



KADİR HAS UNIVERSITY
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**PSYCHO-SOCIAL FACTORS INVOLVED IN EMERGING
ADULTS' CIGARETTE USE: A MIXED-METHOD STUDY**

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MASTER'S THESIS

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MASTER'S THESIS

Submitted to the School of Graduate Studies of Kadir Has University in partial
fulfilment of the requirements for the degree of Master's in the Program of Psychology

İSTANBUL, JUNE, 2021

I, İBRAHİM YAKIN, hereby declare that;

This Master's Thesis is my own original work and that due references have been appropriately provided on all supporting literature and resources.

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ABSTRACT

YAKIN, İBRAHİM. PSYCHO-SOCIAL FACTORS INVOLVED IN EMERGING ADULTS' CIGARETTE USE: A MIXED-METHOD STUDY, MASTER'S THESIS, İSTANBUL, 2021.

The thesis aimed to investigate psycho-social risk factors (impulsivity, sense of belongingness, future anxiety, spirituality, and identity development) affecting tobacco use among university students using the theory of emerging adulthood. These risk factors investigated using logistic regression analysis and k-means cluster analysis. Then it explained in detail using qualitative research methods. In the quantitative part, 389 emerging adults (73.5% women, $M_{age} = 21.4$, $SD = 1.64$) participated into the study. Logistic regression models showed that lower levels of spirituality, higher levels of impulsivity, and higher use of alcohol increased the likelihood of being a smoker. Cigarette use was not linearly associated with feelings of belongingness to friends and work and five identity development dimensions. K-means cluster analysis revealed that foreclosure identity status seemed to be a protective factor, while lack of identity achievement seemed to be a risk factor of smoking. Even when identity development was achieved, high future anxiety and low spirituality remained as significant risk factors. In the qualitative part, 30 participants (15 women) were interviewed face-to-face at the university campus. Results showed that cigarettes played a role as a declaration of independence from their existing groups, a rite of passage into adulthood. The findings showed that men went through this earlier than women. However, the “rite of passage” story took place in adolescence for men and in the emerging adulthood years for women in this age group. Our participants also reported anxiety about their future, and whenever they felt anxious, they smoked more cigarettes and inhaled the smoke more. To conclude, this is the first study demonstrating the psycho-social risk factors of tobacco use among university students utilizing the theory of emerging adults using mixed methods. These results will help future studies and improve the new intervention and smoking cessation programs for emerging adults.

Keywords: emerging adults, tobacco use, smoking, health-risk factors, psycho-social factors, identity development, transition period, future anxiety, mix-methods.

ÖZET

YAKIN, İBRAHİM. BELİREN YETİŞKİNLERİN SİGARA KULLANIMINDAKİ PSİKO-SOSYAL FAKTÖRLER: KARMA YÖNTEMLİ BİR ÇALIŞMA, YÜKSEK LİSANS TEZİ, İSTANBUL, 2021.

Bu tezin temel amacı, beliren yetişkinlik teorisi çerçevesinde üniversite öğrencilerinin sigara kullanımı etkileyen psiko-sosyal risk faktörlerinin (dürtüsellik, aidiyet duygusu, gelecek kaygısı, maneviyat ve kimlik gelişimi) araştırmaktır. Bu risk faktörleri, lojistik regresyon analizi ve k-ortalamlar kümeleme analizi kullanılarak araştırılmıştır. Daha sonra nitel araştırma yöntemleri kullanılarak detaylandırılmıştır. Nicel aşamada, 389 beliren yetişkin (%73.5, Yaş_{ortalama}= 21.4, SS = 1.64) çalışmaya katılmıştır. Lojistik regresyon düşük manevi inanç düzeyinin, yüksek dürtüsellik ve yüksek alkol kullanımının, sigara içme olasılığını arttırdığını göstermiştir. Sigara kullanımı ile, arkadaşla ve işe aidiyet duygusu ve kimlik gelişimi boyutları arasında doğrusal olarak ilişkili bulunmamıştır. K-ortalamlar kümeleme analizi, ipotekli kimlik statüsünün sigara kullanımı için koruyucu bir faktör olduğunu, kimlik başarısızlığının ise sigara kullanımı için risk faktörü olduğunu ortaya koymuştur. Kimlik gelişimi başarılı olsa bile, yüksek gelecek kaygısı ve düşük manevi inanç düzeyi risk faktörleri olarak önemini korumaktadır. Nitel kısımda ise ise, üniversite kampüsündeki 30 öğrenciyle (15 Kadın) yüz yüze görüşmeler yapılmıştır. Sonuçlara göre, sigara bağımsızlık ilanı ya da yetişkinliğe geçiş ritüeli gibi anlamlara sahiptir. Bulgular erkeklerin bunu kadınlardan daha erken yaşadığını göstermektedir. Ancak bu yaş grubundaki kadınlar için bu “yetişkinliğe geçiş ritüeli” ortaya çıkan yetişkinlik yıllarının başlarında yaşanmaktadır. Katılımcılar ayrıca gelecekleriyle ilgili endişelerini ifade etmişlerdir. Katılımcılar endişe altında, daha fazla sigara içtiklerini ve dumanı daha fazla içlerine çektiklerini bildirmişlerdir. Sonuç olarak bu araştırma, karma yöntemler ve beliren yetişkinlik teorisini kullanarak üniversite öğrencilerinin sigara kullanımının psiko-sosyal risk faktörlerini gösteren ilk çalışmadır. Bu sonuçlar, gelecekteki çalışmalara ışık tutacak ve beliren yetişkinlere odaklanan yeni müdahale ve sigara bırakma programlarının gelişmesinde katkı sağlayacaktır.

Anahtar Sözcükler: beliren yetişkin, tütün kullanımı, sigara, risk faktörleri, psiko-sosyal faktörler, kimlik gelişimi, geçiş dönemi, gelecek kaygısı, karma yöntem.

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İbrahim Yakın

June 2021



To my dearest parents and sister

CHAPTER 1

1. INTRODUCTION

“For Zeno, every cigarette being the last one until the addiction is finally "cured" by death.”

Aaron Schuter

(Cited in “The Trouble with Pleasure: Deleuze and Psychoanalysis”, p.35)

In many cultures, getting married, leaving home, having a baby, gaining financial independence, and receiving a degree are the primary criteria of being an adult (Arnett, 2001). If university students are not adolescents, well then, is it correct to call them young adults? According to the American developmental psychologist Jeffrey Arnett, the answer is *no!* With the industrialization of the societies, adulthood shifted to the mid-twenties (Arnett, 2000). During the early twenties, many young people take their degrees and prepare themselves for adult life (Arnett, 2000).

Arnett, in 2000, proposed a brand-new developmental stage, the theory of emerging adulthood, which comprises people aged between 18 and 25 years (Arnett, 2000). The emerging adulthood is defined as a developmental period between adolescence and adulthood (Arnett, 2000). Individuals in this period feel exactly in between being adolescent and adult. Biological and hormonal changes seen in the adolescence passed out, and they have been reached adulthood legally. However, the responsibilities and roles of being an adult based on social norms have not been gained yet. In this period, emerging adults try to acquire the skills, capacities, and personality traits of adulthood that are determined by their culture (Arnett, 1998). They experience the critical transition period; they complete their

education; gain a "good job". Additionally, they may experience many changes in their cognition, emotions, and behaviors (Arnett 1994).

These individuals may face several academic, economic, and social dilemmas that may be associated with stress and negative affect (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005). They may face many problems beyond their physical and psychological limits and force their capacity (Bozkurt, 2004; Çakmak & Hevedanlı, 2005). As a result, emerging adults are at a higher risk of exhibiting numerous health-risk behaviors, including tobacco and alcohol use (Arnett et al., 2014).

Compared to other substances, smoking is more comfortable to try because of its ease of carrying, its relatively lower price, and the presence of tobacco users in almost every social environment. The highest rates of tobacco consumption are seen in underdeveloped and developing countries (Karlıkaya et al., 2006). As a developing country, cigarette use is widespread in Turkey. The smoking prevalence was 27.1 percent among Turkish citizens aged 15 and above years (Turkish Ministry of Health, 2014). According to the Global Adult Tobacco Survey (GATS), the smoking initiation age is very low in Turkey. It was observed to be approximately from the age of 17 (WHO, 2008). Furthermore, the Global Youth Tobacco Survey reported that smoking is very high among the young population (WHO, 2008). Turhan and colleagues (2011) found that the lifetime smoking rate was 73.2% and alcohol use was 56.9% among a sample group of Turkish university students.

A number of studies from the tobacco use literature focused on this age group, yet without using the emerging adulthood theory as their general theoretical framework. The fundamental aim of this thesis is to explore psychosocial risk factors affecting cigarette use among university students. Since a vast majority of the university students are aged between 18 to 25, the theory of emerging adulthood was utilized as a guide theory while examining the psychosocial risk factors among those people.

The following research questions (RQs) will be answered using a mix-method approach. The quantitative study pertains to RQ1, and the qualitative study pertains to RQ2.

1. What are the psychosocial risk factors of cigarette use among university students?
2. How risk factors associated with cigarette use among university students?

1.1. TOBACCO USE

The most common way of tobacco consumption is cigarettes (Shafey, Eriksen, Ross, & Mackay, 2009). Smoking is a severe public health condition worldwide, and each year, about 6 million people died because of tobacco-related diseases (WHO, 2016). In the 20th century, tobacco use caused approximately 100 million deaths (WHO, 2011). One in every four people worldwide is a smoker (Doll, Peto, & Boreham, 2004). Over a billion people are smokers, and unless any intervention programs are organized to take action, the prevalence is expected to reach 1.7 billion (WHO, 2017). If the prevalence continued in the same way as in the 20th century, nearly a billion individuals are expected to die because of smoking.

Smoking prevalence varies from country to country. The data from 2013 indicated that the majority of the world's smokers lived in thirteen countries which were Bangladesh, Brazil, the Republic of China, Germany, India, Indonesia, Japan, Pakistan, Philippines, Russian Federation, Turkey, United States, and Vietnam (WHO, 2015). According to the WHO global report (2015), 21.2% of the world's population aged 15 years and older were tobacco users (35% males and 6% of females) in 2013.

Most tobacco consumption is seen in developing countries. In this respect, Turkey, as a developing country, is in the high-risk group, with the 6th highest smoking rate in global (Can, Çakırbay, Topbaş, Karkucak, & Çapkın, 2007; Karlıkaya et al., 2006; Health Statistics Yearbook, 2016). Furthermore, as stated in the Turkish Health Statistics (2018), following France and Greece, Turkey, with 27% of the population, is at the top third rank in tobacco use among OECD countries (Organization of Economic Co-operation and Development).

1.1.1. Tobacco use and Health

Tobacco is dangerous because of the chemical compounds within cigarettes, and it affects all parts of the human body systems with the dangerous chemicals in tobacco (Samet, 2001). When tobacco is lighted up, all harmful chemicals reach the lungs and other organs, such as kidneys, pancreas, liver, and/or bladder. Therefore, smoking is related to many diseases and health problems such as cancers, respiratory diseases, tuberculosis, reproduction problems, psoriasis, eye diseases, and diabetes (Shafey, Eriksen, Ross, & Mackay, 2009; US Surgeon General's report on smoking and health, 2014).

In the 19th century, cigars and pipes were proven to cause mouth cancer, but the relationship between lung cancer and smoking had not been demonstrated until 1950. As a result of five studies published in 1950, it was concluded that smoking causes cancer (Demir, 2008). At the end of the 20th century, one-third of men and ten percent of women died because of cancers caused by smoking. In the last 20 years, the most common disease related to smoking in the world is lung cancer which has the lowest rate of survival among cancers (Karlíkaya et al., 2006). Smoking is associated with about 90% of lung cancers worldwide (General US Department of Health and Human Services, 2004).

Although smoking has the most harmful effects on the lungs, oral cavities, and the throat, it is also important to be considered among the cardiovascular and circulatory system disorders (Karlíkaya et al., 2006). Moreover, cerebral palsy, dementia, infertility, early menopause, osteoporosis, skin disorder, periodontal diseases are examples of other diseases that are related to smoking (Shafey, Eriksen, Ross, & Mackay, 2009). As a matter of fact, a study showed that there is a relationship between smoking and hearing loss (Dawes et al., 2014). It was found that age-related hearing loss was more likely to be observed in smokers than non-smokers among participants between the ages of 40 and 69 (Dawes et al., 2014). When individuals quit smoking, the incidence of many tobacco-related disorders is reduced, depending on the amount and duration of smoking (Marks et al., 2005).

Smoking is closely related not only to physical disorders but also to psychological illnesses. Substance use is quite common in the clinical population (Zvolensky et al., 2011). Smoking is prevalent in individuals with schizophrenia, attention deficit, and hyperactivity disorder, depression, anxiety, panic disorder, somatoform disorder, and personality disorders (Goodwin, Perkonig, Höfler, & Wittchen, 2013; Grant et al., 2004; Jorm et al., 1999; Lee, Brook, Finch, De La Rosa, & Brook, 2017; Williams et al., 1996; Zvolensky et al., 2011). For example, smoking is very high among people with schizophrenia. It is seen as self-medication to regulate negative symptoms (De Leon and Diaz, 2005; Winterer, 2010).

According to various studies, there are differences in terms of some psychological characteristics between smokers and non-smokers. Smoking has been associated with emotion regulation, extraversion, risk-taking, sensation-seeking, neuroticism, life satisfaction, aggression, and self-sufficiency (Atak, 2011; Conner, Grogan, Fry, Gough, &

Higgings, 2009; Durmuş & Pirinçci, 2009; Gilbert & Gilbert, 1995; Terracciano & Costa, 2004; Wu et al., 2015).

Emotion regulation plays a critical role in both substance use and smoking (Wu et al., 2015). Therefore, the most studied psychological variable in smoking as well as in addiction is the effect of emotion regulation strategies. Smokers use a cigarette as a coping strategy to regulate their negative emotions (Brown, Kahler, Zvolensky, Lejuez, & Ramsey, 2001; McChargue, Spring, Cook, & Neumann, 2004). Overall, findings revealed that early smoking initiation is associated with the use of unhealthy coping strategies such as suppression, which causes increased urges for smoking and failure for smoking cessation (Fucito, Juliano, & Toll, 2010).

When we look at the psychological risk factors about smoking and substance use, previously mentioned variables come forward for the general population and youth. However, considering the target population of this thesis, it was to discuss the possible psychological and personal risk factors among emerging adults aged between 18-25, addressing the theory of emerging adulthood. In the next part, psychological and personal risk factors of smoking behavior: impulsivity, identity development, sense of belongingness, and life transitions and stress will be explained.

1.2. PSYCHOLOGICAL AND PERSONAL FACTORS OF SMOKING

1.2.1. Impulsivity

Impulsivity is a tendency to act spontaneously without thinking (Cross, Copping, & Campbell, 2011). In the simplest term, a high level of impulsivity can be defined as preferring risky behaviors, responding to the external and the internal stimuli without considering its negative results, not inhibiting thoughts or actions, choosing instant and easy satisfaction without thinking, impatience, and excitement (Congdon, Lesch, & Canli 2008; Cross, Copping, & Campbell, 2011). It can also be defined as a tendency to display unappreciated behavior (De Wit, 2008).

Impulsivity is a risk factor for various behaviors which threaten health, such as alcohol consumption, bingeing and purging, gambling, and smoking. A meta-analysis (Kale, Stautz, & Cooper, 2018) about impulsivity and tobacco use revealed that (1) impulsivity is positively

associated with the severity of nicotine dependence, (2) the level of impulsivity was higher among smokers than non-smokers, and (3) smoking status was usually related to positive urgency and lack of planning.

People with high impulsivity have a greater expectation of the effects of substances. In this regard, VanderVeen, Cohen, Trotter, & Collins (2008) conducted a study with college students to examine the relationship between impulsivity and smoking expectancies over 48-hours of smoking abstinence. They showed that if the level of impulsivity were high, the positive reinforcement expectancies would increase as well. Besides, during the period of smoking abstinence, people with a high level of impulsivity were inclined more to relapse as a response to gratify their desire for a more satisfying and rewarding stimulus (VanderVeen et al., 2008). They also found that an increase in craving resulted from a higher level of impulsivity in 48-hours of abstinence. In other words, people with high impulsivity experience more cravings and anxiety during an abstinence period.

