



# An Investigation of Friendship Quality, Attachment to Friends and Perceived Social Support from Friends as Predictors of Loneliness in Adolescents<sup>1</sup>

Research Article

Ayşe Nur KATMER<sup>2</sup>, Ahmet BUGA<sup>3</sup>, Idris KAYA<sup>4</sup>

<sup>2</sup>Ministry of National Education, ORCID: 0000-0002-2733-9325

<sup>3</sup>Gaziantep University, Faculty of Education, Department of Guidance and Psychological Counseling, Gaziantep, Turkey, ORCID: 0000-0002-9598-2451

<sup>4</sup>Gaziantep University, Faculty of Education, Department of Guidance and Psychological Counseling, Gaziantep, Turkey, ORCID: 0000-0001-9592-3347

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## ABSTRACT

The purpose of this study is to assess the predictive power of the variables of perceived social support from friends, friendship quality and attachment to friends, concerning the loneliness level of adolescents. The sample of research consists of 430 students, 239 female and 191 male, at the Anatolian high schools of the İskenderun district in Hatay province in the 2016-2017 academic year. The study data was obtained by using the Personal Information Form, UCLA Loneliness Scale, Perceived Social Support Scale, Friendship Quality Scale, and Adolescent Friendship Scale. Research variables were examined in terms of gender, education level of parents, number of siblings, family income level and class level by T-test, ANOVA, Kruskal Wallis H test. Hierarchical multiple regression analysis was used to determine the degree to which the variables of perceived social support, friendship quality, and attachment to friends predict loneliness. The study concludes that the perceived social support from friends, friendship quality and attachment to friends variables significantly predict loneliness. It was observed that loneliness, one of the research variables, did not differ according to gender, grade level, educational level of parents, number of siblings, or monthly income level of the family. On the other hand, it was seen that friendship quality and perceived social support differed significantly in terms of gender, and female students received more social support than male students. It was also seen that these variables did not differ significantly according to class level, educational level of parents, number of siblings, and monthly family income level. Finally, it was observed that the secure attachment subscale of the adolescent friendship attachment scale showed significant variations in favor of female students. All these results were discussed in the light of other studies in the literature within the context of adolescence, loneliness, social support, attachment, and friendship quality variables.

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### Keywords:

Adolescence, Loneliness, Perceived Social Support, Friendship Quality, Attachment to Friends.

## Introduction

Loneliness is the lack of social relations that an individual needs, or the lack of sincerity and sharing of emotions in existing social relations (Weiss, 1973). Gierveld (1998) on the other hand describes loneliness as

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<sup>2</sup> Corresponding author's address: Gaziantep University, Faculty of Education, Department of Guidance and Psychological Counseling, Gaziantep/Turkey.

Telephone: +90 342 3172772

e-mail: buga@gantep.edu.tr

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the lack of social relations in a person's life and the feeling of discomfort that this causes. Tarhan (1998) argues that loneliness is one of the most common problems of contemporary society today. Even though loneliness is generally associated with elderly people isolated from society or people who do not have a social environment, loneliness in its true sense is an emotional state experienced by anyone at any stage of their lives.

According to Peplau and Perlman (1982), loneliness stems from the difference between the social relationships that an individual dreams of having and the actual social relationships existing in real life. For this reason, loneliness does not exactly mean physical intimacy. Lake (1990) states that lonely people are often more prone to behaviors such as depression, anger, and misunderstanding. These people are more prone to self-pity and self-criticism and therefore tend to have dysfunctional social relationships. An individual's self-esteem who has difficulty in developing close relationships is also adversely affected. Kemple (1995) argues that there is an interactional link between shyness and loneliness and that these two emotions mutually affect each other. When Kamath and Kanekar (1993) examined the relationship between shyness, self-esteem, extraversion, and loneliness, they discovered that shyness and low self-esteem were positively correlated with loneliness and negatively correlated with extraversion.

Adolescence is when a person experiences loneliness at its most intense. According to Bilgiç (2000), adolescents go through the most radical changes in their lives. The individual wants to be alone as a result of physical changes, personality changes and identity formation, etc. Furthermore, during this period when individuals' interests shift from their family to their peers, adolescents feel the need strongly to become part of a group or community. Individuals who do not feel that they belong to a certain group during this period experience intense feelings of loneliness. In this context, loneliness is a common sentiment among adolescents when they start to enter peer groups and break away from their families, which are usually the strongest provider of moral support. For an adolescent who does not get the support and attention they thought they would from their peer group as opposed to the strong support provided by their family, loneliness emerges as an undesirable feeling that prevents healthy development. Studies have shown that adolescents who feel lonely are more susceptible to depression, have cognitive distortions, and think their social skills are worse than other adolescents who do not feel alone (Erim, 2001; Mutlu, 2014; Wittenberg & Reis 1986).

