



How Do Personality Traits Influence Adolescents' Career Anxiety and Self-Efficacy in Making Career Decisions?

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ABSTRACT

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The aim of this study was to search for the links between adolescent career anxiety, career decision-making self-efficacy, and adjective-based personality traits, as well as to see how predictive adjective-based personality qualities are for career anxiety and decision-making self-efficacy. A total of 710 students, 511 girls (72%) and 199 boys (28%) from various high schools in Istanbul, Turkey, made up the research group. Predictive correlational model was used in the analysis of the data while Career Anxiety Scale, Career Decision-Making Self-Efficacy Scale and Adjective-Based Personality Scale were used as data collection tools. After providing the normality assumptions and checking extreme values, data analysis was carried out. Standard multiple regression analysis was performed to examine the predictive potential of personality traits based on adjectives on career anxiety and career decision-making self-efficacy, while Pearson Correlation analysis was utilized to determine the relationship between the variables. As a result of the study, several significant correlations between adolescent career anxiety, career decision-making self-efficacy, and adjective-based personality traits were discovered. It was also discovered that adjective-based personality traits predicted career anxiety and competence expectation in career decision-making.

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INTRODUCTION

The Career is the succession of events that occur throughout one's life, including advances, pauses, and regressions in employment and profession (Özyürek, 2016; Yeşilyaprak, 2019). Along with these changes that individuals experience throughout their lives, their development processes can also be affected by various positive or negative emotions such as anxiety (Baltes, 1987). One of the frequently encountered situations during adolescence that negatively affect career development and specifically career choice is *career anxiety* (Vignoli, Croity-Belz, Chapeland, Fillipis, and Garcia 2005).

Career anxiety is the fear of failure that negatively affects the career development of the individual (Vignoli, 2015) and such an indecision affects career choice and career development (Tsai, H. Hsu, & Y.C. Hsu, 2007). It is a concept that addresses the detrimental impacts of career development brought on by a lack of information (Pisarik, Rowell, & Thompson, 2017) and the negative emotions experienced during career decision-making process (Fouad, 2007; Saka et al., 2008). In some cases, some certain amount of anxiety when making career-related decisions can help individuals prepare themselves for career-related tasks (Cho, 2008; Harren, 1979). However, if the anxiety experienced reaches to an uncontrollable level, it ceases to be beneficial and may negatively affect the career choice of the individual (Shin & Lee, 2019). Adolescents in transition, such as those choosing a higher education program in the formal school system, might be considered as an important group in this regard because their decisions may have long-term consequences on their career development.

There are some studies on *career anxiety* of adolescents (e.g., (Campagna & Curtis, 2007, p.94; Corkin et al., 2008, p. 87; Daniels et al., 2011, p. 417; Hawkins et al., 1977, p. 401; Kaplan and Brown, 1987; Peng, 2005, p. 300) which mostly examine the relationship between career or vocational indecision and anxiety. It is widely assumed that university students comprise the majority of the sample group in relevant studies, and high school teenagers are the subject of a small proportion of them. The findings of these research suggest that there is a positive association between anxiety and career or vocational indecision, and that trait anxiety is more helpful than state anxiety in reducing career anxiety. Furthermore, it has been discovered that adolescent anxiety during the career development process is often linked to exam anxiety, future anxiety, and unemployment anxiety (Alkan, 2014; Ayyıldız, 2015: 182; Kaya & Varol, 2004; Şanlı Kula & Saraç, 2016, p. 240). When the relationship between vocational indecision and career anxiety in high school students is examined, it is observed that as the students' vocational indecision grows, their career anxiety regarding choosing a profession grows as well (Nalbantoğlu Yılmaz & Çetin Gündüz, 2018b, p. 41).