Impulsivity is not significantly associated with age, the number of previous quitting attempts, gender, or race (VanderVeen, Cohen, Cukrowicz, & Trotter, 2008; Kale, Stautz, & Cooper, 2018). However, a trajectory study with adolescents suggested that being a smoker and being a heavy drinker could be predicted by an increasing impulsivity trajectory among males (Martinez-Loredo, Fernandez-Hermida, De La Torre-Luque & Fernandez-Artamendi, 2018)

1.2.2. Sense of Identity

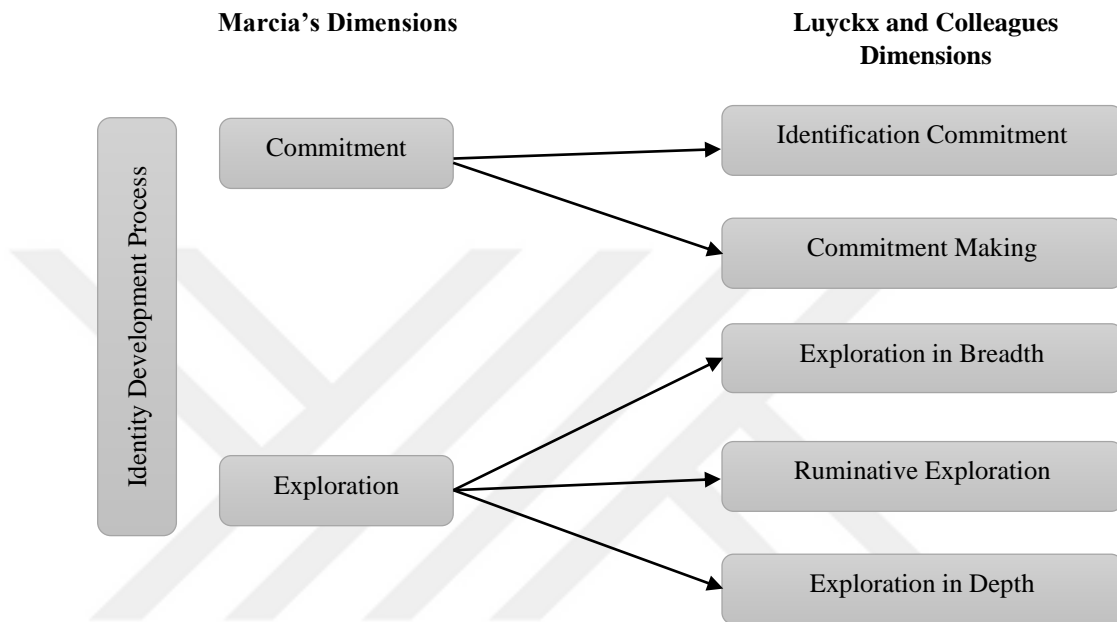
Identity development starts in adolescence to explore different alternatives (Morsünbül & Çok, 2013). Developing an identity is one of the most critical components for young people to achieve adulthood. According to developmental theorists (e.g., Maslow or Rogers), healthy identity development is associated with good mental health (Suh, 2002). Erikson (1968) believed that if a person successfully passes the identity vs. confusion stage (ages 13 to 21), they will be more likely to have good mental health. Erikson also supported that identity development is affected by social, environmental, and cultural factors (Erikson, 1968).

Based on Erikson's psychosocial developmental theory, many models have been proposed. The most frequently used model in the literature is Marcia's identity status model

(Morsünbüllü & Çok, 2013). In this model, James Marcia developed a measurement for identity development, and he suggested four identity statuses based on the exploration and commitment process (Marcia, 1989). These are; achievement identity status (individuals in this status commit with internal investment by actively searching possible options), moratorium identity status (individuals in this status, actively seek out possible options, but do not make significant internal investments), foreclosure identity status (individuals in this status, make a distinct internal commitment, but do not have an effective search process while creating these investments), and a diffusion identity status (individuals in this status do temporary research but do not make any internal investment) (Marcia, 1989).

The second frequently used identity development model is the Five Dimension Identity Formation Model of Luyckx and colleagues (2008). This model is an extended form of Marcia's model. As seen in Figure 1, they extended commitment into two commitment processes: identification commitment and commitment making, and exploration into three exploration processes: the exploration in-breadth, ruminative exploration, and exploration in depth. Commitment Making is the degree of decision making on identity issues. Identification with commitment is the degree of their feelings about identifying with their internal investments and how much they fit into it. Exploration in breadth is the amount of exploration of different alternatives related to identity before making internal investments. Exploration in depth is the degree of an in-depth evaluation of the internal investments that the person must evaluate how much it suits them. Finally, ruminative exploration is the degree of getting stuck in the searching process, which makes it very difficult for youth to reach strong internal investments (Luyckx et al., 2008).

Figure 1.1. Visualization of Comparison of Marcia's and Luyckx and Colleagues' Identity Development Dimensions



Substance use may be a part of this identity exploration among emerging adults (Arnett, 2005). While establishing a stable identity, they may face many difficulties and stressors. In that time, substance use may play a role in relieving their identity confusion (Arnett, 2005). A longitudinal study about identity formation, substance use, and health-compromising behaviors among adolescents revealed that when identity confusion scores increase over time, adolescents more likely started to use tobacco and alcohol (Schwartz, Mason, Partin, & Szapocznik, 2008). In addition, adolescents who are in the diffusion identity status are more likely to have tried cigarettes and alcohol than those in the foreclosure identity status (Jones & Hartmann, 1988).

A limited number of studies examined the relationship between identity development, tobacco, alcohol, and illegal substance use among young adults (e.g., Johns & Hartmann, 1988; Marsiglia, Kulis, & Hecht, 2001; Schwartz et al., 2009), utilizing Marcia's measurement of identity development dimensions (Marcia, 1989). However, no studies

examined this relationship via qualitative methods, focusing on a single substance, allowing for a more extensive exploration of the influence of that substance for this age group.

Many studies from the tobacco use literature focused on this age group without using the emerging adulthood. These studies primarily focused on social identity. Social identity is about a sense of belonging to a group (Hogg, 2006). People may have more than one group they feel they belong to; and some being more dominant in defining one's self-identity than others (Stets, 2006). The more an individual identifies themselves with a social group, the more that identity becomes central in their lives regarding the roles they see themselves taking on and norms and values that shape their choices (Stets, 2006; Hogg, 2006).

Being a smoker is one such possible identity that has been studied. Previous studies showed that smokers do not always internalize their identity as a smoker (Berg et al., 2009; Song and Ling, 2011). They may refuse to be called a smoker or identify themselves with alternative self-labels such as “social smokers” (Berg et al., 2009; Song and Ling, 2011). Nevertheless, the social benefits of a smoker identity are also observed among young people. Being a smoker can be considered an acceptable, even desirable, identity around friends (Witshire, Amos, Haw, and McNeill, 2006). Having a smoker identity may increase social power, help individuals feel involved, express their membership in social groups, and maintain a valuable identity within these groups (Nitchter, 2015). Young people think that participation in smoking is more important for social acceptance among peers rather than smoking itself (Engels et al. 2006)

To sum up, identity development is found to be associated with the initiation and maintenance of smoking behavior among adolescents. Therefore, understanding the identity component related to smoking, such as smoker identity or social-smoker identity, is critical for smoking behavior among university students.

1.2.3. Sense of Belongingness

According to Baumeister & Leary (1995), belongingness is a fundamental component of human nature to establish a stable and positive interpersonal relationship. University students spend most of their time with their peers. If they feel that they belong to a peer group, they are less likely to internalize their problems (Newman, Lohman, & Newman, 2007).

A sense of belongingness is a core component of being healthier and happier for humans (Newman, Lohman, & Newman, 2007). Lack of belongingness or social isolation may be related to some negative psychological experiences, such as anxiety or depression (MacDonald & Leary, 2005). A low sense of belongingness predicted high psychological distress among young adults (Corrales et al., 2016). An absence of belongingness is associated with behavioral problems, such as substance use (Newman, Lohman, & Newman, 2007).

Family conflict and low family bonding increase the risk of substance use and alcohol consumption among young adults (Zhou et al., 2006). If the family bonding/support increases during adolescence, alcohol and drug use decline (Stone, Becker, Huber, & Catalano, 2012). Also, since peers' smoking status and social norms of smoking affect young people's smoking behavior, a high level of belongingness toward these social groups may be seen as a risk factor. Not only family and peer commitment, but school commitment is also a risk factor for smoking behavior among adolescents and young people (Bonell et al., 2017). That is, the low level of belongingness to school predicts an increase in alcohol consumption and tobacco use (Bonell et al., 2017).

Overall, there have been no studies examining the relationship between the sense of belongingness (as a personal and psychological factor) and smoking behavior among young people in the literature. Previous studies focused on the effect of parents' and peers' smoking status and their social components such as social norms. They do not emphasize belongingness to work or school as a risk factor of smoking behavior among young adults. Thus, there is no need to expect a linear and direct relationship between belongingness and smoking behavior among university students. However, it is seen as a remarkable variable in the association among social norms, parents and peer influence, and smoking behavior.

1.2.4. Life Transition and Stress

Stress is defined as the reaction that occurs in the case of physical and psychological strain caused by an action or a situation (Hellriegel, 1992). People may face stress at every stage of life, and stress is an emotional reaction to the situation that people perceive as a threat or difficulty (Durna, 2009). For example, changes in human life (such as the transition to college

or work-life) may cause stress. Besides, daily expectations or the concern about future as a matter of uncertainty have a significant physical and psychological effect on the individual. University students are in the transition period. During the transition from adolescence to adulthood, they face many problems beyond their physical and psychological limits; thus, they are overwhelmed by them (Bozkurt, 2004; Çakmak & Hevedanlı, 2005). They need to be self-sufficient, which is related to stress and anxiety and develop skills to gain independence (Mahmoud, Staten, Hall, & Lennie, 2012; Meadows, Brown, & Elder, 2006). They may face several academic, economic, and social dilemmas associated with negative effects, such as depressive symptoms or anxiety (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005).

Stress is related to depressive symptoms, anxiety, and social support. Failure of or any problems related to the transition period may cause life dissatisfaction and distress among young adults (Newman & Newman, 2017). Living conditions, economic and academic problems, and family separation constitute the primary sources of stress among university students (Newman & Newman, 2017). According to a longitudinal study in the UK, anxiety and depression were related to economic and academic difficulties among university students (Andrews & Wilding, 2004). Among Turkish university students, separating from parents, financial problems, problems in interpersonal relationships, and adaptation to university life are the main variables that influence stress and anxiety symptoms (Savcı & Aysan, 2014).

The relationship between smoking and stress has also been investigated in the literature on tobacco use. (Ng & Feffret, 2003; Pietras et al., 2011; West et al., 1992; Steptoe et al., 1996). Stress was a major motivation to smoke reported by the young tobacco users. According to a study about the stress-related problem on young adults' smoking behavior, stress-related problems increased smoking by 54.7% among women participants (Steptoe et al., 1996). In a qualitative study by Nichter et al. (2007), smoking has many functions for university students, including stress relief. Participants expressed that they used smoking to manage their stress at school as well as in social situations.

University students use some non-functional strategies to cope with stress, such as substance use (Karahan & Koç, 2005). While coping with negative emotions, such as anxiety in the face of a stressful situation, alcohol use and smoking are used as a coping strategy instead of

focusing on the problem and making a change in the situation (Karahana & Koç, 2005). For instance, using an emotion-oriented coping style is higher among smokers compared to the control group (Pietras, Witusik, Panek, Szemraj, & Górski, 2011).

1.3. SOCIAL AND ENVIRONMENTAL FACTORS OF SMOKING

According to Bandura, learning new behavior patterns in the social learning system occurs directly through experience or by observing others (Bandura & Walters, 1971). In other words, people learn by interacting with others that are close to them in their environments, such as peers, parents, or their role models. Reference groups, such as parents or peers for adolescents and young adults, are significant to develop attitude and behavior (Gryczynski & Ward, 2011). The social impact on addiction may be seen in many forms. According to the literature, substance use of young people is associated with modeling behavior of family, peers, and friends (Ennett et al., 2010).

The onset of health risk behavior, such as alcohol and tobacco use, usually develops during adolescence (Brown & Rinelli, 2010). For example, young people start smoking cigarettes at an early age, and they become addicted to nicotine in adulthood (Paul et al., 2008). Those who have started using tobacco at an early age find it challenging to quit, and they are more likely to be dedicated tobacco users (Mercken, Steglich, Sinclair, Holliday, & Moore, 2012). The theory of triadic influence on youth's health behavior claims that the social context, socio-cultural environment, and intrapersonal factors are significant for health-risk behavior among adolescents (Komro, McCarty, Forster, Blain, & Chen, 2002). Komro et al. (2002) found that social and environmental factors such as parental attitudes and norms, family rules and communication about rules, role models, and home environments were found to be important factors in the youth's smoking behavior. Thus, when the target population considers parents and peer influence, social norms, gender roles, and spirituality are thought to be critical factors.

1.3.1 Parents and Peer Influence

Parents' behavior is a significant social factor related to the smoking behavior of young people (Andrews Hops & Duncan, 1997; Chassin, Presson, Rose, Sherman, & Prost, 2002; Hill, Hawkins, Catalano, Abbott, & Guo, 2005). Studies showed that the smoking status of

parents and siblings is associated with the smoking status of adolescents (Çelikel, Erkorkmaz, & Seyfikli, 2009; Leonardi-Bee, Jere, & Britton, 2011; Peterson et al., 2006). Positive family environments during adolescence are associated with low levels of problematic health-risk behaviors, such as drinking or smoking at the age of 24 (Bailey, Hill, Meacham, Young, & Hawkins, 2011).

Smoking in the family "normalizes" cigarette use and facilitates access to smoking (Paul et al., 2008). Komro et al. (2002) conducted a study to examine the relationship between family characteristics and smoking behavior among adolescents and concluded that parents' hostility to tobacco use, such as bans and fines, is related to high smoking rates. In the same study, it was also found that if cigarettes are accessible at home, the monthly smoking rate increased among young people. This study illustrates the significance of parental smoking attitudes and norms and smoker role models at home. Another critical factor of young people's tobacco use is the siblings' smoking status (Scherrer et al., 2012). It was found that siblings' tobacco use, and smoking prevalence are associated (Erbaycu, Aksel, Çakan, & Özsöz, 2004), and sibling's smoking status is a robust predictor (Mayhew, Flay, & Mott, 2000).

Young adults who leave their families and go to another city enter a more comfortable environment for smoking. In those environments, they are at risk of using tobacco or alcohol. For example, in a study carried out in a university sample group, individuals living alone or with a roommate smoked more cigarettes than the participants living with their family or living in a dormitory (Saraçlı, 2007).

Peer groups play a critical role in smoking behavior during among adolescents and young adults (Ennett, Bauman, & Koch, 1994; Johnson et al., 2010). Peer groups are found to be a suitable environment for smokings and they serve as role models. For example, a study conducted with adolescents showed that if a student smoked, they were more likely to make friends who do smoke than those who do not smoke (Mercken et al., 2012). Schaefer, Adams, & Haas (2013) explored social networks and smoking among adolescents. They found that smoking popularity affects smoking behavior among adolescents. That is, higher levels of peer influence increased tobacco use among peers if smoking behavior is popular.

1.3.2. Social Norms and Gender Roles

The theory of Normative Social Behaviors includes two types of social norms: descriptive norms and injunctive norms (Cialdini & Trost, 1998). The descriptive social norms essentially refer to one's perception of what significant others do in a specific field, such as quitting smoking. People watch others, and they gain knowledge about what is normal, and they may motivate themselves to display the same behavior. For instance, research findings showed that if one's partner smokes, they perceive smoking as normal behavior (Chandola, Head, & Bartley, 2004; Homish & Leonardo, 2005; Walsh et al., 2007). The injunctive (subjective) social norms are the expectation of significant others where one should adopt the other's specific behavior. Descriptive norms and subjective norms are commonly associated variables with tobacco use, in the cases of quitting tobacco in particular (Dohnke, Weiss-Gerlach, & Spies, 2011). In addition, longitudinal results support those subjective norms and children's intention to use tobacco are associated (Rose, Chassin, Presson, & Sherman, 1999; Vries, Backbier, Kok, & Dijkstra, 1995).

Smoking behavior creates a social norm (Nichter, Nichter, & Carkoglu., 2007). For example, research on injunctive social norms about substance use among adolescents concluded that adolescents perceive substance use as a "cool behavior" (Gilreath, Chaix, King, Matthews, & Flisher, 2012; Loomis et al., 2012; Spijkerman, van den Eijnden, Vitale, & Engels, 2004). Thus, it serves as a desirable characteristic among the youth culture, especially among males (Closson 2008; Meisinger, Blake, Lease, Palardy, & Olejnik, 2007).

Smoking is a social activity among young adults (Roohafza et al., 2013) and adolescents (Mercken, Steglich, Sinclair, Holliday, & Moore, 2012). Cigarette use serves as a utility function for university students (Stromberg, Nichter, & Nichter, 2007; Nichter, Nichter, Carkoglu, & Lloyd-Richarson, 2010), and it facilitates social communication. Therefore, it is used as a communication technique, especially in parties (Nichter, Nichter, Çarkoğlu, & Llyod-Richardson, 2010) among smokers. According to Roohafza et al. (2013), 75% of young smokers believe that smoking makes gatherings friendly.

Gender is a social and cultural construct, including multidimensional features and it can change in time (Butler, 2011). Social roles influence the association between gender and health behaviors (e.g. smoking). Traditional gender roles have a remarkable impact on

tobacco use both among men and women (Flandorfer, Wegner, & Buber, 2010). Gender is related to health-compromising behaviors, especially in drinking and smoking among university students (Nitchter et al., 2006). To illustrate, being concerned about one's health is perceived as a "girly thing" in many cultures (Sezgin, 2015). On the other hand, risky behaviors are considered a "manly thing" that is associated with bravery and power (Sezgin, 2015)

Smoking is a risk factor for health, and concordantly being a male is a strong predictor of tobacco use worldwide (WHO, 2011b; Çelikel et al., 2009). Smoking prevalence between males and females is somewhat equal in western cultures, such as in the USA and Europe (WHO, 2011b). However, the differences in smoking rates between males and females are noticeably high among eastern countries (WHO, 2011b).

It is not a common sight to see a woman smoke while walking because smoking is viewed as inappropriate behavior in society (Tryon, Vaughter & Ginorio, 1977). According to a qualitative study that investigated gender dimensions of smoking concluded that "smoking looks really trashy, slutty and unladylike" for women; however, male smoking behavior is perceived as "looking manly, like a tough guy and bad boy image" among university students (Nitchter et al., 2006).

