Hurt, R. D., & Shiffman, S. (1999). Recent advances in the pharmacotherapy of smoking. *Jama, 281*(1), 72-76.

Ingledew, D. K., Markland, D., & Medley, A. R. (1998). Exercise motives and stages of change. *Journal of Health Psychology, 3*(4), 477-489.

Ingledew, D. K., Markland, D., & Sheppard, K. E. (2004). Personality and self-determination of exercise behavior. *Personality and Individual Differences, 36*(8), 1921-1932.

Im, E. O., Lee, B., Hwang, H., Yoo, K. H., Chee, W., Stuifbergen, A. & Chee, E. (2010). "A waste of time": Hispanic women's attitudes toward physical activity. *Women & Health, 50*(6), 563-579.

Jakicic, J. M., Clark, K., Coleman, E., Donnelly, J. E., Foreyt, J., Melanson, E., & Volpe, S. L. (2001). American College of Sports Medicine position stand. Appropriate intervention strategies for weight loss and prevention of weight

regain for adults. *Medicine and Science in Sports and Exercise*, *33*(12), 2145-2156.

Johansson, K., & Lundberg, C. (1997). The 1994 international consensus conference on dementia and driving: A brief report. *Alzheimer Disease & Associated Disorders*, *11*, 62-69.

Katzmarzyk, P. T., & Mason, C. (2009). The physical activity transition. *Physical Activity and Health*, *6*(3), 269-280.

Kaufman, P., Alt, M. N., & Chapman, C. D. (2004). Dropout Rates in the United States: 2001. Statistical Analysis Report NCES 2005-046. *US Department of Education*.

Keating, X. D., Guan, J., Huang, Y., Deng, M., Wu, Y., & Qu, S. (2005). Cross-cultural validation of stages of exercise change scale among Chinese college students. *European Physical Education Review*, *11*(1), 71-83.

Kelder, S. H., Perry, C. L., Klepp, K. I., & Lytle, L. L. (1994). Longitudinal tracking of adolescent smoking, physical activity, and food choice behaviors. *American Journal of Public Health*, *84*(7), 1121-1126.

King, A. C. (2001). Interventions to promote physical activity by older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *56*(2), 36-46.

Kirk, A., Mutrie, N., MacIntyre, P., & Fisher, M. (2003). Increasing physical activity in people with type 2 diabetes. *Diabetes Care*, *26*(4), 1186-1192.

Koka, A., & Hein, V. (2003). Perceptions of teacher's feedback and learning environment as predictors of intrinsic motivation in physical education. *Psychology of Sport and Exercise*, *4*(4), 333-346.

Landry, J. B., & Solmon, M. A. (2004). African American women's self-determination across the stages of change for exercise. *Journal of Sport and Exercise Psychology*, *26*(3), 457.

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: a self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, *79*(3), 367.

Li, F. (1999). The exercise motivation scale: It's multifaceted structure and construct validity. *Journal of Applied Sport Psychology*, *11*(1), 97-115.

Mageau, G. A., & Vallerand, R. J. (2003). The coach–athlete relationship: A motivational model. *Journal of Sports Science*, *21*(11), 883-904.

Macek, M. D., & Mitola, D. J. (2006). Exploring the association between overweight and dental caries among US children. *Pediatric Dentistry*, *28*(4), 375-380.

Marcus, B. H., Bock, B. C., Pinto, B. M., Forsyth, L. A. H., Roberts, M. B., & Traficante, R. M. (1998). Efficacy of an individualized, motivationally-tailored physical activity intervention. *Annals of Behavioral Medicine*, *20*(3), 174-180.

Marcus, B. H., Selby, V. C., Niaura, R. S., & Rossi, J. S. (1992). Self-efficacy and the stages of exercise behavior change. *Research Quarterly for Exercise and Sport*, *63*(1), 60-66.

Markland, D., & Ingledew, D. K. (1997). The measurement of exercise motives: Factorial validity and invariance across gender of a revised Exercise Motivations Inventory. *British Journal of Health Psychology*, *2*(4), 361-376.

Markland, D., & Ingledew, D. K. (2007). The relationships between body mass and body image and relative autonomy for exercise among adolescent males and females. *Psychology of Sport and Exercise*, *8*(5), 836-853.

Markland, D., & Hardy, L. (1997). On the factorial and construct validity of the Intrinsic Motivation Inventory: Conceptual and operational concerns. *Research Quarterly for Exercise and Sport*, *68*(1), 20-32.

Mayer, D. K., Terrin, N. C., Kreps, G. L., Menon, U., McCance, K., Parsons, S. K., & Mooney, K. H. (2007). Cancer survivor's information seeking behaviors: a comparison of survivors who do and do not seek information about cancer. *Patient Education and Counseling*, *65*(3), 342-350.

Martinez-Gonzalez, M. A., Alfredo Martinez, J., Hu, F. B., Gibney, M. J., & Kearney, J. (1999). Physical inactivity, sedentary lifestyle and obesity in the European Union. *International Journal of Obesity*, *23*(11), 1192-1201.

McCarley, P. B., & Salai, P. B. (2007). Chronic kidney disease and cardiovascular disease: a case presentation. *Nephrology Nursing Journal*, *34*(2), 187.

Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *Jama*, *291*(10), 1238-1245.

Moustaka, F. C., Vlachopoulos, S. P., Kabitsis, C., & Theodorakis, Y. (2012). Effects of an autonomy-supportive exercise instructing style on exercise motivation, psychological well-being, and exercise attendance in middle-age women. *Journal of Physical Activity and Health*, *9*(1), 138.

Müftüler, M., & İnce, M.L. (2012a). Adaptation and validation of the perceived autonomy support scale for exercise settings. Presented at 2nd International Social Sciences in Physical Education and Sport Congress, Ankara: Turkey.

Müftüler, M., (2013). List of trans-contextual model based intervention in developing leisure-time physical activity behavior, A Thesis Submitted to the Graduated School of Social Sciences in Middle East Technical University, Ankara: Turkey.

