

Gözde ERSÖZ¹

Murat ÖZŞAKER

Selman SASUR²

A SELF-DETERMINATION THEORY APPROACH TO MOTIVATIONAL ORIENTATIONS, BASIC NEEDS SATISFACTION AND PSYCHOLOGICAL WELL-BEING IN EXERCISE

ABSTRACT

The aim of this study was to determine motivational orientations, basic need satisfaction in exercise and psychological well-being in the Self-Determination Theory approach. 387 university students who exercise regularly ($n_{\text{male}}=206$; $\chi_{\text{age}}=25.01\pm 5.82$ and $n_{\text{female}}=181$; $\chi_{\text{age}}=28.38\pm 7.48$) participated to this study. Behavioral Regulations in Exercise Questionnaire-2 (BREQ-2), Psychological Need Satisfaction in Exercise Questionnaire (PNSE), Psychological Well-Being Scale (PWBS) and Physical Activity Stages of Change Questionnaire (PASCQ) were administered to participants. According to the findings significant difference has been found in motivational orientations and basic needs satisfaction for gender. In addition, results indicated significant differences in the motivational orientation, basic needs satisfaction in exercise and psychological well-being with regard to stage of change in exercise. The significant positive correlations were observed between all subscales of BREQ-2 and PNSE and psychological well-being, while negative correlations have observed between amotivation and psychological well-being. In a summary the findings demonstrated that males were motivated to exercise with introjected and extrinsic reasons and they report higher competence compared with females. In addition, exercise participants in the latter stage reported higher lower external regulation scores than participants in the early stage. And participants in the maintenance stage reported higher competence, autonomy, relatedness and psychological well-being scores than those in the early stages of change. The results illustrate the importance of promoting self-determined motivation and basic needs satisfaction in exercisers to foster their exercise behavior. Satisfaction of all three needs and motivational orientations is positive associated with psychological well-being.

Keywords: Exercise motivation, basic need satisfactions in exercise, psychological well-being.

HÜR İRADE KURAMI PERSPEKTİFİNDEN EGZERSİZDE GÜDÜLENME, TEMEL PSİKOLOJİK İHTİYAÇLAR VE PSİKOLOJİK İYİ OLUŞ

Bu çalışmanın amacı Hür İrade Kuramı (HİK) perspektifinden egzersizde güdüsel yönelimler, psikolojik ihtiyaçlar ve psikolojik iyi oluş kavramlarını incelemektir. Düzenli olarak egzersiz yapan üniversite öğrencileri araştırmanın örneklemini oluşturmaktadır (erkek=206; yaş=25.01±5.82 ve kadın=181; yaş=28.38±7.48). Egzersizde Davranışsal Düzenlemeler Ölçeği (EDDÖ-2), Egzersizde Temel Psikolojik İhtiyaçlar Ölçeği (ETPİÖ), Psikolojik İyi Oluş Ölçeği (PİOÖ) ve Egzersiz Davranışı Değişim Basamakları Anketi (EDDBA) katılımcılara uygulanmıştır. Araştırmanın bulgularına göre egzersizde güdüsel yönelimler ve psikolojik ihtiyaçlar cinsiyet değişkenine göre farklılık göstermiştir. Buna ek olarak katılımcıların egzersizde güdüsel yönelimleri, temel psikolojik ihtiyaçları ve psikolojik iyi oluş düzeyleri de istatistiksel olarak anlamlı farklılık göstermiştir. Araştırmada ele alınan tüm psikolojik faktörler arasında pozitif yönde anlamlı bir ilişki görülürken, sadece güdülenme ile psikolojik iyi oluş arasında negatif yönde anlamlı bir ilişki görülmüştür. Sonuç olarak bulgular, erkeklerin kadınlardan daha fazla içe atım ve dışsal davranışsal düzenlemeler ile egzersize katıldığını ve erkeklerin kadınlardan daha fazla düzeyde yeterlik ihtiyacına sahip olduğunu ortaya koymuştur. Bununla beraber katılımcıların egzersizin ileri basamaklarında daha düşük düzeyde dışsal düzenleme ve daha yüksek düzeyde yeterlik, ilişkili olma, özerklik ve psikolojik iyi oluş puanlarına sahip olduğu görülmüştür. Sonuçlar egzersize hür iradeli katılım ve üç temel psikolojik ihtiyacın tatmininin egzersizde devamlılığın artırılmasına faydalı olduğunu göstermektedir. Ayrıca elde edilen bulgulardan üç temel ihtiyacın tatmini ve hür iradeli güdülenmenin psikolojik iyi oluşu olumlu yönde etkilediği söylenebilir.

Anahtar Kelimeler: Egzersizde güdülenme, egzersizde temel psikolojik ihtiyaçlar, psikolojik iyi oluş

¹ Namik Kemal University, School of Physical Education

² Celal Bayer University School of Physical Education

INTRODUCTION

Although physical and psychological benefits of regular exercise are known, but people still have adopted an inactive life style (Lowther, Mutrie and Scott, 2007). According to the research performed by Ministry of Health over 12 years and above individuals, it is resulted that 67,6 % of men and 76,5 % of women in our country are physical inactive (Ministry of Health, 2014). When considered positive effect of doing exercise on non-infectious diseases such as blood pressure, diabetes, cardiovascular diseases, cancer, depression, importance of growing healthy of new generations and positive effects of decreasing of non-infectious diseases in nationwide on the national economy, to research motivational orientations and emotional status, which are effective on continuity of doing exercise is seen very important (Rose, Parfitt and Williams, 2005).