The self-imposed seclusion of the adolescent causes loneliness over time. When the literature is examined, it becomes apparent that it is necessary for an individual to be able to establish and maintain a relationship with their environment, to socialize and develop their social skills and also get on with their life in a healthy way outside of this relationship. In adolescence when individuals get closer with their peers rather than with their families, healthy attachment to friends is also very important for healthy relations and socialization of adolescents (Taştekin, 2016; Yücel, 2009). According to Bowlby (1973), attachment is a strong emotional bond that people develop towards others whom they respect in their lives. Bowlby's attachment theory is closely related to ethology, object relations and psychodynamic approaches (Bretherton, 2000). When the ethological approach of attachment theory is examined, it draws attention to the biological and evolutionary process of attachment behavior. A post-natal relationship based on trust develops between mother and child (Lieberman, Doyle & Markeiwicz, 1999). This relationship is cemented by the social support given by their father and any siblings (Wolchik, Wilcox, Tein&Sandler, 2000). The psychoanalytic aspect of this theory manifests itself in the belief that behaviors that occur during the attachment process will last for a lifetime (cited in: Baş, 2013). According to the attachment theory, which was posited by Bowlby in 1950, the main purpose of attachment is to meet the need for security. According to Bowlby, the secure relationship between a carer and infant during infancy also persists in adolescence and adulthood. By developing a secure attachment, the baby can express themselves with ease in their relations with siblings, teachers, friends, and romantic partners during childhood, adolescence, and adulthood. At the same time, such individuals are able

to cope with challenging situations in a healthy way when they experience stress during later stages of their lives (Deniz et al., 2004).

In longitudinal studies covering infancy and childhood, a continuous link was discovered between these two periods (Zimmerman & Becker-Stoll, 2002). Adolescence is a turning point for the child and the family. Adolescence is also a transition period for the attachment theory. Adolescents who try to become independent by getting away from their first attachment figures, their families, make an intense effort in the process. For an adolescent, it is “me and the others.” A one-way attachment relationship seen during childhood will give way to mutual relations during adolescence. Now, the individual does not merely trust others but also starts to be trusted by others (Allen & Land, 1999).

Adolescence is a period of great transformation for an individual. An individual goes through a gradual process of gaining autonomy. Seeing friends as attachment figures besides family members, an individual enters the world of multiple attachments (Sümer, 2006). Raja et al. (1991) have three arguments regarding the process of attachment during adolescence. The first argument concerns the adolescent gaining autonomy, with the attention shifting from family to friends. This situation explains the opposing position of family and friends in the process of attachment during adolescence. According to the second argument, attachment to parents and friends is independent of each other. Adolescents can develop an attachment to family members and friends at the same time. According to the third argument, attachment to family members and friends is positively associated with each other. The adolescent who has a healthy attachment to their family also establishes a healthy relationship with their friends. While attachment for an adolescent means moving closer to friends and away from the family, relationships are driven by a need for security. As the relationship develops, the need for developing familiarity with the environment and socialization is satisfied (Hazan & Shaver, 1994).

The attachment of an individual in childhood is more about the attachment of the baby to its caregiver. The caregiver meets the basic needs of the child. The attachment formed during this period is unilateral. In adolescence, the child becomes more extroverted in developing social skills. Peer relationships are now more important than family. There is no more room for one-sided attachments or for basic needs being met solely by the family. Attachment is no longer towards family members, but rather towards peers (Yücel, 2009).

The perceived social support by friends is also very important for an adolescent who tries to find a place for themselves in a peer group, during the process of gaining independence from the family in this period when social support is needed the most. Social support is an indispensable basic need for an individual to be able to overcome problems in their social relations, adapt to the environment in a sustainable way and maintain a healthy psyche under these conditions during their entire life. It is closely related to the emotions and behaviors of an individual trying to ascertain their place in society (Geçtan, 2000). According to Wang and Eccles (2012), in an adolescents' perception of the support they receive from their teachers, their peers and their families, they are more affected by the perceived social support from their friends than that from their family or teachers. It has been argued that peer support is more effective upon the socialization of adolescents and increased academic achievement. In his study with high school students, Elbir (2000) examined the social support students perceived from family, friends, and teachers. It was understood that the perceived social support decreased, in tandem with increasing levels of loneliness. In a study conducted by Haskan (2009), the prevalence of violent tendencies among adolescents, and the perceived social support and loneliness levels of adolescents with a high tendency for violence were examined. The research showed that adolescents with a high tendency for violence tend to have low levels of support from family, friends and teachers, and high levels of loneliness.