Mullen, E., Markland, D., & Ingledew, D. K. (1997). A graded conceptualization of self-determination in the regulation of exercise behavior: Development of a measure using confirmatory factor analysis. *Personality and Individual Differences*, *23*(5), 745-752.

Nahas, M. V., Goldfine, B., & Collins, M. A. (2003). Determinants of Physical Activity in Adolescents and Young Adults: The Basis for High School and

College Physical Education to Promote Active Lifestyles. *Physical Educator*, *60*(1), 42-56.

Nelson, M. E., Rejeski, W. J., Blair, S. N., Duncan, P. W., Judge, J. O., King, A. C., & Castaneda-Sceppa, C. (2007). Physical activity and public health in older adults: recommendation from the American College of Sports Medicine and the American Heart Association. *Circulation, 116*(9), 1094.

NIHCDP (1997). National Institutes of Health consensus Development conference statement: breast cancer screening for women ages 40-49, January 21-23, 1997. *JNCI Monographs*, *1997*(22)

Nie, N. H., Bent, D. H., & Hull, C. H. (1975). *SPSS: Statistical Package for the Social Sciences* (Vol. 421, pp. 250-265). New York: McGraw-Hill.

Nigg, C. R., & Courneya, K. S. (1998). Trans-theoretical model: Examining adolescent exercise behavior. *Journal of Adolescent Health*, *22*(3), 214-224.

Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluation*, *8*(2), 1-9.

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., & Wilmore, J. H. (1995). Physical activity and public health: a recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Jama*, *273*(5), 402-407.

Patten, C. A., Armstorng, C. A., Martin, J. E., Sallis, J. F., & Booth, J. (2000). Behavioral control of exercise in adults: Studies 7 and 8. *Psychology and Health, 15*(4), 571-581.

Pelletier, J. P., Martel-Pelletier, J., & Abramson, S. B. (2001). Osteoarthritis, an inflammatory disease: potential implication for the selection of new therapeutic targets. *Arthritis & Rheumatism*, *44*(6), 1237-1247.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. *American psychologist*, *47*(9), 1102.

Prochaska, J. O., Norcross, J. C., & DiClemente, C. (1994). Changing for good. New York: William Morrow and Company.

Prochaska, J. O., & Velicer, W. F. (1997). The trans-theoretical model of health behavior change. *American Journal of Health Promotion*, *12*(1), 38-48.

Prapavessis, H., Maddison, R., & Brading, F. (2004). Understanding exercise behavior among New Zealand adolescents: A test of the Trans theoretical Model. *Journal of Adolescent Health*, *35*(4), 346-e17.

Puente, R., & Anshel, M. H. (2010). Exercisers' perceptions of their fitness instructor's interacting style, perceived competence, and autonomy as a function of self-determined regulation to exercise, enjoyment, affect, and exercise frequency. *Scandinavian Journal of Psychology*, *51*(1), 38-45.

Ramsay, J. D., & Jones, J. P. (1998). Using behavior staging to evaluate the economic effect of worksite health promotion. *American Journal of Health Studies*, *14*, 72-83.

Roberts, G. C., Treasure, D. C., & Conroy, D. E. (2007). Understanding the dynamics of motivation in sport and physical activity: An achievement goal interpretation. *Handbook of Sport Psychology, Third Edition*, 1-30.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68.

Ryan, R. M., Frederick, C. M., Lepes, D., Rubio, N., & Sheldon, K. M. (1997). Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology*, *28*, 335–354.

Ross, R., Dagnone, D., Jones, P. J., Smith, H., Paddags, A., Hudson, R., & Janssen, I. (2000). Reduction in obesity and related comorbid conditions after diet-induced weight loss or exercise-induced weight loss in men, a randomized, controlled trial. *Annals of Internal Medicine*, *133*(2), 92-103.

Rose, E. A., Parfitt, G., & Williams, S. (2005). Exercise causality orientations, behavioral regulation for exercise and stage of change for exercise: exploring their relationships. *Psychology of Sport and Exercise*, *6*(4), 399-414.

Sallis, J. F., Patrick, K., & Long, B. J. (1994). Overview of the international consensus conference on physical activity guidelines for adolescents. *Pediatric Exercise Science*, *6*, 299-299.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, *32*(5), 963-975.

Sallis, J. F., Nader, P. R., Broyles, S. L., Berry, C. C., Elder, J. P., McKenzie, T. L., & Nelson, J. A. (1993). Correlates of physical activity at home in Mexican-American and Anglo-American preschool children. *Health Psychology*, *12*(5), 390.

Shephard, R. J. (2003). Limits to the measurement of habitual physical activity by questionnaires. *British Journal of Sports Medicine*, *37*(3), 197-206.

Song, M., Carroll, D. D., & Fulton, J. E. (2013). Meeting the 2008 physical activity guidelines for Americans among US youth. *American Journal of Preventive Medicine*, *44*(3), 216-222.

Smith, A., Ntoumanis, N., & Duda, J. L. (2007). Goal striving, goal attainment, and well-being: Adapting and testing the self-concordance model in sport. *Journal of Sport & Exercise Psychology*, *29*(6), 763-782.

Steptoe, A., & Wardle, J. (1999). Motivational factors as mediators of socioeconomic variations in dietary intake patterns. *Psychology and Health*, *14*(3), 391-402.

Tabachnick, B. G. & Fidel, L. S. (2007). *Using multivariate statistics* (4th edition). London: Allyn and Bacon.

Teixeira, P. J., Carraça, E. V., Markland, D., Silva, M. N., & Ryan, R. M. (2012). Exercise, physical activity, and self-determination theory: A systematic review. *Int J Behav Nutr Phys Act*, *9*(1), 78.

Thogersen-Ntoumani, C., & Ntoumanis, N. (2006). The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions and physical self-evaluations. *Journal of Sports Sciences*, *24*(4), 393-404.

Troiano, R. P., Berrigan, D., Dodd, K. W., Masse, L. C., Tilert, T., & McDowell, M. (2008). Physical activity in the United States measured by accelerometer. *Medicine and Science in Sports and Exercise*, *40*(1), 181.