As well as many theoretical approach are available on the matter of motivation in sport and exercise, recently it is seen that a social cognitive perspective of youth when it comes to sport and exercise rules over the researches (Spray et al., 2006). For example, "Self-Determination Theory" of Deci and Ryan (1985) is one of them, which is used most frequently.

Self-Determination Theory

Self-determination is recognized as individual displays his/her behaviours with own value judgements and personal believes than external factors (i.e. community rules, group pressure) and making his/her decisions by himself/herself (Budak, 2000). In other words, it means that persons experience selection sense when they display and regulate their behaviours (Deci, Connell and Ryan, 1989). Behavioral regulations relating to exercise affect our regular physical behaviour of activity (Thogersen-Ntoumani and Ntoumanis, 2006). Theory, used frequently in this area is Self-Determination Theory (SDT). Five sub-theory are available in SDT: cognitive-

appraisal theory, organismic integration theory, causality orientation theory, basic needs theory and target content theory. Each theory is supported by laboratory and field studies made on different subjects (Deci and Ryan, 1985).

As organismic integration theory handles motivation concept in a multidimensional way, it often takes place in exercise and physical activity works. This sub-theory of SDT refers to six type of regulation from autonomous behaviour to controlled behaviour (intrinsic, identified, integrated, introjected, external regulation and amotivation) (Lewis and Sutton, 2011). External motivation in paralel with self-determination scale, at first was handled as completely reverse of it, but on the contrary of the studies, set forth this, SDT sets forth that activities arising from the external motivation stands out in a scale, varies between self-determination and controlled will (Deci and Ryan, 2000). Deci and Ryan put forward the integration theory relating to the organism in order to give more detailed information about these differencies. This theory is based on internalization and integration. This process describes that people obtain a value and adopt it as their own opinion within time. Deci and Ryan (1985) refer to four different type external motivation as integrated, identified, introjected and external regulation. Integrated regulation is the most autonomous of them and least directed one by external motivation; because cope with a certain activity isn't an own preference of the person and person can adopt it with his/her own structure. This type of motivation actually is quite similar to internal motivation, but consequently starting point isn't a personal request, it is an impulse of getting result by an external reason. Identified regulation is appeared after a person assessed a behaviour and decided that it is important and started to display this behaviour. In that case, an internalization is discussed, but as a result again a focal point is a result or an output. It is exemplified to this case; the individuals considers to doing exercise

will contribute to their physical development is a basic reason why they deal with exercise. And when it comes to introjected regulation, it is necessary to display a behaviour arising from ego such as feeling guilty, avoiding from anxiety or pride. All of them appear as internal cases, when they are examined in terms of cause and effect relation its source isn't inner person, it is out of the him/her. Because they feel ashamed or guilty when they don't do exercise, individuals who deal with exercise have such motivation. And external regulation refers to a motivation type, on which self-determination effects at least and it occurs due to the awards for this behaviour or things, which is lacked of when the behaviour isn't be displayed. To be praised or have a problem of health, individuals, who doing exercise set an example for this group (Kingston, Horrocks and Hanton, 2006). Amotivation, taken place at the end of the self-determination scale states both lack of internal and external motivation and shows to not value an activity or individual doesn't believe that s/he cannot achieve results, which wants with this activity. As well as amotivation is lack of motivation and also it is a case without self-determination. An individual, who is not motivated has no reason to continue this exercise program (Vallerand, 2001). Consequently, integrated and identified regulations represent self-determined (autonomous) motivational behaviours; introjected and external regulations are low self-determined or controlled motivational regulations (Ntoumani and Ntoumanis, 2006).

Basic Needs Satisfaction Theory:

According to the assumption laid down SDT, people tend to hereditarily build their social environments and within this frame they try to fulfill some psychological needs. These needs, reflect conscious requests, wills and motivations of individuals are variables, determine the differences among the individuals according to the

power of their requests. Under SDT, there is three basic psychological needs of the people named as autonomy, competence and relatedness (Özer, 2009). Autonomy is identified as ability of selection between incompatible requests and orientations and relatively being independent from external control. Competence is stated as having power, knowledge and skills, need to perform an action and believing to be able to perform this action. Relatedness is that people experience the sense of need of building a relationship with others and belonging to their social environment.

By explaining the relation of motivation and psychological needs, SDT ensure that we understand our behaviours more significantly. The environment, where people live is effective on their autonomy, competence and relatedness sensations, so these basic psychological needs are determinative on motivation. Selecting to their activities of the individuals freely ensures that they meet completely their basic psychological needs and this causes that selected activity by them makes it a pleasurable and favourable activity. But, if it is so individuals can motivated for the activity internally. When the activity doesn't meet the basic needs, than the person continues to do this activity but s/he doesn't motivate internally. In addition to this, autonomy support given by the social environment also cause that the people control themselves their own behaviors and ensure internal motivation (Çankaya, 2005).

In SDT, it is set forth that feeling the people themselves as self-determined and competent has positive effect on their internally motivation (Markland, 1999). Further, according to this theory interaction between internal motivation, autonomy and competence sensation is positive and high, effect of the relation with relatedness is lower (Çankaya, 2005). Effect of competence sensation is high on the inner motivation (Losier and Vallerand, 1994). When our these needs are met, self-determined types of motivational regulations (internal, integrated and

identified) ensure that we adopt ourselves to exercise behaviour. On the contrary of this situation, when these needs aren't be met it causes to controlled motivation (introjected and external regulation and amotivation) and this case is resulted that the individual doesn't adopt himself/herself to exercise behaviour (Deci and Ryan, 2000). In the study of Edmunds, Ntoumanis and Duda (2006), which they research the relation between basic needs and behavioral regulations on exercise, it reveals that fulfilling of the three basic needs has a positive relation with internal and identified regulation and negative relation with external motivation.