The tobacco industry has persistently marked smoking behavior from a gendered perspective as a marketing strategy (Bottorff et al., 2014; Kaufman & Nichter, 2001). For example, they are aware that smoking is seen as a masculine behavior that fosters masculine identity (Ng, Weinehall, & Ohman, 2007). So much so that tobacco use was mostly seen among males till the 19th century (Lopez, Collishaw, & Piha, 1994). However, lifestyles have changed, and so have the social roles. Women have started to participate in the workplaces more and they have displayed masculine behaviors as a way to express their independence (Amos & Haglund, 2000; Amos & Bostock, 2007). Smoking is marketed under the ideal of free and modern women as a status symbol. This tactic is especially effective among women with high education levels and leads to an increase in smoking in this group (Amos & Haglund, 2000).

Turkey has faced sweeping changes both socially and culturally, and Turkey is somewhat in between the western and the eastern cultures (Greaves, 2007). When the representation of

smoking behavior in the social sphere, such as freedom and independence for women, has started to take notice in Turkey with an upward trend in the smoking rate of females from 10.8% in 2012 to 13.3% in 2016 (Turkish Ministry of Health Statistics, 2019). Accordingly, Turkey has one of the highest rates of female smokers in the Middle East, following the other Middle Eastern countries, such as Iran (Roohafza et al., 2013).

1.3.3. Spirituality and Religiosity

In Turkey, where the most citizenry is Muslim, nearly every citizen (97%) describes themselves as believers in God (Konda, 2007). Religion is significantly associated with destructive behaviors such as substance use, alcohol abuse, and gambling (Cheung & Yeung, 2010).

Religiosity and spirituality are not the same concepts. On the one hand, religiosity is a conventional, strict, and external statement of the sacred (Miller & Thoresen, 2003). It is measured by frequency of worship, attendance of place of worships, and significance of religion (Dew et al., 2008). On the other hand, spirituality is a personal and emotional statement of the sacred. Therefore, regardless of one's religiosity, it is measured by variables such as the effect of spirituality on well-being and spiritual or religious coping.

Some religions may see drug use as a sin. So that, religiosity has been observed to be a protective factor against the health-risk behaviors and mental health conditions among youth (Dew et al., 2008). Young people who are not spiritual and religious attempt higher rates of health-compromising behaviors and show higher mental health problems (Gryczynski & Ward, 2011; Regnerus, Smith, & Fritsch, 2003; Wallace & Forman, 1998). In the literature, studies about mental health, such as depression and anxiety, and religiosity among adolescents indicate that, even though some studies show nonsignificant results between spirituality and depression, one-fourth of the studies revealed that a high level of religiosity is associated with a low level of depression (Berg, Choi, Kaur, Nollen, & Ahluwalia, 2008; Dew et al., 2008).

Religion creates a “self-control and personal morality” to live a healthier life and it may decrease substance use (Smith, 2002). In addition, religiosity aids in building social norms that promote healthy behavior by boosting healthy norms among reference groups within a

social network. It is especially effective against alcohol consumption, substance use, and smoking (Gryczynski & Ward, 2011).

Religiosity and spirituality are found to be associated with decrease in substance use both in cross-sectional and longitudinal studies (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006; Dew et al., 2008). A meta-analysis about religiosity/spirituality and its psychological outcomes among young adults revealed a significant effect of spirituality and religiosity on risk behaviors such as substance use, alcohol consumption, and tobacco use with a significant effect size (Yonker, Schnabelrauch, & DeHaan, 2012).

Spirituality can be seen as a utility function for people who use alcohol and substances. For example, spirituality and religiousness prevent stress and increase the quality of life among those who quit using alcohol (Laudet, Morgen, & White, 2006). Since religiousness, spirituality, and the conception of the meaning of life increase the capacity to cope with negative experiences, such as withdrawal effects and aid to recovery in the treatment of addiction (Laudet, Morgen, & White, 2006).

Furthermore, very few studies revealed that religiosity was related to greater substance use (Dew et al., 2008) For example, a study about smoking and religiosity among males concluded that being a smoker is predicted to be less likely to decrease religious attendance than those who do not smoke cigarettes (Steinman & Zimmerman, 2004).

Undoubtedly, spirituality/religiosity is negatively associated with tobacco use (Berg, Choi, Kaur, Nollen, & Ahluwalia, 2008; Garrusi & Nakhaee, 2012; Gryczynski & Ward, 2011). Meta-analyses show that a high level of spirituality and religiosity predicted less tobacco use with an adequate effect size (Yonker, Schnabelrauch, & DeHaan, 2012).

Religiosity may be a part of the family environment and social norms, and group norms play an important role in the relationship between religiosity and smoking. Religiosity usually aids in establishing a social network and it may influence the youth's substance use indirectly within the network (Gryczynski & Ward, 2011). Also, parents can embrace their children's tobacco use expectations, and these expectations are usually congruent with the culture of their religious society (Gryczynski & Ward, 2011).

1.3.4. Alcohol and Smoking

There are other factors related to smoking behaviors. For example, several research showed that smoking is found to be associated with alcohol (e.g., Randler, 2008; Swanson, Lee, & Hopp, 1994; Stromberg, Nichter, & Nichter, 2007).

Smoking and drinking are strongly related behaviors (Bobo & Husten, 2000). King and Epstein (2005) indicated that an urge to smoke appears among non-alcoholic young adults after heavy drinking. The existence of smoking and drinking simultaneously among university students was also stated (Dierker et al., 2006; Jackson, Colby, & Sher, 2010). University students smoked more while drinking alcohol, and if they were drunk, they are over three times more likely to use tobacco in a party setting (Schulenberg & Magg, 2002; Witkiewitz et al., 2012).

Nichter, Nichter, Carkoglu, & Lloyd-Richardson (2010) conducted a qualitative study to understand smoking and alcohol behaviors among university students. In that study, participants also believed that smoking had a utility function while drinking. It aided in calming down a person and keeping them sober. In the same study, smokers stated that smoking was not real smoking while drinking at a party; it was as though a social norm at the party to make friends easily. Other studies concluded that tobacco increased the effect of alcohol (Stromberg, Nichter, & Nichter, 2007).

1.5. THE CURRENT STUDY

The main aim of the thesis was to examine the psychosocial risk factors of tobacco use among university students. Just as many health-risk behaviors, tobacco use, which is affected by many factors from biological to social aspects, is multidimensional and complex. In the direction of a holistic perspective in health psychology, it was decided to examine this serious health-risk behavior, tobacco use, using both qualitative and quantitative methodologies. In the first study (quantitative study), multiple scales related to risk-factors for university students were applied. Furthermore, it was analyzed according to a person- and a variable-centered approach. Those approaches investigate the association between smoking behavior and psychosocial risk factors, both macro-and micro-level. In the second study (qualitative study), on the other hand, semi-structured interviews were applied to understand this

relationship in-depth and supported the results from the first study using qualitative analysis techniques such as thematic analysis.

Arnett stated that emerging adulthood might encourage substance use (Sussman & Arnett, 2014). Arnett described substance use among emerging adults with five important features: (1) Identity development may be associated with substance use. (2) The instability of life such as moving to a different city for school or searching for an optimal job, may boost substance use. (3) Because of being more self-focused, they connect with their peers rather than their parents. Subsequently, the social network that normalizes drugs can affect one's substance use. (4) Since emerging adults are optimistic about the future, they might ignore the negative consequences of substance use. And most importantly, (5) the aspiration to gain the status of "adults", which is the most stressful stage such as making decisions independently, obtaining economic autonomy, or being a psychologically stable person, may be related to substance use (Arnett, 2005). Thus, impulsivity, identity development, sense of belongingness, spirituality and future anxiety included as risk factors of university students in the current study. To understand the role of identity, socialization, and future anxiety on university students' cigarette use in detail, face-to-face interviews were conducted.

This thesis is the first study examining the role of psychosocial health risk factors: impulsivity, identity development, sense of belongingness, spirituality and future anxiety on cigarette use among university students in a Turkish sample group by utilizing the theory of emerging adulthood from a relatively collectivist culture, using both qualitative and quantitative methods. Thus, the current study has several contributions to the existing literature related to tobacco use of young adults. Firstly, the findings of the thesis contributed to the existing literature about emerging adults' cigarette use using both person- and variable-centered approaches. Further, the role of sense of identity, socialization and future anxiety on university students' cigarette use detailed using face-to-face interviews conducted. Secondly, so far, a very limited number of studies have examined identity development, socialization and tobacco use among emerging adults using the theory of emerging adulthood as its theoretical framework. All these existing studies utilize Marcia's identity statuses to examine how tobacco, alcohol and other drug use as "delinquent behaviors" fit within these categories. However, tobacco use is not necessarily a "delinquent" behavior for emerging

adults and in countries like Turkey, alcohol use is also legal for people aged 18 and up. Thus, studying these behaviors as “delinquencies” may be limiting our understanding of what various functions these substances may have in the lives of these emerging adults. Furthermore, as a frequently stated socialization and stress management tool, we expect smoking to take on various roles. Lastly, the findings of the thesis will inform the new intervention and smoking cessation programs that focus on emerging adults.



CHAPTER 2: QUANTITATIVE PART

2. METHOD

The design of the first part is cross-sectional. Ethical Approval for the human participants was obtained from Kadir Has University (82741295-900-E.34577). The convenience sampling method was used for data collection, and the only criteria to participate in the study is to be between the age of 18 and 25 years old. In addition to voluntary participants, all students studying psychology gained extra credit for the participation.

2.1. SAMPLE

In the quantitative part of the thesis, 389 university students (73.5% women, 22.8% men) aged between 18 to 25 ($M_{\text{age}} = 21.4$, $SD = 1.64$) were participated in the first study.

2.2. MEASUREMENTS

2.2.1. Socio-Demographic Form

The socio-demographic form includes the questions about demographic characteristics of participants which are gender, age, living condition, income, existence of religious belief, the level of religiosity, and the questions about health behaviors (cigarette and alcohol use). If the participants stated that they use tobacco four times a week and more and the information of smoking initiation age and nicotine dependence scale was obtained.

2.2.2. Short form of Barrat Impulsiveness Scale (BIS-11-KF)

BIS-15 (Spinella, 2007) is a short form of Barrat Impulsivity Scale (Patton, Stanford, & Barratt, 1995). It is a self-report scale to measure level of impulsivity with 15 questions. Items were rated as 4 Likert-type from “1 = rarely/never” to “4 = almost always”. It includes three subscales named as non-planning (e.g., “*I plan for the future*”), motor impulsivity (e.g., “*I do things without thinking*”), and attention impulsivity (e.g., “*I don't pay attention*”).

Higher score represents higher level of impulsivity. The reliability of BIS-15 in the original study ($\alpha = .81$) and in the Turkish version ($\alpha = .82$; Tamam et al., 2012) was very good ($\alpha = .82$, in current study).

2.2.3. Dark Future Scale

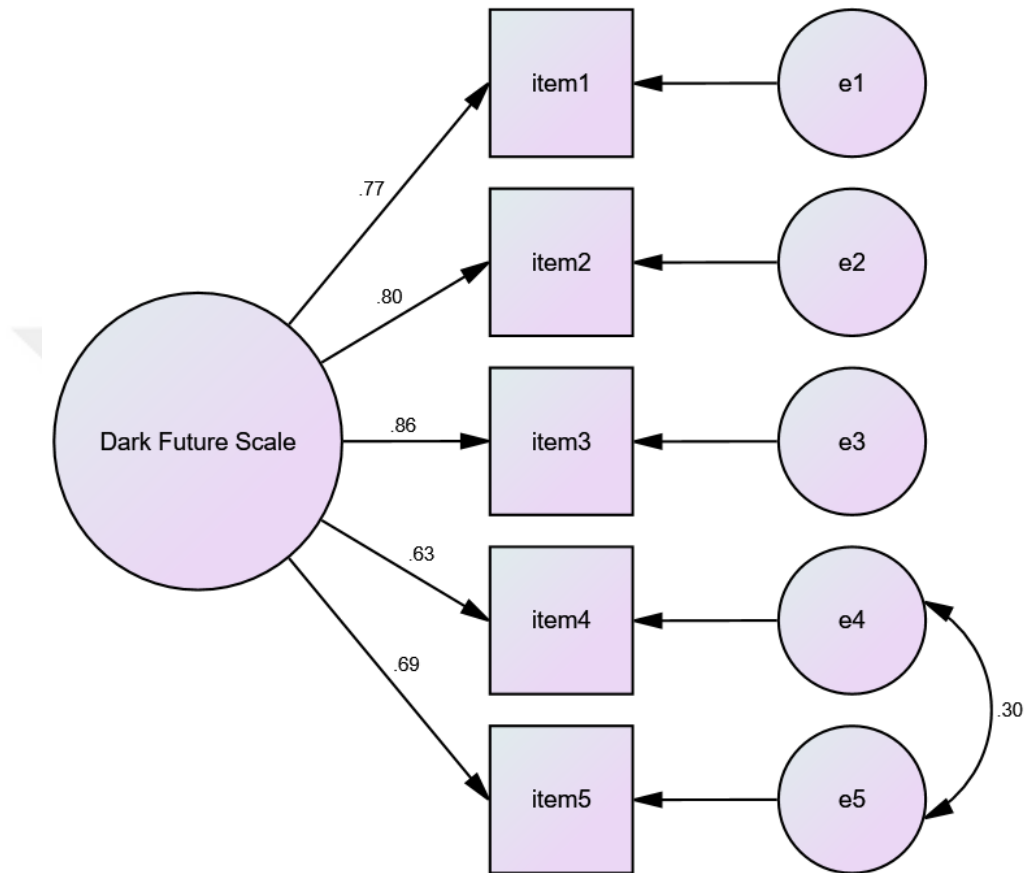
Dark future scale (Zaleski, Sobol-Kwapinska, Przepiorka, & Meisner, 2019) is a short form of future anxiety scale (Zaleski, 1996). It is a one-factor self-report scale to measure the future anxiety with five items (e.g., “*I am afraid that the problems which trouble me now will continue for a long time*”). Items were rated as a 7-Likert type from “0 = Decidedly false” to “6 = Decidedly true”. Higher score represents higher future anxiety.

Dark future scale does not have a Turkish version. So that, the original items in English were translated by me. Then, the Turkish items were translated from Turkish to English by the thesis supervisor. Finally, the reverse-translated items were compared with original ones and created the Turkish version of the scale. To test the validity of the scale for the Turkish sample, confirmatory factor analysis was performed. The model fit was excellent with minor modification (see in Table 2.1). The factor loadings had acceptable levels: .77, .80, .86, .63, and .69, respectively for the item number (see Figure 2.1). For the criterion validity, Trait Anxiety Scale (STAI-2) was correlated with the Dark Future Scale. It was found that the STAI-2 and Dark Future Scale was positively correlated, $r(389) = .69$, $p < .01$. Finally, for reliability the alpha value was .87 ($\alpha = .88$ in the original article).

Table 2.1. Model Fit Indices on Dark Future Scale

Model	χ^2	df	p	χ^2 / df	RMSA	GFI	AGFI	CFI
Initial	44.155	5	.000	8.82	.142	.954	.861	.958
Modification 1	15.838	4	.003	3.95	.087	.984	.938	.987

Figure 2.1. Factor Loadings on Dark Future Scale



2.2.4. Dimensions of Identity Development Scale

Dimension of identity development (Luyckx et al., 2008) is a self-report scale to measure identity development for adolescents and young adults. It consists of 25 items for five main parts which are commitment making, exploration in breadth, ruminative exploration, identification with commitment, and exploration in depth. It is a 5-Likert type from “1 = Strongly disagree” to “5 = Strongly agree”. The scoring of the scale is obtained separately. The Turkish adaptation of the scale was made by Morsünbül and Çok (2014). In the original scale the alpha values were found between .79 and .86 (commitment making .86, identification with commitment .86, exploration in breadth .81, exploration in depth .79, and ruminative exploration .86). The alpha values in the Turkish adaptation were between .79

and .88 (commitment making .88, identification with commitment .87, exploration in breadth .84, exploration in depth .78, ruminative exploration .79). In the current study, Cronbach alpha values was found between .61 and .90 (commitment making .90, identification with commitment .86, exploration in breadth .82, exploration in depth .61, ruminative exploration .84).

2.2.5. The Belonging Scale

The belonging scale (Ersanlı & Koçyiğit, 2013) is specifically developed for Turkish public. It is a self-report scale to measure perceived sense of belongingness toward friends, family, and occupation. It includes 22 items with three-factor structure which are; belonging to friends (e.g., *“I have many friends to support me when I need it”*), belonging to family (e.g., *“I know that my family will support me when I need it”*), and t belonging to occupation (e.g., *“I don't feel that I belong to the profession in which I studied”*). It is a 5-Likert type scale from “1 = Strongly disagree” to “5 = Strongly agree”. Higher score represents higher perceived belongingness. The alpha values in the original scale were .88 for the family subscale, .89 for Ffriends subscale, .88 for occupation subscale, and .90 for total. In concurrent study, the Cronbach alpha values were .93, .90, .92, and .88, respectively.

2.2.6. Spirituality Scale

Spirituality scale (Demirci, 2017) is a self-report scale that aimed to measure level of spirituality with six items. It was particularly developed for the Turkish sample. It is a one-factor scale with a 5-Likert type from “1 = Very much unlike me” to “5 = Very much like me”. Higher score represents high level of spirituality. Cronbach alpha was found as .88 in the original study, and it was .94 for the current study.