Trost, S. G., Pate, R. R., Sallis, J. F., Freedson, P. S., Taylor, W. C., Dowda, M., & Sirard, J. (2002). Age and gender differences in objectively measured physical activity in youth. *Medicine and Science in Sports and Exercise*, *34*(2), 350-355.

Tucker, J. M., Welk, G. J., & Beyler, N. K. (2011). Physical activity in US adults: compliance with the physical activity guidelines for Americans. *American Journal of Preventive Medicine*, *40*(4), 454-461.

NBDT, (2004). *National burden of disease and cost effectiveness project report*. Ministry of Health Refik Saydam Hygiene Center Presidency School of Public Health. Ankara: Türkiye.

Twisk, J. W. R., Kemper, H. C. G., & Van Mechelen, W. (2002). The relationship between physical fitness and physical activity during adolescence and cardiovascular disease risk factors at adult age. The Amsterdam Growth and Health Longitudinal Study. *International Journal of Sports Medicine*, *23*(1), 8-14.

US Department of Health and Health Services (1996). *Physical activity and health: a report of the Surgeon General*. Diane Publishing.

US Department of Health and Human Services. USDHHS (2002). Physical activity fundamental to preventing disease. *Office of the Assistant Secretary for Planning and Evaluation*, 1-19.

Ünüvar, N., Mollahaliloğlu, S., & Yardım, N. (2006). Türkiye hastalık yükü çalışması 2004. *TC Sağlık Bakanlığı, Refik Saydam Hıfzıssıhha Merkezı Başkanlığı, Hıfzıssıhha Mektebi Müdürlüğü. 1Basım. Ankara: Aydoğdu Ofset Matbaacılık San. Ve Tic. Ltd. Şti*, 1-56.

US Department of Health and Human Services. (2006). the health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. Atlanta, Georgia: US Department of Health and Human Services, Centers for Disease Control and Prevention. *Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health*, 1988-2002.

US Department of Health and Human Services (2000) *Healthy People 2010: Understanding and Improving Health*. USDHHS, Washington DC.

Vallerand, R. J., & Thill, E. E. (1993). Introduction au concept de motivation. *Introduction À La Psychologie De La Motivation*, 3-39.

Vallerand, R. J. (2004). Intrinsic and extrinsic motivation in sport. *Encyclopedia of Applied Psychology*, *2*, 427-435.

Vallerand, R. J., & Losier, G. F. (1999). An integrative analysis of intrinsic and extrinsic motivation in sport. *Journal of Applied Sport Psychology*, *11*(1), 142-169.

Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivating learning, performance, and persistence: the synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology*, *87*(2), 246.

Vlachopoulos, S. P., & Michailidou, S. (2006). Development and initial validation of a measure of autonomy, competence, and relatedness in exercise: The Basic Psychological Needs in Exercise Scale. *Measurement in Physical Education and Exercise Science*, *10*(3), 179-201.

Vlachopoulos, S. P., Asci, F. H., Cid, L., Ersoz, G., González-Cutre, D., Moreno-Murcia, J. A., & Moutão, J. (2013). Cross-cultural invariance of the basic psychological needs in exercise scale and need satisfaction latent mean differences among Greek, Spanish, Portuguese and Turkish samples. *Psychology of Sport and Exercise*, *14*(5), 622-631.

Wakui, S., Shimomitsu, T., Odagiri, Y., Inoue, S., Takamiya, T., & Ohya, Y. (2002). Relation of the stages of change for exercise behaviors, self-efficacy, decisional-balance, and diet-related psycho-behavioral factors in young Japanese women. *The Journal of Sports Medicine and Physical Fitness*, *42*(2), 224-232.

Welk, G. J. (1999). The youth physical activity promotion model: a conceptual bridge between theory and practice. *Quest*, *51*(1), 5-23.

Williams, G. C., Cox, E. M., Kouides, R., & Deci, E. L. (1999). Presenting the facts about smoking to adolescents: effects of an autonomy-supportive style. *Archives of Pediatrics & Adolescent Medicine*, *153*(9), 959-964.

Wilson, P. M., Mack, D. E., Muon, S., & LeBlanc, M. E. (2007). What role does psychological need satisfaction play in motivating exercise participation. *Motivation for Exercise and Physical Activity*, 35-52.

Wilson, P. M., & Todd Rogers, W. (2008). Examining relationships between perceived psychological need satisfaction and behavioral regulations in exercise. *Journal of Applied Bio Behavioral Research*, *13*(3), 119-142.

Wilson, P. M., Rodgers, W. M., Blanchard, C. M., & Gessell, J. (2003). The relationship between psychological needs, Self-Determined motivation, exercise attitudes, and physical Fitness1. *Journal of Applied Social Psychology*, *33*(11), 2373-2392.

Wilson, P. M., Rodgers, W. M., Fraser, S. N., & Murray, T. C. (2004). Relationships between exercise regulations and motivational consequences in university students. *Research Quarterly For Exercise and Sport*, *75*(1), 81-91.

Wilson, P. M., & Mackl, E. (2009). Need Satisfaction In Exercise-Related Affect? *Hellenic Journal of Psychology*, *6*, 183-206.

World Health Organization, & International Society of Hypertension Writing Group. (2003). 2003 World Health Organization (WHO)/International Society of Hypertension (ISH) statement on management of hypertension. *Journal of Hypertension*, *21*(11), 1983-1992.

Who, E. C. (2004). Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet*, *363*(9403), 157.