Psychological Well-Being Concept

Psychological well-being concept contains positive assessment of individual relating to himself/herself and his/her past life, individual development, belief of him/her relating to his/her life is meaningful and purposeful, positive relations with others, life of individual and effective management capacity of around world and self-determination sense (Keyes, Shmotkin and Ryff, 2002). Research show that psychological well-being levels of the individuals, who is doing regular physical exercise (Ryan and Deci, 2000). In addition to this, it is seen that the individuals, whose basic psychological needs are met motivate internally against the events; namely they undertake the

METHODS

Population and Sampling: The study sample consist of 181 female ($X_{yaş} = 28.38 \pm 7:48$), 206 male ($X_{age} = 25.01 \pm 5.82$) for a total of 387 ($X_{age} = 26.59 \pm 6.85$) university students who exercise regularly and age ranged 17 to 35 years old. All participants participated to the study voluntarily.

Information about the frequency of exercise 3.85 (SS=1.29) day, it is 3.61 (SS=1.16) day for female participants and

responsibility of their selections and behaviour more self-determined. Thanks to this psychological process, it is said that the individual is satisfied much more his/her life so exercise medium because his/her psychological well-being increased (Ryan and Deci, 2008).

According to SDT, as well as all people have the same basic psychological believes, the needs can be commented differently in different cultures and satisfied in different styles and grades. In this content, when it is handled "SDT" is important in terms of researching in our Country and setting forth potential cultural differences. At the same time findings, obtained by the research can ensure a new viewpoint to understand individuals' exercise habit and psychological needs in the exercise mediums through their healthy behaviour patterns. In this content, purpose of the study is to state differences of behavioral regulations in exercise, basic psychological needs and psychological well-being concepts by sex and behavioral change step in exercise and to set forth the relations between mentioned concepts. In line with this purpose, our hypothesis is in the direction of exercise participants have no differences on behavioral regulations in exercise, basic psychological needs and psychological well-being concepts by sex and have differences on behavioral change step in exercise.

4.07 (SS= 1.36) day for male participants. Information about the length of exercise per exercise session ranged from 61 to 90 minutes, it is 46 to 60 minutes for female and 61 to 90 minutes for male. It is observed that the participants generally exercise in moderate intensity (f = 159) and this finding is the same for female participants (f= 121), male participants have high intensity level for exercise.

Table 1: Descriptive information about the participants

| | Female (n=181) | | Male (n=206) | | Total (n=387) | |
|---------------------------|-----------------------|-----------|---------------------|-----------|----------------------|-----------|
| | Mean | SS | Mean | SS | Mean | SS |
| Age | 28.38 | 7.48 | 25.01 | 5.82 | 26.59 | 6.85 |
| Exercis frequency (day) | 3.61 | 1.16 | 4.07 | 1.36 | 3.85 | 1.29 |
| Exercise length | f | % | f | % | f | % |
| 20-30 minutes | 14 | 7.7 | 5 | 2.4 | 19 | 4.9 |
| 31-45 minutes | 21 | 11.6 | 8 | 3.9 | 29 | 7.5 |
| 46-60 minutes | 67 | 37.0 | 42 | 20.4 | 109 | 28.2 |
| 61-90 minutes | 62 | 34.3 | 97 | 47.1 | 159 | 41.1 |
| 91-120 minutes | 16 | 8.8 | 44 | 21.4 | 60 | 15.5 |
| More than 2 hours | 1 | .6 | 10 | 4.9 | 11 | 2.8 |
| Exercise intensity | f | % | f | % | f | % |
| Low intensity | 40 | 22.1 | 22 | 10.7 | 62 | 16.0 |
| Moderate intensity | 121 | 66.9 | 87 | 42.2 | 208 | 53.7 |
| High intensity | 20 | 11.0 | 97 | 47.1 | 117 | 30.2 |

Instrument: “Behavioural Regulations in Exercise Questionnaire-2 (BREQ-2)”, “Basic Psychological Needs in Exercise Scale (BPNES)”, “Physical Activity Stages of Change Questionnaire (PASCQ)” and “Psychological Well-Being Scale” were administered to all participants. The details of each questionnaire were given below:

Personal Information Form: A demographic questionnaire was consist of 8 items and it is prepared for obtaining information about age, sex, exercise frequency, the length of the exercise, the intensity of exercise, the exercise type.

Behavioural Regulations in Exercise Questionnaire-2 (BREQ-2): The 19-item Behavioural Regulations in Exercise Questionnaire-2 (BREQ-2) is contained five subscales that measured varying degrees of exercise regulations, namely external (“I take part in exercise because my family/friends/ partner say I should”), introjected (“I feel guilty when I don’t exercise”), identified (“It’s important to me to exercise regularly”), intrinsic (“I exercise because it is fun”) regulations and amotivation (“I think exercising is a waste of time”) (Markland & Tobin, 2004). Following the statement “Why do you exercise?”, participants are asked to respond to each item on a 5-point scale anchored by (0) “not at all true for me” and (4) “very true for me”. Past research has provided support for the validity and

reliability of the BREQ-2 in a different exercise settings and age groups (Markland & Tobin, 2004; Mullan & Markland, 1997; Wilson & Rodgers, 2004; Wilson, Rodgers, & Fraser, 2002; Mullan et al., 1997). The reliability and validity evidences of the BREQ-2 for Turkish university students were obtained in a study carried out by Ersöz, Aşçı & Altıparmak (2011). In Turkish version of BREQ-2 contained four subscales and each subscale contains four items except intrinsic regulation, which includes seven items (Ersöz, Aşçı & Altıparmak, 2012). The internal consistency coefficient of subscales for this sample were .79, .81, .82 .84 respectively.