For adolescents, low social support from friends and family is accompanied by high levels of loneliness. During this period, adolescents develop a new identity and go through physical changes. Also experiencing

cognitive changes, adolescents find themselves in more complex social relations. While adolescents wish to be alone, they also want to build stronger relationships with their peers. Adolescents who are excluded by their friends during this period may feel lonely (Karayel, 2011). When looking at all this information, it is seen that it is an inevitable situation for adolescents to develop attachments with friends when the family is relegated to a secondary position. At the same time, it can be argued that social support from friends and friendship relationships may also be factors that constitute adolescent loneliness when developing a new identity outside the family. Making new friends and finding a new social environment to thrive in becomes extremely important for the adolescent who is no longer a child. It can be argued that for adolescents who prepare themselves for adulthood and undertake that responsibility, friendship, perceived social support from friends, loneliness, and attachment to friends are all related to each other. Each of these concepts, which are thought to be effective on loneliness during adolescence, should be taken into account in the process. When the literature is reviewed, there is not a single study on loneliness, perceived social support, friendship quality and attachment to friends. While there are studies on attachment in childhood and adulthood, there are no studies covering adolescence (Bilgen, 1989; Sümer& Knight, 2001). Various studies have shown that the concept of loneliness is a feeling that threatens the health of the body and soul (Erözkan, 2004; Haliloğlu, 2008; Yıldırım, 2007). Researching all aspects of loneliness, which is such an important emotion, and determining the variables that affect and determine loneliness are also very important for maintaining mental health. In this context, the aim of this study is to investigate the friendship quality, attachment to friends and the social support perceived by adolescents as a predictor of loneliness in adolescents.

## Method

### Study design

This is a descriptive study which uses a correlational survey model. The relationship demonstrated by correlational survey studies explains the effect of a variable used in the study on another variable without establishing a causal relationship (Köklü&Büyüköztürk, 2000). In the study, the dependent variable is loneliness, and the independent variables are friendship quality, perceived social support and attachment to friends.

### Study group

The study group consists of 430 students chosen from four high schools in the district of İskenderun in the province of Hatay during the 2016-2017 academic year. The research contains students from various Anatolian high schools in İskenderun covering all grades (9th - 10th - 11th - 12th grades). Groups included in the study group were selected using the stratified sampling selection method. The stratified sample is used when the aim of the study is not homogeneous in the universe (Can, 2016). In terms of demographic features, 239 (55.6%) female and 191 (44.4%) male students took part in the study, 430 in total, while 111 of the students (25.2%) were in 9th grade, 102 were in the 10th grade (23.7%), 116 (27%) were in the 11th grade and 101 (23.5%) were in the 12th grade. Concerning the educational level of the participants' mothers, 28 (6.5%) were non-literate, 164 (38.1%) were elementary school graduates, 108 (25.1%) were secondary school graduates, 87 (20.1%) were high school graduates, and 43 (10%) had a bachelor degree and above. Concerning the educational level of the participants' fathers, 118 (27.4%) were elementary school graduates, 105 (24.4%) were secondary school graduates, 116 (27.0%) were high school graduates, 91 (21.2%) had a bachelor degree and above. The monthly income levels of the families of the students were examined in five categories. The number of families with a monthly income level of TL 0-1000 was 45 (10.5%), with a monthly income level of TL 1000-2000 was 150 (34.9%), with a monthly income level of TL 2000-3000 was 104 (24.2%), with a monthly income level of TL 3000-4000 was 63 (14.7%) and with a monthly income level of TL 4000+ was 68 (15.8%).

## Data collection tools

The study's data was obtained by using the Personal Information Form, UCLA Loneliness Scale, Perceived Social Support Scale, Friendship Quality Scale, and Adolescent Friendship Scale. The data collection tools used in the study and the data on the validity and reliability of these tools are given below.

### 1. Personal information form

This form contains participants' demographical information such as gender, socio-economic level, grade level, parents' education level, and economic status.

### 2. UCLA Loneliness Scale (UCLA)

The scale was developed by Russell, Peplau, and Ferguson (1980) to measure the loneliness levels of individuals, it was used in Turkey firstly by Yaparel (1984). Yaparel (1984) examined the validity of the scale by taking the Beck Depression Scale as a basis and found that the validity of the scale was 0.50 in comparison to similar scales. Then, in an adaptation study by Demir (1989), the internal consistency coefficient was 0.96 and the test-retest correlation was 0.94. The analyses show that the validity and reliability of the UCLA loneliness scale is sufficient. In this study, a revised form developed by Demir (1990) was used.

The scale is scored on a four-point basis, namely "I Never Feel This Way" (1), "I Rarely Feel This Way" (2), "I Sometimes Feel This Way" (3), "I Often Feel This Way" (4) whereby the total score leads to the total loneliness score. The highest and lowest possible scores that can be obtained from the scale are 80 and 20, respectively. Higher scores mean that the level of loneliness of the individual is high (Demir, 1989; Koçak, 2008; Karayel, 2011). The confirmatory factor analysis (CFA) and reliability analysis of the UCLA loneliness scale were conducted within the framework of this study. When the goodness of fit values obtained from the CFA were examined, it was established that the  $\chi^2/SD$  (3.94), RMSEA (0.08), NNFI (0.93), CFI (0.94), SRMR (0.06) and GFI (0.87) tool structure was confirmed for the sample used within the scope of this study. (Çelik&Yılmaz, 2013; Çokluk, Şekercioğlu&Büyüköztürk, 2010;Kline, 2005). According to the reliability analysis within this study, the Cronbach Alpha internal consistency value of the scale was 0.86.

