THE ASSOCIATION BETWEEN PHYSICAL ACTIVITY PARTICIPATION AND SOCIAL CAPITAL, PHYSICAL SELF PERCEPTIONS AMONG ADOLESCENTS: CASE OF ESKİŞEHİR URBAN

Ph.D. DISSERTATION

Günay Yıldızer

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Günay YILDIZER

Ph.D. DISSERTATION

Department of Physical Education and Sports

Supervisor: Prof. Dr. İlker YILMAZ

Eskişehir

Anadolu University

Graduate School of Health Sciences

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Unvanı-Adı Soyadı		İmza
Üye (Tez Danışmanı)	: Prof. Dr. İlker YILMAZ	
Üye	: Prof. Dr. Gıyasettin DEMİRHAN	
Üye	: Prof. Dr. Bülent AĞBUĞA	
Üye	: Dr. Öğr. Üyesi Dilek YALIZ-SOLMAZ	
Üye	: Dr. Öğr. Üyesi Veli Onur ÇELIK	

Prof. Dr. Nalan GÜNDOĞDU-KARABURUN

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Committee Members		Signature
Member (Supervisor)	: Prof. Dr. İlker YILMAZ	
Member	: Prof. Dr. Gıyasettin DEMİRHAN	
Member	: Prof. Dr. Bülent AĞBUĞA	
Member	: Assist. Prof. Dr. Dilek YALIZ-SOLMAZ	
Member	: Assist. Prof. Dr. Veli Onur ÇELIK	

Prof. Dr. Nalan GÜNDOĞDU-KARABURUN

Director

Graduate School of Health Sciences

ÖZET

ADÖLESANLARDA SOSYAL SERMAYE, FİZİKSEL BENLİK ALGISI VE FİZİKSEL AKTİVİTE ARASINDAKİ İLİŞKİ: ESKİŞEHİR KENT MERKEZİ ÖRNEĞİ

Günay YILDIZER

Beden Eğitimi ve Spor Anabilim Dalı
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Danışman: Prof. Dr. İlker YILMAZ

Bu çalışmanın amacı, Eskişehir kent merkezinde yaşayan adölesanların, fiziksel aktiviteye katılımları ile algıladıkları sosyal sermaye desteği, fiziksel benlik algısı, gelir düzeyi, vücut kitle endeksi ve ebeveyn eğitim düzeyleri arasındaki ilişkinin araştırılmasıdır. Çalışmaya 14-18 yaş arasında, öğrenimlerine Eskişehir kent merkezinde devam eden 568 kız ve 659 erkek adölesan katılmıştır. Uluslararası Fiziksel Aktivite Anketi-Kısa Formu, Adölesanlar için Sosyal Sermaye Ölçeği, Fiziksel Benlik Envanteri veri toplama araçlarıdır. Gelir düzeyleri ile ebeveyn eğitim durumları veli onam formları aracılığıyla toplanmıştır. Genel fiziksel aktiviteye katılım (GFAK) ve orta-yüksek şiddetli fiziksel aktiviteye katılım (OYŞFAK) ikili bağımlı değişken olarak ki-kare ve ikili lojistik regresyon testlerine dâhil edilmiştir. Ki-kare test sonuçlarına göre erkekler GFAK ve OYŞFAK'ta kız adölesanlara göre daha fazla katılım oranı göstermektedir, p=0.000. Adölesanlarda fiziksel dayanıklılık ve spor yeteneği algıları ile gelir GFAK ve OYŞFAK ile pozitif ilişkilidir. Uzak aile sosyal sermayesi OYŞFAK ters yönlü ilişkilidir. Kız öğrenciler için yakın aile sosyal sermayesi ile GFAK ters yönlü bir ilişkiye sahipken, spor yeteneği algısı GFAK ve OYŞFAK ile pozitif ilişkilidir. Gelir durumu kadın adölesanlarda OYŞFAK ile pozitif ilişkilidir. Erkek adölesanlar için ise fiziksel kuvvet algısı ile gelir durumu GFAK ile pozitif; fiziksel dayanıklılık algısı OYŞFAK ile pozitif, uzak aile sosyal sermayesi ise ters yönlü ilişkilidir. Bu sonuçlar ışığında Eskişehir şehir merkezinde yaşayan adölesanların sosyal sermaye algısının çeşitli alt boyutlarının fiziksel aktivite davranışını farklı şekilde yordadığı görülmektedir. Ayrıca benlik algısının geliştirilmesine yönelik uygulamalar fiziksel aktivite programlarına dâhil edilmelidir.

Anahtar Sözcükler: Fiziksel aktivite, Sosyal sermaye, Fiziksel benlik algısı, Adölesan sağlığı, Türkiye

ABSTRACT

THE ASSOCIATION BETWEEN PHYSICAL ACTIVITY PARTICIPATION AND SOCIAL CAPITAL, PHYSICAL SELF PERCEPTIONS AMONG ADOLESCENTS: CASE OF ESKİŞEHİR URBAN

Günay YILDIZER

Department of Physical Education and Sports
Anadolu University, Graduate School of Health Sciences, October 2018

Supervisor: Prof. Dr. İlker YILMAZ

The aim of this study was to investigate the association of physical activity participation with social capital, physical self-perception, body-mass index, family income, and parental educational status. Participants of the study were 568 female and 659 male adolescents who live in Eskişehir urban. Short form of International Physical Activity Questionnaire, Social Capital Scale for Adolescents and Physical Self-Inventory were used as data collection tool. Income and parental educational attainment status were collected via parental consent forms. Overall physical activity participation (OPAP) and moderate to vigorous physical activity participation (MVPAP) were analyzed as dichotomous dependent variables. Chi-square and binomial logistic regression tests were used. Chi-square test results indicated that males' participation rate was significantly higher than females in OPAP and MVPAP, p=0.000. Physical condition, sport competence, and income were directly associated with OPAP and MVPAP, while distant family social capital was inversely associated with MVPAP. The distant family social capital was inversely, and sport competence was directly associated with OPAP for females. Sport competence and income were directly associated with MVPAP for females. For male adolescents, physical strength and income were directly associated with OPAP. The distant family social capital was inversely, and physical condition was directly associated with MVPAP for male adolescents. These results suggest that various aspects of social capital were associated with physical activity participation among Turkish adolescents. Moreover, implementation addressing physical self-perception should be included in physical activity interventions.

Keywords: Physical activity, Social capital, Physical self-perception, Adolescent health, Turkey

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Bu tezin bana ait, özgün bir çalışma olduğunu; çalışmamın hazırlık, veri toplama, analiz ve bilgilerin sunumu olmak üzere tüm aşamalarında bilimsel etik, ilk eve kurallara uygun davrandığımı; bu çalışma kapsamında elde edilen tüm veri ve bilgiler için kaynak gösterdiğimi ve bu kaynaklara kaynakçada yer verdiğimi; bu çalışmanın Anadolu Üniversitesi tarafından kullanılan "bilimsel intihal tespit programı"yla tarandığını ve hiçbir şekilde "intihal içermediğini" beyan ederim. Herhangi bir zamanda, çalışmamla ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçlara razı olduğumu bildiririm.

Günay YILDIZER

05/10/2018

STATEMENT OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES

I hereby truthfully declare that this dissertation is an original work prepared by me; that I have behaved in accordance with the scientific, ethical principles and rules throughout the stages of preparation, data collection, analysis, and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study, and included these sources in the references section; and that this study has been scanned for plagiarism with "scientific plagiarism detection program" used by Anadolu University, and that "it does not have any plagiarism" whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.

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LIST OF ABBREVIATIONS

BMI : Body Mass Index

CFA : Confirmatory Factor Analyses

CFI : Comparative Fit Index

CI : Confidence Interval

df : Degrees of Freedom

EFA : Exploratory Factor Analyses

GFAK : Genel Fiziksel Aktiviteye Katılım

GFI : Goodness of Fit

IFI : Incremental Fit Index

IPAQ : International Physical Activity Questionnaire

MET : Metabolic Energy

MVPAP : Moderate to Vigorous Physical Activity Participation

NNFI : Non-Normed Fit Index

OECD : Organisation for Economic Co-operation and Development

OPAP : Overall Physical Activity Participation

OR : Odds Ratio

OYŞFAK : Orta Yüksek Şiddetli Fiziksel Aktiviteye Katılım

p : Probability Value

R^2 : R-Squared

RMSEA : Root Mean Square of Error of Approximation

SC : Social Capital

TLI : Tucker-Lewis Index

VIF : Variance Inflation Factor

WHO **:** World Health Organization

x^2 **:** Chi-Square

β **:** Beta

1. INTRODUCTION

Physical activity is defined as any body movement that results in energy expenditure using skeletal muscles (Caspersen et al., 1985, p. 126), and it is an important factor in preventing chronic health problems such as cardiovascular diseases, diabetes, and various types of cancer (Kyu et al. 2016, p. 6). Physical activity is not only important to prevent health problems, but also contributes significantly to the maturation, growth and behavioral development of children and adolescents (Strong et al., 2005, p. 736). Although it has been emphasized that overall physical activity that expresses any bodily movement for adolescents is effective in enhancing health status, participation in moderate to vigorous physical activity in daily basis would result in more positive health outcomes (Nader et al., 2008, p. 708).

Even though the benefits of participation in physical activity are well explained by experimental and epidemiologic studies, the increase in the sedentary lifestyle, which defines physical inactivity, is now a major health problem (Merkur, Sassi, and Mcdaid, p. 17). The problems brought by the sedentary lifestyle are not limited to health, but there are also economic consequences. Annually, billions of dollars are spent on the treatment of emerging health problems (Ding et al., 2016, p. 1311).

According to the report of the World Health Organization (WHO, 2014, p. 178), 27% of adult men and 37% of adult women in Turkey are not physically active in a sufficient level. When these ratios are examined for adolescents between the ages of 11-18, it is reported that 77.8% of males and 86.9% of females are not physically active (WHO, 2014, p. 183). Heitzler et al. (2011, p. 458) stated that health-related behavior patterns acquired during the adolescence period constitute the basis for adulthood health and behavior during adulthood. However, the decline of physical activity during the adolescence period has been previously demonstrated (Kimm et al., 2002, p. 711; Brodersen et al., 2007, p. 114). In light of this information, the difference between adult and adolescent physical activity participation rates seen in Turkey can be interpreted as augmentation of health problems related to lack of physical activity in Turkish society in the future. This can be also seen as a sign that the economic burden of health spending caused by a sedentary lifestyle may increase.

Researchers addressed many factors for improving physical activity participation for various populations. For example; logistic factors like socio-economic status,

facilitating factors such as physical fitness level, and personal factors such as orientation and attitude are claimed to be an important in physical activity promotion model specifically developed for youths (Welk, 1999, p. 12). The socio-economic status of an individual is a factor directly affecting health-related behaviors by being a structure that covers all of these factors (Pampel, Krueger and Denney, 2010, p. 349). Moreover, another important component of the theoretical sub-structure of the physical activity promotion model for youth is family, peer and teacher support, which are considered as supporting factors (Welk, 1999, p. 13). Another theory that explains in more detail the supporting factors that can be addressed under the heading of social determinants of health is a social capital theory. Social capital is, by its simplest definition, the trust, cooperation, and norms that show the quantities of the relationships people build (Field, 2006, p. 15). In order to improve health-related behaviors among various populations, it is important to explicate the association between social capital perceptions and physical activity participation.

Physical activity behavior is multifaceted structure, and the determinants of this multifaceted structure are not limited to social aspects of the behavior. In addition to social capital theory, psychological components are also important in physical activity participation. Thus, the physical description of one's self is also a directly related factor in participating in physical activity (Marsh and Redmayne, 1994, p. 43). More and more, it is emphasized earlier that social and psychological variables should be considered together in describing physical activity behavior in a more holistic structure (Trost et al., 2001, p 828). In this context, explicating the associations between physical activity participation and various social and psychological factors determining health-related behaviors is aimed in this study to propose solutions for the problems of the low physical activity participation in Turkey.

Previous studies examined the association between solely social capital indicators and health outcomes among adolescents. However, adolescence is a period in which rapid physical, social and psychological changes occurring at the same time. Therefore, it is important to investigate the association between health-related behaviors and both physical, social and psychological structures in the same model. Lastly, the literature indicates studies investigating social capital and health outcomes have been conducted in developed, high-income countries, and there is a lack of information related to the population from developing countries those from different cultures.

1.1. Purpose of the Study

The aim of this study is to examine the association of physical activity participation (overall and moderate to vigorous) with social capital perceptions, physical self-perception of adolescent individuals attending high school in the city center of Eskişehir. Moreover, this study aimed to examine the association between physical activity behavior and social, physical and psychological structures that are rapidly changing during adolescence. This study also aimed to present an information, focusing on the association between health-related behavior and social capital perception in developing country context. Moreover, socio-economic status, BMI and parental educational attainment were taken into account as covariates in the analyses. To reach these aims, the following research questions were examined:

- Is there a significant difference between adolescents' participation in physical activity depending on the gender variable?
    - Is there a significant difference between the participation of adolescents in overall physical activity depending on the gender variable?
    - Is there a significant difference between adolescents' participation in moderate to vigorous physical activity depending on the gender variable?
- Is there an association between adolescents' social capital and physical self-perception, BMI, family income, parental education level and participation in physical activity?
    - Is overall physical activity participation associated with social capital, physical self-perceptions, BMI, family income and parental education level among female adolescents?
    - Is moderate to vigorous physical activity participation associated with social capital, physical self-perceptions, BMI, family income and parental education level among female adolescents?
    - Is overall physical activity participation associated with social capital physical self-perceptions, BMI, family income and parental education level among male adolescents?
    - Is moderate to vigorous physical activity participation associated with social capital, physical self-perceptions, BMI, family income and parental education level among male adolescents?

1.2. The Significance of the Study

Effective and healthy people are needed for the use of human capital for development. However, the sedentary lifestyle that negatively affects the character and length of human life is an obstacle to this. Insufficient level and participation of physical activity in Turkish people from all ages, which bring about negative health consequences as well as an economic burden, urge on the need of investigation of physical activity behavior of Turkish community.

Report of Turkey Statistical Institute (http-1), namely "Causes of Death Statistics in Turkey" indicated reasons of deaths occurring in Turkey for the last three years, and the top reasons were the heart and circulatory system diseases, metabolic diseases and cancer, which were proven to associated with the insufficient physical activity level. The results of the national and international studies have also revealed the inadequacy of physical activity in Turkish society. This problem, which is also common among adolescent individuals, describes the deterioration of health in the statistics to be put forth in the coming years. As a result, while the rate of utilization of human capital is decreasing, the economic burden for treatment can be expected to increase.

Chronic illnesses due to lack of physical activity, deaths caused by these diseases and expenses for the treatment of diseases are a great burden on the state and the private sector. Hence, examination of the factors determining the participation of physical activity among adolescents in Turkish society and presenting it in details are important in terms of community health, as well as economic burden caused by health issues. When the issue is addressed in a wider perspective, the studies in which the basic factors involved in participation patterns in physical activity examined together are limited. Moreover, previous studies examining the association between social capital and physical activity are mainly limited to societies in developed countries such as the United States, Japan, and European countries. In a society such as Turkey carry out this study is important in terms of international literature to reveal the possible associations in developing country context.

1.3. Assumptions of the Study

In the scope of this study, the following assumptions were accepted.

- The information given by parents related to income and educational level were assumed to accurate and current.
- The information given by adolescents to questionnaires were assumed to accurate.

1.4. Limitations of the Study

This dissertation is limited to the following situations.

- Adolescents participating in the study are between the ages of 14-18.
- The dissertation is limited to individuals who are studying in the provinces of Tepebaşı and Osmangazi in the city center of Eskişehir.
- The misreporting that may arise from the personal statement is also accompanied by a limitation.

2. LITERATURE

2.1 The Association between Physical Activity and Health

The economic share of health researches is enormous due to the fact that health is the common passion of humankind and the most basic human need (Marmot, 2007, p. 1153). Factors determining health status are listed as social and economic factors such as income and education; hereditary related factors; environmental, personal and family circumstances, the environment in which people live and work, and accessibility to health services (WHO, 2008, p. 3). Among these factors, physical activity, which is emphasized as personal health-related behavior, has been shown to be directly related to health status (Warburton, Whitney-Nicol, and Bredin, 2006, s. 801, Bouchard, Blair and Haskell, 2012, p. 16) and reflecting a life preferences of individuals (Welk, Eisenmann and Dollman, 2006, p. 667). In most basic manner, physical activity is defined as any body movement that causes more energy expenditure than the resting state by the skeletal muscles (Caspersen et al., 1985, p. 126; Bouchard, Blair, and Haskell, 2012, p. 12).

Physical activity can be performed for a variety of purposes, such as a leisure time activity, professional reasons, or transportation, and WHO suggested a physical activity to prevent chronic diseases and decrease the inclination of development of some diseases and to provide a better quality of life (WHO, 2010, p. 10). Many diseases from various medical disciplines are directly related to physically active or inactive life preferences. For example, regular participation in physical activity was indicated as an important factor in the prevention of various diseases and disorders such as cardiovascular problems, cancer types, diabetes, obesity, osteoporosis, mobility problems, depression and emotional stress (Kruk, 2007, p. 325). Although physical activity as a preventive health practice is attracting attention in reducing health problems, it is not only important for preventing diseases but improving health status by promoting enhanced cardiovascular, immune system and mental health.

Physical activity is an important factor in the prevention of cardiovascular diseases (Kyu et al., 2016, p. 9), which were also noted as leading death reasons in Turkey. Paffenbarger et al. (1986, p. 610), one of the earliest studies on this subject, suggests that those who continue to participate in a physical activity after college sports have a more advanced cardiovascular system at a later age and that the risk of heart disease is lower. In line with this, Arem et al. (2015, p. 966) also emphasized that individuals carrying out the recommended level of physical activity have increased the probability of being protected from cardiovascular diseases.

A considerable amount of the health spending is devoted to cancer research. As it is in cardiovascular system-related disorders, regular participation in physical activity is important in the prevention of various types of cancer (Cerhan et al., 2004, p. 1119). Katzmarzyk et al. (2009, p. 998) emphasized that regular participation in physical activity has a great influence on reducing cancer-related deaths. Ballard-Barbash et al. (2012, p. 837) reached a conclusion that participation in physical activity significantly reduced mortality from breast and colon cancers. In their review compiled 48 articles, Monninkhof et al. (2007, p. 152) concluded that participation in physical activity was 20-80% effective in decreasing the risk of breast cancer developing after menopause. Kyu et al. (2016, p. 5) emphasized the importance of participating in physical activity at a certain level in order to avoid the risk of colon and breast cancer.

Physical activity is also seen as an important life preference for preventing metabolic disorders. For example, regular participation in physical activity has positive effects in prevention of diabetes, which is one of the most common health problems in modern society. Studies that have focused on the relationship between participation in physical activity and type 2 diabetes emphasize that these two variables were inversely associated (Jonker et al., 2006, p. 38). To illustrate, Aune et al. (2015, p. 533) reported that participation in physical activity for 7 hours per week is of great importance in reducing the risk of diabetes. The results of the meta-analysis of Kyu et al. (2016, p. 1) stated the minimum weekly expenditure of 600 MET reduced the incidence of diabetes by at least 2%. The same study also emphasized that increasing physical activity level may reduce the risk of developing diabetes mellitus by 19%.

Chronic and metabolic health issues, which are highly associated with each other, also negatively affect the body mass index (BMI). For example, obesity has previously been linked to diabetes, cancer, and cardiovascular disease (Yoshimoto et al., 2013, p. 97, Lu et al., 2014, p. 976, Ungefroren et al., 2015, p. 7). In addition, Vásquez et al. (2014, p. 1038) reported that obesity is an important factor limiting daily functional activity in their study conducted on 5000 adults. Positive effects of physical activity practices on body composition have been proven both among children (Reilly et al., 2006, p. 1043) and adults (Ross et al., 2000, p.100; Chomistek, Shiroma and Lee, 2016, p. 417).

Participation in physical activity does not only affect physiological components, but it also affects the cognitive and psychological processes. For example, studies stressed that participation in physical activity does not only have a positive effect on weight control but also positive outcomes in cognitive processes on adult women (Katz et al., 2012, p. 507) and elders (Naples et al., 2014, p. 192). More and more, Donnely et al.

(2016, p. 1205) examined an ample number of studies and had indicated that a physically active life is positively related to cognitive processes.

When the health issue is considered as a whole, and various physiological systems are thought to function as a whole, the positive effect of the active lifestyle indicating deliberate physical activity participation is not limited to specific health outcomes in an individual perspective. The positive effect of a physically active lifestyle will be reflected in all the functions of the person in his daily life. Increasing metabolic energy expenditure through physical activity and accelerating metabolism does not only affect individual health but also public health.

In terms of epidemiology, the health of the people who constitute the society develops the health of the society. Eriksen (2001, p. 571) considered a lack of physical activity as one of the major reasons for the high mortality rates. Lee et al. (2012, p. 221) have reported that 6% of the increase seen in heart disease in the world, 7% of the increase in diabetes, and 10% of the increase in breast and colon cancer are due to inadequate physical activity. According to the results of the same study, among the total 57 million deaths in the world in 2008, 5.3 million deaths are directly related to inadequate physical activity-related diseases (Lee et al., 2012, p. 227). Mokdad et al. (2004, p. 1240) emphasized that the rate of physical inactivity associated deaths was 16.6% in the United States in 2000, and this was the second highest rate after cigarette use, which accounted for 18.1%. Garrett et al. (2004, p. 307) reported that 31% of spending on colon cancer, osteoporosis and various cardiovascular diseases among 1.5 million Americans is associated with the inadequate physical activity.

Kruk (2007, p. 326) calculated the economic burden of this situation, and the total annual expenditure for the six health problems associated with a sedentary lifestyle in America was 83.6 million US dollars. Similarly, Ding et al. (2016, p. 1311) calculated that the health problems caused by not being physically active in 2013 created an economic burden of 53.8 billion dollars on the health system. The results of the same study indicated that public founds covers the 77% and private sector covers the 23% of this economic burden in Turkey (Ding et al., 2016, p. 1320). In this context, participation in physical activity is an important factor not only in health but also in reducing the economic burden engendered by health problems.

Children and adolescents can be seen as an important group for solving physical activity related health problems. Encouragement of physical activity among these groups

is valuable in ensuring the continuity of this attitude in adulthood (Halfon and Hochstein, 2002, p. 466). For this reason, the ongoing section examines the characteristics of the adolescent period and physical activity in this period.

2.2. The Association between Physical Activity and Health in Adolescence

The adolescence is defined as the period in which significant changes and the critical difficulties are experienced (Erikson, 1959, p. 164). DiClemente, Santelli, and Crosby (2009, p. 4) defined the adolescent period as the process by which physical, socio-cultural, psychological and cognitive changes are experienced rapidly. The adolescent period is divided into two phases as early adolescence (10-14 years) and late adolescence (15-19 years) (Fleming, 2010, p. 671). It is emphasized that health-related behaviors generally develop negatively in the adolescent period due to a rapid change process (Mahalik et al., 2013, p. 686). Currie et al. (2004, p. 55) described these health-related behaviors under the headings of self-evaluation of health, life satisfaction, and health complaints. When examined in more detail, it is seen that smoking, alcohol and drug use, physical activity and sedentary behaviors, eating habits, body image, weight, and weight control, body mass index, and sexual health subheadings are seen under these headings.