APPENDICES

Appendix A: ETHICAL COMMITTEE PERMISSION

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
ueam@metu.edu.tr
www.ueam.metu.edu.tr

Sayı: 28620816/168 -327

04.04.2014

Gönderilen : Doç. Dr. Mustafa Levent İnce
Beden Eğitimi ve Spor Bölümü

Gönderen : Prof. Dr. Canan Özgen
IAK Başkanı

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Beden Eğitimi ve Spor Bölümü öğrencisi Shabnam Mehrtash'ın "Examination of Sport for Health program implementation at METU" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

04/04/2014

Prof.Dr. Canan Özgen
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkanı
ODTÜ 06531 ANKARA

Appendix B: QUESTIONNAIRES

Egzersiz Ortamında Eğitmenden Kaynaklanan Algılanan Özerklik Desteği Anketi

Bu ankette Spor Eğitmeninizin sizi serbest zamanınızda* aktif spor ve/veya şiddetli egzersiz yapmanıza dair desteklemesini değerlendiren maddeler yer almaktadır. Her bir maddeyi 1 (tamamen katılmıyorum)'den 7 (tamamen katılıyorum)'e doğru sıralanan ölçeğe göre değerlendiriniz. Her madde için size en yakın rakamı işaretleyiniz. * Serbest zaman; sizin okul, iş, yeme-içme, uyuma v.b. zorunlu işlerinizden geriye kalan zamanı tanımlar.

1. SİS eğitmenimin, serbest zamanımda aktif spor ve/veya şiddetli egzersiz yapmam konusunda bana seçenek, tercih ve imkan sağladığını hissediyorum.						
1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum
2. SİS eğitmenimin, serbest zamanımda neden aktif spor ve/veya şiddetli egzersiz yapmayı tercih ettiğimi anladığını düşünüyorum.						
1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum
3. SİS eğitmenim, serbest zamanımda aktif spor ve/veya şiddetli egzersiz yapabilme becerime güvenir.						
1	2	3	4	5	6	7

tamamen katılmıyorum			kararsızım			tamamen katılıyorum

4. SİS eğitmenim, serbest zamanımda aktif spor ve/veya şiddetli egzersiz yapmam için beni cesaretlendirir.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

5. SİS eğitmenim, serbest zamanımda yaptığım aktif spor ve/veya şiddetli egzersiz hakkında konuşurken beni dinler.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

6. SİS eğitmenim, serbest zamanımda aktif spor ve/veya şiddetli egzersiz yaptığım zaman bana olumlu geribildirim sağlar.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

7. SİS eğitmenimle serbest zamanımda yaptığım aktif spor ve/veya şiddetli egzersiz hakkında konuşabilirim.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

8. SİS eğitmenim, neden serbest zamanımda aktif spor ve/veya şiddetli egzersiz yaptığımdan emindir.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

9. SİS eğitmenim, serbest zamanımda yaptığım aktif spor ve/veya şiddetli egzersiz hakkındaki sorularıma cevap verir.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

10. SİS eğitmenim, serbest zamanımda yaptığım aktif spor ve/veya şiddetli egzersizle ilgilenir.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

11. SİS eğitmenimle aktif spor ve/veya şiddetli egzersiz deneyimlerimi paylaşabileceğimi hissediyorum.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

12. SİS eğitmenimin, serbest zamanımda yaptığım aktif spor ve/veya şiddeti egzersizle ilgili tavsiyesine güvenirim.

1	2	3	4	5	6	7
tamamen katılmıyorum			kararsızım			tamamen katılıyorum

Egzersizde Temel Psikolojik İhtiyaçlar Ölçeği (ETPİÖ)

Aşağıda belirtilen ifadeler özel durumlardan ziyade egzersizdeki genel deneyimlerinizle ilgilidir. 1-5 arasında derecelendirilen bu ölçeği kullanarak, size en uygun gelen cevabı daire içine alınız.					
	Tamamen katılmıyorum	Katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen katılıyorum
1. Ulaşmak istediğim sonuçla ilgili çok büyük bir ilerleme gösterdiğimi hissederim.	1	2	3	4	5
2. Diğer egzersiz katılımcıları ile birlikte iken kendimi rahat hissederim	1	2	3	4	5
3. Yaptığım egzersiz programı tercihlerim ve ilgilerimle örtüşür.	1	2	3	4	5
4. Egzersiz programımda yer alan etkinlikleri etkili ve başarılı yaptığımı hissederim.	1	2	3	4	5
5. Diğer egzersiz katılımcıları ile arkadaşça ilişkiler kurduğumu hissederim.	1	2	3	4	5
6. Yaptığım egzersizlerin tam istediğim gibi olduğunu hissederim.	1	2	3	4	5
7. Egzersizin çok iyi yaptığım bir aktivite olduğunu hissederim.	1	2	3	4	5
8. Diğer egzersiz katılımcıları ile	1	2	3	4	5

açık iletişimim olduğunu hissederim.					
9. Yaptığım egzersizin kim olduğumu kesinlikle yansıttığını hissederim.	1	2	3	4	5
10. Katıldığım egzersiz programımın gerekliliklerini karşılayabildiğimi hissederim.	1	2	3	4	5
11. Diğer egzersiz katılımcılarının yanında rahatsız olmadığımı hissederim.	1	2	3	4	5
12. Egzersiz yapma şeklimle ilgili olarak seçimler yapma fırsatına sahip olduğumu hissederim.	1	2	3	4	5

Egzersiz Davranışları Değişim Basamakları Anketi

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 yürüyüş, 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 süreyle yürüyüş yapabilir veya 10 dakikalık 3 farklı aktivite ile 30 dakikayı doldurabilirsiniz.

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

	Evet	Hayır
1. Şu anda orta düzeyde fiziksel aktiviteye katılmaktayım.	○	○
2. Gelecek 6 ayda orta düzeyde fiziksel aktiviteye katılımımı arttırmak niyetindeyim.	○	○
3. Şu anda düzenli olarak orta düzeyde fiziksel aktivite yapmaktayım.	○	○
4. Son 6 aydır düzenli olarak orta düzeyde fiziksel aktiviteye katılmaktayım.	○	○
5. Geçmişte, en az 3 aylık dönemde düzenli olarak orta düzeyde aktivitelere katılırdım.	○	○

Kişisel Bilgiler

Lütfen aşağıda verilen alanları doldurunuz.

Katılımcı

ODTÜ Üniversite Öğrencisi	: □	ODTÜ Akademik Personel	: □
ODTÜ İdari Personel	: □	ODTÜ Dışı Misafir	: □
Yaşınız	:.....	Cinsiyetiniz	Kadın: □ Erkek: □

Şu anda katıldığınız SİS programları	:.....
SİS programı etkinliklerine haftada kaç gün katılıyorsunuz	:.....