### 3. Perceived Social Support Scale (PSSS)

The perceived social support scale was developed by Yıldırım (1997) in order to measure the perceived social support of adolescents from their family, friends, and teachers. Yıldırım (2004) revised the scale due to the fact that the subscales of the scale "perceived social support from relatives and society" were not used and the reverse items make scoring impractical. The perceived social support scale has three subscales, namely Family Support (20 items), Friend Support (13 items) and Teacher support (17 items), and a total of 50 items. High scores indicate that the level of perceived social support is high. A high score from a 3-point Likert scale means that the individual perceives more social support (Kaya 2009; Yıldırım, 200;).

The validity of the PSSS was determined through the validity of similar scales method and a correlation of 0.69 was found between the total scores of the two scales. Furthermore, factor analysis was performed for the perceived social support scale. The Cronbach Alpha internal consistency coefficient of the scale was 0.89 in terms of family support, while it was 0.86 in terms of support from friends and 0.93 in terms of support from teachers. (Kaşık, 2009; Yıldırım, 1997). In this study, the subscale of the "support from friends" scale was used. The values relating to the "my friends" subscale of the perceived social support scale in adolescents obtained from the CFA ( $\chi^2/SD$  (2.93), RMSEA (0.06), NNFI (0.97), CFI (0.98), SRMR (0.04) and GFI (0.94)) show that the subscale has sufficient validity scores (Çelik & Yılmaz, 2013; Çokluk, Şekercioğlu & Büyüköztürk, 2010; Kline, 2005). In addition, the Cronbach Alpha internal consistency value of the scale, which is 0.88, shows that the scale can provide a reliable measurement of the variables intended to be measured.

#### 4. Friendship Quality Scale (FQS)

The Friendship Quality Scale was first developed by Thien, Razak, and Jamil (2012). (cited by: Akin, 2014). The development and adaptation of the friendship quality scale, which was developed to measure the conceptual and functional aspects of good friendship, was conducted by Akin, Karduz, and Akin (2014). The Friendship Quality Scale is a six-point Likert-type scale and consists of 4 subscales, namely intimacy, help, acceptance and security, and 21 items. In terms of scoring, a total score is given for each subscale and the whole scale. High scores from the scale mean that the quality of friendship is also high (Akin, 2014; Akin, 2015).

The internal consistency reliability coefficients of the original form of the Friendship Quality Scale developed by Thien et al. (2012) were 0.83 for the intimacy subscale, 0.81 for the help subscale, 0.84 for the acceptance subscale, and 0.88 for the security subscale (cited by: Akin, 2014). The CFA performed by Yıldırım (2014) showed that the model with four subscales yields good fitness values ( $\chi^2 = 374.29$ ,  $sd = 179$ ,  $RMSEA = 0.063$ ,  $CFI = 0.92$ ,  $IFI = 0.92$ ). The internal consistency reliability coefficients were 0.75, 0.81, 0.77, and 0.82 for the four subscales while it was 0.91 for the whole scale (Yıldırım, 2014). The results of the confirmatory factor analysis of the friendship quality scale ( $\chi^2/SD$  (3.13),  $RMSEA$  (0.07),  $NNFI$  (0.97),  $CFI$  (0.97),  $SRMR$  (0.06) and  $GFI$  (0.89)) show that the four-factor structure is appropriate for the study sample (Çelik & Yılmaz, 2013; Çokluk, Şekercioğlu & Büyüköztürk, 2010; Kline, 2005). Of the subscales, Security was 0.84, Intimacy was 0.77, Acceptance was 0.79 and Help was 0.82, and the total score was 0.92 in the Cronbach Alpha internal consistency calculation done within the scope of reliability analysis. These values show that the scale can provide a reliable measurement of the variables it intends to measure.

#### 5. Adolescent Friendship Attachment Scale (AFAS)

The Adolescent Friendship Attachment Scale used in the study was developed by Wilkinson (2008) and adapted to Turkish by Ercan (2015) who also tested its validity. The Adolescent Friendship Attachment Scale is scored on the basis of a five-point Likert scale (I Completely Disagree (1) - I Completely Agree (5)). The scale has three subscales and a total of 23 items under the categories of secure attachment, avoidant attachment, and anxious/ambivalent attachment. The high level of the scores obtained from each subscale of the scale reflects the strength of the attachment style while a low score reflects its weakness (Ercan, 2015).