Basic Psychological Need Satisfaction in Exercise (BPNES): BPNES was used to assess the extent to which the psychological needs (autonomy, competence and relatedness) of the participants from the two samples were fulfilled in organized exercise settings witin the Self-Determination Theory (SDT). Evidence for the validity and reliability of the scale has been presented with Greek-speaking exercise participants by Vlachopoulos and Michailidou (2006). Psychological need satisfaction among English-speaking exercise participants was additionally assessed via the PNSE by Wilson et al. (2006). Evidence for the validity and reliability of the scale has been adapted by Vlachopoulos et al. (2013) in

Greek, Spanish, Portuguese and Turkish. Responses were provided on a 5-point Likert scale ranging from 1 (I don't agree at all) to 5 (I completely agree). It consists of 12 items intended to measure satisfaction of the 3 basic needs for competence, autonomy, and relatedness with 4 items each. Sample items are: "I feel that the way I exercise is definitely an expression of myself" (autonomy), "I feel that I can manage with the requirements of the training program I am involved" (competence) and "I feel that I associate with the other exercise participants in a very pleasant way" (relatedness). The internal consistency coefficient of subscales for this sample were .52, .72, .76 respectively.

Psychological Well-Being Scale (PWBS): Psychological Well-Being Scale consisting of 8 items which is defined to positive relationship, feeling competencies and having meaningful and purposeful life. It was developed by Diener et al. (2010) and The Turkish adaptation of the scale has been done by Telef (2013). Responses were provided on a 7-point Likert scale ranging from 1 (I don't agree at all) to 7 (I completely agree). The researcher has determined as a result of descriptive factor analysis that the single dimensional structure explains 53% of the variance. The factor loadings of the scale were changing between .61 to .77. The internal consistency coefficient of the original scale was .87. The internal consistency coefficient of scale for this sample was .78.

Physical Activity Stages of Change Questionnaire (PASCQ): PASCQ is a validated instrument to assess individuals' level of readiness to participate physical activity (Marcus et al., 1992; Marcus & Lewis, 2003). It is a binary type (yes/no) questionnaire. Participants answer each question related with their physical activity participation as yes or no. Based on their responses, they classified in five different stages (pre-contemplation, contemplation,

preparation, action, and maintenance) by using a scoring algorithm. Individuals in the Precontemplation stage are inactive and have no intention to become active over the next 6 months. In the contemplation stage, Individuals are inactive but intend to start exercising within the next 6 months. The preparation stage includes individuals who exercise occasionally but not regularly. Individuals in the action stage have been exercising regularly less than 6 months. Individuals in the maintenance stage have been exercising regularly 6 months or longer. Due to the nature of our sample (i.e. exercisers), only the last three stages were assessed. Translation and validation study of Turkish version for the university students indicated an evidence for test retest stability ($r = .80$) (Cengiz, 2007).

Data Analysis: Data obtained on the research were transferred to SPSS 18.0 program. Data were tested for normal distribution and homogeneity of variance using Kolmogorov-Smirnov and Levene's test before statistical procedures were applied. In order to determine the differences of scores of participants, obtained BREQ-2, BPNSE and PWBS scales in terms of sex using independent samples t-test. MANOVA was used to determine whether differences exist of the subscales of BREQ-2 and BPNSE scores and ANOVA was used to analysis the differences of PWBS scores in terms of stage of changes in exercise (preparation, action and maintenance). If in MANOVA and ANOVA analysis was found a difference, post hoc Tukey's test was used for analysis is for the difference between groups. To determine the relationships among sub-dimensions of BREQ-2 and BPNSE and PWBS scales Pearson Moment of Correlation analysis method was used. Statistical significance level was considered as $p < 0.05$.

RESULTS

Table 2: Mean Differences Among Gender in Exercise Regulation, Basic Needs Satisfaction in Exercise and Psychological Well-Being

| | Gender | n | Mean | SS | t test | | |
|---------------------------------|--------|-----|-------|------|--------|-----|-----------|
| | | | | | t | sd | p |
| Intrinsic Regulation | Female | 181 | 28.81 | 4.87 | -1.28 | 385 | 0.20 |
| | Male | 206 | 29.46 | 5.04 | | | |
| Introjected Regulation | Female | 181 | 13.31 | 4.52 | -3.82 | 385 | <0.001*** |
| | Male | 206 | 15.01 | 4.22 | | | |
| External Regulation | Female | 181 | 10.19 | 5.34 | -2.62 | 370 | 0.01* |
| | Male | 206 | 11.57 | 4.96 | | | |
| Amotivation | Female | 181 | 7.43 | 4.83 | -1.98 | 377 | 0.05 |
| | Male | 206 | 8.56 | 6.40 | | | |
| Competence | Female | 181 | 16.20 | 2.47 | -2.81 | 385 | 0.01* |
| | Male | 206 | 17.03 | 3.26 | | | |
| Relatedness | Female | 181 | 16.00 | 2.90 | -1.83 | 385 | 0.07 |
| | Male | 206 | 16.55 | 2.97 | | | |
| Autonomy | Female | 181 | 15.82 | 2.69 | -1.87 | 385 | 0.06 |
| | Male | 206 | 16.35 | 2.92 | | | |
| Psychological Well-Being | Female | 181 | 48.24 | 9.12 | 0.43 | 385 | 0.67 |
| | Male | 206 | 47.85 | 8.38 | | | |