Sizinle araştırma konusu hakkında daha ayrıntılı bilgi almak amacı ile görüşme yapılmasını istermisiniz?	Evet	: □
	Hayır	: □
Cevabınız Evet ise iletişim için	E-Posta	:
	Tel	:

Anket bitmiştir. Katılımınız için teşekkür ederiz.

Appendix C: NORMALITY ASSUMPTION CHECK

Normality Tests Related to PASES & Exercise Stages of Change

1/ *Tests of Normality (Kolmogorov-Smirnov, Shapiro-Wilk)*

		Kolmogorov-Smirnov		Shapiro- Wilk	
	stages	*Statistic*	*p*	*Statistic*	*p*
PASES	Contemplation	.11	.20	.96	.14
	Preparation	.14	.13	.89	.01
	Action	.10	.20	.97	.45
	Maintenance	.14	.00	.94	.01

2/ *Skewness and Kurtosis Values*

				Skewness	Kurtosis
	n	*M*	*SD*	*Std. Error*	*Std. Error*
Contemplation	43	65.33	9.18	.36	.71
Preparation	30	69.50	10.91	.427	.83
Action	36	72.05	6.95	.39	.77
Maintenance	61	70.34	9.68	.31	.60

Normality Tests Related to PASES & Type of Preferred Exercise

1/*Tests of Normality (Kolmogrov_Smirnov, Shapiro-Wilk Tests)*

	Kolmogrov-Smirnov	Shapiro-Wilk

		Statistic	p	Statistic	p
PASES	Aerobic	.08	.20	.97	.05
	Strength & Flexibility	.12	.00	.95	.00

PASES= Perceived Autonomy Support in Exercise Settings

2/*Skewness and Kurtosis Tests*

					Skewness	Kurtosis
		N	*M*	*SD*	*Std.Error*	*Std.Error*
PASES	Aerobic	83	70.51	8.72	.26	.52
	Strength&flexibility	92	68.01	10.34	.25	.50

Normality Tests Related to PASES & Weekly Frequency of Participation in Exercise

1/Tests of Normality by Kolmogrov-Smirnov, Shapiro-Wilk Tests

		Kolmogrove-Smirnov		Shapiro-Wilk	
		Statistic	*p*	*Statistic*	*p*
PASESS	1	.13	.15	.94	.09
	2	.09	.20	.91	.15
	3	.18	.20	.91	.15
	4	.12	.20	.98	.91
	5	.25	.20	.87	.23

PASESS=”perceived autonomy support in exercise setting Scale

2/ *Skewness and kurtosis Tests 'Value*

	Skewness	Kurtosis

	n	*M*	*SD*	*Std.Error*	*Std. Error*
1	33	68.06	9.29	.41	.80
2	112	69.49	9.78	.22	.45
3	14	65.86	10.82	.60	1.15
4	9	74.00	6.20	.72	3.57
5	6	68.00	8.74	.85	1.74

Normality Tests Related to PASSES & Job Type

1/ *Kolmogrov-Smirnov and Shapiro Wilk Tests Results*

	Kolmogrov-Smirnov		Shapiro-Wilk	
	Statistic	*p*	*Statistic*	*p*
Student	.10	.00	.97	.00
Academic-staff	.17	.09	.92	.06
Administrative-staff	.16	.20	.94	.28

2/ *Skewness and Kurtosis Tests' Values*

				Skewness	Kurtosis
	n	*M*	*SD*	*Std. Error*	*Std. Error*
Students	134	69.00	9.38	.21	.42
Academic-Staff	23	68.87	12.07	.48	.94
Administration-Staff	18	71.06	8.61	.54	1.04

Normality Tests Related to BPNES & Exercise Stages of Change

Box's M	12.71
F	0.68
df 1	18
df 2	60658.42
Sig.	.83

Normality Test Related to BPNES & Type of Preferred Exercise

Box's M	5.80
F	.95
df 1	6
df 2	210705.012
Sig.	.459

Normality Test Related to BPNES & Weekly Frequency of Participation in Exercise

Box's M	23.20
F	.84
df 1	24
df 2	2147.328
Sig.	.69

Normality Test Related to BPNES & Job Type

Box's M	12.40
F	.97
df 1	12
df 2	10537.407
Sig.	.47

Appendix D : TÜRKÇE ÖZET

Fiziksel hareketsizlik modern hayatta önemli bir sağlık problemidir. Surgeon General'ın fiziksel aktivite ve sağlık raporuna göre; yetişkinlerin çoğunluğu yeterince aktif olmadıkları gibi sağlıklarını iyileştirmek konusunda da bilinçli değildirler (USDHHS, 1996). Fiziksel hareketsizlik kardiyovasküler ve kronik hastalıkların gelişmesinde önemli bir risk faktörüdür (Bradley, McMurray, Harrell, & Deng, 2000). Bar-Or'a göre (2000) çoğu gençler de yeterince aktif değildirler ve aşırı kilolardan ve formsuzluktan muzdariptirler. Bir başka çalışmada üniversite öğrencilerinin neredeyse %50'sinin serbest zamanlarında fiziksel olarak aktif olmadıkları rapor edilmiştir (Hasse, Steptoe, Sallis & Wardle, 2004). Benzer sonuçlar Türk ergenlerde de ortaya çıkmıştır (Cengiz, Ince & Cicek, 2009). Anketle yapılan bir çalışmada üniversite öğrencilerinin çoğunluğunun fiziksel aktiviteye katılma niyetinin sınırlı olduğu ifade edilmiştir (Cengiz, Ince & Cicek, 2009).