2.2.7. Fagerström Nicotine Dependence Scale

Fagerström proposed the Fagerström Tolerance Test in 1978 to evaluate nicotine addiction. Later, Heatherton and colleagues (1992) revised the Fagerström Tolerance Test, and Fagerström Nicotine Dependence Test was generated. It consists of 6 questions to understand

the one's dependence level, and each question has a unique scoring (e.g., "*How soon after you wake up do you smoke your first cigarette?*"). The Turkish validity and reliability of the test were carried out by Uysal and colleagues in 2004. The score range is zero to 10. The level of dependence is categorized according to the score they received. 0-2 score is "Very low level of nicotine dependence", 2-4 is "Low level of nicotine dependence", 5 is "Moderate level of nicotine dependence", 6-7 is "High level of nicotine dependence", and 8-10 is "Very high level of nicotine dependence".

2.3. PROCEDURE

The announcement of the study was made via posters on the notice board or orally during the lecture at Kadir Has University. Another announcement made by the lecturers in two private universities in İstanbul, and one private university in İzmir.

If the participants were at the same school as the researcher, they were invited to a psychology laboratory. When they arrived at the laboratory, the aim of the study was explained to the participants, and consent forms were obtained. Firstly, vis a vis-structured interview was implemented to fill out the socio-demographic form and apply the Fagerström nicotine dependence scale. Afterwards, participants filled out self-report measures.

If the participants were not in the same university as the researcher, they participated in an online survey via Qualtrics. At the end of the online survey, participants wrote their phone numbers and chose the available time range for a phone interview. Then, two senior psychology students and I called them for a structured interview. In this way, the socio-demographic form was applied on the phone. The total procedure took approximately 25 minutes.

The rank of the self-report measures was not the same in all participants. They were mixed for counterbalancing. Also, for the students who were participated in the study at the laboratory, half of them took the self-report measures before asking for socio-demographic information, and vice versa.

2.4. DATA ANALYSIS STRATEGY

Data were analyzed in Statistical Package for the Social Sciences (SPSS) 20.0. Since the planned analysis is very sensitive to the outliers, Mahalanobis distance was used to determine the outliers.

Descriptive statistics such as frequencies, percentages, mean, and standard deviation used to describe the characteristics of the data. To indicate the mean differences among the groups such as gender, or smoking status, independent samples t-test was used.

To understand the association between psychosocial health-risk behavior and smoking status, variable- and person-centered approach (Howard & Hoffman, 2018) was used. Variable-centered approaches investigate the association between variables of interest in a population. The approach requires research questions and hypotheses in the effect of a variable on the outcome variable. It is a kind of summarizing the target population with a set of parameters. T-tests, ANOVAs, regression analysis or correlations can be given as examples of the approach.

On the other hand, person-centered approaches are to make specific inferences regarding the subjects; these inferences do not require describing a larger population or sample. The primary aim of the approach is to describe accurately and adequately the subject itself. It is frequently used in applied psychology (Howard & Hoffman, 2018). It aids in categorizing subjects into common subpopulations based on substantive variables and understanding the associations of these subgroups with predictors, correlations, or outcomes. Data collection is similar to a variable-centered approach. This approach needs a larger sample size, such as more than 500; however, a smaller sample size (>200) is also acceptable depending on the number of subgroups and sample size for each group. Small sample sizes such as 30-200 are not adequate for person-centered approaches (Howard & Hoffman, 2018). The most frequently used methods in the person-centered approaches are cluster analysis and latent class analysis. The person-centered approach does not need a hypothesis prior to the analysis. In this approach, the researcher is like an archeologist (Howard & Hoffman, 2018).

The most important strength of using two approaches is that; (1) variable-centered approach can detect common relationship and summarize an absolute population, and (2) person-

centered approach can classify similar individuals into identical clusters based on very complicated patterns of the variables.

Consequently, the variable-centered approach Logistic Regression Analysis was utilized to test the association between several psychosocial risk factors and smoking status. Regarding the person-centered approach, k-means cluster analysis was performed to examine the subgroups using several psychosocial variables related to smoking behavior among university students. After obtaining the clusters, logistic regression analysis was used to understand the association between clusters and smoking status.

3. RESULTS

3.1. PARTICIPANTS AND SMOKING CHARACTERISTICS

Table 3.1 represents the participants and smoking characteristics. The participants who smoke four times a week and more were named as smokers ($n = 177$). Other participants were named as a non-smoker ($n = 212$). Mean smoking initiation age was 17.5 ($SD = 2.08$). Mean nicotine dependence score was 3.3 ($SD = 2.01$) out 10 among smokers. Gender difference was observed in smoking status. Nearly half of the (40.7%) of participants were men among tobacco users, compared to non-users (14.6%). Independent samples t-test was used to test whether there is a significant difference in the mean age between cigarette users and non-users. Mean age ($M = 21.8$, $SD = 1.66$) was slightly higher among smokers than non-smokers ($M = 21.1$, $SD = 1.58$), $t(387) = -4.16$, $p < .01$. In terms of income, although majority of the smoker had moderate income (56.5%), 54.2% of non-smoker had low income. Alcohol use was higher among smokers (92.7%) than non-smokers (67.5%). There was a significant difference on general well-being according to the smoking status $t(387) = 2.70$, $p < .01$. That is, the general well-being score was higher among non-smokers ($M = 7.1$, $SD = 1.34$) than smokers ($M = 6.7$, $SD = 1.49$). The level of religiosity was higher among non-smokers ($M = 6.0$, $SD = 2.55$) than smokers ($M = 4.2$, $SD = 2.76$), $t(356.393) = 6.52$, $p < .01$. In terms of living conditions, most of non-smokers was living with their family (73.9%), but about half of the smokers was living with their family (54.8%).

Table 3.1. Differences of Characteristics of the Participants in terms of Smoking Status

Variable	Total	Smokers (n = 177)	Non-smokers (n = 212)	t / χ^2	p
Sex (Female/Male)	73.5%/26.5%	59.3% / 40.7%	85.4% / 14.6%	33.64	.000
Age	21.4±1.64	21.8 ± 1.66	21.1 ± 1.58	-4.16	.000
Income				34.705	.000
Low (100-999 ₺)	41.4%	26%	54.2%		
Modarete (1000-1999 ₺)	42.7%	56.5%	39.2%		
High (2000 ₺ and more)	15.9%	17.5%	6.6%		
Alcohol use (User/Non-user)	78.9%/21.1%	92.7%/7.3%	67.5%/32.5%	36.829	.000
Religion				24.409	.000
Islam	66.3%	53.1%	77.4%		
Christianity	1.5%	1.1%	1.9%		
Buddhism	0.3%	0.6%	0%		
Deism	5.7%	7.9%	0%		
Agnosticism	3.1%	3.4%	2.8%		
Atheism	10.8%	16.4%	6.1%		
Other	12.3%	1.1%	0%		
Level of religiosity	5.1 ± 2.79	4.2 ± 2.76	6.0 ± 2.55	6.52	.000
Living conditions (W/family and W/o family)	66.5±33.5	54.8%/45.2%	73.9/26.1	34.705	.000
Well-being	6.7 ± 1.42	6.7 ± 1.49	7.1 ± 1.34	2.70	.007

3.2. DESCRIPTIVE AND CORRELATIONS

Descriptive statistics and t-test results were summarized in Table 3.2. Smokers reported lower belongingness to family, lower belongingness to occupation, higher future anxiety, higher level of impulsivity and lower level of spirituality.

Table 3.2. Descriptive Statistics and T-test results

Variables ^b	Total	Non-Smokers	Smokers	<i>t</i>	<i>p</i>
Belongingness to Friends	30.5±4.23	30.3 ± 4.03	30.6 ± 4.47	-.66	.509
Belongingness to Family	25.6±4.66	26.2 ± 4.41	25.0 ± 4.88	2.46	.014
Belongingness to Occupation	37.3±6.78	38.2 ± 6.02	36.1 ± 7.44	3.08	.002
Future Anxiety	18.0±7.30	17.3 ± 7.64	18.8 ± 7.80	-2.10	.036
Impulsivity	28.3±6.08	27.3 ± 5.73	29.5 ± 6.29	-3.58	.000
Spirituality	18.5±6.26	20.2 ± 5.54	16.1 ± 6.44	6.12	.000
Trait Anxiety	44.8±9.49	44.3 ± 9.82	45.4 ± 9.07	-1.16	.247
Commitment Making	19.1±3.43	19.4 ± 3.05	18.8 ± 3.81	1.76	.073
Exploration in Breadth	20.1±2.85	20.0 ± 2.79	20.2 ± 2.92	-.60	.546
Ruminative Exploration	15.0±4.57	14.8 ± 4.32	15.2 ± 4.84	-.69	.095
Identification with Commitment	19.4±3.47	19.7 ± 3.38	19.0 ± 3.56	1.96	.347
Exploration in Depth	19.6±2.76	19.4 ± 2.68	19.8 ± 2.84	-1.35	.376

Note. ^a *n* = 389 expect spirituality (*n* = 347). ^b *n* = 389; non-smokers is 212, smokers is 177 expect spirituality (199, 148, respectively).

Before conducting logistic regression analysis, the relationship between the predictors (e.g. future anxiety, belongingness to family, friends, and occupation) and outcome is correlated by using Spearman's Correlation analysis. For the personal factors (belongingness and identity development dimensions), cigarette use was significantly correlated with income, living place, belongingness to family, belongingness to occupation, and identification with commitment (see Table 3.4). For other factors, cigarette use was significantly correlated with gender, spirituality, impulsivity, alcohol use, and future anxiety (see Table 3.5).

Table 3.3 Correlation Coefficient among Variables (Model 1)

	1	2	3	4	5	6
1. Cigarette Use	-	.29**	-.34**	.19**	-.38**	.09
2. Gender		-	-.27**	.04	-.24**	-.02
3. Spirituality			-	-.13**	.48**	-.17**
4. Impulsivity				-	-.19**	.30**
5. Alcohol Use					-	-.15**
6. Future Anxiety						-

Note. * p < .05, ** p < .01. Cigarette Use: 1-non-smokers, 2-smokers; Gender: 1-Female, 2-Male; Alcohol use 5-Likert: 1- use frequently, 5- do not use

Table 3.4. Correlation Coefficient among Variables (Model 2)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Cigarette Use	-	.29**	.32**	.20**	-.13*	.07	-.14**	-.10	.04	.04	-.11*	.05
2. Gender		-	.17**	.20**	-.05	.03	-.23**	-.00	.08	-.02	-.05	.03
3. Income			-	.30**	.11*	.11*	-.08	.01	.09	-.02	-.01	.04
4. Living Conditions				-	.05	-.03	-.10	-.07	.07	.06	-.09	.01
5. Belongingness to Family					-	.38**	.13*	.18*	.12*	-.15**	.21**	.03
6. Belongingness to Friends						-	.19**	.18**	.10*	-.21**	.22**	.12*
7. Belongingness to Occupation							-	.49**	.14*	-.40**	.48**	-.01
8. Commitment Making								-	.37**	-.59**	.70**	.06
9. Exploration in Breadth									-	-.18**	.35**	.29**
10. Ruminative Exploration										-	-.53**	.09
11. Identification with Commitment											-	.15**
12. Exploration in Depth												-

Note. * p < .05, ** p < .01. Cigarette Use: 1-non-smoker, 2-smokers; Gender: 1-Female, 2-Male; Income: 1-very low to 15-very high; Living conditions: 1-with family, 2-without family.

3.3. VARIABLE-CENTERED APPROACH: LOGISCTIC REGRESSION

Regarding to variable-centered approach, logistic regression was used. Two regression models were tested to investigate the effect of several variables on smoking status (smokers/non-smokers) among university students. Model 1 involved the risk factors related to smoking status in the literature, however; Model 2 involved personal factors (belongingness and identity development dimensions).

Tests to show if the data met the assumption of collinearity indicated that multicollinearity was not a concern for both Model 1 and Model 2. Collinearity statistics represented in Table 3.5.

Table 3.5. Multicollinearity Statistics Both Model 1 and Model 2

Variables (Model 1)	Tolerance	VIF
Gender	.880	1.137
Income	.900	1.112
Living Conditions	.910	1.099
Spirituality	.738	1.356
Impulsivity	.800	1.143
Future Anxiety	.875	1.129
Alcohol Use	.742	1.347
Variables (Model 2)		
Gender	.851	1.175
Income	.903	1.107
Living Conditions	.871	1.149
Belongingness to Family	.857	1.167
Belongingness to Friends	.819	1.222
Belongingness to Occupation	.656	1.437
Commitment Making	.393	2.548
Exploration in Breadth	.747	1.340
Ruminative Exploration	.599	1.670
Identification Commitment	.433	2.312
Exploration in Depth	.835	1.198

Model 1 was performed to explore the effects of spirituality, impulsivity, future anxiety, and alcohol use on the likelihood to be smoker or not (smoking status), when gender, income and living place was controlled for. Model 1 was statistically significant $\chi^2(7) = 107.480, p < .001$. The model has a good fit to the data $p = .996 (>.05)$. Model 1 explained 32% of the variance (Nagelkerke R^2) on smoking status and correctly classified 72.2% of cases (% 78.7

in non-smoker, 64.4% in smoker). Results showed that level of spirituality and alcohol use was significant predictors of smoking status, when gender, income and living place was controlled for. Decrease in spirituality [*Odd Ratio* = .94, 95% CI (.91, .98)], and an increase in impulsivity [*Odd Ratio* = 1.03, 95% CI (.99, 1.00)], and in alcohol use [*Odd Ratio* = .63, 95% CI (.43, .72)] was associated with an increase in the likelihood of being a smoker. Future anxiety had no effect on smoking status. Model statistics represented in Table 3.6.

Model 2 was performed to explore the effects of feeling of belongingness (to friends, family and occupation) and identity development (commitment making, exploration in breadth, ruminative exploration, identification with commitment, and exploration in depth) on the likelihood of being a smoker or not (smoking status), when gender, income and living place was controlled for. Model 2 was statistically significant $\chi^2(11) = 81.829, p < .001$. The model has a good fit to the data $p = .66 (>.05)$. Model 2 explained 25% of the variance (Nagelkerke R^2) in smoking status, and correctly classified 71.1% of cases (% 77.7 in non-smoker, 63.3% in smoker). Results showed that belongingness to friends and occupation, commitment making, exploration in breadth, ruminative exploration, identification with commitment, and exploration in depth had no significant effect on smoking status, when gender, income and living place controlled for. Only decreasing feeling of belongingness to family [*Odd Ratio* = .93, 95% CI (.88, .97)] was associated with an increased likelihood of being smoker. Model statistics represented in Table 3.6.

Table 3.6. Logistic Regression Results of Model 1 and Model 2

	Tobacco Use (Yes/No)						Tobacco Use (Yes/No)						
	r^b	β	Exp (β)	%95 CI Lower, Upper			R^2	r^b	β	Exp (β)	%95 CI Lower, Upper		R^2
Model 1													
<i>Step 1</i>													
Gender	.29**	-1.23**	.29	.21, .61			.29**	-1.23**	.29	.18, .54			
Income	.32**	.23*	1.25	1.23, 1.38			.32**	.23**	1.25	1.16, 1.41			
Living Conditions	.20**	.45	1.56	.98, 2.49			.20**	-.45	.64	.40, 1.04			
<i>Step 2</i>						.32						.25	
Spirituality	-.34**	-.06**	.95	.90, .98			-.13*	-.08**	.92	.88, .97			
Impulsivity	.19**	.03*	1.03	.99, 1.00			.07	.04	1.04	.98, 1.10			
Future Anxiety	.09	.01	1.01	.98, 1.04			-.14**	-.01	.99	.95, 1.03			
Alcohol Use	-.37**	-.59**	.55	.43, .72			-.09	-.04	.97	.87, 1.07			
							Exploration in Breadth	.04	.01	1.01	.92, 1.10		
							Ruminative Exploration	.04	-.01	.99	.93, 1.05		
							Identification Commitment	-.11*	-.03	.97	.88, 1.07		
							Exploration in Depth	.05	.05	1.05	.96, 1.15		

^bZero order correlations of independent variables and tobacco use.

* $p < .05$, ** $p < .01$

3.4. PERSON CENTERED APPROACH: K-MEANS CLUSTER ANALYSIS

Regarding the person-centered approach, the k-means cluster analysis was used. Since k-means cluster analysis needed to decide the cluster number before the analysis, the optimal cluster number were investigated for this study.

In k-means cluster analysis, there is no exact and single way to determine the optimal cluster numbers (Mittal, Shame, & Singh, 2014; Blattberg, Kim, & Neslin, 2008). The most frequently used technique to determine the cluster number was split-half sample method (Brusco, Shireman, & Steinley, 2017). However, the method required a large data set. Therefore, it was not appropriate for the current data. Ward technique (hierarchical clustering method) was also conducted to determine the optimal cluster number in some research (e.g. Poland et al., 2000). Still, it is hard to say that these methods were exact methods to determine the cluster numbers.

First, I conducted hierarchical clustering analysis for optimal cluster number. I obtained dendrogram based on Ward method of clustering. The appropriate cluster number seemed 2 and 3 cluster number. Later, I ran the K-means cluster analysis for two-, three-, four- and five- cluster solutions. I evaluated the results of each solution based on Iteration history and ANOVA results (see Table 3.7, Table 3.8).

Iteration history indicated the changing in the centroid of the cluster through each iteration of K-means. Lower number of iterations indicated less improvement that the algorithm makes from each iteration. Table 3.7 showed that, the iteration of three-cluster solution stopped in 8th iteration, but other solutions continued even 10th iteration.