Studies evaluating positive health-related behaviors emphasize that the level of physical activity has a great proportion for youth health (Centers for Disease Control and Prevention, 2011, p. 25). Physical activity can be seen as an important health-related behavior and have positive outcomes on various health issues among adolescents. To illustrate, American Department of Health and Human Services (2008, p. vii) stated that regular physical activity supports bone and muscle development in children and adolescents; reduce the incidence of diabetes, certain types of cancer and diseases of the cardiovascular system, and obesity; reduce the symptoms related to depression and anxiety, and contributing to the academic performance of the students. In parallel with this information, Boreham and Riddoch (2001, p. 915) maintained that the incidence of chronic illness was lower in children and adolescents participating in the regular physical activity.

Experimental studies in this area have examined the effects of the level of physical activity on the metabolic output of adolescents. For example, Carnethon et al. (2005, p. 610) concluded that improved physical activity level has a positive effect on

cardiorespiratory physical fitness adolescents between the ages of 12-19 years of age. On the other hand, girls with lower physical fitness levels reported 1.83 times more likely to have hypercholesterolemia and 1.43 times higher rates of HDL-cholesterol than those with higher physical fitness levels. Other studies conducted in this context have reported similar results and have found that physical activity results in positive outcomes regarding metabolic values such as blood lipid, lipoprotein, and cholesterol levels in children and adolescents (Meyer et al., 2006, p. 1867).

Physical activity has been noted as an important contributor to cardiovascular health (Carnethon et al., 2005, p. 610). Dasqupta et al. (2006, p. 2665), as a result of six years of longitudinal study composed of 1267 high school aged adolescents; found a negative relationship between the self-reported weekly physical activity levels and the high systolic blood pressure. Thus, an increase in physical activity reduces the high systolic blood pressure. In addition to this result, the duration of the sedentary state was associated with high systolic blood pressure. Jago et al. (2006, p. 184) implemented physical activity intervention and concluded that increasing physical activity participation among adolescents has a high impact on blood pressure in positive ways.

Another popular research topic on metabolic processes associated with physical activity is the insulin tolerance among the adolescent population. Carrel et al. (2005, p. 966) emphasized that the physical fitness achieved by increasing the level of physical activity in obese adolescents positively affect body composition and insulin resistance. Meyer et al. (2006, p. 1869) also mentioned the positive effect of cardiovascular development on physical activity and insulin resistance. It is also worth to note that a considerable number of the studies on obesity and weight gain seem to be based on body mass index data and the level of physical activity reported by individuals or their families. More objective study that monitor the physical activity level of pediatric and obese adolescents with pedometer and accelerometer devices indicated the association between the increased level of physical activity and the cardiorespiratory physical fitness (Eisenmann et al., 2007, p. 16).

Ondrak and Morgan (2007, p. 594) have shown that regular physical activity participation among children and adolescents has positive effects on bone mineral density. Schneider et al. (2007, p. 25) showed that the increase in physical activity in adolescent girls positively affects bone health.

In addition to the physiological consequences, positive outcomes of physical activity have been demonstrated in the field of psychology. Brosnahan et al. (2004, p. 821) found that the increase in the level of physical activity led to a decrease in the level of stress in American adolescents. Park (2014, p. 5) indicated that physically active Korean adolescents had more sleep satisfaction and fewer stress levels.

The introduction of the idea that physical activity consciousness is so important to adolescent and community health. This situation has led to a proposal for the optimal physical activity level. The physiological process behind the health outcomes of physical activity can be explained by metabolic equivalents (METs) which indicates how much energy is consumed during an activity. In another word, the MET method is used to calculate the energy consumed during physical activity. A single MET describes 3.5 ml of oxygen that the individual consumes per kilogram of the body in the resting state (Miles, 2007, p. 318). Jansen and LeBlanc (2010, p. 12) stated that moderate-intensity activities, which result in energy expenditure of between 4-7 METs, and activities that are defined as high-intensity activities resulting in energy expenditure of 7 METs and above, recommended being made more frequently. Corbin, Pangrazi, and Masurier (2004, p. 281) emphasized that the increase in the level of physical activity is directly associated with the increase in health benefits. Blair, LaMonte, and Nichaman (2004, p. 918) emphasized that daily 30 minutes physical activity participation will produce positive health outcomes for individuals. Tremblay et al. (2011, p. 40) suggested that an individual of all ages should continue to participate in a physical activity for at least one hour a day and at least one day a week. It has been reported that children and adolescents will be able to stand clear of their various addictions (alcohol, smoking) by obtaining physical activity for at least one hour every day and they will obtain positive health benefits (Collingwood et al., 2000, p. 447). In the detailed review, Janssen and LeBlanc (2010, p. 13), indicated that these positive outcomes of physical activity are not due to a single type of exercise, but different types of exercises have different results.

In order to improve the individual physical activity level, the participation should be promoted. Moreover, as previously mentioned, encouragement of physical activity among adolescents is valuable in ensuring the continuity of this attitude in adulthood (Halfon and Hochstein, 2002, p. 466), in turn, might lead to better public health. Hence, the following section focuses on a model for encouraging physical activity participation among adolescents.

2.3. Physical Activity Promotion Model for Youth

There are many models have been developed to promote health through physical activity. The model created by Welk (1999, p. 51) proposes the determinants of participation in physical activity in a general framework by bridging the theoretical basis and practice for the participation of youth including adolescents. The components of the model are the enabling, the predisposing, the reinforcing, the personal, the perceptual, and demographic characteristics of the individual, depicted in Figure 2.1.

The physical activity promotion model for youth is seen as a comprehensive study involving different theoretical foundations and demographic variables. The most basic structure in relation to all other determinative factors in the model is individual characteristics. To illustrate, social epidemiological studies on the distribution of health status in the society maintain that adolescents' participation in physical activity is directly related to the socio-economic position (Adler et al., 1994, p. 15). Tate et al. (2015, p. 249) found that African American adolescents with low-socioeconomic status had significantly higher BMI than those of socio-economically advantageous groups. As emphasized earlier, Humbert et al. (2006, p. 472) shown that the socio-economic status is a direct factor in achieving physical activity opportunities, and in this way, the level of physical activity of young people is affected. Similar to socio-economic status previous researches indicate that sex, ethnic background, and age are important factors in physical activity participation among adolescents.

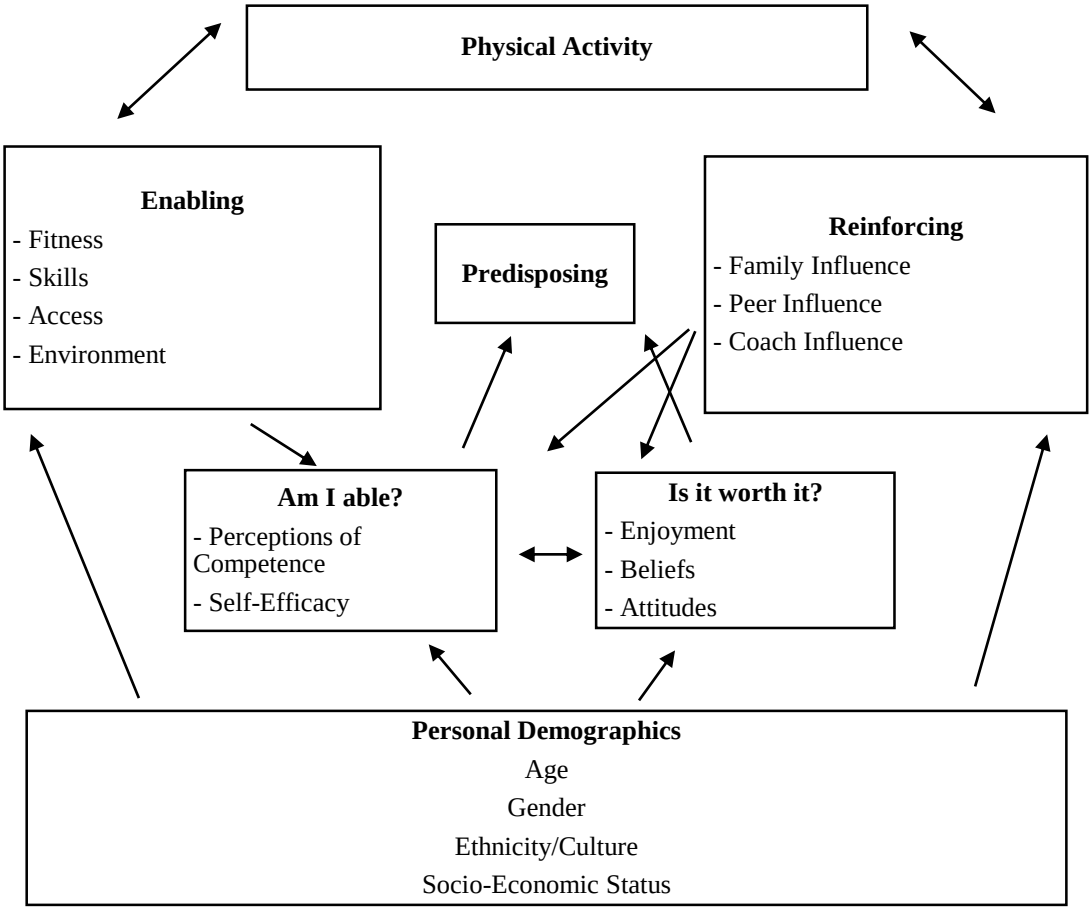

Figure 2.1. *Physical activity promotion model for youth (Welk, 1999, p. 12)*

Accessibility to physical activity programs such as transportation opportunities and summer camps, physical fitness levels of adolescents, physical skill levels, and physical environment are grouped under the heading enabling factors (Welk, 1999, p. 12). de Brujin et al. (2006, p. 510) showed that access to facilities influences physical activity in young people. In particular, Humbert et al. (2006, p. 476) emphasized that the socio-economic status is a direct factor in achieving physical activity opportunities, and in this way, the level of physical activity of young people is affected. Tate et al. (2015, p. 248), indicated that the development environment is significantly differentiated the weight and BMI values among adolescents by affecting the level of the physical activity. According to these results, it may conclude that the adolescents living in the cities have higher weight and BMI values than those living in the provinces. One of the main reasons for this is that the adolescents living in the provinces have to be more physically active in meeting the basic needs of transportation, as compared to those living in the cities. Thus, children and

adolescents would be more susceptible to risk factors due to the lack of enabling physical activity factors.

The factors that promote physical activity among children and young people by reinforcing the all kinds of social support adolescents receive from their social agents such as a teacher, family, coach, and friends were explicated as Reinforcing Factors (Welk, 1999, p. 12). Ammouri et al. (2007, p. 346) emphasized that social support is one of the essential factors for participation in physical activity. To illustrate, parents have a direct influence on the physical activity behavior of youth by role modeling and performing appropriate orientation tasks (Ornelas, Perreira and Ayala, 2007, p. 7). Kirby, Levin, and Inchley (2011, p. 789) have emphasized that support provided by family and friends is important to physical activity behavior of adolescents, especially in early adolescence. In line with these findings, Barkley et al. (2014, p. 404) found that 54% of the children participating in physical activity with peers were more active than those performing in physical activity alone.

Finally, based on the socio-cognitive theory, young people's experiences from their environment and the answers to the question "Am I Talented?" and "Is it worth?" are the conclusions of their ideas and peer observations, and these perceptions prepare the ground for physical activity. In this respect, youths' interactions with their social surroundings, their views on self-evaluations, the fun they experience, and the knowledge and attitudes they develop are important for physical activity behavior (Sallis, Prochaska and Taylor, 2000, p. 967). Welk and Schaben (2004, p. 74) also stressed that the competence perception might be a direct cause of participation in physical activity, emphasizing the importance of the question "Can I?". From this point of view, in addition to the social environment, physical self-perception can be considered to be an important part of this model.

The following sections are focused on social capital theory, indicating social interactions, and physical self-concept as an important factor for physical activity participation.

2.3.1. Social capital as a determinative factor on physical activity participation

The main theme of this dissertation is the associations between participation in physical activity and social capital perceptions, which is considered as a social

determinant of various health behaviors. Among the social determinants of health, "social capital" has a different characteristic from other determinants by being among the titles of both structural and intermediate determinants (Solar and Irwin, 2010, p. 6). Studies in the social sciences and social epidemiology show that the concept of social capital is one of the most important elements of community health (Kawachi et al., 1997, p. 1496; Saegert, Thompson and Warren, 2002, p. 166). The main reason for this situation is that human relations and their psychological and social consequences have an effective structure for health behaviors. In order to comprehend the association between social capital and health behaviors, it would be beneficial to understand the origin of the social capital.

The theory of social capital, which has great importance in understanding how people feel and behave in social networks shaped by social relations and explicates the reasons that hold people in specific social networks. The social capital theory has become common themes shared by different academic disciplines such as sociology, economics, community health, and cultural studies. Harper (2001, p. 6) has shown that in academic articles, the concept of social capital was used only 20 times before in 1981, but rose to 109 in 1991-1995 and 1003 in 1996-1999. The growing popularity of social capital also lead increase in the comprehension of the positive and negative aspects of health behavior.

The development of classical capital theories has great importance in the theorization of the idea of social capital. The origin of the work on social capital is based on the analysis of Pierre Bourdieu, James Coleman, and Robert Putnam (Ekşi Uğuz, 2010, p 16). The complexity of the concept of social capital does not originate only from multidimensional and interconnected social networks, but the capital dimension of the concept is another way of increasing this complexity and multidimensionality (Ekşi Uğuz, 2010, p. 16). Like all other types of capital, social capital is among the neo-capital theories that are outside of the classical capitalist definition of Karl Marx. From this point of view, the emergence of social capital and its differentiation from other forms of capital is important in understanding the detailed analysis of social capital (Ferlander, 2007, p. 117).

Hanifan (Arezzo and Giudici, quoted from 1920, 2017, p. 4) was the first to be addressed the historical foundations of the concept of social capital at the beginning of the twentieth century. Today, it represents the one of the contemporary focus of capital

theories. Briefly, the main idea of social capital is that social networks are a valuable asset (Field, 2000, p. 16). Communication networks have various advantages in terms of their qualities and quantities and for people to have mutual advantages. In these networks, people can work together and gain all kinds of profits. The social capital of the power of social networks has been discovered six times in the twentieth century according to Putnam (2000, p. 19). In other words, it was defined in different ways. The social capilta theory become so popular, since researchers such as Bourdieu, Coleman, and Putnam have put the importance of social networks in social welfare.

Theoretically, Pierre Bourdieu's pioneer studies created the basic foundation and emphasized the source of social capital. Bourdieu's capital typology is at three basic levels: economic, cultural and social. Bourdieu uses all types of capital to explain the continuity of social classes and the inequality between classes (Field, 2006, p.18). Bourdieu, (1986, p. 422) claimed that "It is not possible to understand the world without understanding the effect of the capital, not only in a form accepted by economic theory but in all its forms." The three types of capital are also in a mutual relationship, leading to the desired achievement of one, but in a structure in which the economic capital is always dominant (Alheit, 1996, p. 19; Bourdieu, 1986, p. 252). So, people do not use a single line of capital to reach their goals, all three types of capital are required to work together to have a benefit. According to Castiglione, van Deth and Wolleb (2008, p. 3), it can be argued that Bourdieu emerged as the main element of interaction and communication, by treating the idea of social capital as a systematic social relation. Hanifan, on the other hand, discussed metaphorically social capital and expressed the necessity for the community to coexist (Castiglione, van Deth, and Wolleb, 2008, p. 2). Portes (1998, p. 20) emphasized that the individual must communicate with other individuals who will give him the advantage to take a better place in the social network. Hence, the main source of social capital is human relations. Likewise, Field (2006, p. 1) points out that the foundations of the social capital theory are very simple, pointing to ways in which people can work together to overcome their mutual obstacles by maintaining the relationships they have established and these relationships in a consistent manner. Frankly, Field (2006, p. 1) defined the summary of social capital theory as "relations are important." Another simple definition summarizes social capital as "an investment in social relations with a return expectation" (Lin, 1999, p. 30).

In the process of extending the limited definition of the concept of classic capital to tangible assets, including social networks, culture, and knowledge, the resources of social capital have begun to become more evident. Hanifan (Arezzo and Giudici, 2017, quoted from 1920) discusses human relationships, which are the source of social capital, with the concepts of "goodness, friendship, sympathy, and social interaction" using social connections and socialization ideas in the theoretical approach. Despite the fact that the concept of social capital has a structure based on the quality of human relations, researchers have defended different bases about the definition of social capital, resulting in definitions that emphasize different determinants in distinct dimensions (Castiglione, van Deth, and Wolleb, 2008, p. 3). Field (2006, p. 23) emphasizes that solidarity is the fundamental source of social relations that are necessary for individuals to earn rewards in their social relationships. Bourdieu (1986, p. 248) refers to the accumulation of capital as labor, which is the labor of capital to make strategic investments in social relations within the scope of social capital. Likewise, Bourdieu's first definition of social capital is as follows: the capital of social relations that provide useful support when necessary: capital of dignity and honor, which is often indispensable when it comes to the attention of those who have positions in socially significant positions, such as political careers (Bourdieu 1977, p. 503).

Bourdieu's definitions of social capital have two key features. While one of them addresses social capital from a personal perspective (Field, 2006, p. 27), the other one focuses on the nature and quantity of social networks that are rooted in the other social capital constitute, the characteristics of social networks that individuals can use (Ekşi Uğuz, 2010, p. 26). In line with this information, the amount of social capital is dependent on the size of the links that individiual can actively act on and the amount of capital (economic, cultural, or social capital) (Kayı, 2012, p. 14 quoted from Bourdieu, 1986).

Bourdieu has pointed out that social capital is a source of associative links and that the qualities and strength of these bonds are very important (Bourdieu 1986, p. 248). In addition, the most vital aspect about the importance of social ties are the individual's need for social networking, the number of connections they can act on, and the size of each link in the social network (Bourdieu, 1986, p. 249). Bourdieu later added the characteristics of the social capital to his definition as follows: social capital is a collection of potential or actual resources associated with having a long-lived network of relationships that are more or less institutionalized based on mutual familiarity or

acquaintance. In other words, a group; which presents a kind of "credit" to each of its members and members can collectively use this credit in a different sense of the word.

James Coleman is another researcher who deals with the determinants of social capital. According to Field (2006, p. 28), James Coleman stresses that social capital is not only limited to the rich, but also benefits the poor and socially disadvantaged groups, and thus this perspective may have a greater impact on social capital studies than Bourdieu's approach. According to Coleman (1990, p. 302), social capital defined as "It is not a single asset or gain, but on the contrary, it can be seen as many assets or gains that share two basic characteristics. These two features include some aspects of social structure, and in this direction, the individual is able to move in a certain direction." These social structural factors mobilize people to work together in a particular way (Field, 2006, p. 29). Coleman (1988, p. 104), who examines human relations and social networks, explains that human relations play an intermediary role in establishing certain obligations among individuals and that concepts such as loyalty and honesty take precedence and that norms are applied within these networks to create resources for the social capital. In this respect, James Coleman deals with social capital in a collective dimension that emphasizes mutual acquisition as well as individual dimension.

Robert Putnam is another classical researcher in social capital studies. Despite Bourdieu's individual and Coleman's view of individual-collective social capital, Robert Putnam has examined social capital with a broader social scale (Lee et al., 2005, p. 270). Putnam's study of values and organizations that bring American society together has shown that organizations have been important in the past and they have lost value for the formation of social networks and the sharing of these networks. This work by Putnam (2000, p. 1), namely Bowling Alone, has a great share in the recognition and importance of the theoretical structure of social capital. By the words of Putnam, "social capital is not a structure that can be obtained at the individual level, and societies have or do not have social capital". Putnam briefly explicated social capital as the trust that makes actors collaborate and collaborate actively in order to achieve common goals consists of the characteristics of social organization, such as social norms and networks and similar to the understanding of physical and human capital, social capital is a concept that is at the heart of social organization such as networks, norms, and trust that facilitate coordination and cooperation for common interests (Kayı, 2012, p. 16 quoted from Putnam, 1993)". According to Putnam (2000, p. 22), social capital is a sociological adherence and exists

in two different forms. These are social capital that is bridging and bonding. The bonding social capital tends to maintain homogeneity in social networks with similar characteristics. On the other hand, bridging social capital is based on sharing between groups with various social differences.

A common view was established that Bourdieu, Coleman, and Putnam were the pioneers in the development of the social capital theory. The way in which these three authors handle the theory and the levels of analysis differ. Winter (Ekşi Uğuz, 2010, p. 40, quoted from 2000) tabulated the purpose of examining this theory (presented in Table 2.1.).

Table 2.1. *Social capital definitions by three main researchers (Winter, 2000)*

	Definition	**Purpose**
Pierre Bourdieu	Resources that provide access to group assets	To obtain economic capital
James Coleman	Planes of social structure that individuals use to realize their interests	To obtain human capital
Robert Putnam	Trust, networks, and norms that facilitate mutually beneficial cooperation	Effective democracy and economy

On the other hand, the World Bank defined the social capital as social capital is found in norms, relations, and institutions shaped by the quality and quantity of social interaction of society. Social capital is a kind of glue that holds together a community (Harper, 2001, p. 8). According to Narayan and Cassidy (2001, p. 67), social capital, includes group qualities, generalized rules, unity, entrepreneurship, connections with neighbours, volunteerism, and trust. In other sources, trust in these dimensions is handled in five main themes: rules and norms that guide social actions, social interaction types, network resources, and other network qualities (Ekşi Uğuz, 2010, p. 60). Kayı (2012, p. 21) stated that common dimensions of social capital are seen as social networks trust and reciprocity norms. In parallel with this analysis, Ekşi Uğuz (2010, p. 60) emphasizes that these basic determining dimensions are seen as the most important dimensions in measuring social capital. Social capital, which is a source of human relation, is shaped in all kinds of dimensions in these human relations. Although early-period studies address social capital with a single dimension in the context of human relationships, there is a growing recognition that social capital is a multi-dimensional concept (De Carolis and Saparito, 2006, p. 43). Ekşi-Uğuz (2010, p. 59) indicates that none of these dimensions

will define social capital alone, providing a different contribution to social capital. Current studies indicate that social relations and norms and the sense of trust in these relations are the main dimensions of social capital theory.

Coleman, who most strongly emphasizes the importance of norms in terms of social capital, states that social capital will exist when norms are strong (Frintch, 2000, p. 15). Marshall (2009, p. 533) defined norms as culturally desirable, and appropriate behaviors and influence people's presence in certain actions (Carroll, 1997, p. 46). The role of norms in directing people to specific actions is perceived as one of the defining dimensions of social capital (Rea-Holloway, 2008, p. 25). Social norms also lead to the formation of trust, which is the other fundamental dimensions of social capital, and the development of response mechanisms within social networks. Kayı (2012, p. 22) explains that the sense of trust in the social relations will affect the behave of other individuals in the sense of collective efficacy. Norms based on cultural roots will increase expectation on this side by providing the rules for certain patterns of behavior according to the society, and by doing so will cause social capital to increase (Rea-Holloway, 2008, p. 25).