Ercan (2015) found that the values obtained as a result of the item-total score correlation analysis were high for the secure attachment subscale (between 0.42-0.71), and that the values for the subscales avoidant attachment and anxious-ambivalent attachment were not high but above the acceptable limit of 0.20. The scale's secure attachment subscale had a Cronbach Alpha value of 0.89, the avoidant attachment subscale had a value of 0.63, and the anxious-ambivalent attachment subscale had a value of 0.60. As a result of the test-retest reliability analysis, the correlation coefficients of secure attachment (0.83), avoidant attachment (0.83) and anxious-ambivalent attachment (0.81) were found. In addition, the secure attachment subscale of the scale was positively correlated with the secure attachment subscale of the Relationship Scales Questionnaire and negatively correlated, in a significant way with, the dismissing attachment and fearful attachment subscales (Ercan, 2015). The CFA goodness of fit values of the scale obtained within the framework of this study established that the  $\chi^2/SD$  (3.22),  $RMSEA$  (0.07),  $NNFI$  (0.94),  $CFI$  (0.95),  $SRMR$  (0.07) and  $GFI$  (0.87) tool structure was confirmed for the sample used within the scope of this study. (Çelik & Yılmaz, 2013; Çokluk, Şekercioğlu & Büyüköztürk, 2010; Kline, 2005).

In this study, the Cronbach Alpha internal consistency values were 0.88 for the secure attachment subscale, 0.65 for the avoidant attachment subscale, and 0.57 for the anxious attachment subscale. These values indicate that the secure attachment subscale has high, the avoidant attachment subscale has moderate, while the anxious attachment subscale has low-reliability values (Can, 2016).

## Findings

### Pre-Analysis data review and basic assumptions

#### Missing values and extreme values

In this study, the data of 11 students were excluded from the analysis due to the students participating in the study filling the data collection tools systematically (e.g. marking the whole scale 1) or leaving the items blank. Errors resulting from incorrect data entry were corrected before starting the analysis. In the following statistical process, four items of study data showing extreme values were excluded from the study.

#### Normality

One of the important assumptions of multivariate statistics is the assumption of normality. The Skewness and Kurtosis values were examined in this study to test the assumption of normality. Table 1 below shows the Skewness-Kurtosis and standard errors values of the total scores obtained from the scales.

**Table 1.**Normality values of total scale scores

Variable	Skewness	Kurtosis	Se <sub>1</sub>	Se <sub>2</sub>
UCLA	.73	.44	.12	.23
PSSS	-1.64	2.67	.12	.23
FQS	-.76	-.45	.12	.23
AFAS- Secure	-1.04	1.06	.12	.23
AFAS- Avoidant	.29	-.50	.12	.23
AFAS- Anxious/Ambivalent	.16	-.42	.12	.23

UCLA: UCLA Loneliness Scale; PSSS: Perceived Social Support Scale; FQS: Friendship Quality Scale; AFAS: Adolescent Friendship Attachment Scale

Morgan (2004) and Şencan (2005) suggested that values of skewness and kurtosis should be between -1 and +1 when interpreting normality values. Can (2016) stated that if the standard error division of the skewness and kurtosis values yielded a value between -1.96 and +1.96, it would mean that the distribution was normal. In accordance with this information, it is seen in Table 1 that all variables are distributed normally. According to the multivariate normality assumption required for multivariate statistics, each variable in the research has a normal distribution (Kline, 2005). Therefore, it can be said that the assumption of normality has been met.

#### Multiple Correlation Problem

According to Tabachnick and Fidel (2001), the multiple correlation problem is defined as a very high level (0.90 and above) of the relationship between the variables. Kline (2005) states that the high level of the relationship between the variables impairs the practicality of the research in terms of showing that there are many common points among the variables. When Table 2 is examined, it is seen that the highest correlation between the variables is at the level of 0.72, occurring between the friendship quality scale and the secure attachment subscale of the Adolescent Friendship Attachment Scale. These results show that there is no multiple correlation problem between the data.

#### Correlation analysis

The relationship between the total scores obtained from the variables used in the study is shown in Table 2 and the relation between the subscales of the variables is shown in Table 3.

**Table 2.** Results of the Pearson correlation analysis among attachment to friends, perceived social support from friends, loneliness and friendship quality in adolescents

	1	2	3	4	5	6
1. AFAS- Secure	-					
2. AFAS- Avoidant	-.59*	-				
3. AFAS- Anxious/Ambivalent	-.27*	.17*	-			
4. PSSS	.64*	-.40*	-.24*	-		
5. UCLA	-.53*	.41*	.26*	-.51*	-	
6. FQS	.72*	-.46*	-.28*	.68*	-.53*	-
X	41.40	15.36	17.94	35.08	35.98	92.47
Sd	7.25	4.99	5.04	4.39	9.87	17.74

\* $p < 0.01$ ; n: 430; UCLA: UCLA Loneliness Scale; PSSS: Perceived Social Support Scale; FQS: Friendship Quality Scale; AFAS: Adolescent Friendship Attachment Scale

When Table 2 is examined, it is seen that the lowest relationship is between the avoidant subscale of the adolescent friendship attachment scale and the anxious subscale of the adolescent friendship attachment scale ( $r = 0.17$ ,  $p < 0.01$ ), that the highest relationship between variables is between the friendship quality scale and the secure attachment subscale of the adolescent Friendship Attachment Scale ( $r = 0.72$ ,  $p < 0.01$ ) and that the relationship among the other variables is low or moderate.