ANOVA table showed that the difference of continues variables that used for clustering the differences among clusters. The variables should significantly differentiate across clusters. Thus, except two-cluster solution, the outcome variables differentiated significantly (see Table 3.8).

Finally, the number of cases in each cluster important for subjective evaluation among the clusters. If the number of cases are very different among clusters, comparing the clusters is impossible. Also, when the number cluster increase, the evaluation the clusters and

comparison will be harder. Table 3.9 showed the number of cases for each cluster solution. In three-cluster solution, the number of cases were similar among cluster.

Table 3.9. The Number of Cases for Different Cluster Solutions

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster solution					
Two-cluster	174	215			
Three-cluster	128	133	128		
Four-cluster	126	73	139	51	
Five-cluster	63	90	61	49	126

When the 2-cluster solution is examined, the iterations of the centroids continue even 10th iteration. Although you can compare case numbers in two clusters, not all variables are separated significantly.

It was clearly seen in the three-cluster solution that when it comes to the 8th iteration, the iteration stopped, and the clusters were classified differently from each other. Cluster case numbers are comparable. The results can also be explained with a theoretical framework.

When Cluster 4-5 solution is examined, although the ANOVA table shows us that the variables used in clustering differ significantly from each other, it makes it difficult to compare clusters due to the large differences between the number of cluster cases. In addition, iteration continues for both solutions even at 10th iteration.

For this reason, when looking at the results of the three-cluster solution; the iteration stopped in 8, all variables were significantly differed among clusters, and the number of cases was equal (128 cases for cluster 1, 133 cases for Cluster 2, and 128 cases for Cluster 3). Therefore, three cluster number were decided as an optimal cluster number to explain the data.

Table 3.7. Iteration History for Two, Three, Four, and Five Cluster Solution

Iteration	Two Cluster Solution		Three Cluster Solution			Four Cluster Solution				Five Cluster Solution				
	Change in Cluster Center		Change in Cluster Center			Change in Cluster Center				Change in Cluster Center				
	1	2	1	2	3	1	2	3	4	1	2	3	4	5
1	5.275	5.610	4.477	4.412	4.012	4.244	4.045	4.338	4.026	3.330	3.455	3.338	3.434	3.432
2	.776	.570	.381	.268	.259	.260	.654	.198	.325	.766	.501	.244	.545	.234
3	.455	.342	.177	.142	.143	.151	.265	.105	.181	.405	.196	.335	.249	.108
4	.230	.164	.105	.076	.058	.086	.143	.113	.119	.194	.181	.174	.174	.107
5	.082	.066	.052	.051	.020	.086	.117	.082	.112	.140	.122	.146	.158	.108
6	.038	.030	.050	.036	.021	.067	.050	.048	.070	.042	.024	.042	.000	.035
7	.017	.013	.021	.000	.021	.042	.052	.036	.036	.000	.000	.041	.000	.020
8	.019	.015	.000	.000	.000	.028	.048	.049	.058	.000	.000	.060	.076	.000
9	.013	.011	.000	.000	.000	.000	.000	.023	.062	.000	.000	.055	.066	.000
10	.010	.008	.000	.000	.000	.000	.000	.024	.065	.000	.024	.000	.044	.000

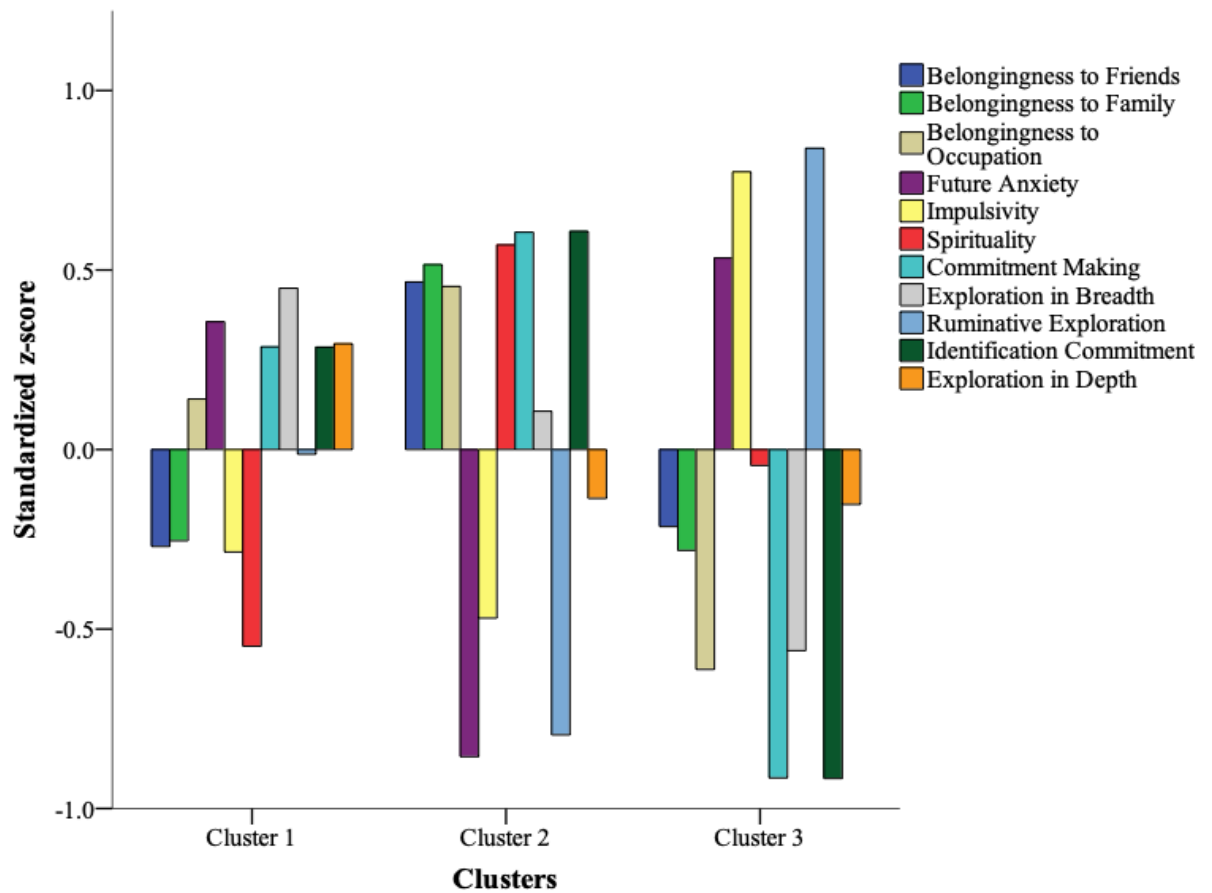
Table 3.8. ANOVA Values for Two, Three, Four, and Five Cluster Solution

Variables	Two Cluster Solution		Three Cluster Solution		Four Cluster Solution		Five Cluster Solution	
	F	p	F	p	F	p	F	p
Belongingness to Friends	26.050	.000	24.814	.000	15.279	.000	22.720	.000
Belongingness to Family	34.093	.000	30.976	.000	19.617	.000	42.736	.000
Belongingness to Occupation	127.219	.000	48.573	.000	41.308	.000	31.959	.000
Future Anxiety	134.262	.000	121.640	.000	72.274	.000	66.675	.000
Impulsivity	118.961	.000	82.674	.000	52.736	.000	42.902	.000
Spirituality	6.882	.000	51.626	.000	13.513	.000	41.245	.000
Commitment Making	244.190	.000	144.747	.000	143.895	.000	108.738	.000
Exploration in Breadth	33.783	.000	40.670	.000	86.273	.000	43.560	.000
Ruminative Exploration	252.019	.000	157.229	.000	141.706	.000	133.383	.000
Identification with Commitment	291.039	.000	145.821	.000	118.603	.000	91.180	.000
Exploration in Depth	.155	.694	8.613	.000	40.891	.000	27.506	.000

Note. Z scores of the variables were used.

K-means cluster technique also allows us to see which variable is more important while creating the cluster in F value in the ANOVA table. When examining the results of K-means analysis with three cluster number, the ANOVA table showed that while feeling of belongingness to friends and family were least important while creating the clusters, belongingness to occupation, spirituality, impulsivity, future anxiety, and identity development were the most important variables while creating the cluster (see in Table 6.8). Cluster 1 ($n = 128$) was characterized by low scores on belongingness to family, friends, impulsivity and spirituality, with higher scores on future anxiety, belongingness to the occupation, and achievement identity status. Cluster 2 ($n = 133$) was characterized by higher scores on belongingness to family, friends, occupation, and spirituality, and lower scores on future anxiety, impulsivity, and foreclosure identity status. Cluster 3 ($n = 128$) was characterized by lower scores on belongingness to family, friends, occupation and spirituality, with higher scores on future anxiety, impulsivity, and diffused-diffusion identity status (see Figure 3.1).

Figure 3.1 Z-scores of Outcome Variables for Clusters



Demographic characteristics, cigarette, and alcohol use results in terms of Clusters were represented in Table 3.10. In Cluster 1, 66.4% of the participants were women, 62.5% were living with their family. 85.9% of the students used alcohol, and 53.9% was a smoker. In Cluster 2, 81.2% of the participants were women, 71.4% was living with their family. 68.4% of the students used alcohol, and 31.6% was a smoker. In Cluster 3, 72.7% of the participants were women, 61.4% were living with their family. 82.8% of the students used alcohol, and 51.6% was a smoker. The number of students who do not use cigarette was significantly higher in Cluster 2 than Cluster 1 and Cluster 3, $\chi^2 (2) = 15.939, p < .001$.

Table. 3.10. Demographic Characteristics, Cigarette and Alcohol Use of Clusters

Variables	Cluster 1	Cluster 2	Cluster 3
<i>Gender</i>			
Men	33.6%	18.8%	27.3%
Women	66.4%	81.2%	72.7%
<i>Living Conditions</i>			
W/ Family	62.5%	71.4%	61.4%
W/o Family	37.5%	28.6%	38.6%
<i>Alcohol Use</i>			
User	85.9%	68.4%	82.8%
Non-user	14.1%	31.6%	17.2%
<i>Tobacco Use</i>			
User	53.9%	31.6%	51.6%
Non-user	46.1%	68.4%	48.4%

Finally, a logistic regression model was performed to investigate the effects of Clusters on the likelihood to be smoker or not (smoking status). The model was statistically significant ($\chi^2 (2) = 1.239, p < .001$). The results showed that Cluster 2 had a significant effect on smoking status. Being a member of Cluster 2 was 2 .43 times more likely to be a non-smoker compared Cluster 1 and Cluster 3 ($p = .001$).

4. DISCUSSION

The aim of Part 1 was to investigate the psychosocial health-compromising factors affecting smoking among university students in the light of the emerging adulthood theory by using both person- and variable-centered approaches. Accordingly, impulsivity, spirituality, alcohol use, future anxiety, identity development, and sense of belongingness were found to be associated with cigarette use among university students.

To begin with the differences in terms of smoking status, men smoked more than women. Furthermore, smokers defined themselves as less religious compared to non-smokers. Moreover, smokers showed a significantly lower sense of belongingness to family and work. They also had lower spirituality and a higher score of impulsivity and future anxiety.

In the notion of the variable-centered approach, two logistic regression models were used to show the predictors of cigarette use among university students. According to Model 1, results showed that lower spirituality, higher impulsivity, and higher alcohol use increased the

likelihood of being a smoker. In the literature, it has been found that higher impulsivity, lower spirituality, and higher alcohol use was associated with an increase in smoking (Lucchetti, Peres, Lucchetti, & Koenig, 2012; Suhwal & Suman, 2013; Lee et al., 2015; Doran & Tully, 2018). The findings in Model 1 supports the previous studies. According to Model 2, however, only a lower sense of belongingness to family increased the likelihood of being a smoker. Other personal factors (belongingness to friends and occupation, and identity development) was not directly associated with university students' cigarette use.

There was no direct relationship between cigarette use, identity development, and future anxiety in the current study. Although many studies indicated a relationship between tobacco use and anxiety (Boehm, Lei, Llyd, & Prichard, 2016; McKenzie et al., 2010; Torres, Estep, Gwin, & Villalta, 2020), we did not find a linear relationship between future anxiety and tobacco use according to results of regression models. We also did not indicate a significant association between identity development dimensions and tobacco use in the variable-centered approach.

Smoking is a multidimensional behavior (Randler, 2008). So, traditional statistical methods such as correlations and/or regressions may not be a proper way of investigating risk factors of cigarette use. Previous studies about risk factors of tobacco use utilized a person-centered approach (such as k-means cluster analysis) to indicate the risk factors (Engelmann et al., 2016; Primack, et al., 2012). Thus, we continue with the results of the k-means cluster analysis.

In the notion of the person-centered approach, k-means cluster analysis was utilized to investigate further the psychosocial risk factors of cigarette use, especially identity development and future anxiety. First of all, while creating the clusters, dimensions of identity development, particularly commitment making, ruminative exploration, and identification with commitment, were the most important factors to distinguish the clusters. Following identity development, future anxiety and impulsivity were also the outstanding variables contributing to the distinction of these clusters. Spirituality and sense of belongingness were relatively less important than others in the distinction of the clusters compared to them. According to the final results of the k-means cluster analysis, three

clusters were obtained. The clusters names Cluster 1, Cluster 2, and Cluster 3 that described in the paragraph below.

Cluster 1 was characterized by a lower sense of belongingness to friends and family, a lower level of spirituality and impulsivity, a higher belongingness to work and future anxiety, and achievement identity status. Cluster 2 was defined by a higher sense of belongingness to family, friends, work, a higher level of spirituality, a lower level of future anxiety and impulsivity, and foreclosure identity status. Cluster 3 was characterized by lower scores on belongingness to family, friends, work, and spirituality, with higher scores on future anxiety, impulsivity, and diffusion identity status.

In terms of demographic characteristics, Cluster 2 included a greater number of female students compared to Cluster 1 and Cluster 3. In addition, cluster 2 included a greater number of participants who lived with their families. Besides, A greater number of participants used alcohol in Cluster 1 and Cluster 3 compared to Cluster 2.

Previous studies showed that being women, living with family, decreased in alcohol use, better relationship with peers and family, lower impulsivity, higher level of spirituality, higher anxiety, and success in identity development (such as foreclosure identity and achievement identity statuses) was found as a protective factor of tobacco use among young people (Jones & Hartmann, 1988). In this regard, Cluster 2 involved a lower number of smokers, and Cluster 3 and involved a greater number of smokers in this study. However, Cluster 1 with achievement identity status had the similar number of smokers as Cluster 3. Achievement identity status was no longer be a protective factor if the level of future anxiety (which is the leading important factor while creating clusters) was high and the level of spirituality was low.

A logistic regression analysis was further used to indicate that being a member of which cluster was a protective factor of cigarette use. Results showed that being a member of Cluster 2 was 2.43 times more likely to be a non-smoker. That is to say, if a person is women, lives with their family, uses less alcohol, has a higher sense of belongingness (friends, family and occupation), has lower impulsivity, has a higher level of spirituality, is less anxious about future, and has foreclosure identity status, s/he is two times likely to be a non-smoker. Previous studies support this finding (Jones & Hartmann, 1988; Schwartz et al., 2008).

Very few studies conducted studies about identity development and substance use among young people (Bishop et al., 1997; Jones & Hartmann, 1988; Rose & Bond, 2008; Bentrim-Tapio, 2004). According to these studies, achievement identity status was related to decreased substance use and diffusion identity status related to increased substance use, including tobacco use. However, literature is inconsistent regarding to the relationship between foreclosure identity status and substance use (Marsiglia et al., 2001; Bishop et al., 1997).

Jones and Hartmann (1988) found that participants with foreclosure identity status reported lower substance use. However, Bentrim-Tapio (2004) conducted a study about alcohol use and identity development among university students and found that the highest consumption of alcohol use among students with foreclosure identity status. In this study, we support Jones and Hartmann's finding (1988): foreclosure identity status as a protective factor of cigarette use among university students. However, we need to consider some important issues while drawing the foreclosure identity status as a protective factor.

When we look at the demographic characteristics of this study, female participants were higher than male participants, especially among non-smokers. It was the same for the demographic characteristics of Cluster 2; the women were higher than men. The majority of the participants were also religious and had a high level of spirituality in Cluster 2. Since foreclosure identity status means accepting an identity without any questioning, these individuals (in Cluster 2) may have accepted their identities assigned by their role models without questioning (e.g., parents). So, to dare to say foreclosure identity status is a protective factor, the role of parental control and parental smoking status needs to measure. However, in this study, any variables related to parental control or parents' smoking status were not included in the analysis. Thus, it would be beneficial to replicate this study for equal gender and the sample of male university students with high spiritual and defined themselves as believers.

The findings of Part 1 have the potential to shed light on the future intervention and smoking cessation program that will be developed for emerging adults and university students. Primarily, this study is the first study which examined the psychosocial risk factors of tobacco use among university students using both person- and variable-centered approach. Not only

impulsivity, spirituality, and alcohol use, but future anxiety/life transition and identity development have also been associated with cigarette use. Hence, the smoking cessation and intervention programs that targeted the university students and young adults' population need to consider the importance of future anxiety and identity developments. They need to consider gaining university students healthy and adaptive coping skills to cope with future anxiety and identity development problems. Further, a suitable environment should be provided for people to develop their identities. The concepts of religiosity and spirituality also need to pay attention to while developing intervention and smoking cessation programs in some context, especially in a country like Turkey, where the majority of the population described themselves as believers. Lastly, since the relationship between smoking, identity, and future anxiety is not complex and non-linear, the relationship between these two concepts should be clarified with qualitative methods. Future studies also need to focus on the role of the social environment and peer relationship on smoking behavior among university students.