The idea of social capital is based on the idea that social relations are rich in quality and quantity in order to promote individual benefit, regardless of the level of social capital. Field (2006, p. 91) emphasizes that one of the most basic dimensions of social capital is trust in enhancing the richness of social relations. Cohen and Prusak (2001, p. 51) viewed trust as a basis for providing other benefits of social capital and made social capital equal to trust. According to Ahn and Ostrom (2008, p. 80), trust is an emotional link to creating social capital, and people who only have confidence in each other can act collectively. Putnam (2000, p. 144) examines the trust under two main headings as socially or institutionally. While social trust exists among individuals, institutional trust reflects the trust between individuals and institutions. Putnam's second focus on trust is related to the power of trust. According to this, "strong trust" defined as the sense of trust in close social networks (family, close friendships) and "weak trust" defined as the sense of trust between individuals in distant social networks. OECD (2001, p. 41), which grouped trust similar to Putnam's separation; also emphasized that perspectives about trust are effective for accumulating social capital.

All of the definitions of social capital include social relations engendered by the fact that social networks are among the decisive dimensions of social capital, which is seen as the plane where social relations will take place. According to Coleman, social

capital emerges as a consequence of interpersonal relations, which is the result of collective interaction in social networks, and similarly, Putnam emphasizes that social networks also would increase mutual trust (Ekşi Uğuz, 2010, p. 66-67). Social networks according to Cohen and Prusak (Ekşi Uğuz, 2010, p. 68 quoted from Cohen and Prusak, 2001); it is not just acquaintances, and knowing a lot of people is not alone, it is not necessarily becoming a part of a network. Network membership is a more active feature and requires a certain amount of time, energy, and emotional investment, with a strong reciprocity potential.

Social networks are classified in different ways; horizontal, vertical, strong, weak and communicative social networks that have been mentioned before. Having some common points in these classifications have also led to occasional resemblances to the ways in which they are handled, or to be considered together in the analysis phase (Ferlander, 2007, p. 117).

In particular, the networks in the horizontal and vertical, which play an important role in Putnam's discussions of social capital, qualify hierarchically equivalent and unequal ties. For example, students in a school are a group of individuals who are hierarchically located on the same plane. On the other hand, when considering the social network between teachers and students, there is a vertical hierarchical structure. Putnam emphasized that equal status and power in horizontal ties lead to the tendency of this social network to increase co-operation amongst its stakeholders and to act together (Ferlander, 2007, p. 117)

Social capital debates around concepts such as cooperation and mutual benefit focus on the role of social networks in achieving mutual benefit and gain by providing solidarity (Newell, Tansley and Huang, 2004, p. 46). Solidarity of social capital can often be observed in homogeneous groups where individuals are very similar to each other (age, sex, ethnicity, etc.) and can affect negative outcomes such as the formation of criminal organizations (Ekşi Uğuz, 2010, p. 76). The similarity of the members of the group is attributed to strong links and the main reason for these adverse effects is caused by the very strong links. "Power of weak bonds" emerges in intermediary networks, and individuals share fewer partnerships than solidarity networks of each other. While Woolcock (Kayı, 2012, s. 24 quoted from Woolcock, 2001) sees solidarity and intermediary social networks as horizontal networks, he describes networks that

individuals use to obtain various achievements from vertical networks as the linking social capital.

Gravonetter (1973, p. 1361) has drawn attention to the debate that reveals the strengths of social networks and has shown that weak networks are very strong at certain angles. Within social ties such as family, close friendships where close relations are valid, people build trust within the reciprocity principle by acting within certain norms (Chan, Cheung and Peng 2004, p. 316). According to Öztaş (2007, p. 84), the knowledge of these networks is shared in a closed structure. In other words, individuals in strong ties share social capital within this group without any effort and cant gain much because they share the same information or interests. Moreover, Ekşi Uğuz (2010, p. 71) noted that the sharing of closed strong links is limited between groups, and that closed strong networks have the function of separating society. On the other hand, the weak social ties that apply to distant relations have strong characteristics because individuals do not meet each other in a closed network and are unlike each other (Granovetter, 1973, p. 1374). Granovetter calls this phenomenon "the power of weak bonds," explaining that when individuals in a social network are the same, the individuals will have the same gain as other individuals, whereas individuals with weaker ties will increase the quality of their gains in differentiated groups.

2.3.1.1. *The association between social capital and physical activity*

Smoking and alcohol use, dietary intake, participation in physical activity or choosing a sedentary lifestyle are behavioral determinants of health, and these are also foundations of many chronic diseases such as cardiovascular diseases and cancer (Lindström, 2008, p. 215). The relationship between the social and environmental factors of health and the behavioral determinants of health has been the subject of an increasing number of researches in recent years in order to prevent various health obstacles and to abolish endemic, epidemic and pandemic problems. McNeill, Kreuter and Subramanian (2006, p. 1013) indicated that the social determinants of health are; (I) social support and social networks, (II) socio-economic status and income injustice, (III) racial discrimination, (IV) environmental factors in the neighbourhood and (V) social cohesion and social capital.

As previously stated, social capital has a different characteristic from other social determinants by being among both structural and intermediate social determinants of

health (Solar and Irwin, 201, p. 6). Kawachi, Keneddy and Glass (1999, p. 1190) have pointed out that social capital affects human health by functioning through different mechanisms on health. These mechanisms include: (I) influencing health behaviors through established norms and behaviors; (II) providing biological health benefits by increasing self-esteem, self-confidence and individual control through psycho-social mechanisms; (III) increasing access to health care services and opportunities by increasing access to social networks; (IV) reduce health problems by reducing crime rates. Among these mechanisms, Putnam (2000, p. 355) bases the relation between social capital and health on four themes. These are (I) stress reducing the effect of social networks (II) establishing and enforcing health-related norms, (III) providing more effective activities for medical services, (IV) the psychological support provided by social networks to stimulate the immune system and combat health problems. Moreover, according to Ekşi Uğuz (2010, p. 111), Putnam addressed the relationship between social capital and health, especially in relation to family and close friends, and stated that psychological support provided to each other by people in this social network is the most important factor.

Determinative factors of physical activity are not limited to physical competencies or environmental opportunities including social networks, but also includes other factors such as the profession, the educational attainment, and income level and the socio-economic group (Lindström, Hanson and Östergen, 2001, p. 446). It has been observed that participation in physical activity is low in disadvantaged groups in terms of socio-economic variables. McNeill, Kreuter and Subramanian (2006, p. 1013) describe this with high levels of psychosocial stress and low physical activity associated with low socioeconomic status among individuals. However, Lindström, Hanson and Ostergen (2001, p. 441) explained that participation in physical activity is high among socio-economically disadvantaged individuals who have norms that promote physical activity in their social networks. Norms, one of the elements of social capital, and some of those might have evolved to require physical activity within the social networks. To illustrate, Ali and Lindström (2006, p. 214) explained that norms allows people to participate in physical activity and fulfill the social networking requirements in Sweden. Likewise, it has been emphasized that social capital is important for people to participate in leisure time activities such as arts and sports activities (Ekşi Uğuz, 2010, p. 77). Thus, social

capital may reduce the negative effect of other social factors by manifesting health-related norms and make an individual follow these norms.

Although norms are extremely important in a society, they are not solely effective on behavior patterns. Improved social capital perception influences the behavior of physical activity by developing norms and values related to health in the society, stimulating inter-personal trust, acting in concert with these norms and values, and influencing physical activity behavior (Lindström, 2008, p. 226). Ueshima et al. (2010, p. 1) claimed that social capital has an impact on participation in physical activity through three different functions. First, social capital has provided informal social control, making it possible for the environment to be safe, and in this way, people have made preferences for physical activity in this environment. The second function is to build, use and protect the creation of collective action consciousness, parks, bicycle paths, etc., which will enable people to move and do it together. The last function is the creation and maintenance of norms that positively affect health-related behaviors within groups such as walking, cycling, nature walking, as mentioned by Lindström, Hanson and Ostergen (2001, p. 441). For example, Lindström Moghaddassi and Merlo (2003, p. 26) have shown that people are more active in social networks in the environment which have adopted and promote a physically active lifestyle through informal social control and collective efficacy.

Studies focusing on the relationship between social capital and physical activity do not reveal a consistent relationship (shown in Appendix 6). On the other hand, studies conducted in American society have found that social capital has a significant impact on participation in physical activity (Fisher et al., 2004, p. 60), the size of the effect of social capital perception on participation in physical activity was less than individual factors in Europe (Lindström, Moghaddassi and Merlo, 2003, p. 26). On the other hand, in Japan, located in the Asia-Pacific region, the confidence intervals of social capital determinants were inversely associated with the sedentary lifestyle (Ueshima et al., 2010, p. 1). The studies carried out in the societies with different cultural, economic and political characteristics give very different results related to the association between social capital and physical activity behavior. Lindström (2008, p. 32) emphasized the fact that the entire study of the relationship between social capital and the behavioral determinants of health is carried out in countries where the industrially developed and socio-economic distribution is relatively equal or equally close. Therefore, it emphasized the necessity of

examining the relation of social capital perception, which is a social determinant of health, to health behaviors in societies that differ in social and economic context. Thus, this notion was one of the crucial points of aiming to conduct this research in Turkish society.

2.3.2 Physical self-concept as a determinative factor on physical activity participation

Physical self-concept is the awareness of the individual's positive qualities and competencies, and positive personal self-perception is an important component of psychological well-being (Craven and Marsh, 2004, p. 104; Shavelson, Hubner and Stanton, 1976, p. 435). The concept of self-perception of two basic structures, academic and non-academic, and the non-academic dimension consists of three sub-dimensions: emotional, social and physical self-perceptions (Shavelson, Hubner and Stanton., 1976, p. 412). In this theoretical structure, there is a reciprocal association between physical activity and physical self-perception (Cook, 2004, p. 40).

The physical self is shaped by the significant contribution of environmental interaction since childhood and is directly related to health (Aşçı, 2004, s. 40, quoted from Fox, 1990). Marsh (1996, p. 253) summarized the physical self as "positive thoughts about the physical self of the person." According to Garn (2016, p. 504), the concepts of physical self-perception, self-efficacy, and perceived skill are directly related cognitive constructs and key concepts in explaining self-efficacy and perceived skill in physical activity context. Aşçı (2004, p. 40) stated that the development of self-perception studies began with the concept of the body image and then continued with the understanding that self-concept was a dimension in itself. This perception leads the studies investigating the self-perception as a multi-dimensional hierarchical concept. Garn (2016, p. 505) stated that the sense of perceived competence is based on self-perception. Although self-concept and self-efficacy are hierarchical concepts in direct relation, self-efficacy demonstrates the physical skills within the ability of a person, while emphasizing that the physical-self is physically explaining how an individual identifies one's own skills (Bong and Skaalvik, 2003, p. 3).

While the development of self-perception is considered, the interaction of the individual with the environment is one of the most important factors to be considered. The "self-directed" metaphor that Fox and Wilson (2008, p. 50) use to describe self-

perception defines the process that one carries out to create, organize, observe, relate, and protect perception about him/herself. Accordingly, in this process, the person's interaction with the environment and the culture are of utmost importance. In addition, Markus and Wurf (1987, p. 29) emphasized the importance of two internal and social structures in the shaping of the self-concept. While the information processing constitutes the internal processes of emotional regulation and motivation, the social dimension constitutes social perceptions, situational choices, partner selection, social interaction strategies, and social feedbacks. In this sense, the norms and social networks underlying social capital theory can also be seen as important in the formation and shaping process of self-concept of self.

Aşçı (2004, p. 41) stated that how the individual perceives himself in the psychomotor dimension is at the basis of the inventory development studies on the physical self-concept. This psychological concept constitutes a multidimensional hierarchical structure, necessitating the use of sub-dimensional inventories in order to measure the concept. The self-perception that the individual has in these subscales are key concepts underlying many socio-cognitive theories based on participation in the sports and physical activity (Babic et al., 2014, p. 1590).

2.3.2.1.The association between physical self-concept and physical activity participation

Fox (1997, p. 189) stated that physical self is an important part of gaining physical, psychological and social well-being by promoting participation motivation in physical activity. Sonstrom and Potts (1996, p. 620) interpreted the physical self-concept as the perceiving physical fitness parameters and self-perception in motor skills. Stodden et al. (2008, p. 290) emphasized that perceived physical competence pose a complex task, with one of the main components of participation in physical activity. The model they have created involves a reciprocal relationship between physical activity and competence of mobility. Thus, while participation in physical activity increases mobility, in turn, increases the likelihood of inclined perceptions of competence of mobility. For example, Beasley and Garn (2013, p. 245) found that participation in physical activity in physical education classes and leisure activities improved self-perception in adolescent girls. Standage et al. (2012, p. 37) also emphasized that one of the main outputs of a quality physical education process should be the development of self-perception, and Barnes and

Spray (2013, p. 1060) indicated that health-related physical education courses should lead students to discover their physical self-profile. In this respect, it has been suggested that participation in physical activity at an early age will have significant effects on the development of motor competence perception and increase participation in physical activity (Stodden et al., 2008, p.294).

Gender, physical fitness and activity status, weight and culture are the variables affecting the physical self-perception. Carraro, Scarpa and Ventura (2010, p. 522) emphasized that the physical self-perception in adolescents vary according to gender and physical fitness. Similarly, Janić et al. (2014, p. 636) reported that gender was the most significant variable in the physical self-perceptions of adolescents and that the most important reason for this was male physical activity participation rates had been at much higher levels. Lazarevic et al. (2011, p. 355) revealed a relationship between weight and physical self-perception in adolescents. Their findings revealed that the association was more meaningful in girls, and emphasized that the studies of physical self-perception among adolescents must take into account the gender variable. On the other hand, Hagger, Ashford and Stambulova et al. (1998, p. 145) showed that there was a difference between cultures in the development of physical self-perception, and it was emphasized that there was a difference in participation in physical activity. Similarly, the concept of body literacy, a concept that is directly related to the self-perceived in the context of physical activity, is quite different among cultures (Whitehead, 2010, p. 40).

Physical self-perception is examined according to the level of participation and physical activity in the Turkish literature. For example, Aşçı (2004, p. 45) has found that physical self-perception in university students varies according to the level of physical activity and gender. Altıntaş et al. (2009, p. 8) revealed that the sports competence, body attractiveness, strength and endurance subscales of self-perception are related to the energy expenditure with physical activity in middle school students. In addition, the results of the analyses carried out separately for male and female students showed significant differences between these variables. In the light of both international and national literature, it is necessary to consider variables such as gender, physical activity level, and athletic status while investigating the concept of physical self.

To sum up, many concepts have been explored that affect the level of physical activity and participation in physical activity. It is seen that the studies in the social dimension, which have an important place in health studies in recent years, also an

important factor in physical activity studies. One of these reflections is a social capital theory. However, participation in physical activity is as important in social psychology as it is in the psychodynamic structures that deal with the inner world of the individual, and in this sense self-perception is an additive value to physical activity. Taking together social and psychological structures in describing the behavior of physical activity in a holistic structure has value for more effective policy proposals. For this reason, the social and psychological dimensions of physical activity behaviors were examined and discussed in this study.

3. METHOD

In this part of the study research model, research group, sampling, data collection tools, data collection process and information on the analysis of data is explained. The research model, sampling method for the research group, measurement tools and methods described in this section is approved by the Ethics Committee of Anadolu University with the name of "The Effect of Social Capital Perception and Social Inequality on Physical Activity Level of Adolescents: Case of Eskişehir Urban". Latter, change of the title as "The Association Between Physical Activity Participation and Social Capital, Physical Self Perceptions Among Adolescents: Case of Eskişehir Urban" was proposed and accepted by the Ethics Committee of Anadolu University (Protocol No.: 29192, Appendix-1).

3.1. Research Model

In this study, quantitative research methods were used in which the associations between social factors and participation in physical activity were revealed (Fraenkel, Wallen and Hyunn, 2011, p. 10). In addition, implemented research method is a cross-sectional design based on time (Erdoğan, 2012, p. 178) that provides the possibility of collecting data from groups with different characteristics such as gender and socio-economic class.

It is aimed to reveal the causal relationship between dependent and independent variables specified in the study. One of the main aims of correlational studies is to increase understanding of a phenomenon by revealing relationships among variables (Fraenkel, Wallen and Hyunn, 2011, p. 332). The causational research model is a research model that attempts to explain the nature of the relationship by going beyond what the relationship is (Fraenkel, Wallen and Hyunn, 2011, p. 333; Erdogan, 2012 p. 172). In the social sciences, this research is used to determine the situation after the incident, called "ex-post facto" (Erdoğan, 2012, p. 173). In this context, independent variables are examined in terms of dependent variable causation and grade. In this study, it was aimed to reveal the association between socio-psychological factors and high school aged adolescents' participation in physical activity.

In addition, this study can be evaluated within the epidemiological research model in terms of the research models used in the health sciences and the purpose of the research.

Epidemiology has been described as studies investigating how health status and its determinants are distributed in the specific sample to control health-related problems (Last, 1988, p. 141). Epidemiological surveys focus on the incidence of health problems, setting guidelines for the development of community health, observing the effectiveness of interventions to overcome existing health problems, and assessing the incidence of these factors with the diagnosis of risk factors affecting health (Ainsworth and Matthews, 2005, p. 302). Epidemiological studies are aimed at examining and presenting the existing situation with quantitative research methods (Ainsworth and Matthews, 2005, p. 303).

Independent variables included in this research were family income, educational attainment of mother and father, body mass index, family, school and perceived social capital perceptions and physical self-perceptions. Independent variables related to social capital perceptions include close family, distant family, horizontal school, vertical school and neighbor social capital relations, while independent variables related to physical self-perception include physical self, physical strength, physical endurance, physical attractiveness, and sports ability. The dependent variables of the study were overall physical activity participation and moderate to vigorous physical activity participation.

3.2. Research Group and Sampling

In this study, a two-stage random sampling method was used for the study of high school students in Eskişehir city center. The two-stage random sampling method involves choosing the clusters of the participants rather than selecting random participants from within the population, and randomly choosing a certain number of participants within these clusters (Fraenkel, Wallen and Hyunn, 2011, p. 97). The following criteria were set for participation in the study;

- To study in Eskişehir city center,
- Being between 14-18 years of age,
- Do not have a physical disability or any health problem that will prevent participation in physical activity.

Individuals who fail to meet the above criteria are not included in the study.

With the permission of the Eskisehir Provincial Directorate of National Education (Appendix-2) 20 of the 74 high schools in the Tepebaşı and Odunpazarı districts in Eskişehir city center were randomly selected. During the selection process, the likelihood

of choosing private and state high schools has been equalized, and 16 public and 4 private high schools have been included. The last lettered (A-B-C-D) branch of 9^{th}-10^{th}-11^{th}-12^{th} classes from each school was visited and the 20 students at the end of the list were invited to work. The main reason for the selection of students at the end of the list is that students who are repeating the class have the priority registration number and they were at the top of the lists.

According to the initial plan, a total of 1600 students were targeted to participate in the study. However, a total of 1227 adolescents were participated in the study due to the decision to refuse the parental consent forms, to leave out the wrongly filled forms and private school's decisions to not to attend to this study. The participants were 568 females (16.37 ± 1.13 years, 161.69 ± 5.69 cm, 56.50 ± 10.18 kg, 21.66 ± 3.56 kg / cm2) and 659 males (16.35 ± 1.15 years, 172.47 ± 7.29, 66.07 ± 13.82, 22.17 ± 4.25). The participation rate in the study was 76.68%.

3.3. Data Collection Tools

3.3.1. Personal information form

The personal information forms including the participants' gender, age, class level were provided by students. The family income and educational attainment level of parents were asked to mothers and fathers in parental consent forms. These forms were used to collect information for independent variables.

In pilot studies, it was observed that the vast majority of students were undecided about the level of income, while a small proportion was undecided about the educational level of their parents. For these reasons, information on these two variables has been collected via parental consent forms in order to increase the reliability of the data. The income situation was dictated by the hunger threshold specified by Türk-İş (http-2) for April 2017 when the data were collected. In the same way, the educational status of mothers and fathers was dichotomized and analyzed equally as high school and below and university and above. The information provided by the parents in the parental consent form was transferred to the main data collection tool by high school students to ensure the confidentiality. Both forms were checked by a different investigator to ensure correction of the data.

3.3.2. Social capital scale for adolescents

Literature research has shown that a social capital scale that can be applied to Turkish adolescents has not been developed yet. It has been observed that different aspects of social capital have been examined by collective or individual level questionnaires in various cultures (Lindström, Hanson and Östergen, 2001, p. 443; Novak, Suzuki and Kawachi, 2015, p. 2). Since a measurement tool for adolescents at the national level has not been developed in the Turkish literature, the 5-point Likert-type scale development process was followed primarily in this study. The following steps have been applied (Creswell, 2017, p. 41):

1. Literature review and expert opinion for advice to identify potential items,
2. Testing the elements on a small sample with descriptive factor analysis,
3. Applying an instrument to a larger sample for exploratory factor analysis,
4. To carry out the reliability analysis of items,
5. Applying confirmatory factor analysis.

Other scale development processes were examined and opinion of experts from sociology, sociology of sport, measurement and evaluation were taken into consideration. Finally, item pool consisting of 53 items were created. Experts examined the items for face and content validity. The answers are coded “I totally disagree,” “I disagree,” “I am undecided,” “I agree” and “I totally agree”.

3.3.2.1. Psychometric properties of the social capital scale for adolescents

3.3.2.1.1. Pilot study

Erdoğan (2012, p. 248) emphasized that scales primarily should be applied to a small group, composed on representing subjects, in order to test the comprehensibility of the items in the scale. A draft item pool was applied to 50 high school students by using convenient sampling method. Participants and their parents filled consent forms and parental consent forms. Comprehensibility of the items, items are left blank continuously and marked with more than one answer were checked in this stage. However, no item left empty or receiving a double response in the scale and students reported that all items were easily understood.

3.3.2.1.2. Results of exploratory factor analysis of social capital scale for adolescents

Data were collected from 218 female and 211 male high school students to test the factor structure of the Social Capital Scale for Adolescents. In this step, 120 ninths, 108 tenths, 90 eleventh, and 111 twelfth grade students were included in the study in order to represent the population. According to Karagöz (2016, p. 877), that the sample size of more than 300 is sufficient for factor analysis.

The EFA and CFA methods were used to determine the factor structure of the Social Capital Scale for Adolescents. The purpose of the EFA is to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. On the other hand, CFA analyses the concordance between the model and the original data (Özdamar, 2013, p. 210). Principal Component Analyses conducted by using the Varimax method in the EFA analysis.

The Eigenvalue was set as a criterium to determine the factor number. According to this method, the factors which are greater than the values of 1 are accepted as a factor in the analyses (Karagöz, 2016, p. 879). Three assumptions of principal component analyze were also checked. First of all, the correlation coefficients between the items were tested. According to Özdamar (2013, p. 213), each item should have at least a moderate correlation with one of the other items and this value would be between 0.25-0.90. It was seen that the items 12, 20 and 47 did not reach the threshold correlation values and they were removed from the draft item pool.

The Kaiser-Meyer-Olkin (KMO) test for the sampling adequacy for factor analyses, and Barlett's test of Sphericity test for identifying correlation matrix for the relatedness of the variables was implemented. The KMO value between 05.-1.0 is sufficient for EFA (Altunışık et al., 2007, p. 217). The Social Capital Scale for Adolescents has a KMO value of 0.836. This value indicates that the sample size is adequate at a good rate for the execution of the EFA (Altunışık et al., 2007, p. 217, Tavşancıl, 2002, p.50). On the other hand, the results of the Barlett's test of sphericity was conducted to evaluate the suitability of the data for EFA, and the results were significant $p = 0.00$. This result is pointing out that the data came from multiple normal distributions, emphasizes the fulfillment of the assumption of sphericity in the execution of the EFA analysis (Hair et al., 1998, p. 374).