Another psychological factor affecting the career development of adolescents is supposed to be *career decision-making self-efficacy*. A similar concept of efficacy expectation was first used in the literature in Bandura's (1977) social learning theory (Dursun & Kara, 2019). In his theory, Bandura (1977) defined efficacy expectancy as the sum of an individual's ability and perceptions on any subject. The concept of career self-efficacy was first explained in social cognitive career theory (Betz & Hackett, 1981). Career decision-making self-efficacy is individuals' confidence in their ability to fulfill and perform tasks related to career choice and commitment (Taylor & Betz, 1983); an important situation that guides individuals and affects their career development (Betz, 2007; Klassen & Chiu, 2010). It can be defined as the individual's beliefs about himself/herself (Betz & Hackett, 1981) regarding the individual's ability to fulfill the career development tasks expected from him/her during the career development period he/she is in. Showing skills in self-assessment, conducting research on the professions one wishes to pursue, creating objectives, preparing for the purpose, and problem-solving behaviors are some examples of career development tasks that are strongly associated to this notion (Crites, 1976). Having a high level of career decision-making self-efficacy in fulfilling career development tasks is generally associated with positive career attitudes, high self-esteem and clearer professional identity (Choi et al., 2012). Individuals with a high level of career decision-making self-efficacy are more likely to participate in career exploration and planning activities, identify career interests, constantly work towards career goals, and have greater success (Hou, Wu, & Liu, 2014). Maintaining a high level of career decision-making self-efficacy is a positive indicator that adolescents take initiative in career research and planning activities to identify and further

refine their career interests and career goals (Lent et al., 2000). On the contrary, low career decision-making self-efficacy levels are often associated with vulnerability to stress and depression (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001), as well as some career decision-making difficulties that lead to career indecision (Gati et al., 2011).

Research on career decision-making self-efficacy in adolescents report a positive and significant relationship with career decision-making self-efficacy and family social support (Xing & Rojewski, 2018), stronger sense of self-identity (Kim & Yang, 2019), career research behaviors (Blustein, 1989), career maturity and career adjustment (Chung, 2002; Patton & Creed, 2001) while a negative relationship with career indecision (Taylor, Klein, & Betz, 1996) is reported. Additionally, research findings (Gushue, Clarke, Pantzer, & Scanlan, 2006) demonstrate that self-efficacy in career decision-making clearly depicts professional identity and enhances people's behavior while considering their career options. Also, evidence (i.e., Abidin et al., 2019) suggests that gifted students have stronger self-efficacy in vocational decision-making than their non-gifted classmates. It is also stated that people who have high career decision-making self-efficacy are more focused on their goals than those with a low expectation of making a career plan, participating in the career research process, and making career decisions (Rogers, Creed, & Glendon, 2008).

Personality traits are another psychological aspect that influences how adolescents pursue their careers. According to studies, personality traits have a substantial impact on choosing a career (Yeşilyaprak, 2012). Systems that encompass all of an individual's overall emotional, physical, and intellectual traits are referred to as their personality (Bacanlı, İlhan, & Aslan, 2009; Burger, 2006; Yelboğa, 2006). To put it another way, personality is described as a set of structures that include all psychological and physiological aspects in order to comprehend an individual's emotional, behavioral, and cognitive features (Mount et al., 2005). Five factor personality theory (McCrae & Costa, 1985), which is one of the approaches to explain personality, attempted to unify the idea of personality by taking into account the previous definitions. Studies related to this approach show that explanations about personality can be grouped under five different concepts. These concepts can be named as extraversion, neuroticism, agreeableness, conscientiousness and openness to experience which can be briefly defined as follows:

- *Extraversion*; It represents the friendly, social and affectionate aspects of individuals who love to have fun, are talkative, like to joke, like to win (McAdams, 2008; McCrae & Costa, 1985). Individuals with this characteristic are those who like to establish good relations with other people, have a positive outlook on life, and have developed social relations with their environment. Individuals with this feature care about those around them and also expect other people to notice them (Barrick & Mount, 1991).
- *Agreeableness*; Individuals with this personality trait are more likely to cooperate with others. These individuals are friendly towards others and come to the fore with their social, kind, tolerant, forgiving, warm and reassuring and collaborative nature (Glass, Prichard, Lafortune, & Schwab, 2013; Kayadibi, 2019).
- *Conscientiousness*; People with this trait are distinctive with their self-control and self-discipline features. They act in a planned manner and proceed with determination towards their plan. Individuals with these characteristics are known for being organized, hard, meticulous, and responsible, as well as being effective, competent, attentive, and practical at work (McCrae & Costa, 1985).
- *Neuroticism*; This concept corresponds to the state of neuroticism. While people with a high level of this trait feel restless, anxious and stressed, those with low levels are more balanced, harmonious and able to cope with stress (Glass, Prichard, Lafortune, & Schwab, 2013; Lounsbury & Gibson, 2009). Individuals with this personality trait are more likely to use their emotional characteristics to deal with challenges or stress in their life (Kayadibi, 2019).
- *Openness to experience*; It encompasses people's openness to life experiences and multiple interests. Individuals with this personality trait are known for their knowledge-seeking, adventurous, creative, imagination and curious aspects (Bozzoneles, 2014).