CHAPTER 3: QUALITATIVE PART

5. METHOD

The design of the second study is cross-sectional qualitative. The ethical approval is also valid for the second part of the study (82741295-900-E.34577, Kadir Has University). In qualitative research, the researcher aims to discover how people perceive their experiences (Marshall & Rossman, 2011). At the same time, qualitative research is carried out to understand and define a particular topic or behavior in detail. We can only achieve the details of a subject, allowing them to express their own experiences by talking (Creswell, 2007: 40).

5.1. QUESTION GENERATION AND INTERVIEWS

Before generating the interview questions, I decided on the themes/topics (e.g., Life transition and Smoking). Then, I generated at least five questions for each topic (e.g., When you think about the things that worry you, how do you make a connection between smoking and those anxious times?) based on previous studies (e.g. Nichter, Nichter, Carkoglu, & Lloyd-Richardson, 2010; Nichter, Nichter, & Carkoglu, 2007; Nichter et al., 2006). After 11 interviews, questions were edited; and new questions were added to make the nature of the conversation brighter. When the 21st interview was done, I decided on the important themes that required in-depth explanations. Editing the questions did not influence the nature of the conversation, so there is no considerable extent of differences between the first 11 interviews and 21 interviews.

The interviews were not formal and did not have a strict outline. They were more like a conversation between two friends, allowing them to share their experiences and feelings about cigarette use. The outline of the conversations had changed based on the participants. However, the framework/topic remained the same. Interview questions were represented in appendix B.

5.2. PARTICIPANTS AND PROCEDURE

While conducting the first part of the study, contact details of the participants who were willing to talk and share their experiences about smoking were obtained. Then, I called the participants and asked whether they are interested in the second part of the study. If they were interested, I invited them to the psychology laboratory in Kadir Has University. The first 11 participants were recruited with this method. Then the rest of the twenty-one were recruited with a snowball sampling technique.

Snowball sampling is asking the participants whether they have known a new contact person with similar characteristics or not (Patton, 2002). With this sampling, I controlled the sample characteristics and tried to balance some properties of the current sample, such as gender, religiosity, the severity of the dependence, etc.

The interviews were carried out in the laboratory. After giving brief information about the main aim of the second study, the consent form was obtained from the participants. The participants on the interview day did not fill out any demographic form or scales. The participants' socio-demographic information and health behaviors were obtained from the first study because there was a short time interval between the first and second studies. Interviews were recorded by a smartphone with the permission of the participants. Each interview took approximately half an hour. During the interview, I did not take any notes. The first two interviews were carried out under the supervision of the advisor, Dr. Aslı Çarkoğlu. I did the rest of the interviews.

Although the participants gained extra credit for participating in the second study, the voluntary participants were considerably high in numbers. As a final step, two senior psychology students and I transcribed all recordings.

5.3. DATA ANALYSIS STRATEGY

For the analysis, the thematic analysis technique was used. This technique is used to identify, analyze, and report the themes within the data in detail (Braun & Clarke, 2006). The analysis strategy can be separated into three main parts. First of all, at the end of the first 11 interviews, I transcribed all of the sentences in the records. I coded freely, and nearly 100 codes were

obtained. I read the transcriptions twice. I described the themes and decided on which questions needed to be extended and clarified. Afterward, I discussed the results from eleven interviews with the advisor. Questions were edited. A code list was created.

In the second round, ten more interviews were carried out. After that, I determined the points that needed to be explored in detail (e.g., smoking on the campus). In the third round, nine more interviews were conducted with only male participants to balance gender.

The analysis was performed in the software Atlas.ti 5. Atlas.ti allows to see the combination or separation of the themes, or whether the themes are overlapped, and co-occur within. Using these software tools and family output, the associations among the themes were also obtained. To see whether there is a difference in terms of gender, documents were filtered as male and female. If a family and its associations were related to gender, outputs for men and women were obtained separately. Additionally, my notes before/ after each interview, after 11 and 21 interviews were completed, and/or from the observations on campus where the participants smoked more were also considered while describing the data.

I used the member check technique (Birt, Scott, Cavers, Campbell, & Walter, 2016). This technique allows the researcher to enhance the trustworthiness of the results. It may be described as sending the results to the participants to check for the accuracy and resonance of the research (Brit et al., 2016). A member-check list was created for trustworthiness. This checklist included two questions: “When you think about the conversation we had with you, to what extent do you see the pieces from this interview in this text?” and “What should be added to or removed from the text?” Participants have rated the first item from 1 to 10. A higher number represents higher trustworthiness. The results were sent to 30 participants; 17 of them returned. The average trustworthiness was 8 out of 10.

6. FINDINGS

A total of 30 participants (15 women) were interviewed face-to-face at the university campus. The mean age of the participants was 22, ranging between 18-25. All were economically dependent on their families, and majority (20) lived in their family home.

The average length of the interviews was 30 minutes. The interviews followed a historical timeline, starting from their first smoking experience.

For all the participants, the very first smoking experience happened with the company of friends and was described as an “exciting activity”. The parents were unaware of the experience, and they could not carry the cigarette package home, so they shared packages, smoked in groups rather than alone, and smoked few and far between. The importance of smoking with others in social gatherings remained a central theme for late starters (those who tried their first cigarette after age 18) and the utility of cigarettes was confined to socialization. As for early starters, smoking has many different roles and meanings, socialization being only one of them.

Half of the participants started to use cigarettes after 18. For this group smoking was mostly related to pleasure and fun. They smoked along with alcohol, socializing with a friend, or after eating a meal. The common theme of these participants was that they did not integrate smoking into their daily life and smoked fewer cigarettes. From this point, I shall refer to this group as “social smokers”.

The group split in half in terms of the place they attribute to smoking: 18 of them placed a more central role to cigarettes and smoking, using it as a tool to help themselves explore their identities and define who they were. For the great majority, this happened during their high school years; they started smoking in high school and entered the university as regular smokers. Early starters and few late starters who delayed their identity exploration to university years formed an association between smoking and other factors such as affect, anxiety, impulsivity, and important life experiences that were integral parts of their identity exploration. From this point on I shall refer to this group of participants as “dedicated smokers”.

6.1. SENSE OF IDENTITY AND SMOKING

For the dedicated smokers, the meaning of smoking was not limited to joy or social aspects of smoking, but it was deeply related to identity exploration and formation process during their late teen to early emerging adulthood years. Cigarettes acted as *a sign of change* and a

way of expressing their transformation, a *declaration of independence* from their existing groups, it is a kind of *rite of passage* into adulthood.

When I started smoking, it was a time I started to change a lot. As a personality, I started moving forward to where I wanted to be. I started to become myself rather than a person that other people decided. At that time, I became a regular user.

Dilara, female, initiation age: 20

Smoking meant like "Gamze changed" for me. Let it change now. Now, something has to change. Gamze is different since I started smoking. In fact, my character changed completely after smoking. This change is like a transition from childhood to adulthood...

Gamze, female, initiation age: 17

Men go through this process earlier than women. For men this "rite of passage" story happened in their adolescent years. Yet for the women in this group this as a rite of passage happening in their emerging adult years. The reason of that delay could be related to more parental control on women. It is a rebellious act for the expression of their formation.

For me, smoking is definitely a symbol of freedom. Because once it was a masculine protest against my mother. I said to her, "I don't care, I smoke." I stopped thinking about the future or thinking about the risks and smoke it if it wanted to.

Yonca, female, initiation age: 21

My parents were very surprised when they first heard that I was smoking. Because the Müjde was like a good, and sane daughter of the house, they were not expecting from me... because they think smokers are a bit more rebellious and drifter.

Müjde, female, initiation: 18

For the dedicated smokers, smoking was an indicator of adulthood, independence/autonomy. It was a declaration of "*Look, I can decide for myself, and I choose to smoke*" to their family. However, this self-expression was not an ongoing process. It was mostly seen at the beginning of smoking, but as time goes on, smoking becomes normal. It lost this meaning.

Smoking made me feel a little drifter. A little freer, braver, more mature, living far away from the rules of society... Of course, these thoughts remained in high school. Actually, I didn't think very much why I smoke at the university. It became an addiction. I am now smoking without thinking why I am smoking.

Mehmet, male, initiation age: 17

Cigarette was also a status indicator, or accessory to build their ideal/manifested selves as a dedicated smoker. If their current role model or idealized selves did not contradict the role of a smoker, or if smoking even supported this ideal, then smoking was reinforced. Cigarettes became a frequent prompt to emulate that person or self.

We begin to form our character in high school. During that time, there may be some people whom we have taken many role models. This can be an actor in TV series, a character in a book, or even a neighbor's child. The characters I likened to myself that I wanted to be were a smoker.

Huseyin, male, initiation age: 16

6.2 SOCIALIZATION AND SMOKING

Smokers talk of becoming a member of an unintentional group, a social collective that they become a natural member of once they start smoking where they feel understood and accepted:

It may sound silly, but there is something that smokers share. As if smokers understand each other better. It's like converging for two people who have the same religion. Because when you say to them that I should get a coffee and smoke, they understand what you mean. For example, I share information about myself more easily to my smoker friends.

Melisa, female, initiation age: 20

Our participants reported that titles and status symbols mattered less while smoking. The hierarchy was weakened. Since smoking spots were few and clearly designated places, it increased the chance of making new friends and becoming familiar with others. For example, the most frequently used way to start a conversation was to ask for a lighter. Then, the

conversation could move more quickly. In other words, a cigarette could be used as a “social lubricant” (Nichter, 2015).

It allows you to meet a person you do not know at the university. You are simply doing the same activity. You smoke with that person. Something like a smoking friend. Also, the titles of people do not matter. It can be a professor or even a rector! Everyone can easily talk to each other in the smoking area. Therefore, people can reach people more easily by smoking.

Mehmet, male, initiation age: 17

The *Amfi*, which was the garden on the university campus in the current research was a critical place for cigarette use. The *Amfi* was like a smoking and leisure area, also a social club. Smokers were usually hanging there; and they mostly spend time with their friends in the *Amfi*. The amount of smoking in the *Amfi* almost doubled. Smoking together at the *Amfi* also increased bonding. The *Amfi* was a place that reinforces the group feeling the most.

I tried smoking with my friend in a park for the first time. Then, I went to summer school. At that time, my friends always smoked cigarettes in the *Amfi*. I started to spend time always with them and started to smoke. Smoking was more convenient in that sense.

Abdullah, male, initiation age: 21, low nicotine dependence

I get closer to more people in the *Amfi* because I smoke. Since our common point is smoking, we all stand there. It is a friendly place, so my communication with them has improved a lot.

Ahmet, male, initiation age: 13

Amfi was also a place for mate selection. Participants reported that people come there to find a partner and felt as the spotlight are on. *Amfi* was also a place which related to social identity. Participants talked about a “*Amfi* type person”. Smoking played a role in this context. A cigarette in the *Amfi* was more of an accessory, a reason to be there, than a substance.

The Amfi is a place like give someone the eye a bit. Everyone is watching you. It is a bit like a familiarity checking, do I know he, where do I know she... For example, it is a place that you can gossip about people. People in the Amfi is like, you know peacock show their feather.... But, for example, Starbucks is like buying your coffee, reading a book, getting your computer, or chatting.
Onur, male,

Let me tell you the classical *Amfi* type. They are generally very easy going people. Their hair is messy or something. Usually this person is a male, but there are also female versions, but they are fewer. They light their cigarettes; they are dressed in a tracksuit or something. He always hangs out there with his close friends. There is also a fancy girl version. They are two or three people. They usually grab a coffee from Starbucks. There is a certain brand of cigarette they smoke. They look at people and criticize them. And there is also a big shot man; they smoke heavy cigarettes. They usually talk about cars or something; they have a rosary in their hands. I guess everyone in the *Amfi* think that they are Cillian Murphy...”

Berk, male

6.3 ALCOHOL AND SMOKING

All of the participants reported that the number of cigarettes increased with alcohol or in an alcohol drinking environment. That is, each time they drink, they always smoke as well. Even people who are not regular smokers can smoke alongside alcohol.

I mean, I am not actually addicted to smoking, for example, if you do not give me a cigarette, I will not go into crisis, but when I drink alcohol, I look for a cigarette. At other times, you know, even though there are no cigarettes, it is okay for me.

Onur, male, low nicotine dependence

Smoking significantly increases if I drink alcohol. Because there is something like this, even people who do not smoke grabs a cigarette with alcohol.

Batu, male, very low nicotine dependence

Smoking was an appetizer of alcohol. Cigarette and alcohol duo turned out to be a bit of a norm. Smoking enhanced the effect of alcohol and made its taste better. It made spirits more drinkable.

I have matched cigarettes and alcohol in my brain, just like a tequila shot with salt and lemon, you can actually drink tequila without salt and lemon, but you know, they're consumed together because it has a ritual. Like Rakı and Feta cheese... Raki has its own ritual. You can also drink Raki without them. Smoking is now part of these rituals for me. Especially with beer... the relationship between beer and salted peanuts, and beer and cigarettes are the same. The taste of beer is always the same, but you are happier when you have salted peanuts. Beer is drunk with a cigarette for me, I have coded it like this since high school.

Huseyin, male

So, I think their taste is very compatible, so smoking seems to reduce the bitterness of alcohol. For example, immediately after you pull a bitter shot, the cigarette reduces its bitterness.

Esra, female

The automatic and unwitting smoking cases came out when they drink alcohol and are with their friends at school or somewhere else. When alcohol was taken, the number of more impulsive and rash acts increased. Thus, it did not matter how much you smoke. The frequency of smoking increases with alcohol.

If I go out with my friends, everybody finishes their packages. In normal, if I smoke one pack of cigarettes, I would die, but in this context, everything is going well, I don't know, you are with your friends, there is alcohol, and the ambiance is great. Ah... naturally, I light a cigarette frequently. When you see that someone lights a cigarette, you do the same thing.

Melisa, female

I don't think when I drink alcohol. I mean, I don't even realize whether someone lights a cigarette in front of me or not. Because I already smoke repeatedly. I light one before I put out the other one.

You can smoke almost a pack in 2 hours. You are already sitting for 4-5 hours, consuming 2 packs, with alcohol...”

Mehmet, male

6.4 LIFE TRANSITION, ANXIETY AND SMOKING

Most of the participants reported anxiety about an uncertain future. The anxiety is not a constant; it disappears from time to time. There is no consistency in what it feels. They sometimes believe that they will take care of it, but sometimes they feel that they cannot handle it.

What I do next year is uncertain, now I feel incredibly anxious for the future. When I look at my friends who graduated, or when I look at my senior friends, everyone goes mad. What we will do, what will happen... because everything is so vague. So, what do we do with the master's degree, where do we work? People don't even have the opportunity to work in their field right now, and they have to work in silly jobs to survive. So, of course, I'm very worried.

Ezgi, female

Anxiety about uncertain future was not observed in participants who have an economic backup plan or were financially supported by their parents.

I don't have a lot of worries, frankly. If I cannot continue in this area, I can continue to work with my father. So, this is not my only option. I have other options.

Hamza, male

Anxiety about the uncertainty of the future was an important part of the smoking experience for all participants. They reported that when they felt anxious and stressed, they smoked more. They inhaled the cigarette more deeply and felt more relaxed.

It feels like this: oh, okay calm down it's over. You were just very nervous, but now you're calm. So, when I smoke, it feels like all my troubles come out of my body with the smoke.

Esra, female

Participants who were anxious about the future reported that they did not get immediate satisfaction in the short-term goals they studied and strove for. However, they believed that when the thoughts about the uncertainty of the future intensify, smoking delivered satisfaction for a while.

I think I will work hard and try to get benefits in the future, but there is nothing I can get right now. What gives me comfort now is smoking, frankly.

Fatma, female

I observed that smoking did not exist while talking about positive emotions. However, matching negative emotions with smoking was common for dedicated smokers. When they were happy, smoking rarely crosses their minds. The association between negative emotion and smoking was stronger among participants who reported negative emotions or negative life experiences as a reason for initiation.

In fact, when I think about my smoking behavior, in general, whenever I feel bad, I have a cigarette in my hand. It is not always with me when I'm happy but it is always there when I'm unhappy.

Batuhan, male

I: You have talked about the relationship between smoking and negative mood. What about the relationship between smoking and positive mood?

P: I do not smoke.

I: You don't smoke, well, have you thought why?

P: Because you don't need to smoke when you feel good. May be after dinner or lunch, I smoke for pleasure. This is because of the addiction. The body wants it.

Gamze, female

Smoking rate and urge increased with the presence of negative emotions for dedicated smokers. They reported that their smoking rate increased very much; and they described their smoking behavior as unwitting and automatic when they feel negative emotion. These results did not change according to the nicotine dependence level and gender.

...when I think after school, I feel stress about the future. I sink into despair. Then, I find myself in the *Amfi* while smoking.

Melisa, female, moderate nicotine dependence

My friend had passed away. We went to her funeral, then we gathered in a cafe altogether with high school friends. And I never thought of it, and I lit a cigarette as if my normal habit continued. When I returned home in the evening, I realized that oh yes, I had quit smoking.

Bade, female

7. DISCUSSION

Part 2 aimed to examine how the sense of identity (identity development and social identity) plays a role and, the role of socialization on cigarette use, and the association between life transition/anxiety and smoking among university students. In this part, participants were grouped as social smokers and dedicated smokers. Social smokers smoked fewer cigarettes than dedicated smokers. Social smokers usually smoked along with alcohol, socializing with a friend, or after eating a meal. They did not integrate smoking into their center of life. On the other hand, dedicated smokers formed an association between smoking and other factors such as affect, anxiety, and important life experiences that were essential parts of their identity exploration.