*p<0.05, ***p<0.001

As the result of t test analysis of independent samples t-test to determine if the sub-scales averages of behavioral regulations in exercise, basic psychological needs and psychological well-being scales become different or not by sex variable, statistically significant differences was seen on the introjected, external regulation and competence sub-

scales, women received lower average scores than men at these three dimensions. When examining of intrinsic regulation, amotivation, relatedness, autonomy and psychological well-being averages, statistically significant differences wasn't be seen intersexually (p>0.05).

Table 3: Mean Differences Among the Three Stages of Change in Exercise Regulation, Basic Needs Satisfaction in Exercise and Psychological Well-Being

| | Stage of Change in Exercise | | | | | | F | p |
|---------------------------------|-----------------------------|------|-------------------|------|------------------------|------|------|---------|
| | Preparation (n=107) | | Action (n=130) | | Maintenance (n=150) | | | |
| | Mean | SS | Mean | SS | Mean | SS | | |
| Intrinsic Regulation | 28.92 | 4.60 | 29.54 | 4.76 | 29.00 | 5.39 | 0.58 | 0.565 |
| Introjected Regulation | 14.36 | 4.40 | 14.19 | 4.46 | 14.13 | 4.47 | 0.08 | 0.926 |
| External Regulation | 11.88 | 5.15 | 11.04 | 5.25 | 10.15 | 5.05 | 3.56 | 0.031* |
| Amotivation | 7.07 | 4.14 | 8.55 | 5.84 | 8.27 | 6.54 | 2.16 | 0.122 |
| Competence | 16.04 | 3.75 | 16.97 | 2.64 | 16.79 | 2.46 | 3.30 | 0.041* |
| Relatedness | 15.49 | 2.83 | 16.65 | 3.19 | 16.56 | 2.72 | 5.69 | 0.004** |
| Autonomy | 15.37 | 2.60 | 16.55 | 2.79 | 16.23 | 2.93 | 5.50 | 0.004** |
| Psychological Well-Being | 46.41 | 8.55 | 47.78 | 8.86 | 49.41 | 8.56 | 3.84 | 0.022** |

*p<0.05, **p<0.01

According to the results of ANOVA and MANOVA tests to be performed to determine if the sub-dimension averages of behavioral regulations in exercise, basic psychological needs and psychological well-being scales become different or not by behavioral change in exercise, statistically significant differences was seen on the external regulation, competence, relatedness, autonomy and psychological well-being sub-scales ($p < 0.05$); statistically significant differences wasn't be found among intrinsic and introjected regulation and amotivation ($p > 0.05$). According to the results of Turkey Post Hoc test analysis, averages of external regulation sub-scale received by the participants, who are on the preparation phase were found higher

than the averages received by the participants who are on the continuity phase. While scores of competence subscale received by the participant who are on the preparation phase were found lower than received by the participants who are on the continuity phase; scores received from relatedness and autonomy subscales were found higher in the participants who are in the movement and continuity phases than in the preparation phase. When examined the psychological well-being scores, psychological well-being averages of the participants, who are on the preparation phase were lower than the averages of the participants, who are on the continuity phase.

Table 4: Correlation Coefficients between Exercise Regulation, Basic Needs Satisfaction in Exercise and Psychological Well-Being

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------------|---|--------|--------|---------|--------|--------|--------|---------|
| 1 Intrinsic Regulation | | 0.54** | 0.12* | -0.23** | 0.46** | 0.53** | 0.44** | 0.23** |
| 2 Introjected Regulation | | | 0.63** | 0.15** | 0.38** | 0.46** | 0.37** | 0.06 |
| 3 External Regulation | | | | 0.47** | 0.19** | 0.21** | 0.18** | -0.07 |
| 4 Amotivation | | | | | 0.01 | 0.04 | 0.12* | -0.22** |
| 5 Competence | | | | | | 0.62** | 0.58** | 0.21** |
| 6 Relatedness | | | | | | | 0.64** | 0.21** |
| 7 Autonomy | | | | | | | | 0.16** |
| 8 Psychological Well-Being | | | | | | | | |

* $p < 0.05$, ** $p < 0.01$

As is seen on the Table 4, there is a positive meaning relation among intrinsic regulation and introjected regulation ($r = .54$), external regulation ($r = .12$), competence ($r = .46$), relatedness ($r = .53$), autonomy ($r = .44$) and psychological well-being ($r = .23$) and with amotivation ($r = -.23$) negative meaning relation. There is a positive meaning relation among introjected regulation ($r = .63$), amotivation ($r = .15$), competence ($r = .38$), relatedness ($r = .46$) and autonomy ($r = .37$). A positive meaning relation among external

regulation and amotivation ($r = .47$), competence ($r = .19$), relatedness ($r = .21$) and autonomy ($r = .18$) was obtained. A positive meaning relation was seen between amotivation and autonomy ($r = .12$) and a negative meaning relation between amotivation and psychological well-being ($r = -.22$). A positive meaning relation was seen among sub-dimensions of basic psychological needs in exercise. And a positive meaning relation was seen among subscales of psychological well-being and competence ($r = -.21$), relatedness and autonomy ($r = .16$).