Konunun toplum sağlığı ile ilgili önemi sebebiyle, birçok ulusal ve uluslararası resmi ve sivil toplum örgütleri fiziksel aktivite yapmak için kılavuzlar yayınlamıştır (ör. ICCPAGA, Sallis, Patrick & Long, 1994; USDH, 1996; ACSM, 2013). Örneğin Surgeon General'ın fiziksel aktivite ve sağlık hakkındaki kılavuzu bireylere ilgi alanlarına göre (bisiklet sürme, yürüyüş, dans vb.) haftada 5 gün 30-60 dakika ortalama yoğunlukta fiziksel aktivite yapmasını önermektedir. Bununla birlikte yetişkinlerin fiziksel aktivite seviyelerini inceleyen çalışmalar kılavuzda önerilen düzeye sınırlı sayıda kişinin ulaştığını göstermektedir (Martinez, 1999; USDHHS, 1996; Sallis, Prochaska, and Taylor, 2000) Türkiye Cumhuriyeti Sağlık Bakanlığının 48.000 kişi üzerinde yürüttüğü anket çalışması yetişkinlerin %20'sinin fiziksel aktiviteye hiç katılmadığını, %16'sının ise kılavuzlara göre düşük fiziksel aktivite seviyesinde olduğunu ortaya koymuştur. Ergenlerde ise %15'inin hiç fiziksel

aktiviteye katılmadığı, %14'ünün ise fiziksel aktiviteye katıldığı, fakat bu katılımın önerilen düzeylerde olmadığı belirtilmiştir (Ünüvar, Mollahaliloğlu &Yardım, 2006).

"İşyerinde Sağlık Promosyonu" (WHP) neredeyse otuz yıldır varolan (Kaufman & Chapman, 2004), en azından önlenebilir hastalıklar ve sakatlıkları azaltabilmek için sağlığı en iyi hale getiren davranış ve yaşam tarzı tercihlerini işyerlerinde değiştirmeyi amaçlayan çabalardır" (Ramsay & Jones, 1998). Bir çok WHP programının amacı sağlık etkenlerini azaltmak ve sağlık giderlerini düşürme yollarını bulmaktır (Kaufman & Chapman, 2004; Pelletier, Martel-Peletier & Abramson, 2001). Fiziksel aktivite davranışını geliştirmek ve bu yolla çalışanların sağlığını güçlendirmek WHP'lerde en önemli araçlardandır.

Araştırmalara göre WHP programları dahil olmak üzere egzersiz programlarına başlayan katılımcıların çoğu devam edememiş ve altı ay sonra fiziksel aktivitelerine son vermiştir (Buckworth & Dishman, 2002; Patten, Armstrong, Martin, Sallis, & Booth, 2000). Bu tür sonuçlar, araştırmacıları WHP'lerde fiziksel aktivite programlarının daha etkili nasıl sunulabileceğini sorgulamaya sevk etmiştir.

Son yıllarda, fiziksel aktivite ve egzersize bağlı kalma üzerine yapılan çeşitli araştırmalarda "öz belirlenim" kuramı üzerinde çok durulmaktadır. Öz belirlenim kuramı yalnızca egzersize bağlı kalan ve bunu yaşam boyu süren bir aktivite haline getiren katılımcılarda değil, önce bir egzersiz programına bağlı kalıp sonra bırakan katılımcılar için de kullanılabilen çokboyutlu bir yaklaşımdır (Deci & Ryan, 1985; Ryan & Deci, 2000). Kişisel davranışların herhangi bir bağlamda motivasyonun iç, dış veya gerekçesiz formları olduğu öne sürülmektedir. İç motivasyon egzersize eğlence veya keyif amaçlı serbestçe bağlılık olarak tanımlanır (Deci & Ryan, 1985). Dış motivasyon bir aktiviteyi sonuç odaklı gerçekleştimekle ilintilidir (örn. övgü veya ödüller). Gerekçesizlik ise bir aktiviteye katılmak için yeterli miktarda motivasyon olmaması olarak belirtilir (Deci & Ryan, 1985). İç motivasyonun dış motivasyona göre daha çok "öz belirlenim" ürünü olduğu farzedilmektedir (Deci & Ryan, 1985). Araştırmalara göre egzersizlere daha çok "öz belirlenim" ürünü motivasyonla katılım gösteren yetişkinler, dış motivasyonla katılım gösteren yetişkinlere göre düzenli katılıma daha eğilimlidirler (Chatzisarantis & Biddle, 1998; Landry & Solmon, 2004;

Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Önceki çalışmalar erkeklerde daha çok dış motivasyon ve gerekçesizlik düzeyi saptarken, kadınlarda daha yüksek derecede iç motivasyon düzeyi göstermiştir (Li, 1999).

"Öz belirlenim" kuramının alt boyutlarından biri de "egzersizde temel psikolojik ihtiyaçlar" olarak adlandırılır ve bu boyutta üç psikolojik ihtiyaç tanımlanır: bağımsızlık ihtiyacı, yeterlilik ihtiyacı ve ilintililik ihtiyacı (Ryan & Deci, 2000).

Deci ve Ryan'a (2002) dayanarak, temel psikolojik ihtiyaçlar yalnızca içsel doyumla değil, gerçekleştirilmesi sonucunda büyüme ve gelişmeye, özerk motivasyonda artışa ve refah sağlamaya sebep olacak arzu ve hedeflerle de ilgilidir.

Katılımcının davranışına etki eden içsel faktörlerin yanı sıra, dış faktörler de katılımcıların hayat tarzlarına aktiviteyi entegre etmelerine olanak sağlayabilir veya önleyebilir (Deci & Ryan, 2002). Spor merkezlerinde, eğitmen ve katılımcılar birbirleriyle yakınlaşıp ilişki kurarlar. Katılımcılar eğitmenlere sorular sorarak onların bilgilerinden ve deneyimlerinden faydalanmalıdırlar ve eğitmenler de bilgi ve deneyimlerini katılımcılara öğretmeli ve paylaşmalıdırlar (Antonini, Philippe & Seiler, 2006). Katılımcıların çevreleri hakkındaki algıları motivasyonlarının şekillenmesi açısından önemlidir. Eğer çevrelerini daha özerklik destekçisi bulurlarsa kendilerini kontrol ediliyormuş gibi hissetmek yerine daha bağımsız hissedeceklerdir (Gagne, 2003). Dahası, özerkliğin koçlar, fitness eğitmeni ve akranlar gibi farklı faktörler tarafından desteklendiği algısı, sağlık odaklı program katılımcılarının üç psikolojik ihtiyacını içselleştirmesine yardım edebilir (Ryan & Deci, 2000).