After subtracting three items which did not reach the correlation threshold in the correlation matrix, the EFA analyze was conducted. The items with low factor loads and the overlapping items were removed from the scale, and the analyses were repeated. Items 1, 3, 5, 9, 10, and 11 from the "Horizontal School Social Capital" subscale; 17th, 18th, 23rd, 24th and 26th items from the "Vertical School Social Capital" subscale; 27th, 28th, 29th, 30th, 40th items from "Family Social Capital" subscale; and 46th, 47th, 48th, and 49th items from "Neighborhood Social Capital" subscale has been decided to remove. The measuring tool is composed of 27 items, which represent five different subscales in the final state. These subscales are called "Horizontal School Social Capital," "Vertical School Social Capital," "Close Family Social Capital," "Distant Family Social Capital" and "Neighborhood Social Capital" (Table 3.1).

Table 3.1 *EFA and reliability values of social capital scale for adolescents*

Factors	**Factor Loads**	**Cronbach's Alpha**	**Explained Variance**
Horizontal School Social Capital			
I feel a strong emotional commitment to my school friends.	0.542		
My school friends always support me to succeed.	0.631		
I perceive the problems of my school friends as my own problems.	0.660		
My school friends always support me in solving my problems.	0.753	0.800	%20.13
I would like to meet with my school friends often outside of school.	0.714		
I often consult my school friends when making a decision.	0.707		
I like to join school organizations with my friends in the	0.625		
Vertical School Social Capital			
I feel a strong emotional commitment to my teachers.	0.672		
My teachers always support me to succeed.	0.737		
I believe that teachers in my school trust students.	0.690		
Okulumdaki öğrencilerin ve öğretmenlerin birbirleri ile işbirliği kurmaktan mutlu olduklarına inanıyorum.	0.614	0.777	%10.94
My teachers support me beyond my academic life.	0.683		
I often consult my teachers when making a decision.	0.649		
Close Family Social Capital			
Lise yaşantım boyunca anne-baba-kardeş gibi yakın akrabalarımın beni desteklediğine inanıyorum.	0.639		
My close relatives, like parents and siblings, are insensitive to my problems.(-)	0.747		
I would like to attend activities with close relatives such as parents and siblings.	0.661	0.724	%8.41
I think people in my family don't trust each other enough.(-)	0.735		

Table 3.1 (Continue) *EFA and reliability values of social capital scale for adolescents*

Factors	Factor Loads	Cronbach's Alpha	Explained Variance
Distant Family Social Capital			
Relatives like my uncle, aunt, cousin, my close relatives, are interested in my problems.	0.801	0.807	%7.76
I do not think that my relatives (uncle, aunt, cousin, etc.) other than my close relatives understand me. (-)	0.760		
I believe that my relatives (uncle, aunt, cousin, etc.), other than my close relatives, support me during my high school life,	0.753		
When making a decision, consult my relatives (uncle, aunt, cousin, etc.) other than my close relatives.	0.663		
Neighborhood Social Capital			
I believe our neighbors trust each other.	0.487		
I trust my friends in our neighborhood.	0.777		
My friends in our neighborhood often cooperate with each other.	0.754		
People are willing to help when there is a problem in our neighborhood.	0.718	0.799	%5.98
People in our neighborhood are in good relationship with each other.	0.715		
I often spend time with my friends in our neighborhood.	0.695		
Total		0.841	%53.24
N=429, KMO= 0.836, Barlett's Spherecity p<0.001			

Table 3.1 indicates that the Horizontal School Social Capital subscale is composed of 7 items and the factor loads of these items vary between 0.753 and 0.542. The Horizontal School Social Capital subscale accounted for 20.13% of the total variance, while the Cronbach's Alpha for reliability was 0.80. The Vertical School Social Capital consists of 7 items with item factor loads ranging from 0.614 to 0.737, and 10.94% of the total variance was explained by this subscale. The reliability value for this subscale was 0.77. In the Close Family Social Capital dimension, there were four items with item factor loads ranging from 0.639 to 0.747, which explained 8.41% of the total variance. The reliability value of the Close Family Social Capital Perception subscale was 0.72. There are also four items in the Distant Family Social Capital dimension, and the factor loadings of these items ranged from 0.663 to 0.801. This subscale explained 7.76% of the total variance, Cronbach's Alpha reliability coefficient was 0.80. There were six items in the subscale of Neighborhood Social Capital, and their item factor loadings range from 0.487 to 0.777. This subscale accounted for 5.98% of the total variance, while the Cronbach's Alpha reliability coefficient was 0.79. When the whole scale is examined, it is seen that 27 items reveal 53.24% variance. Tavşancıl (2002, p. 179) stated that the variance ratio should be between 40% and 60% for social sciences. Karagöz (2016, p. 941) stated that

the Cronbach's Alpha between 0.60 and 0.80 is reliable and between 0.80 and 1.00 indicates high reliability. Therefore, it can be concluded that the measuring instrument is reliable.

3.3.2.1.3. Results of confirmatory factor analysis of social capital scale for adolescents

Confirmatory factor analysis was conducted to confirm the structure of the scale resulting from the explanatory factor analysis. Data were collected from 409 high school students not included in EFA to conduct this analysis. The fit indices for the Social Capital Scale for Adolescents and the norm values of these compliance indices are shown in Table 3.2. Table 3.2. indicates that x^2/df value is 2.109; the RMSEA 0.052; the IFI 0.912; the NNFI 0.900; the GFI was 0.893; the CFI was 0.911, and the SRMR was 0.061. It has been explained that the x^2/df smaller than 3 is acceptable for the models with significance is less than 0.05 (Sumer, 2000, p. 59; Meydan and Şeşen, 2015, p. 32). The RMSEA value is less than 0.05 indicates good fit and the value between 0.05-0.08 refers to an acceptable range (Çelik and Yılmaz, 2013, p. 33). The IFI value above 0.90 refers to an acceptable range, while the value above 0.95 refers to good fit (Meydan and Şeşen, 2015, p. 33). Çelik and Yılmaz (2013, p. 35-37) stated that an NNFI value greater than 0.90 and a GFI value greater than 0.85 indicate acceptable fit. Hair et al. (2010, p. 643) emphasized that it is acceptable to have a CFI value greater than 0.90. Fan and Sivo (2005, p. 343) show that when the number of model variables increases, a part of the model's adaptation indices deteriorate, but the SRMR value is less sensitive to this situation. The SRMR value less than 0.05 indicates good fit and the value less than 0.10 indicates acceptable fit. To sum up, the fit indices for the Social Capital Scale for Adolescents appear to change between acceptable and good fit values.

The modifications were made between the error terms related to items 12 and 13 of the Vertical School Social Capital subscale for the development of compliance indices, error terms related to items 15 and 17 of the Near Family Social Capital subscale, and 25 and 26 of the Neighborhood Social Capital subscale. As a result of the first-order DFA, it is seen that all items in the scale give statistically significant t values in explaining implicit variables and all observed variables are below 0.90 error variances (Figure 3.1).

Table 3.2. *CFA and fit index values of a social capital questionnaire for adolescents (Meydan and Şeşen, 2015)*

Fit Indices	Goodness of Fit		Results
	Good	Acceptable	
Chi-Square / Degrees of Freedom (x^2/df)	≤3	≤5	2.109
Root Mean Square of Error of Approximation (RMSEA)	≤0.05	≤0.05-0.08	0.052
Incremental Fit Index (IFI)	≥0.95	0.90-0.94	0.912
Non-Normed Fit Index (NNFI)	≥0.95	0.90-0.94	0.900
Goodness of Fit (GFI)	≥0.90	0.85-0.89	0.893
Comparative Fit Index (CFI)	≥0.97	≥0.90	0.911
Standardized Root Mean Square Residual (SRMR)	<0.05	<0.10	0.061

The measuring instruments of social capital have been developed in different cultures (Onyx and Bullen, 2000, p. 23; Van Der Gaag and Snijders, 2005, p. 16; Grootaert et al., 2003, p. 33; Kritsotakis et al., 2008, p. 217). These include the measurement tools developed for adolescents in Greece (Koutra et al., 2012, p. 338) and Brazil (Paiva et al., 2014, p. 4). In Turkey, only one study stated that a questionnaire developed for university students and graduates (Uçar, 2016, p. 16). Another questionnaire developed by Ersözlü (2008, p. 118) for only in-service teachers. In addition, the social capital measurement tool developed by Onyx and Bullen, (2000, p. 23) was also found to be valid and reliable among Turkish adults (Ardahan, 2012, p. 782). However, there was no any measurement instrument developed or adapted for assessing social capital perceptions for adolescents in Turkey.

A structure consisting of 27 items and five sub-dimensions emerged, as a result of evaluating the factor structure of the Social Capital Scale for Adolescents. In this study, EFA and CFA techniques were evaluated for measurement models and fit of the data. There is no consensus on the fit indices to be used in the assessment of measurement models (Meydan and Şeşen, 2015, p. 5). In assessing the factor structure of the Social Capital Scale for Adolescents, results showed that all of the fit indices (x2/df, RMSEA, NNFI, CFI, GFI, IFI, and SRMR) were in the acceptable range.

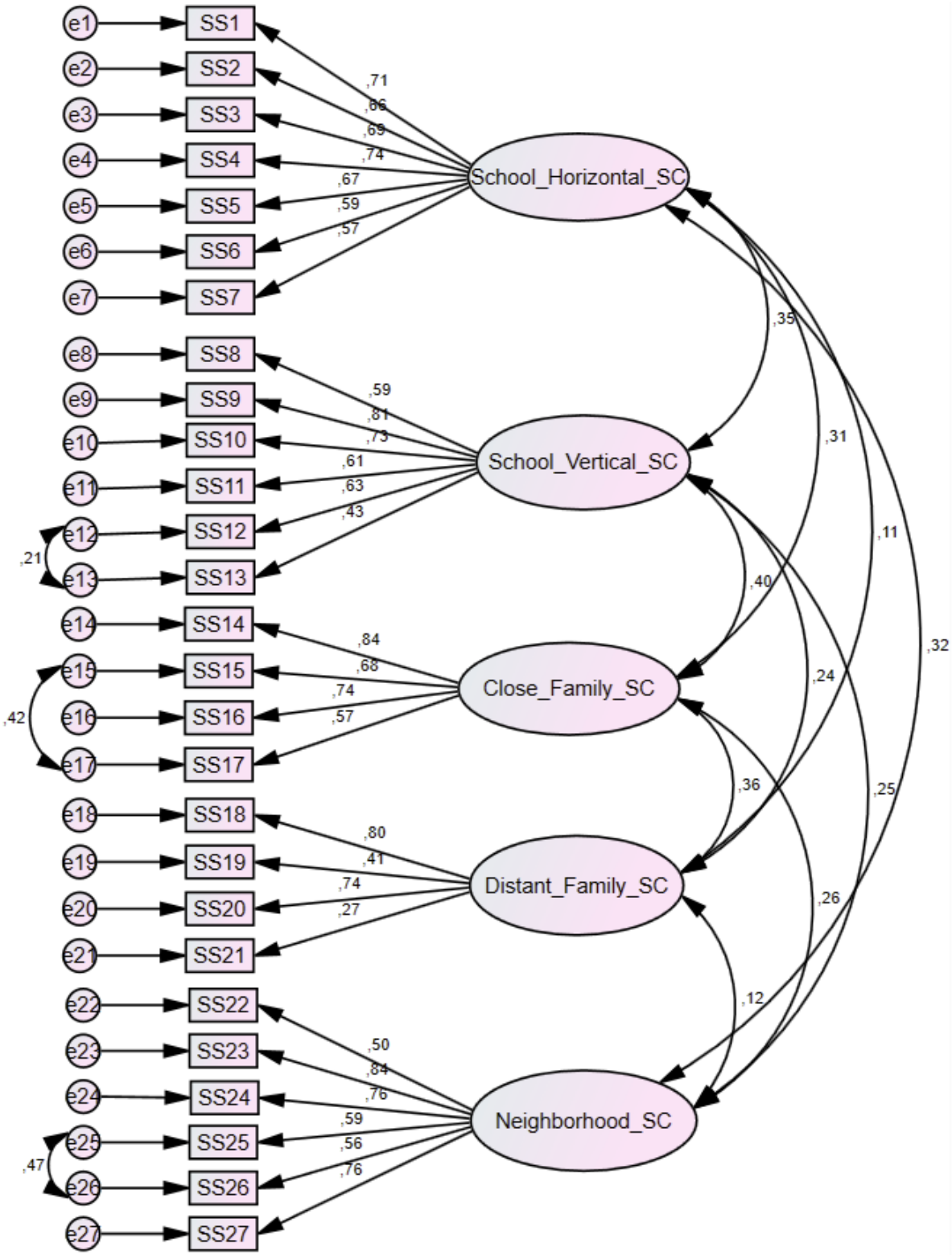

Figure 3.1 *First order CFA model for social capital scale for adolescents*

3.3.3. Short form of physical self-concept

For the measurement of physical self-perception in the study, a 12-item "Short Form of Physical Self Inventory" was used. This inventory developed by Maïano et al. (2008, p. 830) and validity and reliability in the Turkish language were determined by Aşçı et al. (2017, p. 2060). In the pilot studies, the 70-item "Physical Self-Questionnaire" (Marsh et al., 1994, p. 270) was not found to be valid and reliable on a sample of high school students in Eskişehir city center. In addition, students also reported the difficulty of answering this questionnaire because of the length of this measuring instrument during pilot studies. For these reasons, the physical self-perception was determined by the Short Form of the "Physical Self Inventory."

Short form of "Physical Self Inventory" consists of 12 items and six subscales (shown in Table 3.3). There are two items in each sub-dimension, and it is a 6-point Likert-type measuring tool. The sub-dimensions are "Global Self-Worth," "Physical Self-Worth," "Physical Condition," "Sports Competence," "Physical Attractiveness" and "Physical Strength." The answers are coded as "Not at all," "Very Little," "Some," "Enough," "A lot" and "Entirely." One item of the measurement tool is scored in reverse, but in the adaptation study, the researchers stated that they changed the structure and this material could normally be applied (Aşçı et al., 2017, p. 2066). Within the scope of this study, this item which is included in the "physical attractiveness" sub-dimension is included in the measurement tool as "Everybody thinks I look beautiful." Validation was carried out by confirmatory factor analysis in the adjustment study of the scale. In the adaptation study, chi-square fittest, comparative compliance index (CFI> 0.90), Tucker-Lewis index (TLI> 0.90) and approximate error square root mean square (RMSEA <0.80) were reported from the fit indices of the measurement tool. Factor loadings ranged between 0.495 and 0.854, with moderate and high correlations between subscales (Aşçı et al., 2017, p. 2064). Reliability value is calculated by McDonald's omega value. Omega values were found to be 0.51 for Global Self-Worth, 0.71 for Physical Self-Worth, 0.65 for Physical Condition, 0.65 for Physical Strength, 0.60 for Sports Competence, 0.71 for Physical Attractiveness and 0.71 for Physical Strength. In the adaptation study, researchers stated that these values are within acceptable limits.

In this study, the reliability of the measurement tool was calculated by the Cronbach's alpha internal consistency coefficient, which is specified as a suitable method

for calculating the reliability of the scales (Field, 2013, p. 675). The answers given by the adolescents participating in the study to the Short Form of Physical Self Inventory are calculated for each subscale of the instrument. The Cronbach Alpha values were found to be 0.48 for Global Self-Worth, 0.73 for Physical Self-Worth, 0.70 for Physical Condition, 0.75 for Sports Competence, 0.75 for Physical Attractiveness and 0.81 for Physical Strength (shown in Table 3.3.). The Cronbach's Alpha value of 0.50 indicates that the reliability is very low (Özdamar 2013, p. 555; Karagoz 2016, p. 941). As internal consistency values of the "General Self-Esteem" subscale were not in the acceptable thresholds, these subscales were excluded from the analyses.

Table 3.3. *Items of the short form of physical self-inventory*

Items	Cronbach Alpha Values
Global Self-Worth	
1. I have a good opinion of myself. 2. I would like to stay as I am.	0.48
Physical Self-Worth	
1. Globally, I'm proud of what I can do physically 2. I am happy with who I am and what I can do physically.	0.73
Physical Condition	
1. I would be good at physical stamina exercises. 2. I think I could run for a long time without tiring.	0.70
Sports Competence	
1. I can find a way out of difficulties in all sports. 2. I do well in sports.	0.75
Physical Attractiveness	
1. I have a nice body to look at. 2. Everybody thinks that I am good looking.	0.75
Physical Strength	
1. I'm physically stronger than most people. 2. I would be good at exercises that require strength.	0.81

3.3.4. International physical activity questionnaire

International Physical Activity Questionnaire-Short Form (IPAQ, Craig et al., 2003, p. 1381) was implemented to identify participants' involvement in physical activity at an internationally recommended level (60 minutes of daily overall and 60 minutes of daily moderate to vigorous physical activity). Validity and reliability of the measuring tool in Turkish were determined by using an accelerometer in a group of university students (Sağlam et al., 2010, p. 278). This measurement tool was chosen to allow students to think about participating in the physical activity and direct their activities to

detail reporting. Biddle et al. (2011, p.1) examined 437 studies from international studies and found that there was a physical activity questionnaire based on self-report that could be used for adolescents. However, none of these measurement instruments were adhered to in the Turkish culture during the research. Also in previous studies conducted on Turkish adolescents reported the use of the IPAQ as a measuring tool (Akıncı, 2014, p. 65; Yıldızer et al., 2018, p. 28). Lastly, Stamakis et al. (2018, s. 1) indicated that measuring sedentary behavior with questionnaires is a feasible method for studies conducted focusing on samples with a large number.

In the IPAQ, individuals were asked to remember the duration, frequency, and volume of their physical activity in the last seven days. The questionnaire consists of 4 sections and seven questions in total (Appendix-5). The first part relates to the high level, the second part to the middle level, and the third part of the walking. The last question examines the total sedentary time. Through this measurement, the MET account can be made as specified in the guidelines of the researchers (Craig et al., 2003, p. 1381). On the other hand, there are some studies that have been carried out with this measuring instrument for detecting the 60 minutes daily high, and daily overall physical activity suggested for adolescents (Yıldızer et al., 2018, p.28; Novak, Doubova and Kawachi, 2016, p. 49).

In this study, the IPAQ was applied to calculate the participation of adolescents in the high school age group in 60 minutes overall and 60 minutes moderate to vigorous daily physical activity, using a reminder method instead of asking. The participants' daily participation times for each question were multiplied by the number of days they participated, and the weekly physical activity duration was calculated. This account is calculated separately for both overall physical activity and moderate to vigorous physical activity. Then the time obtained was divided by the number of days in the week for calculating the average daily physical activity times of each. Daily 60 minutes of participation in overall and moderate to vigorous physical activity was analyzed as a dichotomous variable. The results obtained were analyzed as a dichotomous dependent variable.

3.3.5. Body mass index measurement

For height measurement, Leicester MK II (Child Development Institution, UK) portable height measuring instrument and Tanita BC-601 (Japan) electronic impedance for weight measurement were used. Both measurement tools are presented in Image 3.1. Height and weight measurements were used to calculate Body Mass Index (BMI).

All measurement protocol was conducted in a specially prepared environment for maintaining the privacy of the students. In the measuring device set up and positioned according to the manufacturer's recommendations, the students were positioned that the heels, hips, shoulders, and back of heads were in contact with the background. While in this position, the researcher lowered upper apparate down to touch the students' heads and recorded the length corresponding to the height indicator in meters. In the weight measuring students positioned their foot to the marked area, and the device started the measure the weight. The measurement was automatically stopped by the device and the final weight recorded by the researcher.

Image 3.1. *Tanita BC-601 weight measurement and Leicester MK II height measurement devices*

The results obtained from weight and height measurements were used to calculate BMI with Weight / Height^2 (kg / m^2) formula. Cole et al. (2000, p. 4) reported redefined cut-off points for overweight and obesity classifications for the adolescents, and these values were used to identify overweight and obesity status of participants (Table 3.4).

Table 3.4 *Redefined overweight and obesity cut-off points for adolescents*

	BMI Values for Overweight		BMI Values for Obesity	
Age	**Male**	**Female**	**Male**	**Female**
14	22.62	23.34	27.63	28.57
14.5	22.96	23.66	27.98	28.87
15	23.29	23.94	28.30	29.11
15.5	23.60	24.17	28.60	29.29
16	23.90	24.37	28.88	29.43
16.5	24.19	24.54	29.14	29.56
17	24.46	24.70	29.41	29.69
17.5	24.73	24.85	29.70	29.84
18	25	25	30	30

3.4. Data Collection Protocol

The researcher made an appointment with the management of the schools for data collection and considering, academic time, ceremonies and event dates. The purpose, methodology, and significance of the study were explained to principals, guidance and counseling responsible and physical education and sports teacher who host the researcher during data collection protocol in the schools. Consent forms (Appendix-3) and parental consent forms (Appendix-4) were distributed to students who voluntarily participated in the study and were requested to fill and bring them back within one week later.

Only students who returned the consent and the parental consent forms indicating allowance of participation to the study were filled with measurement tools. Their height and weight measurements were completed in the classroom environment. Individual and group face-to-face interview methods were used during the collection of measurement tools (Büyüköztürk et al., 2016, p. 135). Face-to-face filling of measuring instruments is a convenient and feasible method that allows the researcher to increase control of the filling of the tools. In this way, the researcher can explain the points that the participants have difficulty in understanding within the measuring tool and ask the participant to fill the missing parts. During the data collection process, the researchers wanted students to fill out the missing parts, and necessary explanations about these parts were made through individual interviews where necessary.

3.5. Statistical Analyses

In order to determine the validity of the "Social Capital Scale for Adolescents" at the first stage of the study, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were implicated. The purpose of the EFA to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. On the other hand, CFA analyses the concordance between the model and the original data (Özdamar, 2013, p. 212, 236). The ratio of chi-square (x^2) value to the degree of freedom of chi-square value (x^2 / df) was used to determine overall compatibility. The non-normed fit index (NNFI), the Root Mean Square Error of Approximation (RMSEA), Incremental Fit Index (IFI), and the Comparative Fit Index (CFI) were used as comparative compliance indices. In addition, the Good Compliance Index (GFI) was used among the absolute compliance indices. After the exploratory and confirmatory factor analysis, Cronbach's Alpha internal consistency coefficient was used to calculate the reliability of the instrument and its subscales. The EFA was conducted using SPSS 24.0 and CFA using AMOS 24.0 programs.