DISCUSSION AND CONCLUSION

Purpose of the study is to state differences of motivational orientations of exercise participants in exercise, basic psychological needs and psychological well-being concepts by sex and behavioral change step in exercise and to set forth the relations between mentioned concepts.

According to the findings obtained from the research, difference by sex variable in terms of motivational orientations of exercise and basic psychological needs was seen. It was stated that women participated in the exercise by introjected and by external behavioral regulations much more than men and this met more competence need in exercise. There are many studies show that social factors cause to differ motivation in exercise in woman and man and set forth this differences (Deci and Ryan, 2002; Brunet and Sabiston, 2009). Studies, research if motivational orientations differ from by sex or not stated that women do exercise by the external reasons such as more controlled, physical appearance and social relations and men by internal reasons such as autonomous motivation, competition and competence (Brunet and Sabiston, 2009; Daley and Duda, 2006; Ryan et al., 1997). On the contrary of these findings, there are many studies, show that women motivate to exercise with more self-determination than men (Landry and Solmon, 2004; Wilson and Rodgers, 2004) and men do exercise with lower self-determination or by fully external reasons (Annesi, 2006; Frederick, Morrison and Manning, 1996). In this content, research results stated that there are differences between exercise motivations of woman and man participants support to the findings of this study. By estimating that physiological and psychological differences on women and men will reflect on the basic needs of the individuals, our hypothesis on motivational orientations in exercise in these two groups can be vary is supported by these findings. On the other hand, the opinion for no intersexual differences on the basic needs of

individuals is the essential opinion in SDT (Deci and Ryan, 2002). Similarly, studies set forth that entertainment, competence and social motivations in written sources don't differ from intersexually don't support to the obtained result (Frederick and Ryan, 1993; Frederick, Morrison and Manning, 1996).

When examined the motivational orientations in exercise, basic psychological needs and psychological well-being levels of individuals, participated in the research by the their behavioral change step, statistically differences were seen. External regulations of participants, take place on preparation phase of exercise were found higher. In parallel with the findings obtained from this study, it is resulted in the previous studies that individuals, started to do exercise by external motivation take place on the first phase of behavioral change step of exercise (Daley and Duda, 2006; Landry and Solmon, 2004; Wininger, 2007). Starting to do exercise is decided often by the external reasons such as health and physical appearance (Ingledew, Markland and Medley, 1998; Ryan et al., 1997). So, on the first steps of exercise more external namely controlled exercise behaviour is displayed. People do exercise generally to lose weight. However, previous studies stated that ensuring continuity in exercise, external motivations such as lose weight isn't be effective (Mullan and Markland, 1997; Wilson and Rodgers, 2002). Although studies, performed in exercise and sport psychology stated that continuous participation is provided in order to physical and psychological benefits of exercise can actualise, approx. 50% of the people, who started to do exercise stated that they give up it in first 6 months (Ntoumani and Ntoumanis, 2006). This can be arisen that the abovementioned external award doesn't actualise in a short time (loss weight). That's to say the group, give up doing exercise in first 6 months is estimated that they started to do exercise by external motivation. On the contrary of

this study, Mullan and Markland (1997) didn't find any differences on the subscale of external regulations by change step of exercise. In addition to this, not finding any differences on the introjected regulation by behavioral change step of exercise by the same researcher coincides with the findings of this study (Mullan and Markland, 1997). Furthermore, on the contrary of our study according to the findings obtained by the previous studies it is seen that averages of intrinsic regulation (Rose, Parfitt and Williams, 2005; Wilson and Rodgers, 2002) and introjected regulation (Deci and Ryan, 2000; Standage, Duda and Ntoumanis, 2003), take place on the continuity step are high. On this study on the contrary of the literature not finding any differences on the subscales of intrinsic regulation and introjected regulation by behavioral change step of exercise can be arised that the researc group consists of the homogenous university students' group at the same age range.

It is seen that all basic psychological needs of participants such as competence, relatedness and autonomy in exercise are higher on the next phases of exercise. According to the previous studies, meeting the three basic psychological needs by the participant of exercise in the event by them left a positive impression on the continuity to doing exercise (Farmanbar et al., 2013; Edmunds, Ntoumanis and Duda, 2006). These studies support to the findings obtained from the research.

When examined the psychological well-being scores, psychological well-being averages of the participants, who are on the preparation phase were lower than the averages of the participants, who are on the continuity phase. When examined the body of literature relating to this matter, it is seen that the psychological well-being level of individulas, who continue to do exercise incresed (Biddle and Mutrie, 2007; Network, 2015) and literature has parallels with the findings of study.

Another matter handled on the research is reviewing the relations between psychological concepts, take place in the study. While generally a positive meaning relation was observed among the subscales of behavioral regulations in exercise, it is stated that there is a negative meaning relation only between intrinsic regulation and amotivation. While a positive menaing relation was shown in the subscales of competence, relatedness introjected regulation and external regulation of subscales of basic psychological needs in exercise, autonomy need show completely a positive meaning relation on the all behavioral regulations in exercise. Finally, while psychological well-being levels of participants in exercise and intrinsic regulation, competence, relatedness and autonomy subscales show a positive meaning ralation, it is seen a negative meaning relations between amotivationb and psycological well-being. A positive relation between sub-dimensions of motivational orientations in exercise and basic psychological needs was observed in the previous studies (Edmunds, Ntoumanis and Duda, 2006; Teixeira et al., 2012) and these studies support to the research. The relation among intrinsic motivation, psychological needs and psychological well-being, which are the concepts handled on the research also were supported by the previous studies in the same way; these studies set forth that positive relation between psychological needs and self-determined motivation is an effect, increased psychological well-being level (Gagne, Ryan and Bargmann, 2003; Wilson and Rodgers, 2002).