**Table 3.** Pearson correlation analysis results between the subscales of friendship quality and attachment to friends variables

	1	2	3	4	5	6	7	8	9
1. FQS - Safety	-								
2. FQS -Closeness	.61*	-							
3. FQS - Acceptance	.66*	.69*	-						
4. FQS - Help	.25*	.30*	.22*	-					
5. AFAS- Secure	.67*	.55*	.61*	.42*	-				
6. AFAS- Avoidant	-.48*	-.39*	-.41*	.13*	-.59*	-			
7. AFAS- Anxious/ Ambivalent	-.26*	-.19*	-.29*	-.17*	-.27*	.17*	-		
8. PSSS	.62*	.55*	.62*	.24*	.64*	-.40*	-.24*	-	
9. UCLA	-.48*	-.42*	-.50*	-.25*	-.53*	.41*	.26*	-.51*	-
X	33.55	28.56	19.29	11.35	41.40	15.36	17.94	35.08	
Sd	8.81	6.15	4.39	1.85	7.25	4.99	5.04	4.39	

\* $p < 0.01$ ; n:430; UCLA: UCLA Loneliness Scale; PSSS: Perceived Social Support Scale; FQS: Friendship Quality Scale; AFAS: Adolescent Friendship Attachment Scale

When Table 3 is examined, it is seen that the lowest relationship between the variables' subscales is between the avoidant subscale of the Adolescent friendship attachment scale and the help subscale of the friendship quality scale ( $r = 0.13$ ,  $p < 0.01$ ), that the highest relationship is between the acceptance and intimacy subscales of the friendship quality scale ( $r = 0.69$ ,  $p < 0.01$ ) and that the relationship among the other variables is low or moderate.

### Findings from the examination of research variables in terms of the gender variable

In order to investigate whether there were differences in terms of the gender variable t-test analysis was performed for unrelated samples. Table 4 shows the arithmetic mean and standard deviation of the scores

obtained from the variables and the results of the t-test, which show whether the scale scores differ in terms of gender.

**Table 4.** t-test results showing the extent of the variation of the total scores according to the gender variable

	Females		Males		t	p
	x	Sd	x	Sd		
UCLA	35.23	10.04	36.92	9.88	1.74	.08
PSSS	35.84	4.10	34.15	4.69	3.98	.00*
FQS	95.58	17.72	89.24	17.48	3.71	.00*
AFAS- Secure	42.30	7.16	40.29	7.43	2.84	.01*
AFAS- Avoidant	14.38	4.96	16.58	4.91	-4.59	.00*
AFAS- Anxious/ Ambivalent	17.73	5.32	18.21	4.82	-.97	.33

$p < 0.05$ ; UCLA: UCLA Loneliness Scale; PSSS: Perceived Social Support Scale; FQS: Friendship Quality Scale; AFAS: Adolescent Friendship Attachment Scale

As seen in Table 4, when the scores from the perceived social support scale are examined, it is seen that female students have significantly higher scores than male students ( $t = 3.98$ ,  $p < 0.05$ ). When the friendship quality scores are examined, it is seen that girls' perceptions of friendship quality are higher ( $t = 3.71$ ,  $p < 0.05$ ). Female students achieved higher scores than male students from the secure subscale of the adolescent friendship attachment scale ( $t = 2.84$ ,  $p < 0.05$ ) and differentiated themselves significantly, and male students achieved a higher score ( $t = -4.59$ ,  $p < 0.05$ ) than female students from the avoidant subscale of the adolescent friendship attachment scale and significantly differentiated themselves. When the UCLA loneliness scale ( $t = 0.08$ ,  $p > 0.05$ ) and anxious attachment subscale of the adolescent friendship attachment scale ( $t = 0.33$ ,  $p > 0.05$ ) are examined, it was seen that there was no significant difference in terms of gender in these two variables.

#### Findings from the examination of research variables in terms of the grade level variable

One-way variance analysis was performed to determine whether study results differentiated themselves in terms of grade level. Among the high school students participating in the study, there were no significant differences in terms of scores between the UCLA loneliness scale ( $F = 0.95$ ,  $p > 0.05$ ), perceived social support scale ( $F = 1.41$ ,  $p > 0.05$ ), friendship quality scale ( $F = 1.83$ ,  $p > 0.05$ ), the secure attachment subscale of the adolescent friendship attachment scale ( $F = 0.11$ ,  $p > 0.05$ ), the avoidant attachment subscale of the adolescent friendship attachment scale ( $F = 0.58$ ,  $p > 0.05$ ) and the anxious subscale of the adolescent friendship attachment scale ( $F = 0.37$ ,  $p > 0.05$ ).