As can be seen, the majority of participants in studies on personality traits based on the five-factor personality theory are college students. According to these studies, an individual's personality traits can be influenced by both personal and systemic variables. In their study examining five factor personality traits, career success, and general mental ability, Judge et al. (1999) found that personality traits positively predicted intrinsic (i.e., career satisfaction) and extrinsic (i.e., income and job status) career success. Furthermore, neuroticism was found to be a negative predictor of external career success and a favorable predictor of overall mental capacity. In a research by Seibert and Kraimer (2001) with employees from various professions and business fields; it was found that extraversion was positively related to salary level, promotion and career satisfaction; neuroticism was negatively related to career satisfaction; agreeableness was negatively related only to career satisfaction; and openness to experience trait was negatively related to salary level. Lounsbury, Hutchens, and Loveland (2005), in another study examining the relationship between career indecision and personality traits of middle and high school students, also found that career decision-making status of students was positively related to personality traits of conscientiousness, openness to experience, and agreeableness. Besides, neuroticism personality trait was found to be negatively related to career decision making. Kayadibi (2019) found a significant negative relationship between career anxiety and conscientiousness and agreeableness, and a positive relationship between neuroticism in his study with high school students. Hoseinifar et al. (2011) showed a negative significant association between creativity and neuroticism in a study of high school students, but a positive significant relationship between creativity and extraversion, as well as agreeableness, self-control, and openness to experience.

Given the content, purpose, and, in particular, the features of the populations studied in the literature, it can be concluded that this study will make a significant contribution to knowledge about the effect of personality traits on career anxiety and self-efficacy in adolescents' career decision-making. The relationship between adolescents' career anxiety, career decision-making self-efficacy, and personality traits are also investigated in this study, which is probing to what extent adjective-based personality factors predict career anxiety and career decision-making self-efficacy.

METHOD

In this section, information about the research design, participants, measurement tools and data analysis are given.

Research Design

The link between career decision-making self-efficacy and career anxiety, as well as the extent of personality trait prediction on these variables, were examined in this study using the predictive correlational analysis technique. In order to evaluate the correlations between the variables, this analysis is performed to determine the predictive potential of the unknown variable based on the known value. If the number of predictor variables is two or more, such correlational designs are called multifactorial (Büyüköztürk et al., 2014).

Participants

The study group of the research consists of students from different high schools in Arnavutköy district of Istanbul. Of the participants, 511 (72.0%) were girls and 199 (28.0%) were boys, and the ages of the participants ranged from 14 to 19. Of the participants, 202 (28.5%) were 9th graders, 219 (30.8%) 10th graders, 156 (22.0%) 11th graders, and 133 (18.7%) were 12th grade students. Demographic information about the participants is given in Table 1.

Table 1. Demographic information of the participants

	Frequency (f)	Percentage (%)
9th Grade	202	28.5
10th Grade	219	30.8
11th Grade	156	22.0
12th Grade	133	18.7
Girls	511	72.0
Boys	199	28.0
Total	710	100.0

Research Instruments

Research data were collected using the Career Anxiety Scale, the Career Decision-Making Self-Efficacy Scale, and the Adjective-Based Personality Scale. Below is a summary of these measurement instruments.

Career Anxiety Scale: It was developed by Gündüz and Yılmaz (2016) to determine the career anxiety of adolescents in their professional development processes. The scale consists of two sub-dimensions (anxiety about career choice and anxiety about family influence) and 14 items. Within the scope of the scale's internal consistency reliability, the cronbach's alpha value for the anxiety about career choice sub-dimension was found to be .797, and the cronbach alpha value for the anxiety about family effect sub-dimension was .742. Goodness-fit indices of the scale were reported as; $\chi^2/sd=2.518$, RMSEA=0.067, CFI=0.95, NFI=0.92, NNFI=0.94, SRMR=0.055, GFI=0.92 and AGFI=0.90. The item-factor loadings were between .399 and .588 in the anxiety about family effect sub-dimension; In the sub-dimension of anxiety about choosing a profession, it was found to be between .313 and .577.