Briefly, as a result of the research it is seen that men participated in the exercise by less self-determined than women and met the competence need much more. In addition to this, it is seen that the individuals, motivated to the exercise with a self-determination continue to doing exercise much more, individuals, continue to doing exercise meet the psychological needs such as competence, relatedness

and autonomy and so their psychological well-being levels are higher. While psychological well-being levels of participants display a positive relation with

the intrinsic motivation and three basic psychological needs; it is stated that it is in a negative relation with amotivation.

KAYNAKLAR

1. Annesi J.J., "Relations Of Physical Self-Concept And Self-Efficacy With Frequency Of Voluntary Physical Activity In Preadolescents: Implications For After-School Care Programming" *Journal of Psychosomatic Research*. 61(4). pp. 515-520, 2006
2. Biddle S.J., & Mutrie N., *Psychology Of Physical Activity: Determinants, Well-Being And Interventions*. Routledge, 2007
3. Brunet J., & Sabiston C.M., "Social Physique Anxiety And Physical Activity: A Self-Determination Theory Perspective" *Psychology of Sport and Exercise*. 10.pp. 329-335, 2009
4. Budak S., *Psikoloji Sözlüğü*. Ankara: Bilim ve Sanat Yayınları, 2000.
5. Cengiz C., Aşçı F.H., & İnce M.L., "Egzersiz Davranışı Değişim Basamakları Anketi: Geçerlik Ve Güvenirlik Çalışması" 10. Uluslararası Spor Bilimleri Kongresi Bildiri Kitapçığı. pp.498-500, 2008
6. Çankaya Z.C., "Öz-belirleme Modeli: Özerklik Desteği, İhtiyaç Doyumu ve İyi Olma" Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Rehberlik ve Psikolojik Danışmanlık Anabilim Dalı Doktora Tezi, 2005
7. Daley A., & Duda J.L., "Self-Determination, Stage Of Readiness To Change For Exercise, And Frequency Of Physical Activity In Young People" *European Journal of Sport Science*. 6. pp. 231-243, 2006
8. Deci E., & Ryan R., *Intrinsic Motivation and Self-Determination in Human Behavior*, New York: Plenum Press, 1985
9. Deci E., Connell J. & Ryan R., "Selfdetermination in a Work Organization" *Journal of Applied Psychology*. 74 (4). pp.580-590, 1989
10. Deci E.L.& Ryan R.M., *Handbook of self-determination research*. Rochester, NY: University of Rochester Press. 2002
11. Deci E.L., & Ryan R.M., "The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior" *Psychological Inquiry*.11.pp.227-268, 2000
12. Diener E., Wirtz D., Tov W., Kim-Prieto C., Choi D.W., Oishi S., & Biswas-Diener R., "New Well-Being Measures: Short Scales To Assess Flourishing And Positive And Negative Feelings" *Social Indicators Research*. 97(2).pp.143-156, 2010
13. Edmunds J., Ntoumanis N., & Duda J.L., "Adherence and well-being in overweight and obese patients referred to an exercise on prescription scheme: A self-determination theory perspective" *Psychology of Sport & Exercise*. 8.pp. 722-740, 2006
14. Farmanbar R., Niknami S., Lubans D.R., & Hidarnia A. "Predicting Exercise Behaviour In Iranian College Students: Utility Of An Integrated Model Of Health Behaviour Based On The Transtheoretical Model And Self-Determination Theory" *Health Education Journal*. 72(1). pp. 56-69, 2013
15. Frederick C.M., & Ryan R.M., "Differences In Motivation For Sport And Exercise And Their Relations With Participation And Mental Health" *Journal of Sport Behaviour*. 16. pp. 124-145, 1993
16. Frederick C.M., Morrison C., & Manning T., "Motivation To Participate Exercise Affect And Outcome Behaviors Toward Physical Activity" *Perceptual and Motor Skills*. 82. pp. 691-701, 1996
17. Gagne M., Ryan R.M., & Bargmann K., "Autonomy Support And Need Satisfaction In The Motivation And Wellbeing Of Gymnasts" *Journal of Applied Sport Psychology*. 15. pp.372-389, 2003
18. Ingledeu D.K.I., Markland D., & Medley A., "Exercise Motives and Stages of Change" *Journal of Health Psychology*. 3. pp. 477-489, 1998
19. Keyes C.L., Shmotkin D., & Ryff C.D., "Optimizing well-being: the empirical encounter of two traditions" *Journal Of Personality And Social Psychology*. 82(6).pp. 1007, 2002
20. Kingston K.M., Horrocks C.S. & Hanton S., "Do Multidimensional Intrinsic And Extrinsic Motivation Profiles Discriminate Between Athlete Scholarship Status And Gender?" *European Journal Of Sport Science*. 6(1).pp.53-63, 2006
21. Landry J.B., & Solmon M.A., "African American Women's Self-Determination Across The Stages Of Change For Exercise" *Journal of Sport and Exercise Psychology*. 26. pp. 457-469, 2004
22. Lewis M., Sutton A., "Understanding exercise behaviour: Examining the interaction of exercise motivation and personality in predicting exercise frequency" *Journal of Sport Behavior*.34(1).pp.82-97, 2011
23. Losier G.F., & Vallerand R.J., "The temporal relationship between perceived competence and self-determined motivation" *Journal of Social Psychology*. 134. pp.793-801, 1994
24. Marcus B.H., & Lewis B.A., "Physical Activity and the Stages of Motivational Readiness for Change Model" *President's Council on Physical Fitness and Sports Research Digest*, 2003
25. Markland D., & Tobin V.J., "Need support and behavioural regulations for exercise among exercise referral scheme clients: The mediating role of psychological need satisfaction" *Psychology of Sport and Exercise*.11.pp. 91-99, 2010