In this study, the association between psychosocial variables and physical activity behavior was tested. Binary logistic regression analysis was applied to examine the association of participation overall and moderate to vigorous physical activity with social capital and physical self-perceptions, gender, income, parental education status, BMI classification. Logistic regression is the type of analysis conducted to identify the relationship between dependent and independent variables with the least variability and best fit (Bircan, 2004, p. 186). Binary logistic regression is a type of analysis that can be applied to variables that involve one or more explanatory variables and dependent variables that contain binary responses (participate in physical activity at a sufficient level-do not participate) (Karagöz, 2016, p. 857). In binary logistic regression analysis, the dichotomized variables have two consequences (yes/no, participant/non-participant, healthy/non-healthy, etc). The positive status of the dependent variable as 1, the opposite is coded as 0 (Bircan, 2004, p. 189). In the context of this study, participation in sufficient physical activity is indicated as 1, and in contrast, inadequate physical activity participation is also coded as 0. Probability Ratio (OO) and 95% Confidence Interval (95% GA) were calculated for regression analysis. The variance was calculated by the Nagelkerke R^2.

To carry out the binary logistic regression analysis, four assumptions about the research design and two assumptions about the analytical suitability of the data set must be met (Field, 2013, p 273; Laerd Statistics, 2015). The assumptions related to research design are dichotomous dependent variables, at least two independent variables, independence of observations and at least 15 observations for each independent variable. These assumptions are met by the research design used in this study and the size of the collected data.

Two different assumptions were tested for the suitability of the data set. Field (2013, p. 273) stated that there should be a linear relationship between independent and dependent variables in normal regression analysis and that this relationship should be between continuous independent variable and logit of the dependent variable in the logistic regression. Hosmer and Lemeshow (Field, 2013, p. 296) stated that in the logistic regression analysis, it is contrary to the linearity assumption that the interaction between continuous independent variables entering the model as estimators and their log transformations is significant in the regression model. In this study, variables that show continuous variable characteristics in the logistic regression model are the scores obtained from the subscales of Social Capital Scale for Adolescents and Physical Self-Inventory. The interaction of these estimating independent variables with the log transformations was analyzed for the dependent models for both the moderate to vigorous and overall physical activity participation models. Laerd Statistics (2015) stated that Bonferroni correction for the number of variables entering the model should be made, and Field (2013, p. 296) indicated that the significance value should set as 0.05. When both the Bonferroni correction was made, and the significance level is assumed to be 0.05, the interaction of estimators and log transformations in all models does not have a significant value in the model for this data set of the study. Field (2013, p. 296) stated that estimating variables and log transformations not reaching a significant value in the interaction model met the linearity assumption between the predictive variable and the predicted dependent variable. According to these results, the data set satisfies the assumption of linearity.

For the logistic regression analysis to be carried out, the data set meeting the linearity assumption must also meet the assumption of multicollinearity (Field, 2013, p. 273). The multicollinearity implies that at least two independent variables are highly correlated and that the error in the regression model is due to the variance of these variables. By examining the tolerance and VIF values, the assumption of multiple linear

correlations can be examined (Field, 2013, p. 297). VIF values greater than 10 (Field, 2013, p.297 quoted from Myers 1990) and that the tolerance values less than 0.01 indicates multicollinearity (Field, 2013, p. 297, quoted from Menard, 1995). The tolerance values were ranged from 0.347 to 0.878 and the VIF values ranged from 1.139 to 2.885. These results indicate that the variables does not have a multi-linear correlation.

Descriptive statistics and the differences between and the responses of the participants to the dependent and independent variables, which were coded as dichotomous were calculated to explain better the results of the regression analyses. Chi-square test was used to analyze the differences between categorical variables. In chi-square analysis, the assumptions at least 80 percent of the tables contain more than five observations were satisfied (Cohen, Manion and Morisson, 2007 p. 365).

4. RESULTS

4.1. Results of Descriptive Statistics and Physical Activity Participation Differences between Genders

In terms of participation in physical activity, the rate of participation in overall physical activity at the recommended level was 64.8%, and the rate of non-participants was 35.2%. These ratios showed a change in the negative direction for participation in moderate to vigorous physical activity. Accordingly, the proportion of those who participated in the moderate to vigorous physical activity in the last week is 29%, and the proportion of those who do not participate is 71%. As a result of chi-square analysis conducted on this data, the results of participation in overall and moderate to vigorous physical activity at the recommended level in the last week are significantly different between male and female adolescents, $p<0.05$. The chi-square test results and participation percentages for participation in physical activity are shown in Table 4.1.

Table 4.1. *Frequencies and chi-square results for physical activity participation*

Overall Physical Activity Participation				**p**
Participant	795 (64.8%)	338 (%59.5)	457 (%69.3)	0.00
Non-Participant	432 (35.2%)	230 (%40.5)	202 (%30.7)	
Moderate to Vigorous Physical Activity Participation				
Participant	356 (%29.0)	111 (%19.5)	414 (%62.8)	0.00
Non-Participant	871 (%71.0)	457 (%80.5)	245 (%37.2)	

Descriptive statistics of the socio-demographic variables indicates that the majority of the adolescent individuals participating in the study come from families below the hunger threshold according to the data of the Turkish-Labor Union. 85.7% of the adolescent individuals are below the hunger threshold, and 14.3% are members of families who have an income above the hunger threshold. When education levels of both parents' were taken into account, it appears that a small percentage of parents have a higher education level than universities. The ratio of the university and higher education is 8.7% for mother education; this ratio is 16% for father education status. 91.3% of the parents reported their education at high school and below, and 83.5% of the fathers graduated from high school and below. When the BMI values of adolescents are

examined, 6.1% of the participants are obese, 16.7% are overweight, and 77.2% have normal BMI values according to the international standards for this age group. Percentage distributions of female and male adolescents for each categorical variable and the results obtained from the physical self-perception and social capital measurement tools for adolescents are given in Table 4.2 and Table 4.3.

Table 4.2. *Frequency distrubution for categorical variables*

Variables	Total(n=1227)	Female (n=568)	Male (n=659)
Income Status			
Above the Hunger Treshold	175 (%14.3)	69 (%12.1)	175 (%16.1)
Below the Hunger Treshold	1052 (%85.7)	499 (%87.9)	553 (%83.9)
Educational Status-Mother			
University or Higher	107 (%8.7)	57 (%10)	50 (%7.6)
Highschool or Lower	1120 (%91.3)	511 (%90)	609 (%92.4)
Educational Status-Father			
University or Higher	202 (%16.5)	94 (%16.5)	108 (%16.4)
Highschool or Lower	1025 (%83.5)	474 (%83.5)	551 (%83.6)
BMI			
Obesity	77 (%6.1)	27(%4.3)	50 (%7.7)
Overweight	201(%16.7)	80 (%14.3)	121 (%18.7)
Normal	929(%77.2)	454 (%81.4)	485 (%77.5)

Table 4.3. *Descriptive statistics for continous variables*

Variables	Total(n=1227)	Female (n=568)	Male (n=659)
Horizontal School SC	3.39±0.79	3.49±0.79	3.30±0.78
Vertical School SC	3.27±0.84	3.32±0.82	3.23±0.86
Close Family SC	4.03±0.88	4.05±0.84	4.01±0.92
Distant Family SC	3.35±0.90	3.25±0.89	3.44±0.91
Neighborhood SC	5.60±1.56	5.36±1.49	5.81±1.59
Physical Self-Worth	9.01±2.36	8.66±2.39	9.32±2.28
Physical Condition	7.62±2.47	7.05±2.42	8.13±2.40
Sports Competence	7.78±2.59	7.12±2.59	8.37±2.44
Physical Attractiveness	7.06±2.57	7.10±2.61	7.03±2.53
Physical Strength	7.62±2.49	6.89±2.51	8.25±2.29

4.2. The Association of Social Capital and Physical Self-Concept with Overall Physical Activity Participation

Two different models were tested in the conducted binary logistic regression analyses. The relationship between social capital perception, physical self-perception, and participation in the overall physical activity. Secondly, participation in moderate to vigorous physical activity are the main outcomes of these models. In each model, income groups, parents' education level, and BMI groups were added in the models as a confounding variable.

The regression model (Table 4.4, Model 1) conducted to examine the association of social capital and physical self-perception with overall physical activity participation was statistically significant, x^2 (16) = 107.90, R^2 = 0.11, p<0.001. In this model, physical fitness (β= 0.09, OR:1.10 ,%95 CI:1.01-1.19), sports ability (β= 0.10, OR:1.11 ,%95 CI:1.02-1.20), income status (β= 0.58, OR:1.78 ,%95 CI:1.10-2.58) and education status of mother (β= 0.58, OR:1.79 ,%95 CI:1.08-2.98) were associated with participation in overall physical activity.

Each model was reanalysed for male and female adolescents because gender was an important determinant for physical activity participation in Table 4.3.1, and male adolescent were more likely to participate in physical activity.

4.2.1. The association of social capital and physical self-concept with overall physical activity participation for females

Table 4.5 shows the results of binomial logistic regression models conducted with data of female adolescents. Model 1, the associations related to overall physical activity, was statistically significant, x^2 (15) = 46.45, R2 = 0.11, p<0.05. For female adolescents, there was an inverse association between participation in the overall physical activity and close family social capital subscale (β = -0.06, OR: 0.93, 95% CI: 0.88-0.99). A linear association between sport competence and overall physical activity participation was observed (β = 0.14, OR: 1.15, 95% CI: 1.04-1.29).

4.2.2. The association of social capital and physical self-concept with overall physical activity participation for males

Table 4.6. shows the results of binomial logistic regression models conducted with the data provided by male students. Model 1, the associations related to overall physical activity, indicating an association of social capital and physical self-perception with participation in overall physical activity was statistically significant, x^2 (15) = 65.93, R2 = 0.13, p<0.05. In this model, physical condition (β = 0.13, OO: 1.14, 95% CI: 1.01-1.29) and income status (β = 0.57, OO: 1.77, 95% CI: 1.00-3.15) are linearly associated to participation in overall physical activity.

4.3. The Association of Social Capital and Physical Self-Concept with Overall Physical Activity Participation

The regression model (Table 4.4, Model 2) conducted to examine the association of social capital and physical self-perception with participation in moderate to vigorous physical activity was statistically significant, x^2 (16) = 149.14, R^2 = 0.17, p<0.001. Distant family social capital (β = -0.04, OR: 0.95, 95% CI: 0.91-0.99) was inversely associated with participation in moderate to vigorous physical activity. Physical fitness (β = 0.13, OR: 1.14, 95% CI: 1.04-1.25), sport ability (β = 0.12, OR: 1.13, 95% CI: 1.03-1.23), gender (β= 0.61, OR:1.84 ,%95 CI:1.38-2.45) and income status (β= 0.61, OR:1.84 ,%95 CI:1.38-2.45) were associated linearly with participation in moderate to vigorous physical activity.

4.3.1. The association of social capital and physical self-concept with overall physical activity participation for females

Table 4.5, Model 2, indicating the associations related to moderate to vigorous physical activity, indicating female's physical participation in moderate to vigorous physical activity was also statistically significant, x^2 (15) = 55.65, R^2 = 0.15, p <0.001 (Model 3). A linear association was between moderate to vigorous physical activity and sport competence (β = 0.22, OR: 1.25, 95% CI: 1.08-1.45) and income status (β = 1.32, OR: 3.74, 95% CI: 1.96-7.12).

4.3.2. The association of social capital and physical self-concept with overall physical activity participation for males

Finally, regression analyses conducted to examine the association of social capital and physical self-perception with moderate to vigorous physical activity participation for male adolescents was also statistically significant, x^2 (15) = 71.10, R^2 = 0.14, p <0.001. In this model (Table 4.6. Model 2), distant family social capital (β = -0.07, OO: 0.92, 95% CI: 0.87-0.98) was inversely associated with participation in moderate to vigorous physical activity, while physical condition (β = 0.19, OO: 1.21, 95% CI: 1.07-1.37) were linearly associated.

Table 4.4. *Regression analyses of the association between physical activity participation and social capital, physical self-perceptions*

Variable	Model 1					Model 2				
				%95 CI					%95 CI	
	β	p	OR	Lower	Upper	β	p	OR	Lower	Upper
Gender	0.16	0.24	1.17	0.89	1.54	0.63	0.00	1.88	1.40	2.53
Horizontal School SC	0.01	0.17	1.01	0.99	1.04	0.00	0.88	1.00	0.97	1.02
Vertical School SC	0.01	0.40	1.01	0.98	1.03	-0.01	0.53	0.99	0.96	1.02
Close Family SC	-0.01	0.46	0.98	0.94	1.02	0.03	0.12	1.03	0.99	1.08
Distant Family SC	-0.01	0.49	0.98	0.94	1.02	-0.06	0.00	0.94	0.90	0.98
Neighborhood SC	0.01	0.36	1.01	0.98	1.03	0.02	0.12	1.02	0.99	1.04
Physical Self-Worth	0.00	0.82	1.00	0.94	1.07	-0.01	0.94	0.99	0.92	1.07
Physical Condition	0.09	0.02	1.10	1.01	1.19	0.13	0.00	1.14	1.04	1.25
Sports Competence	0.10	0.00	1.11	1.02	1.20	0.12	0.00	1.13	1.04	1.23
Physical Attractiveness	-0.01	0.60	0.98	0.92	1.04	-0.02	0.50	0.97	0.91	1.04
Physical Strength	0.04	0.31	1.04	0.96	1.12	0.01	0.67	1.01	0.93	1.11
Income Status	0.58	0.00	1.78	1.17	2.71	0.57	0.00	1.78	1.21	2.61
Education Status-Father	-0.12	0.51	0.87	0.59	1.29	-0.11	0.57	0.89	0.59	1.33
Education Status-Mother	0.58	0.02	1.79	1.08	2.98	0.07	0.88	1.00	0.97	1.02
BMI	Obes group was taken into account as a reference group and there were no any significant differences in physical activity participation across BMI groups									

Model 1: *Regression Analyses of the Association between Overall Physical Activity Participation and Social Capital, Physical Self Perceptions,*

Model 2: *Regression Analyses of the Association between Moderate to Vigorous Physical Activity Participation and Social Capital, Physical Self*

Table 4.5. *Regression analyses of the association between physical activity participation and social capital, physical self-perceptions of female adolescents*

Variable	Model 1					Model 2				
				%95 CI					%95 CI	
	β	p	OR	Lower	Upper	β	p	OR	Lower	Upper
Horizontal School SC	0.02	0.24	1.02	0.98	1.05	-0.01	0.58	0.98	0.94	1.03
Vertical School SC	0.00	0.75	1.00	0.96	1.04	-0.01	0.50	0.98	0.93	1.03
Close Family SC	-0.06	0.04	0.93	0.88	0.99	0.01	0.71	1.01	0.94	1.09
Distant Family SC	0.00	0.97	1.00	0.94	1.06	-0.02	0.55	0.97	0.90	1.05
Neighborhood SC	-0.00	0.79	0.99	0.96	1.03	0.01	0.65	1.01	0.96	1.05
Physical Self-Worth	0.03	0.52	1.03	0.93	1.13	0.00	0.93	1.00	0.88	1.13
Physical Condition	0.05	0.35	1.05	0.94	1.18	0.05	0.44	1.05	0.91	1.22
Sports Competence	0.14	0.00	1.15	1.04	1.29	0.22	0.00	1.25	1.08	1.45
Physical Attractiveness	-0.02	0.53	0.97	0.88	1.06	-0.03	0.54	0.96	0.86	1.08
Physical Strength	0.00	0.87	1.00	0.90	1.12	-0.00	0.97	0.99	0.87	1.14
Income Status	0.54	0.08	1.71	0.92	3.19	1.32	0.00	3.74	1.96	7.12
Education Status-Father	-0.09	0.73	0.90	0.52	1.57	-0.36	0.29	0.69	0.35	1.36
Education Status-Mother	0.66	0.06	1.94	0.97	3.90	0.59	0.20	1.81	0.72	4.56
BMI	Obes group was taken into account as a reference group and there were no any significant differences in physical activity participation across BMI groups									

Model 1: *Regression Analyses of the Association between Overall Physical Activity Participation and Social Capital, Physical Self Perceptions among Females*

Model 2: *Regression Analyses of the Association between Moderate to Vigorous Physical Activity Participation and Social Capital, Physical Self Perceptions among Females*

Table 4.6. *Regression analyses of the association between physical activity participation and social capital, physical self-perceptions of male adolescents*

Variable	Model 1					Model 2				
				%95 CI					%95 CI	
	β	p	OR	Lower	Upper	β	p	OR	Lower	Upper
Horizontal School SC	0.01	0.58	1.01	0.97	1.04	0.01	0.45	1.01	0.97	1.05
Vertical School SC	0.01	0.36	1.01	0.97	1.05	-0.00	0.85	0.99	0.96	1.03
Close Family SC	0.01	0.51	1.01	0.96	1.07	0.04	0.07	1.05	0.99	1.10
Distant Family SC	-0.02	0.51	0.98	0.92	1.04	-0.07	0.00	0.92	0.87	0.98
Neighborhood SC	0.02	0.24	1.02	0.98	1.05	0.01	0.32	1.01	0.98	1.05
Physical Self-Worth	-0.01	0.76	0.98	0.89	1.08	0.00	0.92	1.00	0.91	1.11
Physical Condition	0.13	0.03	1.14	1.01	1.29	0.19	0.01	1.21	1.07	1.37
Sports Competence	0.06	0.30	1.06	0.94	1.19	0.07	0.23	1.07	0.95	1.20
Physical Attractiveness	0.00	0.94	1.00	0.90	1.10	-0.01	0.72	0.98	0.89	1.08
Physical Strength	0.07	0.19	1.08	0.96	1.22	0.01	0.79	1.01	0.90	1.14
Income Status	0.57	0.05	1.77	0.99	3.15	0.14	0.56	1.15	0.71	1.87
Education Status-Father	-0.19	0.49	0.82	0.47	1.43	0.02	0.91	1.02	0.61	1.72
Education Status-Mother	0.37	0.34	1.45	0.67	3.15	-0.24	0.51	0.78	0.37	1.64
BMI	Obes group was taken into account as a reference group and there were no any significant differences in physical activity participation across BMI groups									

Model 1: *Regression Analyses of the Association between Overall Physical Activity Participation and Social Capital, Physical Self Perceptions among Males*

Model 2: *Regression Analyses of the Association between Moderate to Vigorous Physical Activity Participation and Social Capital, Physical Self Perceptions among Males*

5. DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

In the context of this research, the associtions of participation in physical activity with physical self-perceptions, social capital perceptions and demographic variables such as income level, family education level, and BMI values of Turkish adolescents, lives in the mid-sized urban were examined. In the first part of the discussion, the association of social capital perception, physical self-perception with physical activity participation was explicated. In the following section, suggestions and conclusions related to physical activity, physical self-perception, and social capital have been made for improvement of the health status.

5.1. Discussion

The associaiton between physical activity participation and independent variables of the research demonstrated that physical condition and sport competence subscales of physical self-perception inventory, and maternal education level, and income status were associated with participation in the overall physical activity (Model 1). In the case of moderate to vigorous physical activity participation, gender, and distant family social capital perception were significantly associated, in addition to variables that associated with participation in the overall physical activity. The regression models, run separately for male and female adolescents, indicated that the significant results of the mutual analyses performed with all the data collected from male and female were distributed to the genders. According to this, the variables related to the participation of female adolescents in overall physical activity were a close family social capital, sports competence, and income level, whereas physical condition and income status were significantly associated variables with physical activity participation among male adolescents. On the other hand, variables that were significantly associated with female adolescents' participation in moderate to vigorous physical activity were sports competence and income status; and physical condition, close and distant family social capital perceptions for male adolescents.

Chi-square results indicated that male adolescents significantly more participate in both overall and moderate to vigorous physical activity than female adolescents. This finding has also been confirmed by regression analyses According to the results of the regression conducted for participation in moderate to vigorous physical activity (Model

2) with data from all participants, males were 88% more likely to participate in physical activity than female adolescents. The majority of studies on gender differences in physical activity among adolescents show that males are more physically active at a significantly higher level than girls in various countries (Jago et al., 2005, p. 449; Marques, Ekelund and Sardinha, 2016, p. 2002; p. 352, Kin-İşler et al., 2009, p. 1005; Yıldızer et al., 2018, p. 29). Telford et al. (2016, p. 5) explained that the difference between genders is engendered by the socio-ecological and logistic factors, in their longitudinal study.

Telford et al. (2016, p. 6) have referred to the importance of socio-ecological factors such as family and school which might have an impact on female adolescents to participate in physical activity. Although Telford (2016, p. 6) emphasized the importance of social capital in physical activity among adolescents, but the impact of solely social capital might inadequate in promoting participation for female adolescents. Similarly, it was seen that none of the social capital indicators that adolescents perceive in the social networks, was associated with physical activity in Model 1. The relationship between social capital perception and participation in physical activity was determined for different models. These were between the distant family social capital and participation in moderate to vigorous physical activity (6% lower odds ratio) in the analysis for both male and females, and (3% lower probability) only male included analyses. Thirdly, there was also an association between close family social capital and female adolescents' participation in the overall physical activity (8% lower probability ratio). More and more, another important finding was that all of these associations were inversely associated with physical activity participation. In other words, the increase in the perceptions of close and distant family social capital of adolescents, that adolescents' perceive higher support and the trust in the family and the fact that he/she has a positive view towards participation in the event with the family, decreases the participation rate in the physical activity with low odds.

The only research conducted on this topic in Turkey was a pilot study of this dissertation conducted in the four different cities and provinces (Yıldızer et al., 2018, p. 27). The pilot study revealed no association between family social capital and physical activity participation among Turkish adolescents. The differences related to the association of family social capital and physical activity between the pilot study and this dissertation might be caused by the sampling method of the pilot research which includes four different cities and rural areas, and the different data collection tool. In the pilot

research, the single family social capital indicator that only focuses on the general support was asked to participants. The results of the association between the perceived social capital of family and the participation in physical activity of this dissertation are also different from the work done with adolescents in Croatia (Novak, Doubova and Kawachi, p. 53). In a study conducted with Croatian adolescents, researchers found that the increase in the perception of family social capital for male would increase participation in an overall physical activity by 49% and participation in moderate to vigorous physical activity by 26% higher odds. The main reason for the difference in research findings might be associated with the cultural differences. Accordingly, Croation families might prefer to engage in physical activities with their children. In this study, researchers emphasized that Croatian adolescents among the countries dispersed from Yugoslavia are the least adherents of family ties and that families have developed particularly good relations to protect their children from bad habits. In this framework, most of the activities addressing their ages in order to protect their children from bad habits can include the selection of physical activity or sports. Thus, it is possible to conclude that higher family social capital perceptions can only be transferred to positive physical activity behavior if only family members adopt an active lifestyle. However, physical activity participation is also considered low among adults (WHO, 2014, p. 37).

Gustafson and Rhodes (2006, p. 79) stated that parents have a role in a multidimensional structure that affected their children's early physical activity behaviors during the adolescence period. In this multidimensional structure, the level of physical activity of the mother and father, the support for the child's participation in the physical activity, the socio-economic status of the family and the basic relationships between the mother and the child are the forefront factors. It is stated that the positive increase in these factors will affect participation in physical activity positively. However, when examining behavior patterns of the adolescent from the concept of social capital, it is important to note that there is also a negative effect of social capital. Novak and Kawachi (2015, p. 5) discussed the possibility of negative behaviors rather than health behaviors that are expected to emerge as a result of stress and restriction on adolescents when the social capital is used very strongly to protect existing social order. Kawachi Subramanian and Kim (2010, p. 221) explained this situation as the use of social capital to limit unwanted behavior by limiting individual freedoms. Parallel to these explanations, Pugliese and Okun (2014, p. 543) have shown that the feeling of social control that the family creates

is lowering exercise participation in adolescents. From this point of view, it can be considered that parents have strived to keep adolescents away from bad habits by creating a constant control mechanism over their children in Turkey.