#### Findings from the examination of research variables in terms of the educational level of parents

A one-way variance analysis was performed to determine whether the study results differentiated themselves in terms of the educational level of parents. Among the students participating in the study, there were no significant differences in the UCLA loneliness scale ( $F = 0.85$ ,  $p > 0.05$ ), perceived social support scale ( $F = 0.35$ ,  $p > 0.05$ ), friendship quality scale ( $F = 0.60$ ,  $p > 0.05$ ), the secure subscale of the Adolescent Friendship Attachment Scale ( $F = 1.33$ ,  $p > 0.05$ ), the avoidant subscale of the Adolescent Friendship Attachment Scale ( $F = 0.55$ ,  $p > 0.05$ ), or the anxious subscale of the Adolescent Friendship Attachment Scale ( $F = 2.05$ ,  $p > 0.05$ ) variables among the educational level of mothers. Similarly, there were no significant differences in the UCLA loneliness scale ( $F = 0.83$ ,  $p > 0.05$ ), perceived social support scale ( $F = 0.37$ ,  $p > 0.05$ ), friendship quality scale ( $F = 1.25$ ,  $p > 0.05$ ), the secure subscale of the Adolescent Friendship Attachment Scale ( $F = 1.46$ ,  $p < 0.05$ ), the avoidant subscale of the Adolescent Friendship Attachment Scale ( $F = 2.59$ ,  $p > 0.05$ ) or the anxious subscale of

the Adolescent Friendship Attachment Scale ( $F = 1.00, p > 0.05$ ), variables among the educational level of fathers.

### Findings from the examination of research variables in terms of monthly income level variable

A one-way variance analysis was performed to determine whether the study results differentiated themselves in terms of the monthly income level of the students. Among the students participating in the study, there were no significant differences in the UCLA loneliness scale ( $F = 0.57, p > 0.05$ ), perceived social support scale ( $F = 0.15, p > 0.05$ ), friendship quality scale ( $F = 0.15, p > 0.05$ ) and the avoidant subscale of the Adolescent Friendship Attachment Scale ( $F = 2.07, p > 0.05$ ) in terms of the monthly incomes of families. There was a significant difference between participants with an income of TL 0 to 999 and participants with an income of TL 1000 to 1999 with respect to the scores from the secure subscale of the Adolescent Friendship Attachment Scale ( $F = 4.17, p < 0.05$ ). According to the family income level, there was a significant difference of scores between the anxious subscale variables of the Adolescent Friendship Attachment Scale ( $F = 2.64, p < 0.05$ ). LSD test was performed to determine between which sub-groups the difference existed, and there was a significant difference between adolescents with a family income of TL 0 to 999 and adolescents with a family income of TL 1000 to 1999.

### Regression model for prediction of loneliness in adolescents by the variables of attachment to friends, friendship quality and perceived social support from friends

A regression analysis was performed to determine the degree to which the study variables of attachment to friends, friendship quality and perceived social support from friends can predict loneliness in adolescents. The results obtained are given in Table 5.

**Table 5.** Regression analysis results for the prediction of loneliness in adolescents by the variables of attachment to friends, friendship quality and perceived social support from friends

Variable	B	Standard Error	$\beta$	t	p	Pair r	Partial r
(Constant)	64.26	4.86	-	13.22	.00*		
AFAS- Secure	-.24	.09	-.18	-2.85	.005*	-.53	-.14
AFAS- Avoidant	.24	.09	.12	2.54	.01*	.41	.12
AFAS- Anxious/ Ambivalent	.18	.08	.09	2.33	.02*	.26	.11
FQS	-.10	.03	-.19	-3.09	.00*	-.53	-.15
PSSS	-.44	.12	-.20	-3.62	.00*	-.51	-.17
R= .61	R <sup>2</sup> = .37	Adj. R <sup>2</sup> = .36					
F <sub>(3-437)</sub> = 50.73	*p < .05						

AFAS: Adolescent Friendship Attachment Scale; FQS: Friendship Quality Scale; PSSS: Perceived Social Support Scale

A hierarchical multiple regression analysis was performed using the Enter method in order to determine to what extent the variables attachment to friends, friendship quality and perceived social support, which are considered to have an impact on the loneliness of adolescents, predict loneliness in adolescents. While undergoing this analysis, preliminary analyses were conducted to see that the assumptions of normality, linearity, multiple common linearity and co-variance were not violated. In the analysis where the gender variable was entered in the first step of analysis and the attachment to friends, friendship quality and perceived social support from friends in adolescence were entered in the second step, it was established that these variables had a moderate and significant relationship with the loneliness variable ( $R = 0.61, R^2 = 0.37$ ) ( $F_{(3-437)} = 50.73, p < 0.05$ ). After taking the gender variable under control, it was seen that the three variables accounted for 37% of the total variance in the loneliness level. According to the standardized regression coefficient, the relative order of importance of variables that predict loneliness was perceived social support

( $\beta = -0.20$ ), friendship quality ( $\beta = -0.19$ ), secure attachment to friends ( $\beta = -0.18$ ), avoidant attachment to friends ( $\beta = 0.12$ ) and anxious attachment to friends ( $\beta = 0.09$ ).