Adjective-Based Personality Test: It was developed by Bacanlı, İlhan, and Aslan (2007) to determine the personality traits of adolescents. In their study on construct validity, it was revealed that the scale consisted of five sub-dimensions and 40 items: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These five dimensions explained 52.6% of the total variance. In the external criterion validity study, the Sociotropy Scale, Conflict Response Scale, Negative-Positive Emotion Scale, and Trait Anxiety Inventories were used, and the external criterion validity of the scale was found to be sufficient. The Cronbach Alpha internal consistency coefficient, which was also repeated for this study, was found to be .92 for the whole scale.

Career Decision-Making Self-Efficacy Scale: It was developed by Betz, Klein, and Taylor (1996) and adapted into Turkish by Işık (2010). The scale consists of 25 items. As the scores obtained from the scale increase, the career decision competence expectations of the individuals increase. In the reliability analysis results; The Cronbach alpha internal consistency value was found to be .88. The validity study was examined with the confirmatory factor analysis method and the fit index values; GFI = .90, AGFI = .90, CFI = .92, RMSEA = .048, SRMR=.078 (Işık, 2010). The Cronbach alpha internal consistency value, which was repeated for the study, was found to be .89.

Data Analysis

Standard multiple regression analysis was used to determine the effectiveness of adjective-based personality traits in predicting career decision-making difficulties and self-efficacy, and Pearson correlation analysis was used to determine the relationship between career decision-making self-efficacy, career decision-making anxiety, and personality traits. Prior to data analysis, the Mahalanobis distance was computed for the extreme values in the data set. Data from the remaining 710 participants were used for the analyses after the data that did not fit this requirement was removed. Additionally, it was determined whether the data set adheres to the following assumptions before performing the standard multiple regression analysis (Can, 2018);

- Variables are scored at least with the interval scale and show normal distribution,

- Absence of autocorrelation,
- The predicted variables are independent from each other, that is, there is no high correlation between the variables,
- There is a linear (significant) relationship between the predictor and the predicted variables.

As a first step, the assumption of normality was examined. The kurtosis and skewness values were checked for the assumption of normality, and it was found that these values were normally distributed ranging between +1 and -1 (Morgan, Leech, Gloeckner, & Barrett, 2012), as seen in Table 2.

Table 2. *Descriptive analyzes of participants' career anxiety, career decision-making self-efficacy, and personality traits*

	n	\bar{x}	Sd	Kurtosis	Skewness
1. Career Anxiety	710	37.2002	12.61781	.159	-.347
2. Career Decision-Making Self-Efficacy	710	89.7800	16.18250	-.444	.210
3. Neuroticism	710	26.0147	7.25315	.082	-.097
4. Extraversion	710	44.0298	10.25964	-.412	-.295
5. Openness to Experience	710	40.9898	7.97096	-.500	.080
6. Agreeableness	710	46.5833	9.47291	-.623	.367
7. Conscientiousness	710	36.0750	8.08733	-.546	.016

In the second step, the emergence of autocorrelation in the analysis which may be as a consequence of improper type of analysis, not including some variables in the model or incorrect analysis (Uysal and Günay, 2001, p.278) is inspected. Durbin-Watson d value was examined in order to determine the autocorrelation between the variables. The acceptable value of Durbin Watson d value is between 1.5 - 2.5 (Field, 2005). As a result of this analysis, Durbin Watson d values of 1.915 and 1.931 show that the assumption of multiple regression analysis is met.

As the third step, variance amplification factor and tolerance values were calculated. Multicollinearity is the predictor of the selected variables, and the correlational relationship between at least two variables is very high (Kacar & Sariçam, 2015). Since a high correlation between the variables means that the variables measure the same things, one of the variables should be excluded from the analysis. It is necessary for this assumption that the variance amplification factor value is less than 10 and the tolerance value is greater than 0.2 (Field, 2005). In this study, the tolerance value related to the prediction of career anxiety and career decision-making self-efficacy was in the range of .46 - .88, and the variance amplification factor value in the range of 1.13 - 2.17. These findings can be interpreted as there is no problem of multicorrelation between the variables.