Considering the social control of the adolescent, academic concerns of the family is another important point that should be assessed in Turkish culture in terms of family norms. While families support Turkish adolescents, they can find interventions for their expectations, and this is mostly caused an academic anxiety (Kelecioğlu and Bilge, 2009, p. 149). Turkish adolescents in high school prepared for exams for the university degree, and about 35% are thought to be registered to a program, it can be considered that the provided support from family is generally academic in Turkish culture. This finding was also discussed in a study conducted in Turkey, and researchers indicated that physical activity level of high school students decreases sharply, while the eating habits increase in the negative direction with age during high school (Alper et al., 2017, p. 106). In the light of these statements, parents' academic anxiety and social control over adolescents during high school may have had a negative impact on physical activity behavior, and other health-related behaviour.

Parents are not only sources of support that can be provided by the family for physical activity behavior. Hohepa et al. (2007, p. 2) discussed the association between physical activity behaviors and the relationship to parents and cousins, who are considered to be distant relatives and influential on behaviors. Social and psychological support from other adolescents and especially from their siblings and cousins, who are members of their families, may be more valuable from than the support provided by parents. In this way, adolescents can regulate their health-related behaviors. In addition, behaviors of grandparents may have an impact on the health behaviors of adolescents. For example, Eli et al. (2016, p. 33) stated that parents and grandparents have divergent views on the feeding of children, the time spent at the screen, and physical activity behaviors. Similarly, Farrow (2014, p. 340) reported that in British culture, older parents had developed healthier approaches to feeding children than parents. There might be two main reasons associated with these findings in developed countries. The first, generation is related to the difference. Accordingly, the fact that older parents had exposed to lower rates of processed food in their youth and this may have contributed to their eating habits and adopt a healthier approach. Similarly, in the shade of technological advances, the older generation had worse transportation, in turn, they adopted more physically active

ways to move from one place to another. Secondly, older members of that family might want to contribute to the development of their grandchildren's health in the light of their experience. However, no association was found between distant family social capital and physical activity behavior. If both angles are considered from the frame of physical activity in Turkish culture, it can be concluded that the low rate of physical activity among the elderly reduces their power to influence and direct their grandchildren into a physically active lifestyle.

Kawachi, Kennedy, and Glass (1999, p. 1190) emphasized that social capital is influential on health-related behaviors through social norms and the behaviors related to these norms. In the light of this information, it is a necessity to investigate the family norms related to physical activity in Turkish culture. The fact that norms in the mutual participation to activities as a family require another fundamental dimension of social capital such as the development of trust and reciprocity among family members. Kayı (2012, p. 22) explains this by transforming norms into a sense of trust in the expectation, and that other individual will behave in the same way mutually. Although the emotions are a vital part of social capital, the activities in which social capital is also developed important. Participation in physical activity is generally low in all age groups in Turkish society. From this point of view, it can be understood that the place for physical activity is very limited when adolescents spend time with family members and their peers. This might also highlight that physical activity is not one of the activity for structuring norms in the family. Therefore, the absence of physical activity behavior in health-related norms and behaviors within the family will reduce the likelihood of this behavior occurring. Previously reported low rates associated with participation in physical activity in the Turkish community also indicate health-related norms within the family (Hallal et al., 2012, p. 249). Unlike the Turkish community, Fu et al. (2018, p. 4) stated that support for family participation in physical activity is very important in the People's Republic of China, and emphasized that participation in physical activity with other members of the family, especially important for the elderly. Hohepa et al. (2007, p. 4) found that the support for physical activity provided by cousins is significantly related to physical activity behavior for only beginners in New Zealand. In a society like New Zealand where the level of economic prosperity is high, and the urbanization structure allows physical activity, so it is seen that relations with distant family members positively affect physical activity.

For adolescents, family members have a very important role in the psychological, social and logistic support and participation in physical activity. However, previous intervention studies in Anglo-Saxon culture have shown that family support is not the single most important factor in adolescents' participation in physical activity (Salmon et al., 2007, p. 154). Relations with peers have the greatest importance in this respect. However, according to the results of this study, no association was observed between horizontal school social capital perception representing social capital among students and participation in physical activity. Likewise, the results of the study, which examined participation in social capital and physical activity in Croatian adolescents, did not find any relationship similar to the findings of this dissertation (Novak, Doubova, and Kawachi, 2016, p. 52). In the pilot study of the dissertation, there was no association between students' reciprocity perception and physical activity participation, whereas the increase in mutual trust between the students decreased the physical activity behavior among the female students and increased it in the males significantly (Yıldızer, 2018, p. 30). Researchers explain this notion, especially among female adolescents, that social support is not a leading factor in participation in physical activity (Laird et al., 2016, p. 6). Moreover, it is worth to note that once again, the social capital scale includes questions about support, trust, and mutual activity participation for all subscales, rather than pilot research had focused on only one of this component of social capital. Moreover, as it was previously emphasized physical activity might not be a cultural health norm in Turkish culture.

Similar to the sense of social capital among students in school, the perception of social capital felt in neighborhood relations was not associated with physical activity participation among adolescents living in Eskişehir urban. When these two findings are interpreted together, it is necessary to take into consideration the location of the high schools in the city center. The vast majority of the high schools in which this research is carried out are high schools that function in state support and are located in the city center. Due to being in the city center, they have adapted to the dynamic cultural structure of the city, and most of the students use city facilities during the course time. This leads the reciprocal relations and trust between the students in the school environment to be also affected from outside the school. In this concept, it should be better to discuss the importance of adjacencies of schools and neighborhood together to construct social capital and effect physical activity behaviors. Lindström (2011, p. 3) stated that as the

main source of social capital, generalized trust in society is an important factor in increasing participation in physical activity. Increased trust among young people can lead to better health-related behaviors, leading to an increased sense of security that is felt when accepting, supporting, and communicating (Stevens et al., 2007, p. 121).

Secondly, related the location of school and neighborhood, the key link between social capital perception and health behaviors is the reduction of health problems by reducing crime rates (Kawachi, Kennedy and Glass, 1999, p. 1190).) Ueshima et al. (2004, p. 879) concluded that adolescents' perceived crime rate in the environment they live in was significantly correlated with physical activity participation in the opposite direction. In this respect, it can be seen as a necessity that the school and neighborhood environment in Eskişehir city center should be evaluated regarding health behaviors. The third important consequence of the fact that schools are located in the city center regarding physical activity is the inadequacy of physical activity opportunities in the school environment. The inadequacy of opportunities for physical activity can be seen as an obstacle in the transformation of positive feelings towards the trust of the adolescents in the school, reciprocity and affect the physical activity behavior. The main reason for this situation can be seen as the inadequacy of bicycle paths, parks, and areas where physical activities are to be carried out, in and around the schools in Eskişehir city center (Ueshima et al., 2010, p. 1). Parallel to this explanation, Gomez et al. (2004, p. 879) have shown that participation of physical activity is reduced by the distance between the opportunities for participation in physical activity and the environment in which adolescent live.

In the light of explanation made by Bourdieu (1986, p. 249) which regards social capital as a partnership of a whole group and in fact as a way of including the group, the norms within the group such as school friendships become more important. Establishing and maintaining norms that positively affect health-related behaviors within groups such as walking, cycling, and nature walking can be viewed as a necessity for physical activity behavior among adolescents and neighbors in the neighborhood (Lindström, 2008, p. 226). Lindström, Hanson, and Ostergen (2001, p. 441) explained that participation in physical activity is high among socio-economically disadvantaged individuals and that this is based on norms in social networks of the sample in which the research was conducted. Norms, one of the elements of social capital, have evolved to require physical activity within the social network, as in the case of Ali and Lindström (2006, p. 214),

which allows people to participate in physical activity and fulfill the social networking requirements. In the light of Bourdieu's view, social networks in which Turkish adolescents are involved do not have norms for physical activity. It is also possible that norms for physical activity behaviors don't facilitate statues within a network and being a part of a group for adolescents. In parallel with these explanations, Yıldızer et al. (2018, p. 30) reported that the increase in the perceptions of informal social control among Turkish society, which they assessed with a single question, was inversely related to physical activity.

It is important to note that the type of social network is also important factor in behavioral patterns (Putnam, 2000, p. 22). In the case that adolescents always having time within the same social network might cause repeating the same behavioral patterns. On the other hand, being a member of different social networks might engender a weak social ties. These weak ties that apply to distant relations have strong characteristics because individuals do not meet each other in a closed network and are unlike each other (Granovetter, 1973, p. 1374). Granovetter calls this phenomenon "the power of weak bonds," explaining that when individuals in a social network are the same, the individuals will have the same gain as other individuals, whereas individuals with weaker ties will increase the quality of their gains in differentiated groups. One of the gain could be health related behaviours.

Another finding of this study was that there was no association between positive perceptions of perceived teachers-student support, trust and cooperation, and physical activity participation. In a study conducted by Novak, Doubova and Kawachi (2016, p. 52) in Croatia, only a positive association was found between the participation of female adolescents in moderate to vigorous physical activity and the teacher-student social capital perception. In the pilot study of the research, it was reported that the increase in trust between the students and the teachers decreased the participation rates of male students in physical activity (Yıldızer et al., 2018, p. 30). Similarly, these results were obtained in the Croatian sample (Novak, Doubova, and Kawachi, 2016, p. 56). Researchers have explained this to male students with a lower level of trust in the authority figure and weaker ties (Hamid and Lok, 2000, p. 49). However, researchers claimed that the support provided by the teachers is as important as the the support provided by family and peers to develop the behavior of physical activity for the adolescents (Haerens et al., 2008, p. 503). Eather, Morgan, and Lubans (2013, p. 9)

emphasized that social support provided by teachers is a positive influence on the health behaviors, and increases participation in physical activity.

Physical self-perception varibles were also analyzed to examined for their association with physical activity participation. Adolescents with higher self-perception of sports competence and physical condition were at least 10%more likely to participate in physical activity. The most basic reason for this is the correlation between physical self-perception and physical activity. For example; Marsh and Redmayne (1994, p. 48) found that the subscales of the physical self-perception questionnaire were correlated with the physical fitness parameters in adolescents. Similarly, Jekauc et al. (2017, p. 110) stressed that physical exertion has a significant effect on motor skills and influences physical activity behavior as a result of the study carried out with German adolescents. Strong et al. (2005, p. 734) reported that the physical self-perceptions of the individuals were changing from the pubertal period to adolescence, and there was also a strong relationship between physical activity and physical self-perception profiles. The reciprocal relationship between physical activity and self-perception is not limited to these two concepts. Rodriguez and Audrain-McGovern (2005, p. 255) also show that the physical self-perception is a positive health outcome, such as reducing cigarette use, in the data that collected from Americans adolescents. When the findings of this study were analyzed in detail according to gender variable, the increase in the perception of the physical condition also increased the participation rate in physical activity in male adolescents; and sports competence increased participation in physical activity participation among female adolescents. In the studies, examined sex differences in physical self-perception demonstrated that there is a difference between male and female adolescents (Aşçı, 2004, p. 45; Klomsten et al., 2004, p. 119).

Female adolescents with a higher sports competence perception were at least 25% more likely to participate in overall physical activity compared to female adolescents with lower sports competence perception. Similar to the findings of this study, Barnett et al. (2008, p. 1) showed that perceived sports competence perception as a consequence of the longitudinal study predicts adolescents' participation in physical activity. Gilson, Cooke, and Mahoney (2005, p. 443) stated that there is a positive correlation between British female adolescents' perceptions of sports competence and their participation in the sport. According to Harter (1978, p. 34), perceiving their competences at the highest level is one of the main reasons for individuals to put forth a behavior and to behave more

consistently for the continuity of this behavior. The perception of sport competence represents learning sportive activities, athletic skills and self-confidence in the sport environment (Maïano et al., 2004, p. 54). Welk and Schaben (2004, p. 74) also stressed that the sense of competence might be a direct cause of participation in physical activity. Stodden et al. (2008, p. 290) emphasized that perceived physical competence pose a complex task, with one of the main components of participation in physical activity. The model they have analyzed involves a reciprocal association between physical activity and mobility. Thus, participation in physical activity increases motivation, in turn, an exponential increase in physical activity motivation cause higher participation in physical activity. According to this finding, it can be said that female adolescents perceive their athletic skills higher, feel confident in the sports environment and reflect this perception while they are attending the physical activity, in turn, increasing their participation in physical activity and sports.

Sallis, Prochaska, and Taylor (2000, p. 966) emphasized that sport competence perception is one of the most important determinants of participation in physical activity for adolescents aged 13-18 years. This is explained by the fact that the adolescents criticize him/herself for a sport, to participate in that activity, and in this way can adopt a physically active lifestyle. Although the sport is a different concept, participation in organized sport activities is seen as one of the most important ways of adopting physical activity of the adolescent age group (Cairney and Veldhuizen, 2017, p. 338). One of the main reasons is the self-confidence of the individual in the sports environment will increase over time. In his study of Canadian adolescents, Bowker (2006, p. 215) found that nine subscales of physical self-perception were associated with physical self-esteem for both male and female adolescents. It can be argued that participation in sports has explored physical competences, causing individuals to maintain activities that are appropriate for them and to have an image that will improve their self-esteem alongside their health outcomes. In addition to these explanations, according to Slater and Tiggemann (2011, p. 461), it is possible that the adolescents' perceptions of negative body image that they experience during physical activity may decrease physical activity participation rates. The increase in the sense of sport competence and the provision of participation in the sport indicate that this negative effect can be avoided (Burges, Grogan, Burwitz, 2006, p. 57).

Literature indicates many studies examine the effect of structured exercises on the physical self-perception, and some of these studies have implications for physical fitness, which in turn leads to an increase in the perception of sport competence. For example, in Turkey female college students showed improvement, as a result of their participation in the ten-week aerobic physical fitness programs, in the coordination of physical self-perception, physical activity, flexibility subscales of physical self-perception questionnaire compared to control group, (Aşçı, 2003, p. 260). In a study conducted on Swedish female adolescents, it was observed that sport competence increased significantly with high effect size at the end of a six-month exercise program (Lindwall and Lindgren, 2005, p. 650). Burges et al. (2006, p. 63) reported that a six-week aerobic dance program engendered improvement in self-perception of female adolescents in terms of strength and physical fitness, perceived body fat, physical condition, and sport competence. These studies have also reported that female adolescents and female university students are also developing in the physical self-perception in fitness, strength, coordination, and flexibility. However, these studies have implemented structured, planned exercise programs, and it can be said that the warming, general activity type and cooling sections in these exercise programs target the physical fitness of the participants and thus contribute to the development of fitness level, as well as self-concept. It has been also noted that activities such as step-aerobics were included in these programs, and this content of activity also has opportunities for development in coordination (Aşçı, 2003, p. 262). Similarly, Köksal et al. (2006, p. 48) reported that self-perception profile in coordination, fitness, appearance and flexibility subscale scores increased after eight-week step-aerobic activity among females regularly participating in the step-aerobic activities.

On the other hand, it is also worth noting that the possible negative perceptions of female adolescents with low self-perception, about physical activity environment might have affected participation. Maïano et al. (2004, p. 63) stated that perceiving the sports environment as a competition and creating an atmosphere for it could negatively affect some adolescents to participate in that activity. In another study, it was emphasized that females do not choose some activities due to sweating, injuries, aggressive climate (Grieser et al., 2006, p. 40).

Another important finding of this study was that male adolescents with high physical condition perception have at least 14% greater odds of participation in the overall

physical activity and 21% greater odds of participation in moderate to vigorous physical activity than those with low physical condition self-perception. The most basic reason for this situation might be associated with the physical activities that males prefer. Wilson et al. (2005, p. 295) stated that male adolescents prefer mostly the team sports such as football and basketball as a physical activity. On the other hand, female adolescents mentioned activities such as dance and gymnastics as their favorite activities. The motivational sources that stand out for students in identifying these activities are perceptions of entertainment and health gains. When the metabolic burden required by these activities is examined, it is seen that men tend to have the more aerobic capacity. Similarly, Arabacı (2009, p. 6) stated that male high school students like to participate to the team sports, especially football, whereas girl students are interested in individual sports in physical education and sports lessons in Turkey. Moreover, he also stated that the intensity of competitive team sports in physical education and sports lesson negatively affected the participation of the female students in classes. This may be the main reason for the development of physical condition perception among male adolescents. At the same time, the physical condition requirements of the preferred activities by male adolescents also reveal an increase in physical activity participation among male adolescents. Lastly, studies examining the attitudes towards physical education and sport lessons also showed that male adolescents demonstrate a significantly more positive attitude, and this might explicate the higher participation and activity level in physical education and sport classes (Koca and Demirhan, 2004, s. 754; Koca, Aşçı and Demirhan, 2005, s. 365). In this regard, parallel to the findings of Wilson et al. (2005, p. 295), it is more likely that male adolescents who perceive physical condition to participate in these activities with their friends in Turkey, as a result of better opportunities in Turkish school setting and neighborhood.

The income was the most consistently associated variable with the highest probability rates of adolescents' participation in physical activity within all covariates included in the analysis. Literature indicates that income seems to be a very important variable for participation in physical activity in different cultures. To illustrate, Kim and So (2014, p. 1888) in South Korea, Giles-Corti and Donovan (2002, p. 605) in Australia, Estabrooks, Lee and Gyurcsik (2003, p. 102) in United States showed a difference between higher and lower socio-economic groups in physical activity participation, and this differences were in favor of individuals with higher socio-economic status. Gordon-

Larsen et al. (2006, p. 419) stated that living in socioeconomically advantaged neighborhoods would offer more physical activity in terms of the environment for participation in physical activity among adolescents. In addition, being in socio-economically advantageous families also provide the necessary logistic support for physical activity, which in turn can positively affect the physical activity behaviors of adolescents.

In the analyses including male and female adolescents, it was found that the increase in maternal education level also increases adolescents' participation in an overall physical activity by at least 79% probability. Similar to the findings of this research, Hallal et al. (2006, p. 3) compared maternal educational levels and physical activity behaviors of adolescents, and low maternal education levels were associated with greater sedentary behavior among adolescents. Kantomaa et al. (2010, p. 375) stated that children from low-income families and lower levels of education might adopt more sedentary life due to their healthy vision, exhibit behavioral impairment, and lower academic achievement. For example, Certain and Kahn (2002, p. 634) reported that children with higher maternal education levels spent less time on the screen and were more active than children with lower levels of maternal education. Similarly, Guillaume et al. (1997, p. 549) noted that the drop in maternal education level caused children to have more television viewing and less activity. Frost (2005, p. 401) reported that mothers with higher educational levels better fed their children. Considering the role of parents in child development, it can be assumed that mothers with higher educational levels dedicate some of their times to personal development for child development and understand the importance of physical activity in physical development. It can also be argued that assuming that socio-economically advantaged individuals have a higher education level, the level of maternal education can indirectly create opportunities for adolescents to participate in physical activity.

Guillaume et al. (1997, p. 549) examined the association between the education level of father and physical activity behaviors of children in Belgium and conclude that increase in education level also increases physical activity among children. In his study conducted in Finland, Kantomaa (2007, p. 413) stated that the increase in father education level only affects the physical activity behavior of male adolescents positively. The increase in the level of education and income of the father can lead to the support of adolescents, just like mothers. It is also worth to note that the fact that these studies were

conducted in countries with a high level of income. Participation rates of physical activity are also higher in those communities than Turkey. Finally, the fact that the environmental opportunities such as cycling in nature or for transportation and winter sports adopted in these cultures might be another important factor for the physical activity behaviors of children and adolescents.

In this dissertation, no association was found between BMI and physical activity behavior. When the literature is examined, it is seen that one of the most basic concepts directly related to physical activity in adolescents is BMI (Levin et al., 2003, p. 816). Since the number of the overweight and obese adolescents in this study is very low, an association between this variable and physical activity behavior may not be determined.

5.2. Conclusion

The aim of this dissertation was to examine the association of physical activity participation (overall and moderate to vigorous) with social capital perceptions, physical self-perception of adolescent individuals attending high school in the city center of Eskişehir. Moreover, this dissertation aimed to examine the association between physical activity behavior and social, physical and psychological structures that are rapidly changing during adolescence.

In this dissertation, social, psychological and individual factors were indicated in the youths' physical activity promotion model Welk (1999, p. 12) were examined within a group of adolescents living in the urban of Eskişehir. There was no inventory to measure social capital perception for adolescents in Turkish culture in the 2016-2017 academic year in which the research was conducted. Because of this reason, a scale was developed by researchers. Social Capital Scale for Adolescents was developed, and it was found valid and reliable among adolescents between 14-18 years of age as a result of EFA and CFA internal consistency analysis. The subscales of the measurement instrument are the perception of close family social capital, distant family social capital, horizontal school social capital expressing the social capital among the students, the perception of vertical school social capital expressing the social capital between the students and the teachers and the neighborhood social capital expressing the social capital in the living environment. When the subscales are examined, it is seen that the items include concepts such as trust, support, and cooperation which are the components of social capital.

According to the results of this research, the distant family social capital was inversely associated with moderate to vigorous physical activity participation for males, whereas close family social capital was inversely associated with overall physical activity participation for females. That is adolescents with higher social capital perceptions in these subscales significantly lower participation rates in physical activity compared to those with lower social capital. The main reason for this situation is that the participation of physical activity among adults is very low. Moreover, the physical activity level of Turkish adolescents linearly decreases during the high school, and probably due to the expectations of families, which affects the direction of the support and generally focuses on academic activities. Within the social scope of this study, it is seen that the perception of social capital among students and between teachers and students were not associated with physical activity behavior among adolescents. Similar to these findings, perceived neighborhood social capital in the living environment was not associated with physical activity participation. When these findings are examined holistically, it can be considered that sports facilities in Eskişehir city center may be insufficient for adolescents. In this respect, both the sociological and environmental conditions of schools in the city center of Eskişehir should be observed to be encouraged among adolescents.

On the other hand, there were also some significant associations related to the psychological dimension of the research. Increased self-perceptions of the physical condition of male adolescents and increased awareness of sports competence of female adolescents increase the probability of participation in physical activity. In this respect, the popular sport among male adolescents requires endurance, durability, and the increase in condition perception can lead males to participate more in these activities. Also, since females have a very low level of activity and limited opportunites for activities such as step-aerobics and dancing, those perceive their competence in sport have better participation rates. Therefore, providing variety of physical activity opportunities for them might increase their activity level. Furthermore, physical attractiveness, physical self, and physical strength subscales were not associated with physical activity participation among adolescents. The main reason for this could be attributed to a lack of activity opportunities that improve various physical fitness indicators in urban Eskişehir.

It was also found that higher income and maternal education was associated with increased probability of physical activity participation among adolescents. Higher income level may cause both adolescents to settle in the habitats with physical activity

possibilities as well as to provide the logistic support that can be needed for physical activity. The increase in the maternal education may have led mothers to comprehend the necessity of physical activity in child development and promote this behavior for young people. Finally, because there is an unequal difference between the distributions of the BMI groups, there was no association between this variable and participation in physical activity.