Düzenli fiziksel aktivite ile egzersiz değişim basamakları arasındaki ilişki, birçok araştırmada tartışma konusu olmuştur (Mullen, Markland & Ingledew, 1997; Landry & Salmon, 2004). Birçok deneysel çalışmaya göre, değişimin daha üst basamaklarında olan kişiler daha yüksek iç motivasyona sahipken değişimin daha alt basamaklarda olan kişiler daha çok dış motivasyonun etkisi altındadır (Markland & Ingledew, 1997; Landry & Salmon, 2004; Rose, Parfitt & Williams, 2005).

Egzersiz değişim basamaklarına ek olarak, katılım sıklığını bilmek de egzersize katılım davranışlarını anlamamızda çok önemlidir. Üniversite öğrencileri hakkında

bir araştırmada, egzersize katılım sıklığı farklı aktivite türlerine göre değerlendirilmiştir (örn. Aerobik, yüzme ve ağırlık kaldırma). Sonuçlara göre daha yüksek katılım sıklığına sahip öğrenciler daha düşük katılım sıklığına sahip öğrencilere göre daha yüksek iç motivasyon göstermişlerdir (Li, 1999).

Fiziksel aktiviteye katılım davranışları hakkında daha fazla bilgi edinmek adına, aktivite türü ve meslek türü temel faktörlerden olabilir. Farklı meslek türlerinin yarattığı iş atmosferlerinin insanların üç temel psikolojik ihtiyacını doyurarak motivasyonuna etki edebileceği bazı çalışmalarda öne sürülmektedir (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Buna göre, farklı meslek türleri, katılımcıların psikolojik ihtiyaçlarına farklı etkilerde bulunabilir. Bu da kişinin üç psikolojik ihtiyacındaki doyumu kişinin hislerini destekleyerek veya kontrol altına alarak artırmak veya azaltmak anlamına gelmektedir.

Wilson ve diğerleri (2003)'nin iddiasına göre "öz belirlenim" ile katılım, sosyal şartlar ve aktivitenin türü bağlantılıdır. Bu da demektir ki, algılanan özerklik desteği ve temel psikolojik ihtiyaçlar sosyal şartların değer ve normlarına göre değişebilir.

Yukarıda belirtlien savlar dikkate alarak, bu çalışmanın amacı sağlık için fiziksel aktivite programına katılan kadınların algıladıkları özerklik desteğini ve temel psikolojik ihtiyaçlarının karşılanma düzeyini egzersiz değişim basamakları, tercih edilen fiziksel aktiviteler, katılım sıklığı ve meslek türüne göre WHP ortamında incelemektir.

Çalışmaya aşağıdaki araştırma soruları yön vermiştir.

1. Üniversite ortamında sağlık için fiziksel aktivite programı katılımcılarının algıladıkları özerklik desteği düzeyi nedir?

   Alt soru 1.1. Katılımcıların egzersiz ortamında algıladıkları özerklik desteği düzeyi egzersiz değişim basamaklarına göre farklımıdır?

   Alt soru 1.2. Katılımcıların egzersiz ortamında algıladıkları özerklik desteği düzeyi tercih ettikleri egzersiz türüne göre farklımıdır?

Alt soru 1.3. Katılımcıların egzersiz ortamında algıladıkları özerklik desteği düzeyi egzersize haftalık katılım sıklıklarına göre farklımıdır?

Alt soru 1.4. Katılımcıların egzersiz ortamında algıladıkları özerklik desteği düzeyi mesleklerine göre farklımıdır?

2. Üniversite ortamında sağlık için fiziksel aktivite programı katılımcılarının algıladıkları temel psikolojik ihtiyaçların karşılanma düzeyi nedir?

Alt soru 2.1. Katılımcıların egzersiz ortamında algıladıkları temel psikolojik ihtiyaçların karşılanma düzeyi egzersiz değişim basamaklarına göre farklımıdır?

Alt soru 2.2. Katılımcıların egzersiz ortamında algıladıkları temel psikolojik ihtiyaçların karşılanma düzeyi tercih ettikleri egzersiz türüne göre farklımıdır?

Alt soru 2.3. Katılımcıların egzersiz ortamında algıladıkları temel psikolojik ihtiyaçların karşılanma düzeyi egzersize haftalık katılım sıklıklarına göre farklımıdır?

Alt soru 2.4. Katılımcıların egzersiz ortamında algıladıkları temel psikolojik ihtiyaçların karşılanma düzeyi mesleklerine göre farklımıdır?

Bu çalışmada anketle veri toplama yöntemi kullanılmıştır. Çalışma Orta Doğu Teknik Üniversitesi (ODTÜ), spor müdürlüğü, sağlık için fiziksel aktivite programı katılımcıları üzerinde yapılmıştır. ODTÜ spor müdürlüğü, sağlık için fiziksel aktivite programı altında bu çalışma sürecinde üniversite öğrencileri, idari personel ve akademik personel için Latin aerobik, zumba, serbest stil tempo, serbest stil dövüş, yüksek-alçak ayrobik, step, power step, tam-vücut pilates, fizyo-jimnastik ve yoga

dersleri sunmuştur. 2013-2014 ilkbahar döneminde bu gruplara katılım gösteren toplam kişi sayısı 1697'dir.

Veriler, çalışmaya katılmaya gönüllü olan toplam 175 kadın zumba, power step, pilates, serbest stil tempo, serbest stil dövüş, yoga ve tam vücut grupları katılımcılarından toplanmıştır. Latin aerobik, zumba, power step, tempo, serbest stil dövüş ve tam vücut gruplarında, ana sağlık için fiziksel aktivite vurgusu aerobik dayanıklılık üzerindedir. Yoga ve pilates'te ise ana vurgu kas dayanıklılığı ve esneklik üzerindedir. Örneklemin 134'ü öğrenci, 23'ü akademik personel, 18'i de idari personeldir.