Cigarettes may seem like a sign of independence among university students (Nitchter, 2015). In this study, a cigarette is seen as a sign of change, declaration of independence, and a rite of passage for female participants. Male participants did talk about identity exploration issues referring to their high school years. They used past tense while talking about identity exploration. Female participants who delayed the identity exploration to the early university years and connected their identity exploration with smoking used cigarettes to declare their adult status to their parents.

Smoking tends to be seen as an identity brand that they can use to express their individuality and identity characteristics (e.g., identity as a young person) (Lennon et al., 2005; MacFadyen et al., 2003; Rooke, Amos, Highet, & Hargreaves, 2013; Wiltshire, Amos, Haw,

& McNeill, 2005). In this study, cigarettes are used as a status indicator or accessory to build their ideal/manifested selves as dedicated smokers. Cigarettes became a frequent prompt to emulate that person or self. Parallel to our results, a piece of qualitative research in Turkey indicated that Turkish university students felt more like adults when they smoked (Yegenoglu et al., 2009).

Previous studies concluded that smoker identity also plays a role in smoking cessation and intervention (Falomir and Invernizzi, 1999; Hoie, Moan, & Rise, 2010; Tomber et al., 2013). The connection between identity and cigarettes may be a barrier to quit smoking among young adults (Berg et al., 2013; Tombor et al., 2015). If a person has a smoker identity, the intention to quit is low; they are more likely to respond defensively to persuasive anti-tobacco messages (Falomir and Invernizzi, 1999; Hoie, Moan, & Rise, 2010). Smokers' positive feelings about smoker identity undermine their motivation to quit smoking (Tombor, Shahab, Brown, & West, 2013).

Congruent with the previous research (Hoek et al. 2013; Scott et al. 2015), smokers perceive themselves as a member of an unintentional group: "Smokers". It can be considered a social club where everyone shows similar behavioral patterns. Smoking is a signal for the benefit of friendship among the group (Nichter, Nichter, & Carkoglu, 2007). The "act of smoking" reinforces social bonding and belonging to a group. Being a smoker may also heighten a member's social power, making them feel more involved in a group (Tombor et al., 2015). As indicated in this part, it is no longer a matter of your social status for all smokers. It eliminates hierarchy and makes social communication easier. Moreover, it connects even between two people who are not in the same social network (Nichter, 2015).

The primary need for emerging adults is socialization and find a romantic partner (Weisskirch, 2018). In this sample, university students did not have much opportunity to socialize. There was no dorm, no many cafes or bars around the university. They mostly socialized between classes or at lunch.

There are only two places: Amfi and a smoking-free garden. Although there is a smoking-free area, most of the students do not prefer to go there. They choose to be at Amfi.

Smoking areas such as Amfi allow people to socialize. In this research, we found that cigarettes were used as a socialization tool for both social and dedicated smokers. Smoking as a social utilizer results in increased cigarette use in the areas for smoking, such as the Amfi. Since emerging adults are motivated to maintain their friendship and membership to this social group, to be a non-smoker could mean exclusion from the social network (Dono, Miller, Ettridge, & Wilson, 2020). University students reported that almost every student smoked during university years, and smoking was perceived as part of university life (Nichter et al., 2010). For this reason, cigarettes should be removed from the social environment spots such as Amfi. However, we now see that just forbidden the cigarette is not going to work. For instance, it can be started with attitude change toward the cigarette (e.g., coolness of the smoking).

The motivations for smoking were consistent with the other studies: stress (Vuckovic, Polen, & Hollis, 2003). Life transition, which is a stressful period that brings anxiety of uncertain future among emerging adults, was another important factor that connected smoking. Our participants reported their anxiety about an uncertain future. The results showed that future anxiety and smoking are directly associated. Those with high future anxiety reported that smoking delivered a short-term satisfaction when their concerns about their goals and striving for intensify. Smoking is also seen as a functional behavior to cope with stress (Berg et al., 2013; Tombor et al., 2015). The (dys)functional role of smoking as coping with stress results in difficulties of smoking cessation among young adults (Villanti et al., 2016).

According to our participants, their smoking rate and urge increased in some cases. Automatic and unwitting smoking appeared, when they were together with friends and felt stressed and other negative feelings. The results were congruent with the examples found in the literature; that is to say, stress and friends who are also smokers triggers smoking behavior (Nichter, Nichter, & Carkoglu, 2007).

Further, previous research concluded that (Stjerna, Lauritzen, & Tillgren, 2004; Nichter, Nichter, Carkoglu, & Lloyd-Richardson, 2010), alcohol use comes out as a significant factor for cigarette use. The findings showed that the urge to smoke becomes more impulsive and automatic when people drink alcohol or are in an environment where people drink.

According to the findings from Part 2, alcohol use directly impacted the amount of smoking; and it is seen as a “dynamic duo”. The harmony between these tastes (such as salt-roasted peanuts and beer) increased the overall smoking rate and the urge to smoke. Furthermore, binge-smoking was observed when the social environment and friend effect are added into the effect of smoking. Similarly, a qualitative study in the USA concluded that (Nichter, Nichter, & Carkoglu, 2007), university students described the harmony between alcohol and cigarettes like milk and cookies. They believed that alcohol always went best with a pack of cigarettes; in other words, "a package deal".

The results of this study contribute to the relevant literature in many ways. First, this study draws attention to the relationship between a sense of identity (identity exploration and social identity) and smoking, especially among women. Existing or planned smoking prevention or cessation programs should give importance to women who have delayed identity exploration. This study found that the identity exploration and transition period can be revealed through smoking, especially as a declaration against the parents. For this reason, cigarettes should be removed from this identity development process, and these people should explore their identity without existing a substance. Moreover, in addition to the relationship between identity development and smoking, cigarette appears to be a substance that facilitates socialization. Especially the smoking areas, such as Amfi in this study, may increase university students' smoking cigarettes. These young people who have contributed many meanings to smoking should be able to socialize in smoking-free areas. So, the use of cigarettes as a socialization tool should be prevented. However, it is obvious that banning smoking does not work, as is the case in the non-smoking area of the university in this study. In addition, considering that this age group is in a period where they give importance to their freedom and autonomy, the first action to ban smoking may cause these students to be perceived as a restriction of their freedom. For this reason, it would be helpful to change the attitude of smokers before removing smoking from the social sphere, for example, to awaken the desire of smokers to quit.

Further, more opportunities for socialization should be ensured at the smoking-free areas. Limited research (e.g., Nichter, 2015) investigated the role of social identity and the sense of

community/group feeling through cigarette use among young adults. I speculated that this social influence of smoking might turn social smokers into dedicated smokers. Therefore, future studies need to consider this point further. Finally, the relationship between future anxiety and smoking was directly reported by participants. Smoking, which is associated with negative emotions, has become more automatic and involuntary due to these emotions. This may lead to an increase in cigarette use and a deeper level of addiction. Future studies must take this recommendation as mentioned earlier and the results of this research into account. Thus, it is thought that the results of this study will lead to future studies.



CHAPTER 4

8. CONCLUSION

This graduate thesis investigated the psycho-social risk factors of tobacco use among university students in the theoretical framework of emerging adulthood. For this purpose, qualitative and quantitative methodologies were used. In the first part, the effect of impulsivity, identity development, belongingness to work, friends, and family, spirituality, and future anxiety on tobacco use were examined using person- and variable-centered approach. Later, the risk factors: role of identity development, future anxiety and socialization was explained in detail using semi-structured interviews and thematic analysis. In this conclusion part, the important results from each part are summarized and bring quantitative and qualitative parts together. Later, the strength and limitations of the study will be explained.

First, a sense of identity has been found to be associated with smoking in both quantitative and qualitative parts. Problem with identity exploration, such as diffused identity status, was a risk factor of cigarette use. Foreclosure identity status was a protective factor of cigarette use, especially among women. Although achievement identity status has been indicated as a protective factor of substance use, we found that if future anxiety is high and level of spirituality was low, achievement identity status was no longer a protective factor of cigarette use among emerging adults. We detailed the relationship between a sense of identity and cigarette use with qualitative techniques. According to the qualitative part of this thesis, dedicated smokers who integrate smoking into their center of life are associated with their identity exploration. However, social smokers did not form this relationship. We did observe this association among women, but we did not observe it among men.

Further, we also investigated the role of smoking on social identity. We found that cigarettes have many meanings: to look like an adult, declaration of independence to parents (especially to mother), and accessory of an ideal self. The qualitative part also enabled us to examine the

role of socialization on smoking. Results showed that cigarettes served as a communication tool in the social environment and facilitated communication in many ways, e.g., breaking the hierarchy.

Second, unlike the previous literature (e.g., Newman & Newman, 2017), we did not find a linear relationship between anxiety about an uncertain future and smoking. In the quantitative part, although regression analysis revealed that future anxiety and smoking were not significantly associated, but we saw from the k-means analysis results, future anxiety seemed to be an important risk factor as identity development. We also detailed this finding in the qualitative part and found that future anxiety was a prominent problem for university students. Smoker university students used cigarettes as a coping skill for the anxiety about an uncertain future, and they reported an apparent association between negative emotions and smoking. We also further investigated that their smoking was more unwitting and unawares when they feel negative emotions, including future anxiety.

Third, we support previous findings that high-level impulsivity increased the likelihood of being a smoker, and impulsivity was important risk factor after identity development and future anxiety. We also further support the finding of the quantitative part with qualitative methods. We found that alcohol, negative emotions, and peer influence results in an unintentional urge to smoke, and smoking becomes more unaware.

Next, we found a significant association between belongingness to family and smoking. In short, a low level of belongingness to friends, occupation and family increased cigarette use. On the other hand, we found that lower spirituality increased the likelihood of becoming a smoker. However, we did not investigate in the qualitative stage of the study. Participants only talked about their smoking behavior patterns during Ramadan. However, they reported that they believed cigarette use is not associated with faith and/or spirituality. Our results also suggested that future studies need to examine spirituality/religiosity and identity development in the field of substance use. Future studies also need to replicate the study among men with spirituality.

8.1. LIMITATION AND STRENGTH

The current thesis has some limitations. Firstly, we used the convenience sampling method, because of which it was impossible to generalize the results for the Turkish population. Secondly, although we balanced the number of participants of both genders in qualitative interviews, most of them were women in the quantitative part. Future studies are required to balance the number of participants from both genders to better understand the nature of cigarette use from the gender perspective. Thirdly, the quantitative stage of the study relied on self-report measures. The last limitation was a consequence of a cross-sectional design. Future studies could use longitudinal designs to investigate the effects of life transition patterns on tobacco use among emerging adults.

This study demonstrates several strengths, the first of which is it being the first study investigating the role psycho-social risk factors on tobacco use among university students using mixed-methods techniques. The psycho-social risk factors of university students' cigarette use are based on the theory of emerging adulthood and elaborated with in-depth interviews in the holistic perspective in health psychology. We hope our results will shed light on future studies and improve the new intervention and smoking cessation programs that focus on emerging adults.

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Foreign Language Skills : English



APPENDIX A

A.1. INFORMED CONSENT

Bu araştırma çalışması Kadir Has Üniversitesi Psikoloji Bölümü Lisansüstü Öğrencisi İbrahim Yakın tarafından Doç. Dr. Aslı Çarkoğlu danışmanlığında yürütülmektedir. Bu formun amacı ise katılımcıyı araştırma koşulları bakımından bilgilendirmek ve çalışmaya tamamen gönüllü olarak katılması hususunda onayını almaktır.

Çalışmanın Amacı: Bu çalışmada genç yetişkinlerin sigara kullanımını şekillendiren bireysel, ilişkisel ve çevresel etmenleri incelemeyi amaçlıyoruz. Size de bu amaçla ulaştık.

Çalışmada Nasıl Yardımcı Olacaksınız: Eğer araştırmaya katılımı kabul ederseniz sizden

- Sigara kullanımını anlamaya yönelik bazı soruları cevaplamanızı isteyeceğiz,
- Sigara kullanımınızı etkileyen bireysel ve çevresel faktörleri anlamaya yönelik ölçekler doldurmanızı isteyeceğiz.

Çalışmaya Veri Sağlanan Katılımcı Olarak Bilmeniz Gerekenler: Bu anket çalışması ortalama 30 dakika kadar sürmektedir.

Bu araştırmaya katılımda gönüllük esastır. Katılmak istemiyorsanız belirtmeniz yeterlidir. Bize vereceğiniz tüm cevapların gizli kalacağını, isim gibi kişisel bilgilerinizin başka kişi ve kurumlarla paylaşılmayacağını özellikle belirtmek istiyoruz.

Bu formun bir kopyası araştırmacıda kalırken bir kopyası da size bırakılacaktır. İmzalı onam formunuz ve araştırma verileriniz birbirinden ayrı yerlerde tutulacaktır.

Riskler: Çalışmaya katılımınız hiçbir risk içermemektedir.

Araştırma hakkında daha fazla bilgi almak isterseniz başvuracağınız araştırmacı adresi, e- posta adresi ve telefon numarası:

Araştırmacı : İbrahim Yakın
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Şu noktada bir sorunuz var mı?

Bize ayırdığınız zaman için şimdiden çok teşekkür ederiz.

A.2. DEMOGRAPHIC INFORMATION

Cinsiyet:..... Yaş:.....

Boy:..... Kilo:.....

Kiminle/Nerede yaşıyorsunuz?

Aile Yurt Ev/Yalnız Ev/Arkadaş (

)Diğer.....

Eğitim harcamalarınızı nasıl karşılıyorsunuz? (Lütfen, sizin için uygun olan tüm seçenekleri işaretleyin)

Bursluyum. Aile dışı tanıdıklardan düzenli destek alıyorum.

Ailem karşılıyor. Çalışıyorum.

Diğer.....

Aylık harcamanızın ortalama ne kadar olduğunu aşağıdaki tabloya bakarak işaretleyiniz (Lütfen bu hesaba -varsa-ev/yurt kirasını EKLEMİYİN)

1	100 – 399 TL	6	1.700 – 1.999 TL	11	3.400 – 3.699 TL
2	400 – 699 TL	7	2.000 – 2.399 TL	12	3.700 – 3.999 TL
3	700 – 999 TL	8	2.400 – 2.699 TL	13	4.000 – 4.499
4	1.000 – 1.399 TL	9	2.700 – 2.999 TL		4.500-4.999
5	1.400 – 1.699 TL	10	3.000 – 3.399 TL		5.000 ve üzeri

Düzenli sigara kullanmaya kaç yaşında başladınız?

Sigara:

Şu günlerde ki sigara kullanımınızı nasıl tanımlarsınız?

haftada 4 kez veya daha fazla.

haftada 2-3 kez.

ayda 2-4 kez

ayda bir kez veya daha az

- Hiç kullanmadım.
 Kullanırdım, ama bıraktım.

Bırakalı ne kadar oldu (işaretleyiniz): bir aydan az

- 1 ay veya daha çok, ama 6 aydan az
 6 ay veya daha çok ama 1 seneden az
 1 sene veya daha çok, ama 5 seneden az
 5 sene veya daha çok, ama 10 seneden az

Alkol:

Şu günlerde ki alkol kullanımınızı nasıl tanımlarsınız?

- haftada 4 kez veya daha fazla.
 haftada 2-3 kez.
 ayda 2-4 kez
 ayda bir kez veya daha az
 Hiç kullanmadım.
 Kullanırdım, ama bıraktım.

Bırakalı ne kadar oldu (işaretleyiniz): bir aydan az

- 1 ay veya daha çok, ama 6 aydan az
 6 ay veya daha çok ama 1 seneden az
 1 sene veya daha çok, ama 5 seneden az
 5 sene veya daha çok, ama 10 seneden az

Nargile:

Şu günlerde ki nargile kullanımınızı nasıl tanımlarsınız?

- haftada 4 kez veya daha fazla.
 haftada 2-3 kez.
 ayda 2-4 kez
 ayda bir kez veya daha az
 Hiç kullanmadım.
 Kullanırdım, ama bıraktım.

Bırakalı ne kadar oldu (işaretleyiniz): bir aydan az

- 1 ay veya daha çok, ama 6 aydan az
 6 ay veya daha çok ama 1 seneden az
 1 sene veya daha çok, ama 5 seneden az
 5 sene veya daha çok, ama 10 seneden az

- Genel olarak hayatınızdan ne derece memnunsunuz? Memnuniyetinizi 1 “hiç memnun değilim”, 10 ise “çok memnunum” anlamına gelece şekilde not verecek olsanız siz kendinize kaç puan verirsiniz?

Hiç memnun değilim
memnunum

Çok

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

- Eğer kendinizi herhangi bir seviyede inançlı olarak tanımlıyorsanız, aşağıdaki inanç sistemlerinden hangisi sizin inancınızı en iyi tanımlar?

() İslam () Musevilik () Hristiyanlık () Budizm () Diğer.....

- Ne sıklıkla ibadet ettiğinize bakmaksızın kendinizi ne derece inançlı biri olarak tanımlarsınız? 1 “hiç inançlı değilim”, 10 ise “çok inançlı biriyim” anlamına gelecek şekilde not verecek olsanız siz kendinize kaç puan verirsiniz?

Hiç inançlı değilim

Çok inançlı biriyim

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

A.3. BARRAT IMPULSIVITY SCALE

İnsanlar farklı durumlarda gösterdiği düşünce ve davranışları ile birbirlerinden ayrılırlar. Bu test bazı durumlarda nasıl düşündüğünüzü ve davrandığınızı ölçen bir testtir.