In conclusion, this dissertation indicated social, psychological and personal variables to examine the physical activity behavior of adolescents in the urban of Eskişehir, which is a mid-sized city in upper-mid income, developing Muslim country. As the majority of the studies conducted on this topic have focused on the adult population in developed countries, this study indicates a distinct perspective related to culture and developmental status. Hence, it was found that social capital perceptions in the family and school social environments that adolescents spend their most of the time were associated with physical activity behavior in various ways. Similarly, specific subscales of physical self-inventory were consistently associated with physical activity behavior for male and female Turkish adolescents.

5.3. Recommendations

The study findings show that the Social Capital Scale for Adolescents is a valid and reliable data collection tool with a five-factor pattern. Moreover, this data collection tool is the first measurement tool developed in Turkey to examine social capital perceptions among adolescents and can be used in studies focusing on adolescents. Castiglione et al. (2008, p. 3) indicated that the strength of the measurement of social capital theory would eventually rise, and future studies on inventory development should consider including different aspects of social capital. On the other hand, the development of a social capital perception scale for the physical activity environment might be considered by future studies.

The inverse association between the family social capital and physical activity participation suggest that policies should consider informing parents and relatives about the importance of physical activity. In this respect, the adoption of physical activity among the parents in terms of health and development and prevention of adverse behavior can lead to increased parental involvement in physical activity. The development of such

policies may lead to an increase in participation rates in physical activity in Turkish adolescents through promoting participation in physical activity among adult members of the family. It is thought that health, education and family policies can benefit from the results of the research.

It can be suggested that the teachers' role in promoting physical activity should be increased when it is thought that there was no association between the school-related subscales of social capital perception and physical activity behavior. Just as it is in the perception of family social capital, teachers also bear academic concerns, and for this reason, adolescents may be supporting this aspect of their profession's necessity. However, it is also expected that teachers will be a role model for health behaviors and they can play a leading role in physical activity behavior. The organization and development of the possibilities that the school has for physical activity may also cause the high sense of social capital of adolescents to turn into physical activity and other positive health outcomes. Similarly, increasing physical activity opportunities for adolescents in the city center can open up the possibility for adolescents to participate in physical activity with both their schoolmates and their friends in the neighborhood.

It is seen that the increase in the perception of the sporting competence among female adolescents increases the probability of participating in physical activity. From this point of view, it can be suggested that parents should start their daughters in sports at an early age to increase their self-perception that they are capable of sport and that girls may probably have a positive attitude towards both overall and moderate to vigorous physical activity behaviors.

In terms of physical education and sports lessons, the patterns of lesson plans proposed by teachers should consider the gender equality and the activities that both male and females like to participate to improve, the students' perceptions of sport competence. In this way, the disadvantages of participation of the girls and adolescents in physical activity can be avoided. For male adolescents, the increase in the perception of physical condition seems to increase the likelihood of participation in physical activity. From this point of view, improving their aerobic capacity within their interests may increase male participation rates in physical activity.

Increasing parental education level and offering physical activity opportunities for poor neighborhoods also important for improving physical activity participation for those

adolescents who live in low-income districts. State level policies should also consider these variables for promoting health among adolescents.

To sum up, following recommendations were proposed in the light of findings;

- The study findings show that the Social Capital Scale for Adolescents is a valid and reliable data collection tool with a five-factor pattern, and can be used in future studies focused on the adolescent population.
- The inverse association between the family social capital and physical activity participation suggest that policies should consider informing parents and relatives about the importance of physical activity.
- It can be suggested that the teachers' role in promoting physical activity should be increased when it is thought that there was no association between the school-related subscales of social capital perception and physical activity behavior.
- The physical activity opportunities should have revised in the city centers in developing countries for promoting participation.
- It can be suggested that parents should encourage their daughters to participate in sports at an early age to increase their self-perception that they are capable of sport and that girls may probably have a positive attitude towards both overall and moderate to vigorous physical activity behaviors.
- Improving male's aerobic capacity within their interests may increase male participation rates in physical activity.
- Increasing parental education level and offering physical activity opportunities for poor neighborhoods also important for improving physical activity participation for those adolescents who live in low-income districts. State level policies should also consider these variables for promoting health among adolescents.

The findings of this research may also guide topics of future studies. Investigation of the associations between social capital and self-perception and physical activity behaviors cross-culturally may reveal the importance of cultural norms, level of development, on adolescent social perceptions in health-related behaviors. In this study, the execution of different regression models for gender variables separately for both income groups and BMI groups will open up the development of more meaningful policies in the future for socio-economically disadvantaged adolescents and adolescents

with weight problems. In addition, the results of this study demonstrate the importance of the need to investigate the relationship between physical activity behaviors of adolescents and physical activity behaviors of adolescents and parents with whom adolescents spend time together. Future studies might also consider conducting this research model in the various population such as elders, disabled individuals or individuals diagnosed with obesity or other metabolic health problems. Focusing on those special populations might lead to information that helps policy development for increasing physical activity participation for those populations. It is also possible to examine the difference between individuals living in rural and urban in association with their social capital and physical self perceptions. Moreover, conducting this research model with devices for collecting more objective physical activity data would be helpful to explicate physical activity behavior in terms of the level rather than participation status.

This dissertation also has some methodological limitations and overcoming these limitations would be an important factor to improve the quality of research for future studies. First of all, the self-report method was used to measure physical activity behavior in this study, due to the economic constraints. Measuring physical activity behaviors objectively with accelerometers would lead to more reliable monitoring of physical activity. This is the most fundamental impact that will make the findings more valid and reliable. Conducting a similar study in the suburbs and the rural area may offer different results. It should be taken into account by readers that the results of this study have reverse causality limitations due to the cross-sectional study design.

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APPENDICES

APPENDIX-1 Permission of Ethics Committee

Evrak Kayıt Tarihi: 15.03.2016	Protokol No: 29192	Tarih: 04.01.2018

ANADOLU ÜNİVERSİTESİ
SAĞLIK BİLİMLERİ BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU
KARAR BELGESİ

ÇALIŞMANIN TÜRÜ:	Doktora Tez Çalışması
KONU:	Sağlık Bilimleri
BAŞLIK:	Adölesanlarda Sosyal Sermaye, Fiziksel Benlik Algısı ve Fiziksel Aktivite Arasındaki İlişki: Eskişehir Kent Merkezi Örneği
~~PROJE~~/TEZ YÜRÜTÜCÜSÜ:	Prof. Dr. İlker YILMAZ
TEZ YAZARI:	Günay YILDIZER
ALT KOMİSYON GÖRÜŞÜ:	-
KARAR:	Olumlu

Prof.Dr. Dilek AK
(Başkan-Eczacılık Fak.)

Prof.Dr. Yusuf ÖZTÜRK *(Başkan Yardımcısı-Eczacılık Fak.)*	**Prof.Dr. Şükrü TORUN** *(Sağlık Bilimleri Fak.)*
Prof.Dr. Betül DEMİRCİ *(Eczacılık Fak.)*	**Prof.Dr. Müzeyyen DEMİREL** *(Eczacılık Fak.)*
Prof.Dr. Nalan GÜNDOĞDU KARABURUN *(Eczacılık Fak.)*	**Prof.Dr. İlker YILMAZ** *(Spor Bilimleri Fak.)*

APPENDIX-2 Approval of Local Government

Ana. Üni. Evrak Tarih ve Sayısı: 11/05/2016-E.32187

T.C.
ESKİŞEHİR VALİLİĞİ
İl Millî Eğitim Müdürlüğü

ESKİŞEHİR
İL MİLLÎ EĞİTİM MÜDÜRLÜĞÜ

Sayı : 88074293/605.01/4891019 02.05.2016
Konu: Araştırma Projesi

ANADOLU ÜNİVERSİTESİ
(Genel Sekreterlik Yazı İşleri Müdürlüğü)

İlgi : a) 27/04/2016 tarih ve 4709549 sayılı olur.
b) 11/04/2016 tarih ve E.46834 sayılı yazınız.

İlgi (b) yazı ile istemiş olduğunuz "Araştırma Projesi" incelenmiş ve uygun görülmüş olup, ilgi (a) Olur ekte sunulmuştur.
Bilgilerinize rica ederim.

Necmi ÖZEN
Vali a.
İl Milli Eğitim Müdürü

EKLER :
1-İlgi (a) Olur (1 sayfa)
2-Araştırma Değerlendirme Formu (1 sayfa)

Adres :
Yunusemre Kampüsü 26470
Tepebaşı/Eskişehir

Aslı ile Aynıdır
5070 Sayılı Yasa ile elektronik olarak imzalanmıştır.
03/05/2016
Önder ÜLKE
Memur

Büyükdere Mah.Atatürk Blv. No:247 ESKİŞEHİR
Elektronik Ağ: www.eskisehir.meb.gov.tr
e-posta: strateji26@meb.gov.tr

Ayrıntılı bilgi için: L.TOKAT
Tel : (0 222) 239 72 00/213-425
Faks: (0 222) 239 39 22

Bu evrak güvenli elektronik imza ile imzalanmıştır. http://evraksorgu.meb.gov.tr adresinden ee26-4299-344b-8421-e7fe kodu ile teyit edilebilir.

APPENDIX-2 Approval of Local Goverment

T.C.
ESKİŞEHİR VALİLİĞİ
İl Millî Eğitim Müdürlüğü

ESKİŞEHİR
İL MİLLÎ EĞİTİM MÜDÜRLÜĞÜ

Sayı : 88074293/605.01/4709549
Konu : Araştırma Projesi

27.04.2016

VALİLİK MAKAMINA

İlgi: Anadolu Üniversitesi Genel Sekreterlik Yazı İşleri Müdürlüğünün 11/04/2016 tarih ve E.46834 sayılı yazısı.

İlgi yazı ile; Anadolu Üniversitesi Spor Bilimleri Fakültesi Beden Eğitimi ve Spor Öğretmenliği Bölümü Arş. Gör. Günay YILDIZER' in "Sosyal Sermaye Algısı ve Sosyal Eşitsizliğin Adölesanların Fiziksel Aktivite Düzeyine Etkisi: Eskişehir Kent Merkezi Örneği" başlıklı doktora tez çalışması Araştırma İzin Komisyonu tarafından incelenmiş ve komisyon tarafından sakınca görülmediği tespit edilmiş olup, komisyon tarafından belirtilen okullarda yukarıda adı geçen projenin gerçekleştirilmesi uygun görülmektedir.

Makamlarınızca da uygun görülmesi halinde takdirlerinize arz ederim.

Barış HANCI
Müdür Yardımcısı

OLUR
.../04/2016

Necmi ÖZEN
Vali a.
İl Milli Eğitim Müdürü

Büyükdere Mah.Atatürk Blv. No:247 ESKİŞEHİR
Elektronik Ağ: www.eskisehir.meb.gov.tr
e-posta: strateji26@meb.gov.tr

Ayrıntılı bilgi için: L.TOKAT
Tel : (0 222) 239 72 00/213-425
Faks: (0 222) 239 39 22

APPENDIX-2 Approval of Local Goverment

T.C

ESKİŞEHİR VALİLİĞİ

İl Milli Eğitim Müdürlüğü

ARAŞTIRMA DEĞERLENDİRME FORMU

ARAŞTIRMA SAHİBİNİN	
Adı Soyadı	Arş. Gör. Günay YILDIZER
Kurumu/Üniversitesi	Anadolu Üniversitesi
Araştırma Yapılacak Eğitim Kurumu ve Kademesi	Tüm Liseler
Araştırmanın Konusu	Sosyal Sermaye Algısı ve Sosyal Eşitsizliğin Adölesanların Fiziksel Aktivite Düzeyine Etkisi: Eskişehir Kent Merkezi Örneği
Üniversite / Kurum Onayı	Var
Araştırma/Proje/Ödev/ Tez Önerisi	Var
Veri Toplama Araçları	Adölesanlarda Sosyal Sermaye Ölçeği Soru Havuzu, Uluslararası Fiziksel Aktivite Anketi, Kendini Fiziksel Tanımlama Envanteri, Veli Onay Mektubu, Veli Bilgi Formu,
Görüş İstenecek Birimler	
KOMİSYON GÖRÜŞÜ	
Milli Eğitim Bakanlığı Yenilik ve Eğitim Teknolojileri Genel Müdürlüğü'nün 2012/13 sayılı genelgesi gereğince uygulanmasında sakınca yoktur.	
Komisyon Kararı	KABUL (Oybirliği ile)
Muhalif Üyenin Adı ve Soyadı	Gerekçesi :-

KOMİSYON

22/04/2016

Komisyon Başkanı
Barış HANCI
Milli Eğitim Müdür Yardımcısı

Üye
Dr. Seda ERCAN AKKAYA
Baş Öğretmen

Üye
Ömer GARAN
Öğretmen

Üye
Nuray GÖKÇAYIR
Uzman Öğretmen

APPENDIX-3 Consent Form

ANADOLU ÜNIVERSITESI

ESKİŞEHİR, TÜRKİYE

Spor Bilimleri Fakültesi
Beden Eğitimi ve Spor Öğretmenliği Bölümü

Tel: +90 222 335 0580

Sevgili Öğrenci,

Sizlerin aile, okul, arkadaş ve komşularınız ile olan ilişkileriniz üzerinde bir çalışma yapmaktayız. Amacımız senin sosyal ilişkilerine yönelik algılarını belirlemek ve bu algılarının, fiziksel aktivite düzeyi üzerindeki etkisini incelemektir. Araştırma ile yeni bilgiler edineceğiz ve bu yüzden seninde çalışmaya katılmanı öneriyoruz.

Bu çalışmaya katıldığında bir takım sorulara yazılı olarak cevap vermeni isteyeceğiz. Cevaplayacağın sorular senin günlük hayatındaki sosyal ilişkilerini, fiziksel aktivite düzeyini belirlemeyi amaçlamaktadır. Bu sorular hiçbir şekilde dönem sonundaki karne notlarını etkilemeyecektir.

Bu çalışma kapsamında senin verdiğin cevapları farklı meslektaşlarımızla paylaşacağız ama senin adın asla paylaşılmayacaktır.

Bu araştırmaya katılıp katılmamak için karar vermeden önce anne ve baban ile konuşup onlara danışmalısın. Onlara da bu araştırmadan bahsedip onaylarını/izinlerini alacağız. Anne ve baban tamam deseler bile sen kabul etmeyebilirsin. Bu araştırmaya katılmak senin isteğine bağlı ve istemezsen katılmazsın. Bu nedenle hiç kimse sana kızmaz ya da küsmez. Önce katılmayı kabul etsen bile sonradan vazgeçebilirsin, bu tamamen sana bağlı. Katılmaman durumunda sana herhangi bir yaptırımda bulunulmayacak.

Aklına şimdi gelen veya daha sonra gelecek olan soruları istediğin zaman bana ya da çalışma arkadaşıma sorabilirsin. Telefon numaralarımız ve adresimiz bu kağıtta yazıyor. Bu araştırmaya katılmayı kabul ediyorsan aşağıya lütfen adını- soyadını yaz ve imzanı at. İmzaladıktan sonra sana ve ailene bu formun bir kopyası verilecektir.

Prof. Dr. İlker Yılmaz
Bed. Eğt. ve Spor Öğrt. Bölümü
Anadolu Üniversitesi, Eskişehir
Tel: 0222 321 3550/ 6701
e-posta: ilkery@anadolu.edu.tr

Araş.Gör.Günay Yıldızer
Bed. Eğt. ve Spor Öğrt. Bölümü
Anadolu Üniversitesi, Eskişehir
Tel: 0222 321 3550/ 6793
e-posta: gunayyildizer@anadolu.edu.tr

Öğrencinin Adı, Soyadı:

İmzası:

Tarih: 28.02.2017
Salı

APPENDIX-4 Parental Consent Form

ANADOLU ÜNİVERSİTESİ

ESKİŞEHİR, TÜRKİYE

Spor Bilimleri Fakültesi
Beden Eğitimi ve Spor Öğretmenliği Bölümü

Tel: +90 222 3350580

Veli Onay Mektubu

Sayın Veliler, Sevgili Anne-Babalar,

Anadolu Üniversitesi, Beden Eğitimi ve Spor Öğretmenliği Bölümü olarak, lise öğrencilerinin çevrelerindeki insanlar ile ilişkilerinin onların fiziksel aktivite gibi sağlıkla ilişkili davranışları üzerindeki etkilerini inceleyen bir araştırma yürütmekteyiz. Araştırmamızın amacı lise çağındaki katılımcıların sosyal ilişkilerine yönelik algılarını belirlemek ve aile, okul, komşuluk gibi sosyal ilişkilere yönelik algılarının fiziksel aktivite katılımı üzerindeki etkisini incelemektir. Bu amacı gerçekleştirebilmek için çocuklarınız sosyal ilişkilerini ve fiziksel aktivite düzeylerini belirlemeyi amaçlayan bir takım sorulara cevap vermeleri gerekmektedir. Ayrıca sizlere de bu formun altında yer alan üç adet soru sormaktayız. Bu çalışma için Anadolu Üniversitesi Etik Komisyonu, Eskişehir Valiliği ve Eskişehir İl Milli Eğitim müdürlüğünden izin alınmıştır. Bu çalışma kapsamındaki hiç bir test, anket ve ölçüm sonucu çocuklarınızın dönem sonundaki karne notlarını etkilemeyecektir.

Katılmasına izin verdiğiniz takdirde çocuğunuz anket ve ölçeklerin içerdiği soruları okulda Beden Eğitimi ve Spor dersi saatinde cevaplayacaklardır. Öğrencilerden bu çalışma kapsamında ek bir süre talep edilmeyecektir ve izin vermeniz halinde gerekli ölçme araçları bir ders saati içerisinde uygulanarak tamamlanacaktır.

Çocuğunuzun dolduracağı ölçek ve testlerde cevapları kesinlikle gizli tutulacak ve bu cevaplar sadece bilimsel araştırma amacıyla kullanılacaktır. **Bu formu imzaladıktan sonra hem siz hem de çocuğunuz katılımcılıktan ayrılma hakkına sahipsiniz.** Araştırma sonuçlarının özeti tarafımızdan okula ulaştırılacaktır.

Çocuklarınızın çalışmaya katılmasına izin vererek fiziksel uygunluk, sağlık ve spor gibi konularda bir öğretim programına katılmasına ve kendisini geliştirmesine olanak tanıyabilirsiniz. Araştırmayla ilgili sorularınızı aşağıdaki e-posta adresini veya telefon numarasını kullanarak bize yöneltebilirsiniz.

Saygılarımızla,

Prof. Dr. İlker Yılmaz
Bed. Eğt. ve Spor Öğrt. Bölümü
Anadolu Üniversitesi, Eskişehir
Tel: 0222 321 3550/ 6701
e-posta: ilkery@anadolu.edu.tr

Araş.Gör.Günay Yıldızer
Bed. Eğt. ve Spor Öğrt. Bölümü
Anadolu Üniversitesi, Eskişehir
Tel: 0222 321 3550/ 6793
e-posta: gunayyildizer@anadolu.edu.tr

Lütfen bu formu çocuğunuzla okula geri gönderiniz.

Bu araştırmaya tamamen gönüllü olarak katılıyorum ve çocuğum (Ad-Soyad).....'nın da katılımcı olmasına **izin veriyorum**. Çalışmayı istediğim zaman yarıda kesip bırakabileceğimi biliyorum ve verdiğim bilgilerin bilimsel amaçlı olarak kullanılmasını kabul ediyorum.

Veli Adı-Soyadı.....

İmza .....

Ailenizin aylık geliri:6.000.Türk Lirası

Babanın mezun olduğu en son eğitim kademesi:
Okula gitmemiş ☐ İlkokul ☐ Orta Okul ☒ Lise ☐ Üniversite ☐ Lisansüstü ☐

Annenin mezun olduğu en son eğitim kademesi:
Okula gitmemiş ☐ İlkokul ☐ Orta Okul ☐ Lise ☒ Üniversite ☐ Lisansüstü ☐

APPENDIX-5 Data Collection Tool

Sevgili Öğrenciler,

Bu ölçme aracı 4 bölümden oluşmaktadır. İlk bölümde sizlerin tanımlayıcı bilgilerini içeren sorular, ikinci bölümde sosyal ilişkilerle ilgili düşüncelerinizi içeren sorular, üçüncü bölümde ise kendiniz ile ilgili düşüncelerinizi içeren sorular ve son bölümde fiziksel aktiviteye katılımın ile ilgili bir dizi soru yer almaktadır. Sorulara cevap verirken lütfen sayfaların sağında ve yukarıda yer alan "Katılıyorum", "Uygundur" gibi ifadeleri dikkate alarak işaretleme yapınız.

Araştırma Görevlisi Günay Yıldızer

Anadolu Üniversitesi/Spor Bilimleri Fakültesi

gunayyildizer@anadolu.edu.tr/ 0222 3350580-6793

BÖLÜM I-KİŞİSEL BİLGİLER

1. Cinsiyetiniz:
   Kadın ☐ **Erkek** ☐
2. Yaşınız: **……..**
3. Boyunuz: **……** Kilonuz:**……**
4. Sınıfınız:
   9.Sınıf ☐ **10.Sınıf** ☐ **11.Sınıf** ☐ **12.Sınıf** ☐
5. Ailenizin aylık geliri:……Türk Lirası
6. Babanın mezun olduğu en son eğitim kademesi:
   Okula gitmemiş ☐ İlkokul ☐ Orta Okul ☐ Lise ☐ Üniversite ☐ Lisansüstü ☐
7. Annenin mezun olduğu en son eğitim kademesi:
   Okula gitmemiş ☐ İlkokul ☐ Orta Okul ☐ Lise ☐ Üniversite ☐ Lisansüstü ☐

BÖLÜM II-SOSYAL SERMAYE ALGISI ÖLÇEĞİ

No.	Madde	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1	Okul arkadaşlarıma karşı güçlü bir duygusal bağlılık hissediyorum.					
2	Okul arkadaşlarım beni başarılı olmam için her zaman desteklerler.					
3	Okul arkadaşlarımın problemlerini kendi problemlerim olarak algılarım.					
4	Okul arkadaşlarım problemlerimi çözmemde bana her zaman destek olurlar.					
5	Okul arkadaşlarımla sık sık okul dışında da görüşmek isterim.					
6	Bir karar alırken okul arkadaşlarıma sık sık danışırım.					
7	Okulda yapılan organizasyonlara arkadaşlarımla katılmaktan hoşlanırım.					
8	Öğretmenlerime karşı güçlü bir duygusal bağlılık hissediyorum.					
9	Öğretmenlerim beni başarılı olmam için her zaman desteklerler.					
10	Okulumdaki öğretmenlerin öğrencilere güvendiklerine inanıyorum.					
11	Okulumdaki öğrencilerin ve öğretmenlerin birbirleri ile işbirliği kurmaktan mutlu olduklarına inanıyorum.					
12	Öğretmenlerim akademik hayatım dışında da beni desteklerler.					
13	Bir karar alırken okul arkadaşlarıma sık sık danışırım.					
14	Lise yaşantım boyunca anne-baba-kardeş gibi yakın akrabalarımın beni desteklediğine inanıyorum.					