Veri toplama amacı ile üç anket kullanılmıştır: (1) Egzersiz düzenlemesi için algılanan özerklik desteği ölçeği (PASESS), (2) Egzersiz düzenlemesinde temel psikolojik ihtiyaçlar anketi (BPNES) ve (3) Fiziksel aktivite değişim basamakları anketi (PSDCQ).

Egzersiz düzenlemesi için algılanan özerklik desteği (PASES) ölçeği egzersiz düzenlemesinde sağlık için fiziksel aktivite eğitmenlerinin sağladığı katılımcılar tarafından algılanan özerklik desteğini ölçmek için kullanılır ve Hagger, Chatzisarantis, Hein, Pihu, Soos ve Karsai (2007) tarafından geliştirilmiştir. Bu ölçek 12 maddeden oluşan, tek boyutlu bir ölçektir. 7'li likert ölçeğine göre puanlanmaktadır.

Egzersiz düzenlemesinde temel psikolojik ihtiyaçlar ölçeği (BPNESS) Vlachopoulos ve Michailidou (2006) tarafından geliştirilen bir özbildiri aracıdır. Egzersiz şartlarında özerklikle ilgili psikolojik ihtiyaçlar (4 madde), yeterlilik (4 madde) ve ilintililik (4 madde) konularının ne kadar tatmin edildiğini ölçmek için toplamda 12 maddeden oluşmuştur (Ryan & Deci, 2000). Ölçek 5 puanlık bir likert ölçeğidir. Kültürler arası güvenilebilirlik ve geçerliliği daha önce başka çalışmalarda gösterilmiştir (Vlachopoulos & Michailidou, 2009).

Fiziksel aktivite değişim basamakları anketi, katılımcılıların fiziksel aktiviteye katılım niyetlerini değerlendirmek için kullanılmıştır. Bu anket Marcus, Selby, Niaura ve Rossi (1992) tarafından geliştirilmiştir. Katılımcılar her soruya fiziksel

aktiviteye katılım durumlarına göre evet veya hayır cevaplarını verirler. Anket katılımcıları sıralama algoritmasına göre beş farklı gruba ayırmaktadır: Eğilim öncesi (problemli davranışlarından habersiz ve bir aktivitede yer almak konusunda niyetsiz), Eğilim (6 ay içinde davranış biçimini değiştirmek konusunda niyetlenmiş ancak halihazırda aktiviteye katılmıyor), Hazırlık (bir aktivitenin parçası olmaya niyetli ve henüz başlamış veya başlamak üzere), Eylem (davranış biçimi değişmiş ve kişi 1 gün'den 6 ay'a kadar bir aktiviteye dahil olmuş) ve Sürdürme (6 aydan daha uzun bir süredir bir aktiviteye devam halinde olmak). Türk diline Cengiz, Asci ve Ince (2010) tarafından uyarlanmıştır.

Veri analizi için öncelikle tanımlayıcı istatistikler gerçekleştirilmiş sonrasında ortalamalar ve standart sapmalar hesaplanmıştır. İlk dört soru ANOVA ile analiz edilmiştir, ikinci set 4 alt soru ise MANOVA ile analiz edilmiştir ($p<.05$).

Bulgular özerklik desteği algısının egzersiz değişim basamaklarına göre anlamlı bir şekilde farklı olduğunu ortaya koymuştur ($p<.05$). Daha ileriki analiz sadece Eylem aşamasında olan katılımcıların Eğilim aşamasında olanlardan daha yüksek algılanan özerklik desteğine sahip olduğunu göstermiştir ($p<.05$). Algılanan özerklik desteği ile katılımcıların fiziksel aktivite tercihleri, haftalık katılım sıklıkları ve iş türleri arasında anlamlı fark saptanmamıştır. ($p>.05$). Egzersizde temel psikolojik ihtiyaçlar ile ilgili bulgular katılımcıların aktivite tercihi ve iş türüne göre anlamlı fark olduğunu ortaya çıkarmıştır ($p<.05$). Aerobik fiziksel aktivite katılımcıları, kas dayanıklılığı ve esneklik aktiviteleri katılımcılarına göre daha yüksek egzersizde algılanan temel psikolojik ihtiyaç puanlarına sahiptirler ($p<.05$). Bu iş türleri arasında, idari işlerde çalışan personel, öğrencilerin puanlarından daha yüksek egzersizde algılanan temel psikolojik ihtiyaç puanlarına sahiptir. Egzersizde temel psikolojik ihtiyaçları puanlarında öğrenci ve akademik personel ve akademik personel ve idari personel arasında anlamlı bir fark bulunmamıştır. Fakat egzersizde algılanan temel psikolojik ihtiyaçlar ile katılımcıların egzersiz değişim basamakları ve aktivitelere haftalık katılım sıklığı arasında anlamlı bir fark yoktur ($p>.05$). Sonuç olarak, katılımcıların algıladıkları özerklik desteği egzersiz değişim basamaklarına göre; egzersizde temel psikolojik ihtiyaçların karşılanma düzeyi ise tercih ettikleri

fiziksel aktivite ve iş türüne göre farklılık göstermektedir. Sağlıkla ilgili fiziksel aktivite programlarını sunanlar ve eğitmenler; sağlıkla ilgili fiziksel aktivite katılımcısı olan kadınların ihtiyaçlarını karşılamak için algılanan özerklik desteği ve temel psikolojik ihtiyaçları egzersiz değişim basamakları, tercih edilen fiziksel aktivite ve iş türüne göre değerlendirmelidirler.

APPENDIX E: TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ■

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı: SHABNAM

Adı : MEHRTASH

Bölümü: Beden Eğtimi ve Spor- Physical Education and Sports

TEZİN ADI (İngilizce): WOMEN HEALTH-RELATED PHYSICAL ACTIVITY PROGRAM PARTICIPANTS' PERCEIVED AUTONOMY SUPPORT AND BASIC PSYCHOLOGICAL NEEDS IN EXERCISE AT A UNIVERSITY SETTING

TEZIN TÜRÜ

Yüksek Lisans ■ Doktora ☐

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. ☐

2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ■

3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

Yazarın imzası Tarih