Finally, the correlation values between the variables were examined in order to determine the relationship levels between the predictor and the predicted variables. If the correlation coefficient is between 0 and 0.30, there is no relationship between the variables, if it is between 0.31 and 0.49, there is a weak relationship between the variables; Between 0.50 – 0.69 is a moderate relationship; If it is between 0.70 and 1.00, it is interpreted as a high (strong) relationship (Büyüköztürk et al., 2014). After providing the aforementioned assumptions for multiple regression analysis, the analysis was carried out using the Statistical Package Program for Social Sciences (SPSS 25.0).

Ethic

Ethics committee approval was obtained from TED University Human Subjects Ethics Committee (Approval Nr. 27535802-199) in 05 November 2020.

FINDINGS AND DISCUSSION

This research sought to determine the predictive relationship between adolescent personality traits, career anxiety, and career decision-making self-efficacy. The results of the initial Pearson correlation analysis, which was done to identify the relationship between career anxiety, career decision-making efficacy expectation, and personality traits based on adjectives, are shown in Table 3.

Table 3. Relationships between career anxiety, career decision-making competence and personality traits

	1	2	3	4	5	6	7
1. Career Anxiety	1						
2. Career Decision-Making Self-Efficacy	-.45**	1					
3. Neuroticism	.20**	-.24**	1				
4. Extraversion	-.24**	.42**	-.04	1			
5. Openness to Experience	-.17**	.36**	.07	.67**	1		
6. Agreeableness	-.07	.20**	-.07	.48**	.53**	1	
7. Conscientiousness	-.23**	.40**	-.11**	.60**	.55**	.58**	1

(*p<0.05, **p<0.01)

Table 3 shows a positive and significant relationship ($r = .20$, $p < .01$) between career anxiety and neuroticism, one of the personality sub-dimensions based on adjectives, extraversion ($r = -.24$, $p < .01$). A negative significant relationship was found between openness to experience ($r = -.17$, $p < .01$) and conscientiousness ($r = -.23$, $p < .01$). No significant relationship was found between career anxiety and agreeableness ($r = -.07$, $p > .05$). Among the personality sub-dimensions a significant positive correlation was found between, extraversion ($r = .42$, $p < .01$), openness to experience ($r = .36$, $p < .01$), agreeableness ($r = .20$, $p < .01$), and conscientiousness ($r = .40$, $p < .01$) and a negative significant relationship was found with neuroticism ($r = -.24$, $p < .01$) sub-dimension.

Personality traits as predictors of career anxiety

Standard multiple regression analysis was used to determine which personality traits may be predicting career anxiety and the results are shown in Table 4.

Table 4. Standard multiple regression analysis results of personality traits as predictors of career anxiety

	B	Sd	β	T	p	Dual r	Partial R
(Constant)	41.526	3.147		13.194	.000		
Extraversion	.328	.063	.188	5.208	.000	.198	.193
Agreeableness	-.197	.063	-.160	-3.118	.002	-.238	-.117
Neuroticism	-.100	.081	-.063	-1.227	.220	-.170	-.046
Openness to Experience	.207	.061	.155	3.382	.001	-.068	.126
Conscientiousness	-.270	.077	-.173	-3.490	.001	-.234	-.130
R= .34	R ² =.12						
F _(5,704) = 18.499	p= .000						

According to the results of the multiple regression analysis, personality traits of conscientiousness, agreeableness, openness to experience and extroversion predict 12% of career anxiety while neuroticism does not seem to have a significant ($R=0.34$, $R^2=0.12$, $p < .05$) predictive contribution. Using the standardized regression coefficient (β) as a guide, the relative important predictor variables on career anxiety are; extraversion, conscientiousness, agreeableness, openness to experience, and neuroticism respectively. Extraversion, agreeableness, openness to experience, and conscientiousness are significant predictors of career decision-making self-efficacy when the t-test results regarding the significance of the regression coefficients are evaluated. The neuroticism variable, on the other hand, does not have a significant effect on career anxiety.

making self-efficacy. The sum of the five aforementioned variables explains around 28% of the variance explained in self-efficacy in career decision-making.