No.	Madde	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
15	Anne baba kardeş gibi yakın akrabalarımın tamamı sorunlarma karşı duyarsızdır					
16	Anne, baba, kardeş gibi yakın akrabalarımla etkinliklere katılmaktan keyif duyarım.					
17	Ailemdeki bireylerin birbirlerine yeterince güvenmediğini düşünüyorum.					
18	Yakın akrabalarım dışında kalan akrabalarım (amca, teyze, kuzen, vb.) sorunlarım karşısında ilgilidirler.					
19	Yakın akrabalarım dışında kalan akrabalarımın (amca, teyze, kuzen, vb.) beni anladığını düşünmüyorum.					
20	Lise yaşantım boyunca yakın akrabalarım dışında kalan akrabalarımın (amca, teyzei kuzen, vb.) beni dettekliğine inanıyorum.					
21	Bir karar alırken yakın akrabalarım dışında kalan akrabalarıma (amca, teyzei kuzen, vb.) danışırım.					
22	Komşularımızın birbirine güvendiğine inanıyorum.					
23	Mahallemizdeki arkadaşlarıma güvenirim.					
24	Mahallemizdeki arkadaşlarım birbirleriyle sık sık işbirliği kurarlar.					
25	Mahallemizde bir sorun olduğunda insanlar yardım için isteklidirler.					
26	Mahallemizde insanlar birbirleriyle iyi ilişki içerisindedirler.					
27	Mahallemizdeki arkadaşlarımla sık sık zaman geçiririm.					

BÖLÜM III-FİZİKSEL BENLİK ALGISI ÖLÇEĞİ

No	Madde	Hiç	Çok Az	Biraz	Yeterince	Çok	Tamamen
1	Kendimle ilgili olumlu düşüncelere sahibim						
2	Fiziksel olarak yapabildiklerimle gurur duyarım						
3	Birçok kişiden fiziksel olarak daha güçlüyüm						
4	Fiziksel olarak yapabildiklerimden ve kim olduğumdan memnunum/mutluyum						
5	Fiziksel dayanıklılık gerektiren egzersizlerde iyi olabilirim						
6	Güzel görünen bir vücuda sahibim						
7	Kuvvet gerektiren egzersizlerde iyi olabilirim						
8	Yorulmadan uzun süre koşabileceğimi düşünürüm						
9	Bütün sporlarda zorlukların üstesinden gelebilecek yolları bulabilirim						
10	Herkes güzel göründüğümü düşünür						
11	Sporları iyi yaparım						
12	Kendim gibi kalmak isterim						

ULUSLARARASI FİZİKSEL AKTİVİTE ANKETİ (KISA)

Sevgili öğrenciler,

Bu bölümde, İnsanların günlük hayatlarının bir parçası olarak yaptıkları fiziksel aktivite tiplerini bulmayla ilgileniyoruz. Sorular son 7 gün içerisinde fiziksel olarak harcanan zamanla ilgilidir. Lütfen yaptığınız aktiviteleri düşünün; işte, evde, bir yerden bir yere giderken, boş zamanlarınızda yaptığınız spor, egzersiz veya eğlence aktiviteleri.

Son 7 günde yaptığınız şiddetli aktiviteleri düşünün. Şiddetli fiziksel aktiviteler zor fiziksel efor yapıldığını ve nefes almanın normalden çok daha fazla olduğu aktiviteleri ifade eder. Sadece herhangi bir zamanda en az 10 dakika yaptığınız bu aktiviteleri düşünün.
1. Geçen 7 gün içerisinde kaç gün ağır kaldırma, kazma, aerobik, basketbol, futbol veya hızlı bisiklet çevirme gibi şiddetli fiziksel aktivitelerden yaptınız? **Haftada _____ gün** ★ **Şiddetli fiziksel aktivite yapmadım. → (3.soruya gidin.)**
2. Bu günlerin birinde şiddetli fiziksel aktivite yaparak genellikle ne kadar zaman harcadınız? **Günde _____ saat** **Günde _____ dakika** **Bilmiyorum/Emin değilim _____**
Geçen 7 günde yaptığınız orta dereceli fiziksel aktiviteleri düşünün. Orta dereceli aktivite orta derece fiziksel güç gerektiren ve normalden biraz sık nefes almaya neden olan aktivitelerdir. Yalnız bir seferde en az 10 dakika boyunca yaptığınız fiziksel aktiviteleri düşünün.
3. Geçen 7 gün içerisinde kaç gün hafif yük taşıma, normal hızda bisiklet çevirme, halk oyunları, dans, bowling veya çiftler tenis oyunu gibi orta dereceli fiziksel aktivitelerden yaptınız? Yürüme hariç. **Haftada _____ gün** ★ **Orta dereceli fiziksel aktivite yapmadım. → (5.soruya gidin.)**
4. Bu günlerin birinde orta dereceli fiziksel aktivite yaparak genellikle ne kadar zaman harcadınız? **Günde _____ saat** **Günde _____ dakika** **Bilmiyorum/Emin değilim _____**
Geçen 7 günde yürüyerek geçirdiğiniz zamanı düşünün. Bu işyerinde, evde, bir yerden bir yere ulaşım amacıyla veya sadece dinlenme, spor, egzersiz veya hobi amacıyla yaptığınız yürüyüş olabilir.
5. Geçen 7 gün içerisinde, bir seferde en az 10 dakika yürüdüğünüz gün sayısı kaçtır? Haftada___gün ★ **Yürümedim. → (7.soruya gidin.)**
6. Bu günlerden birinde yürüyerek genellikle ne kadar zaman geçirdiniz? **Günde _____ saat** **Günde _____ dakika** **Bilmiyorum/Emin değilim _____**
7. Geçen 7 gün içerisinde,günde otururak ne kadar zaman harcadınız? **Günde _____ saat** **Günde _____ dakika** **Bilmiyorum/Emin değilim _____**

APPENDIX-6 *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
Lindstrom, Hanson, and Stergren 2001	11837, 45-65 years old Malmö City/Sweden Residents	1. Social support 2. Emotional support 3. Instrumental support 4. Participation in formal and informal groups 5. Social anchorage	- Socioeconomic status based on job tittle and position - Country of origin - Previous self-reported diseases - Age clusters	The 17 item PA questionnaire used to identify the quartile of the population with the lowest level of leisure-time PA	1. Low social participation was associated with low leisure-time PA OR Men: (95% CI: 2.0-2.5) OR Women: 2.3(95% CI:2.0-2.6) 2. Low instrumental support was associated with being in the lower quartile of leisure-time pa for women OR Women: 1.2 (95% CI:1.1-1.4)	When social participation was included in the model the association between SES and low-level leisure-time PA was weakened.
Leyden, 2003*	279, 18 years old and older residents in Galway/Ireland	1. Knowing the neighbors 2. Political participation Index 3. Trust Index 4. Social participation	- Age - Number of children in the home - TV watching - Attending religious services - Years in the neighborhood - Education Level - Political party Strength	Neighborhood walkability assessed by survey	1. Knowing the neighbors OR: 1.28 (95% CI:1.14-1.44) 2. Political participation OR: 1.14 (95% CI:1.02-1.28) 3. Trust OR: 1.15 (95% CI:1.04-1.28) 4. Social participation OR: 1.20 (95% CI:1.09-1.32)	Residents living in walkable neighborhoods were more likely to know their neighbors, participate politically, trust others, and be socially engaged.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	1. Social Capital Indicator	Other Study Variables -	PA Indicator	Main Results	Key Findings
Lindström, Moghaddassi, & Merlo, 2003	3861, 20-80 years old Malmö City/Sweden Residents	2. The proportion of the total population within each neighborhood that migrated from the neighborhood Social participation	- Age - Country of origin - Educational attainment Social participation	The 4 item PA questionnaire Outcomes: PA and PIA	1. Social Participation OR: 3.59 (95% CI:2.95-4.35)	PIA was reduced by individual-level SC but was not reduced by the contextual SC.
Kim et al. 2006	167.857, 18 years old and older adults in the US	1. Individual-level SC: - Trust 2. County-level SC: - Group membership - Church attendance	- Age - Gender - Ethnicity - Marital status Educational Attainment - Income	Self-reported Leisure-time moderate to vigorous physical inactivity was taken into account as the outcome	The inverse association between SC and physical inactivity OR: 0.91-0.97	Little support was found for mediation by the social capital of the associations of urban sprawl and income inequality with obesity or physical inactivity.
Wen, Browning, and Cagney 2007	907, 18 years old and older residents of Chicago	1. Cognitive Neighborhood SC: - Neighborhood trust - Norms of reciprocity - The crime rate in the neighborhood	- Educational attainment - Income - Marital Status - Gender	Self-reported regular weekly PA	Interaction effects were given in the article	The social capital index effect appears positive (p-value, 0.05), suggesting that residents of neighborhoods characterized by high levels of trust and norms of reciprocity and low levels of violent crime are more likely to engage in regular exercise.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	**Sample Size/Age**	**Social Capital Indicator**	**Other Study Variables**	**PA Indicator**	**Main Results**	**Key Findings**
Mae McKay et al. 2007	37930, 10-17 years old, adolescents from the US	1. Mutual aid 2. Social trust	- State level economic development - Perceived SES - BMI	Meets recommendation of PA *No information related to measurement	1. State level mutual aid: Younger adolescents OR: 0.50 (95% CI: 0.27-0.95) 2. For adolescent not meeting PA recommendations increased OR: 9.3 (95% CI: 1.7-49.4)	- Differential moderating effect of stage of adolescence.
Singh et al. 2008	68.288, 6-17 years old children from the US	1. Parents' perceived level of neighborhood social capital index including: - Social cohesion - Trust - Reciprocity	- Age - Gender - Race/ethnicity - Household composition - Metropolitan/non-metropolitan and region of residence, - The primary language is spoken at home - Neighborhood Safety	Self-reported PA assessed by a single question: 1. Physical inactivity defined as days without vigorous PA 2. Number of days physically inactive in the past month	The social capital index used to categorize social capital perceptions as high, middle and low. There were significant differences between groups.	Children with low neighborhood social capital had 66% higher odds of physical inactivity and 33% lower odds of PA than children with high neighborhood social capital. Low neighborhood SC was associated with an increased risk of physical inactivity.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
Ueshima et al. 2010	2187, Okayama City Residents (20-80 years old)	1. Cognitive SC: - Trust 2. Structural SC: - Participation 3. Type of similarities - Bridging - Bonding	- Sex - Age - BMI, - Years of Education - Family structure - Self-rated health - Mental status	Self-reported PA assessed by a single question ‘‘How often do you participate in sports or physical exercise?”	1. Having Mid- Level Social Trust: OR: 0.73 (95% CI: 0.59-0.90) 2. Having High Social Trust: OR: 0.58 (95% CI: 0.42-0.79 3. Bridging SC: OR: 0.79 (95% CI: 0.62-1.00) 4. Bonding SC: OR: 0.71 (95% CI: 0.48-1.03)	A higher level of cognitive, social capital (trust for others) is associated with lower level sedentary life style.
Ball et al. 2010	1405, 18 years old and older women from Melbourne	1. SC index - Interpersonal trust - Norms of reciprocity - Social cohesion - Contextual level index: - Percentage serving on a committee of some local organization - Serving as an officer of some club or organization, - Attending any public meeting	- Age - Gender - Race/ethnicity - Marital Status - Educational attainment - Income	Self- reported lack of moderate to vigorous physical inactivity	The social capital state found to be inversely associated with physical inactivity	Results of the association between social capital and physical inactivity are varied with regard to urban sprawl and ethnicity.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	**Sample Size/Age**	**Social Capital Indicator**	**Other Study Variables**	**PA Indicator**	**Main Results**	**Key Findings**
Lindström, 2011	27757, 18-80 years old residents in Skane/Sweden	1. Single question related to trust in other people	- Age - Country of origin - The desire to increase PA level	The 4 item PA questionnaire	Men: OR: 1.3 (95% CI 1.1-1.4) Women: OR 1.2 (95% CI 1.1-1.3	Low leisure-time PA was associated with low trust.
Broyles, Mowen, Theall, Gustat, & Rung, 2011	222, adult park users in New Orleans LA	1. Shared trust, norms of reciprocity, and a willingness to intervene for the common good. 2. Park level collective efficacy.	- Gender - Ethnicity - Age clusters - Educational attainment - Park characteristics - The frequency of visiting the park - With who visited the park	The System for Observing Play and Recreation in Communities. - The count of the total number of park users observed - the mean energy expenditure per park user (METs); -The total volume of energy expended within the park (MET-minutes) for the 3-hour period	Parks with higher levels of social capital had higher daily numbers of observed park users (42.5 vs 12.1, p=0.0044) and had more energy expended within the park (3200.3 vs 721.2 MET-minutes across all park users, p=0.0087).	Interventions to improve park social environments should be conducted to deter- mine if they promote increased physical activity among park users

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
Hanibuchi et al. 2012	11867, 65-85 years old participants from Japan Clustered based on years of residence in the municipality	1. Cognitive and structural neighborhood sc: - General trust - Norms of reciprocity - Attachment to place - Horizontal organization - Vertical organization - Meeting friends	- Educational attainment - Income - Marital Status - Gender - Clustered Age - Years of residence in the municipality	Walkability score was calculated by combining four built environment measures (residential density, street connectivity, land use mix, and availability of parks or green spaces)	1. Attachment to Place: OR:0.61 (95% CI: 0.51-0.74) 2. Horizontal Organization OR: 1.29 (95% CI: 1.06-1.56) 3. Vertical Organization OR: 0.65 (95% CI: 0.54-0.79) 4. Meeting Friends OR: 0.74 (95% CI: 0.61-0.88)	No significant positive association was found between the walkability score and any of the social capital indices. Community age and degree of urbanization were associated with many of the social capital indicators, even after controlling for characteristics of the residents.
Legh-Jones & Moore, 2012	2672, 25-65 years old Canadian adults live in Montreal urban	1. Generalized trust 2. Participation 3. Network SC: - Diversity - Range - Upper reachability	- Age - Gender - Educational Attainment - Household Income - Self-reported health	International Physical Activity Questionnaire	• Participation: OR: 1.64 (95% CI: 1.06-2.54) • Higher network diversity: OR: 0.87 (95% CI: 0.80-0.95)	Findings highlight the importance of social participation and network social capital are important factors for PA.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
McNeill, Stoddard, Bennett, Wolin, & Sorensen, 2012	850 workers from Boston, US	1. Neighborhood safety 2. Social supportive behaviors 3. Social norms for PA	- Age - Gender - Marital status - Household income - Occupational class - Education level - Motivation to perform the behavior - Self-efficacy - Social Ties	Semi-quantitative physical activity questionnaire	Social Ties: OR: 0.31 Social Capital: OR: -0.63	High workplace social capital was significantly associated with a decline in physical activity.
Prins, Mohnen, van Lenthe, Brug, & Oenema, 2012	852 adolescents in the Netherlands	1. Social relations in the neighborhood 2. Solidarity in the neighborhood	- Availability of sports facilities and parks - Ethnicity - Level of education - Neighborhood wealth	Self-reported Physical Activity	1. Neighborhood social capital, sports facilities, and PA OR: 3.51 (95%CI: 1.18-10.41) 2. Neighborhood social capital, sports facilities and PA adjusted for the density of sport facilities OR: 3.37 (95%CI 1.14-9.92) 3. Neighborhood social capital, availability of parks and PA OR: 3.52 (95%CI: 1.19-10.45) 4. Neighborhood social capital, availability of parks and PA adjusted for the density of parks in the neighborhood OR: 3.45 (95%CI: 1.16-10.29)	Availability of parks appears only to be important for leisure-time sports participation when neighborhood SC is high.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	**Sample Size/Age**	**Social Capital Indicator**	**Other Study Variables**	**PA Indicator**	**Main Results**	**Key Findings**
Button, Trites, & Janssen, 2013	18875, 11-15 years old, students from Canada	Cognitive SC	- Gender - School physical environment - School location - School size - The population of the municipality where the schools were located - SES - Grade	Self-report questionnaire.	One unit increase in the school social capital score was associated with a .074 hour/week increase in MVPA performed at school.	The findings suggest that school social capital may be a more important factor in increasing students MVPA than the school physical environment.
Loch, Souza, Mesas, Martinez-Gómez, & Rodríguez-Artalejo, 2015	1062, 40 years old and older residents of Parana State/Brazil	1. Integrated Questionnaire for the Measurement of Social Capital 2. Cognitive SC: Trust Frequency of help Community safety 3. Structural SC: Participation 4. Formal SC: Participation 5. Informal SC: - Number of friends	- Age - Gender - Educational attainment - SES - BMI - Mobility limitation - Chronic medical conditions - Self-perceived health	Self-report questionnaire. PIA was the main outcome	1. Number of friends OR: 2.45 (95% CI: 1.26-4.77) 2. Participation in community activities OR: 0.87 (95% CI: 1.05-2.06) 3. Frequency of help OR: 1.46 (95% CI: 1.06-2.02) 4. SC Score (QI-MSC) OR: 1.70 (95% CI: 1.07-2.70)	Some aspects of SC was associated with insufficient leisure-time physical activity

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
Novak, Doubova, and Kawachi 2016	3428, 17-18 years old high school students from Zagreb/Croatia	1. Cognitive SC - Family SC - Neighborhood SC - School SC	- Self-perceived SES, - Self-perceived health status, Self-perceived psychological distress, - BMI	Self-reported moderate to vigorous and overall 60-min daily PA participation with International PA Questionnaire	1. Moderate to vigorous PA participation: *For boys:* Family social capital OR: 1.49 (95% CI:1.18-1.90) Informal social control in the neighborhood OR: 1.26 (95% CI:1.02-156) 2. Overall PA participation: *For boys:* Vertical school trust OR: 0.75 (95% CI:0.57-0.98) *For girls:* Informal social control OR: 1.38 (95% CI: 1.09-1.76)	Different domains of SC are predictive for PA participation among adolescents with respect to gender. Vertical school trust differentiates the physical overall PA participation between male and female adolescents.
Mackenbach et al., 2016	5900 Austrian Adults	• Social cohesion • Social network • Place attachment	- Obesity-related behaviors - BMI	PA and PIA were main outcomes	PIA for the highest social cohesion Highest quartile: OR: 2.33 (95% CI: 1.53-3.53)	The highest quartile of social cohesion had a higher likelihood of sitting more than 530min a day. Social networks and social cohesion were not associated with the leisure-time physical activity.

APPENDIX-6 (Continued) *Studies examined the association between social capital and physical activity participation*

Authors-Publication Date	Sample Size/Age	Social Capital Indicator	Other Study Variables	PA Indicator	Main Results	Key Findings
J.-R. Kim, Jeong, Park, & Kang, 2016	8800, 19 years old and older Korean citizens	1. Social participation in formal and informal groups 2. Trust 3. Perceptions of community 4. Perceived control	- Gender - Age - Marital status - Education level - Occupation - Food security - Administrative unit	Self-report questionnaire.	1. Social participation only in informal organizations, OR:1.30 (95% CI: 1.17–1.44) 2. Social participation only in formal organizations, OR:1.19 (95% CI: 1.01–1.40) 3. Social participation in both informal and formal organizations compared OR:1.47 (95%CI: 1.31–1.64) 4. Trust OR: 1.41 (95% CI: 1.26–1.59) 5. Perceived control Individual-level OR: 1.11 (95% CI: 0.97–1.27) Community-level OR: 1.43 (95% CI: 1.26–1.63) Both individual and community level OR: 1.31(95%CI: 1.17–1.48)	All social capital indicators except perceived community problems were associated in communities with high mortality in Korea.

CURRICULUM VITAE

Nane, Surname: Günay Yıldızer

Date of Birth : 10.02.1989

E-mail : gunayyildizer@gmail.com

Education

Doctorate of Philosophy 2014-2018	Anadolu University Institute of Health Sciences, Physical Education and Sports Program
Master of Science 2011-2014	Middle East Technical University Institute of Social Sciences Physical Education and Sports Program
Bachelor Degree 2006-2011	Hacettepe University School of Sport Scinces&Technology Physical Education and Sports Teacher Education

Occupational Experience

Research Assistant 2014 – On going	Anadolu University Faculty Of Sports Sciences, Department of Physical Education and Sports Teacher Educatıon
Research Assistant 2011-2014	Middle East Technical Unıversity Faculty of Education Department of Physical Education and Sports

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32. Cerrah, A.O., Yıldızer, G., Bayram İ., Uğurlu, O., Şimşek, D. (2015). Functional balance training effects on static and dynamic balance performance of adolescent soccer players. Oral Presenatation in the *4th International Congress on Research and Education in Sports Sciences.* Turkey: Çanakkale On Sekiz Mart University.

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35. Yıldızer, G. and Kirazcı, S. (2014). Effects of a 8 week core stability training on junior male soccer players' static balance ability. Poster Presentation in the *32nd International Conference on Biomechanics in Sport.* Tennessee: East Tennessee State University.

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1. Yıldızer, G., Yılmaz, İ., Yalız Solmaz, D., Şimşek, D. (2017). Beden eğitimi öğretmen eğitim programı ve sertifika programında öğrenim gören öğretmen

adayların mesleğe yönelik tutumlarının karşılaştırılması. Poster Presented in *Beden Eğitimi ve Spor Öğretiminde Yeni ve Yaratıcı Yaklaşımlar 6. Sempozyumu.* Turkey: Hacettepe University.

Projects:

1. Sosyal Sermaye Algısı ve Sosyal Eşitsizliğin Adölesanların Fiziksel Aktivite Düzeyine Etkisi, Eskişehir Kent Merkezi Örneği, University Funded Project, Researcher.

2. Öğretmenlik Formasyon Programı Beden Eğitimi Alanı Öğrencilerinin Öğretim Stilleri Kullanımı ve Stillere İlişkin Değer Algıları ile Mesleğe İlişkin Tutumlarının Beden Eğitimi Öğretmenliği Bölümü Öğrencileri ile Karşılaştırılması, University Funded Project, Researcher.

3. Futbola Özgü Yorgunluk Protokolünün Bazı Teknik Parametrelere Etkisi, University Funded Project, Researcher.

4. Halk Dansçıların Statik Duruş ve Yürüme Sırasındaki Ayak Altı Basınç Analizlerinin İncelenmesi, University Funded Project, Researcher.

5. Adolesan Futbolcularda Denge Antrenmanmm Performansa Etkisi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

6. Nöropsikolojik ve Fizyolojik Değişkenler Üzerinden Psikomotor Tepki Analizinin Değerlendirilmesi, University Funded Project, Researcher.

7. Sportif Performansın Nöromuskuler ve Mekanik Yöntemlerle Değerlendirilmesi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

8. Adolesan Futbolcularda Denge Antrenmanının Performansa Etkisi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

9. Masa Tenisinde Forehand Topspin Vuruşunun Nöro-Mekanik Yöntemlerle Çözümlenmesi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

10. Masa Tenisinde Forehand Topspin Vuruşunun Nöro Mekanik Yöntemlerle Çözümlenmesi, University Funded Project, Researcher.

11. Sportıf Performansın Nöromusküler ve Mekanık Yöntemlerle Değerlendirilmesi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

12. İnsan Hareketinin Nöro-Mekanik Yöntemlerle Çözümlenmesi, Yükseköğretim Kurumları tarafından destekli bilimsel araştırma projesi, University Funded Project, Researcher.

13. İnsan hareketinin nöro mekanik yöntemlerle çözümlenmesi, University Funded Project, Researcher.

Awards:

1. Anadolu University, Article Performance Award (2018). Awarded article: Yıldızer, G., Bilgin, E., Korur, E.N, Novak D., Demirhan, G. (2018). The association of various social capital indicators and physical activity participation among Turkish adolescents. *Journal of Sport and Health Science*, 7(1), 27-33.