26. Markland D., "Self-determination moderates the effects of perceived competence on intrinsic motivation in an exercise setting" *Journal of Sport & Exercise Psychology*. 21(4).pp.351-361,1999
27. Mullan E., & Markland D., Variations In Self-Determination Across The Stages Of Change For Exercise In Adults, *Motivation and Emotion*, 21. pp. 349-362, 1997
28. Network C.R., "A Countryside For Health And Wellbeing: The Physical And Mental Health Benefits Of Green Exercise" *Public Health*, 2015
29. Ntoumani C.T., & Ntoumanis N., "The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions and physical self-evaluations" *Journal of Sports Sciences*. 24(4), pp.393-404. 2006
30. Özer G., "Öz-Belirleme Kuramı Çerçevesinde İhtiyaç Doyumu, İçsel Güdülenme Ve Bağlanma Stilllerinin Üniversite Öğrencilerinin Öznel İyi Oluşlarına Etkileri" Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Eğitim Bilimleri ABD., Yüksek Lisans Tezi, 2009
31. Rosé E.A., Parfitt G., & Williams S., "Exercise Causality Orientations, Behavioural Regulation For Exercise And Stage Of Change For Exercise: Exploring Their Relationships" *Psychology of Sport and Exercise*. 6. pp. 399-414, 2005
32. Ryan R.M., & Deci E.L., "A Self-Determination Theory Approach To Psychotherapy: The Motivational Basis For Effective Change" *Canadian Psychology/Psychologie Canadienne*. 49(3).pp.186, 2008
33. Ryan R.M., Frederick C.M., Lepes D., Rubio N., & Sheldon, K.M., "Intrinsic Motivation And Exercise Adherence" *International Journal of Sport Psychology*. 28.pp.335-354, 1997
34. Ryan R.R., & Deci E.L., "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being" *American Psychologist*. 55.pp. 68-78, 2000
35. Standage M., Duda J.L., & Ntoumanis N. "Predicting Motivational Regulations In Physical Education: The Interplay Between Dispositional Goal Orientations Motivational, Climate And Perceived Competence" *Journal of Sports Sciences*. 21. pp. 631-647, 2003
36. Teixeira P.J., Carraça E.V., Markland D., Silva M.N., & Ryan R.M., "Exercise, Physical Activity, And Self-Determination Theory: A Systematic Review" *International Journal of Behavioral Nutrition and Physical Activity*. 9(1). pp.78, 2012
37. Telef B.B., "Psikolojik İyi Oluş Ölçeği: Türkçeye Uyarlama, Geçerlik Ve Güvenirlik Çalışması" Hacettepe Üniversitesi Eğitim Fakültesi Dergisi. 28.pp.28-3, 2013
38. Vallerand R.J., "Deci And Ryan's Self-Determination Theory: A View From The Hierarchical Model Of Intrinsic And Extrinsic Motivation" *Psychological Inquiry*. 11(4). Pp. 312-318, 2000
39. Vlachopoulos S.P., & Michailidou S., "Development and initial validation of a measure of autonomy, competence, and relatedness in exercise: The Basic Psychological Needs in Exercise Scale" *Measurement in Physical Education and Exercise Science*. 10. pp.179-201, 2006
40. Vlachopoulos S.P., Asci F.H., Cid L., Ersoz G., González-Cutre D., Moreno-Murcia J.A., & Moutão J., "Cross-Cultural Invariance Of The Basic Psychological Needs In Exercise Scale And Need Satisfaction Latent Mean Differences Among Greek, Spanish, Portuguese And Turkish Samples" *Psychology of Sport and Exercise*. 14(5).pp.622-631, 2013
41. Wilson P.M., & Rodgers W.M., "The Relationship Between Exercise Motives And Physical Self-Esteem In Female Exercise Participants: An Application Of Self-Determination Theory" *Journal of Applied Biobehavioral Research*. 7. pp. 30-43, 2002
42. Wilson P.M., & Rodgers W.M., "The Relationship Between Perceived Autonomy Support, Exercise Regulations And Behavioural Intentions In Women" *Psychology of Sport and Exercise*. 5 pp.229-242, 2004
43. Wilson P.M., Rogers W.T., Rodgers W.M., & Wild T.C., "The Psychological Need Satisfaction in Exercise Scale" *Journal of Sport and Exercise Psychology*. 28.pp. 231-251, 2006
44. Wininger S.R., "Self-Determination Theory and Exercise Behavior: An Examination of the Psychometric Properties of the Exercise Motivation Scale" *Journal of Applied Sport Psychology*. 19. pp. 471-486, 2007