According to the standardized regression coefficient (β), the relative importance of the predictor variables on career decision-making self-efficacy is explored as; conscientiousness, extroversion, agreeableness, neuroticism, and openness to experience. Extraversion, agreeableness, neuroticism, openness to experience, and conscientiousness are significant predictors of career decision-making self-efficacy when the t-test results regarding the significance of the regression coefficients are assessed.

The neuroticism sub-dimension of personality traits was found to have a negative significant relationship with career decision-making self-efficacy. In other words, as neuroticism increases, so does self-efficacy in making career decisions. In addition, the sub-dimensions of extraversion, agreeableness, openness to experience, and conscientiousness were found to have a positive and significant link with the career decision-making self-efficacy. Extraversion, agreeableness, openness to experience, and conscientiousness are personality qualities that predict high self-efficacy expectations for career decision-making. There are studies on this topic that draw conclusions that are comparable in the literature. Penn (2016) discovered a positive and significant relationship between career decision-making self-efficacy and extraversion and conscientiousness, while neuroticism was found to have a negative significant relationship. Meanwhile Bailey (2002) identified positive and significant relationships between career decision-making self-efficacy and openness to experience, conscientiousness, and extroversion, he found no correlation between agreeableness and neuroticism. In another study, Chadick (2018) discovered a positive relationship between career decision-making self-efficacy and openness to experience, conscientiousness, extroversion, and agreeableness; however, neuroticism was found to have a negative significant relationship. Sarçam (2013) found that self-efficacy perception and decision skills, which are quite similar to the competency expectation investigated in this study, can be useful in making career decisions. Individuals' career decision-making self-efficacy (Taylor & Betz, 1983) is directly related to their ability to fulfill and accomplish tasks related to job choice and commitment, according to self-efficacy expectation. According to studies on career decision self-efficacy (Bullock-Yowell, Andrews, & Buzzetta, 2011; Jin, Watkins, & Yuen, 2009; Wang et al., 2006), there was a positive and significant relationship between career decision self-efficacy and openness to experience, conscientiousness, extroversion, and agreeableness, while negative significant relationships were explained by neuroticism.

CONCLUSION

These findings can be considered to have some significance for adolescents' career decision-making, given the characteristics that influence self-efficacy and career anxiety in career decision-making. Although there are studies in the literature that show relationships between personality traits and career anxiety (Chamorro-Premuzic et al. 2008; Kayadibi, 2019; Vreeke & Muris, 2012) and career decision-making self-efficacy (Bailey, 2002; Chadick, 2018; Penn, 2016), the fact that this research revealed the relationship between career anxiety, career decision-making self-efficacy, and personality traits can be considered an important contribution. Significantly predicting career anxiety (12%) and career decision-making self-efficacy (28%) reveals that personality traits are important factors in the examination of career anxiety and career decision-making self-efficacy. In order to assist adolescents in making their career decisions, it is important to identify personality traits and take them into consideration in further studies. Even though there are studies on career decision-making self-efficacy or self-efficacy in the literature, further research that evaluate career anxiety and career decision-making self-efficacy in adolescents and their effects on career choice with various variables are recommended. Moreover, exploratory research into the determinants of career anxiety and self-efficacy in making career decisions may be valuable in highlighting the concerns that people face in this subject. Likewise, encouraging adolescents in the process of selecting a career to seek help from school counselors in order to explore their intellectual, emotional, and behavioral qualities as extensions of their personality traits can be facilitated. Thus, recognizing and supporting students' positive personality traits might help to reduce the anxiety they experience while making career decisions and increase their self-efficacy in making those decisions.

This study also has some important limitations. First and foremost, the participants were chosen using a convenient sampling method, which could restrict the generalizability of the study's findings. Additionally, the assessment methods adopted for the study require students to report about themselves, which provides a constraint in terms of influencing students' willingness to provide the expected responses. In particular, determination of personality traits based on adjectives, notably descriptive terms believed to reflect the participants' own personalities, may have revealed a skewed response tendency toward social acceptance.

DECLARATIONS

The authors have no competing interests to declare that are relevant to the content of this article. Approval was obtained from the ethics committee of TED University, Ankara. The procedures used in this study adhere to the tenets of the Declaration of Helsinki and verbal informed consent was obtained prior to the interviews while an informed consent was given by all participants who completed other forms used in this study. No funds, grants, or other support was received.

DATA AVAILABILITY

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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