Lütfen her cümleyi okuyunuz ve bu sayfanın sağındaki, size en uygun kutucuk içine "X" koyunuz.

Cevaplamak için çok zaman ayırmayınız. Hızlı ve dürüstçe cevap veriniz.

	Nadiren / Hiçbir Zaman	Bazen	Sıklıkla	Hemen Her Zaman/ Her zaman
1. İşlerimi dikkatle planlarım.	1	2	3	4
2. Düşünmeden iş yaparım.	1	2	3	4
3. Dikkat etmem.	1	2	3	4
4. Uçuşan düşüncelerim var.	1	2	3	4
5. Dikkatli düşünen birisiyim.	1	2	3	4
6. İş güvenliğine dikkat ederim.	1	2	3	4
7. Düşünmeden bir şeyler söylerim.	1	2	3	4
8. Düşünmeden hareket ederim.	1	2	3	4
9. Zor problemler çözmem gerektiğinde kolayca sıkılırım.	1	2	3	4
10. Aklıma estiği gibi hareket ederim.	1	2	3	4
11. Düşünerek hareket ederim.	1	2	3	4
12. Düşünmeden alışveriş yaparım.	1	2	3	4
13. Hobilerimi değiştiririm.	1	2	3	4
14. Kazandığımdan daha fazla harcarım.	1	2	3	4
15. Geleceğini düşünen birisiyim.	1	2	3	4

A.4. STAI-2 TRAIT ANXIETY

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da o anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarf etmeksizin anında nasıl hissettiğinizi gösteren cevabı işaretleyin.

	Hemen Hiçbir Zaman	Bazen	Çok Zaman	Hemen Her Zaman
1. Genellikle keyfim yerindedir.	1	2	3	4
2. Genellikle çabuk yorulurum.	1	2	3	4
3. Genellikle kolay ağlarım.	1	2	3	4
4. Başkaları kadar mutlu olmak isterim.	1	2	3	4
5. Çabuk karar veremediğim için fırsatları kaçıırım.	1	2	3	4
6. Kendimi dinlenmiş hissediyorum.	1	2	3	4
7. Genellikle sakin, kendine hakim ve soğukkanlıyım.	1	2	3	4
8. Güçlüklerin yenemeceğim kadar biriktiğini hissediyorum.	1	2	3	4
9. Önemsiz şeyler hakkında endişelenirim.	1	2	3	4
10. Genellikle mutluyum.	1	2	3	4
11. Her şeyi ciddiye alır ve endişelenirim.	1	2	3	4
12. Genellikle kendime güvenim yoktur.	1	2	3	4
13. Genellikle kendimi emniyette hissedirim.	1	2	3	4
14. Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınırım.	1	2	3	4
15. Genellikle kendimi hüzünlü hissedirim.	1	2	3	4
16. Genellikle hayatımdan memnunum.	1	2	3	4
17. Olur olmaz düşünceler beni rahatsız eder.	1	2	3	4
18. hayal kırıklıklarını öylesine ciddiye alırım ki hiç unutamam.	1	2	3	4
19. Akli başında ve kararlı bir insanım.	1	2	3	4
20. Son zamanlarda kafama takılan konular beni tedirgin eder.	1	2	3	4

A.5. THE BELONGING SCALE

Lütfen aşağıdaki soruları dikkatlice okuyunuz ve size en yakın olan cevabı işaretleyiniz.

		Hiç Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Tamamen Katılıyorum
1.	İhtiyaç duyduğumda bana destek olacak çok arkadaşım var.	1	2	3	4	5
2.	Kendimi, eğitimini aldığım mesleğe ait hissetmiyorum.	1	2	3	4	5
3.	İçtenlikle kabul edildiğim bir arkadaş grubum var.	1	2	3	4	5
4.	Eğitimini aldığım mesleği yapma fikri beni heyecanlandırıyor.	1	2	3	4	5
5.	Gerektiğinde ailemin bana destek olacağını biliyorum.	1	2	3	4	5
6.	Eğitimini aldığım mesleğin bir parçası olacağıma inanıyorum.	1	2	3	4	5
7.	Keyifli vakit geçirdiğim gerçek dostlarım var.	1	2	3	4	5
8.	Eğitimini aldığım mesleği yapmak için sabırsızlanıyorum.	1	2	3	4	5
9.	Ailemle aramızda bana huzur veren bir bağ var.	1	2	3	4	5
10.	Arkadaş grubumda aranan birisiyim.	1	2	3	4	5
11.	Ben, eğitimini aldığım meslek için yaratılmışım.	1	2	3	4	5
12.	Kendimi ailemin yanında güvende hissedirim.	1	2	3	4	5
13.	Arkadaş grubum beni mutlu ediyor.	1	2	3	4	5
14.	Eğitimini aldığım meslekle ilgili hiçbir işle ilgilenmiyorum.	1	2	3	4	5
15.	Ailemle birlikte vakit geçirmekten hoşlanırım.	1	2	3	4	5
16.	Eğitimini aldığım mesleğe yönelik etkinliklere katılmaktan hoşlanırım.	1	2	3	4	5
17.	Ailemin beni önemseydiğini hissediyorum.	1	2	3	4	5
18.	Sırlarımı paylaşabildiğim arkadaşlarım var.	1	2	3	4	5
19.	Ailemle ilişkilerimde anlaşıldığımı hissedirim.	1	2	3	4	5
20.	Gelecekte sahip olacağım mesleğin, yaşamımda anlamlı bir yeri olacağını düşünüyorum.	1	2	3	4	5
21.	Arkadaş grubumdakilerle yabancı gibiyiz.	1	2	3	4	5
22.	Fırsatım olsa, gelecekte, eğitimini aldığım mesleği yapmak istemem.	1	2	3	4	5

A. 6. DARK FUTURE SCALE

Aşağıdaki ifadelerin her birinin size ne derece uyduğunu, yanındaki kutucuklarda yer alan “0= Kesinlikle Yanlış” ile “6= Kesinlikle Doğru” arasındaki rakamlardan yalnızca birinin üstüne (X) işareti koyarak gösteriniz.

0 - Kesinlikle Yanlış; 1- Yanlış; 2 – Biraz Yanlış; 3 – Söylenmesi Zor; 4 – Biraz Doğru; 5 – Doğru; 6 – Kesinlikle Doğru

	Kesinlikle Yanlış	Yanlış	Biraz Yanlış	Söylenmesi Zor	Biraz Doğru	Doğru	Kesinlikle Doğru
1. Şu an beni rahatsız eden sorunların uzun süre devam edeceğinden korkuyorum.	0	1	2	3	4	5	6
2. Hayatın krizleriyle ya da zorluklarıyla yüz yüze gelebileceğim düşüncesiyle zaman zaman dehşete düşüyorum.	0	1	2	3	4	5	6
3. Hayatımın gelecekte kötüleşebileceğinden korkuyorum.	0	1	2	3	4	5	6
4. Ekonomik ve politik durumdaki değişikliklerin geleceğimi tehdit edeceğinden korkuyorum.	0	1	2	3	4	5	6
5. Gelecekte hedeflerimi gerçekleştiremeyeceğim düşüncesi beni rahatsız ediyor.	0	1	2	3	4	5	6

A.7. DIMENSIONS OF IDENTITY DEVELOPMENT SCALE

Aşağıda sizin kendinizi tanımlamanıza ilişkin 25 ifade bulunmaktadır. Lütfen her bir ifadenin sizi ne kadar tanımladığını, ifadenin yanında verilen kutucuğu işaretleyerek belirtiniz. Her ifade için yalnızca bir kutucuğu işaretleyiniz

		Hiç Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Tamamen Katılıyorum
1.	Yaşamımda izleyeceğim yöne karar verdim.	1	2	3	4	5
2.	Gelecekte yapacaklarımla ilgili planlarım var.	1	2	3	4	5
3.	Yaşamımda hangi yolu izleyeceğimi biliyorum.	1	2	3	4	5
4.	Gelecekte yapacaklarıma ilişkin düşüncem var.	1	2	3	4	5
5.	Yaşamımda ne yapacağım konusunda seçimimi yaptım.	1	2	3	4	5
6.	Yaşamımda izleyebileceğim farklı yollar hakkında etkin biçimde düşünürüm.	1	2	3	4	5
7.	Gelecekte yapabileceğim farklı şeyler hakkında düşünürüm.	1	2	3	4	5
8.	Bana uyabilecek birtakım farklı yaşam biçimlerini göz önünde bulunduruyorum.	1	2	3	4	5
9.	İzleyebileceğim farklı amaçlar hakkında düşünürüm.	1	2	3	4	5
10.	Benim için iyi olabilecek farklı yaşam biçimleri hakkında düşünüyorum.	1	2	3	4	5
11.	Yaşamda gerçekten elde etmek istediklerim konusunda kuşkularım var.	1	2	3	4	5
12.	Gelecekte yapmak istediklerim konusunda endişeliyim.	1	2	3	4	5
13.	Yaşamımda izlemek istediğim yönü arayıp duruyorum.	1	2	3	4	5
14.	Yaşamımın ne yönde olması gerektiğini merak edip duruyorum.	1	2	3	4	5
15.	Yaşamımda izleyeceğim yönü düşünmemek benim için zor.	1	2	3	4	5
16.	Gelecekle ilgili planlarım, gerçek ilgi ve değerlerimle örtüşüyor.	1	2	3	4	5
17.	Gelecekle ilgili planlarım bana güven veriyor.	1	2	3	4	5
18.	Gelecekle ilgili planlarımın olması, kendime güven duymamı sağlıyor.	1	2	3	4	5
19.	Yaşamıma vermek istediğim yönün bana gerçekten uygun olacağını hissediyorum.	1	2	3	4	5
20.	Gelecekle ilgili planlarımın benim için doğru olduğundan eminim.	1	2	3	4	5
21.	Gelecek için yaptığım planlar üzerine düşünürüm.	1	2	3	4	5
22.	Gelecekle ilgili yapmış olduğum planlar hakkında başkalarıyla konuşurum.	1	2	3	4	5
23.	Yaşamım için belirlediğim hedeflerin bana gerçekten uyup uymadığını düşünürüm.	1	2	3	4	5

24.	Yaşamımda izlemeyi planladığım belli yön hakkında başkalarının ne düşündüğünü anlamaya çalışırım.	1	2	3	4	5
25.	Gelecek planlarımın gerçekten ne istediğimle uyuşup uyuşmadığını düşünürüm.	1	2	3	4	5



A.8. SPIRITUALITY SCALE

Aşağıdaki ifadelerin her birinin size ne derece uyduğunu, yanındaki kutucuklarda yer alan “1= Bana Hiç Uygun Değil” ile “5= Bana Tamamen Uygun” arasındaki rakamlardan yalnızca birinin üstüne (X) işareti koyarak gösteriniz.

(1) Bana Hiç Uygun Değil (2) Bana Uygun Değil (3) Bana Biraz Uygun (4) Bana Oldukça Uygun (5) Bana Tamamen Uygun

		Bana Hiç Uygun Değil	Bana Uygun Değil	Bana Biraz Uygun	Bana Oldukça Uygun	Bana Tamamen Uygun
1	Yaşanan olumsuzluklar karşısında maneviyata sığınırım.	1	2	3	4	5
2	Sıkıntılı zamanlarda yaşadıklarımın bir imtihan olduğunu düşünürüm.	1	2	3	4	5
3	İnancım bana huzur verir.	1	2	3	4	5
4	Zor zamanlarda dua ederek huzur bulurum.	1	2	3	4	5
5	Yaşamımı inancıma göre sürdürürüm.	1	2	3	4	5
6	Ahret hayatında bu dünyada yapılan her şeyin hesaba çekileceğine inanırım.	1	2	3	4	5

A.9. FAGERSTRÖM NICOTINE DEPENDENCE SCALE

1. İlk sigaranızı sabah uandıktan ne kadar sonra içersiniz?
 - a. Uandıktan sonraki ilk beş dakika içinde
 - b. 6 – 30 dakika içinde
 - c. 31 – 60 dakika
 - d. Bir saatten fazla

2. Sigara içmenin yasak olduđu örneğın; otobüs, hastane sinema gibi yerlerde bu yasağa uymakta zorlanıyor musunuz?
 - a. Evet
 - b. Hayır

3. İçmeden duramayacağınız, diğeri bir değışle vazgeçemeyeceğınız sigara hangisidir?
 - a. Sabah içtiğim ilk sigara
 - b. Diğeri herhangi biri

4. Günde kaç adet sigara içiyorsunuz?
 - a. 10 adet veya daha az
 - b. 11 – 12
 - c. 21 – 30
 - d. 31 veya daha fazlası

5. Sabah uyanmayı izleyen ilk saatlerde, günün diğeri saatlerine göre daha sık sigara içer misiniz?
 - a. Evet
 - b. Hayır

6. Günün büyük bölümünü yatakta geçirmenize neden olacak kadar hasta olsanız bile sigara içer misiniz?
 - a. Evet
 - b. Hayır

APPENDIX B

B.1. EXAMPLES OF INTERVIEW QUESTIONS

Example of Semi-Structured Interview Questions

1. Tütün Kullanım Geçmişi / History of Tobacco Use

- Düzenli sigara kullanmaya ne zaman başladın? / When do you start smoking regularly?
- Ne oldu da düzenli kullanmaya başladın? / What happened, you started using it regularly
- Genel olarak ne sebeple sigara içersin? / For what reason do you smoke generally?

2. Social Life and Identity / Sosyal Hayat ve Kimlik

- Şimdi senden son zamanlarda yaşadığınız sıkıntılı bir anımı düşünmeni istiyorum; / Now I would like you to think about a trouble moment you have had;
 - Aklınıza kimler geliyor? / Who comes to your mind?
 - Bu insanlarla ilişkini nasıl tanımlarsın? / How do you describe your relationship with these people?
 - Bu kişiler sigara içiyorlar mı? / Do these people smoke?
 - Onlarla genellikle nasıl vakit geçirirsin? / How do you usually spend time with them?

3. Toplumsal Cinsiyet ve Sosyal Normlar / Gender and Social Norms

- Sigara içen ve içmeyen insanların arasında fark olduğunu düşünür müsün? / Do you think there is a difference between smokers and non-smokers?
 - Toplumsal cinsiyet bağlamında, / in the context of gender,
 - Sosyal norm bağlamında. Örn. otobüs durağı, yürüyerek sigara içme / in the context of social norms, e.g. bus station, smoking while walking

4. Maneviyat / Spirituality

- Bana bir önceki anket çalışmasında inanç ile olan ilişki konusunda “....” seviye demiştin. Peki hayatın zorluklarıyla baş etmen gerektiğinde neler yaparsın? / In the previous survey, you told me about the your belief as “..” level. So, what do you do when you need to deal with the challenges of life?

- Sigara kullanımının dini inancınla nasıl ilişkili? / How is smoking related to your religious belief?
- Ramazan / Ramadan

5. Life Transition and Future Anxiety / Hayata Yön Verme ve Gelecek Kaygısı

- Araştırmalar bizim yaş grubunda gelecek kaygısı olabileceğini söylüyor. Sen bu gelecek kaygısını nasıl tanımlarsın? / Research says our age group may have future anxiety. How would you describe this future anxiety?
- Kaygılı düşüncelerin ne zaman yoğunlaşıyor? / When do your anxious thoughts intensify?
- Seni endişelendiren olayları düşündüğünde sigara bunun içine nasıl oturuyor? / How does the cigarette fit into it when you think about the events that worry you?

6. Dürtüsellik / Impulsivity

- Normal sigara içme sayının ne sıklıkla üstüne çıkarsın? / How often do you exceed the normal number of cigarettes?
- Ne oluyor da sigara içme sayın artıyor? / What is happening, your number of smoking is increasing?
- Duygu durumun içtiğin sayıyı nasıl etkiler? / How does your emotion influence the number you smoke?
 - Sevinçli/üzüntülü/kaygılı/mutlu / sad / worried / happy.

B.2. CODE LIST

- 1. Bagimlilik**
- 2. Baslama nedeni**
- 3. Current smoking status**
- 4. Effect of cigarette**
- 5. İlk deneyim**
- 6. Initiation**
- 7. Meaning of cigarette**
- 8. Rutin**
- 9. Sigara hakkında yargi**
- 10. Sigara icis sekli**
- 11. Sigara kullanim nedeni**
- 12. Utility**
- 13. Aile**
- 14. Amfi**
- 15. Arkadas**
- 16. Grup**
- 17. Identity exploration**
- 18. Kendine zarar verme**
- 19. Kendini idade edis sekl**
- 20. Kimlik**
- 21. New friends**
- 22. Okul**
- 23. Paylasim**
- 24. Sohbet**
- 25. Sosyal cevre**
- 26. Sosyallik**
- 27. Alkol**
- 28. Alkol ve sigara**
- 29. Artis azalis**

30. Birakma
31. Birakma deneyimi
32. Heyecan ve sigara
33. Impulsivity
34. Kahve
35. Urge
36. Uyku
37. Sigara ve yemek
38. Sigara ve kilo
39. ay-sigara
40. Emotion
41. Gelecek kaygisi
42. Gelecek kaygisi ve sigara
43. Negative affect
44. Negative life experience
45. Positive affect
46. Stress
47. Stress ve sigara
48. Yogunluk
49. Maneviyat
50. Maneviyat ve sigara
51. Ramazan
52. Golden
53. Gender
54. Impression
55. Norm
56. Sigara iicen kisi
57. Social learning
58. Social norms