When the t-test results regarding the significance of the regression coefficients were examined, it was established that the variables of friendship quality ( $p < 0.05$ ), perceived social support ( $p < 0.05$ ), secure attachment to friends ( $p < 0.05$ ), avoidant attachment to friends ( $p < 0.05$ ) and anxious attachment to friends ( $p < 0.05$ ) were a significant predictor of the loneliness level. When the relationship between the predictor variables and loneliness is examined, there is a correlation between friendship quality ( $r: -0.53$ ), [when the effect of other predictive variables is controlled  $r: -0.15$ ], perceived social support ( $r: -0.51$ ), [when the effect of other predictive variables is controlled  $r: -0.17$ ], the secure subscale of attachment to friends ( $r: -0.53$ ), [when the effect of the other predictive variables is controlled  $r: -0.14$ ], the avoidant subscale of attachment to friends ( $r: 0.41$ ), [when the effect of the other predictive variables is controlled  $r: 0.12$ ] and the anxious subscale of attachment to friends ( $r: 0.26$ ), [when the effect of other predictive variables is controlled ( $r: .11$ )]. According to the results of the regression analysis, the regression equation predicting loneliness is as follows:

Loneliness scale score:  $(-0.24 \times \text{secure attachment to friends subscale score}) + (0.24 \times \text{avoidant attachment to friends subscale score}) + (0.18 \times \text{anxious attachment to friends subscale score}) + (-0.10 \times \text{friendship quality scale score}) + (-0.44 \times \text{perceived social support scale score [family subscale]}) + (64.26)$ .

### Discussion and Conclusion

In the comparison of loneliness in terms of gender, there was no significant difference between the scores of male students and female students. These results comply with other studies in Turkey and in the literature (Brage et al., 1993; Çeçen, 2008; Duru, 2008; Demirtaş, 2007; Emir, 2001; Eskin, 2000; Roscoe & Skomski 1989; Russell et al., 1980; Sürücü, 2005; Williams, 1983). In some studies conducted on adolescents, it was found that the levels of loneliness in male adolescents were higher than those of female adolescents (Buluş, 1999; Demir, 1990; Deniz et al., 2009; Durak, 2005; Duyan et al. 2008; Haliloğlu, 2008; Hamarta, 2000; Kılınc & Sevim, 2005; Şentürk, 2010; Yıldırım, 2007). However, according to the study with the aforementioned sample, the fact that there were no differences between loneliness scores in terms of gender, differentiates this study from other studies in the literature. The reason can be ascribed to the utilization of similar samples in the study (Anatolian high school). In terms of perceived social support, girls achieved significantly higher scores than boys. The result coincides with information and studies in the literature and the research studies (Altunbaş, 2012; Bayram, 1999; Elbir, 2000; Daalen et al., 2005; Nicpon et al., 2006; Newman et al., 2007).

In the comparison of Friendship Quality, female students achieved significantly higher scores than male students. A study by Weiss et al. (2002) also corroborates this result. According to the gender-based study examining adolescents between the ages of 14 to 18, in terms of loyalty to their friends, being supportive and intimate, female students got higher scores than male students. Philippsen (1999) examined friendship relations and group acceptance on the basis of gender and found that girls were more accommodating than boys and received higher scores in friendship relations. In the gender-based comparison of adolescents' secure attachment to their friends, female students got significantly higher scores than male students. In the comparison of adolescents' avoidant attachment to their friends, male students got significantly higher scores than female students. Finally, in the comparison of adolescents' anxious attachment to their friends, there were no significant differences between the scores of male and female students.

There were no significant differences in the comparison of adolescents' levels of loneliness, perceived social support, friendship quality, and attachment styles to friends in terms of the grade level, educational level of parents and the number of siblings. There were no significant differences in the comparison of adolescents' levels of loneliness, perceived social support and friendship quality in terms of their families' income levels. However, there was a significant difference between students with a monthly income of TL 0

to 999 and students with a monthly income of TL 1000 to 1999 in the secure attachment and the anxious attachment subscales of adolescent friendship scale. In the literature, there are also studies that contradict these results in addition to those that support them. Şahin (2011) concluded that the perceived social support from friends did not change according to the monthly income of the family, whereas Bayram (1999) found that perceived social support from friends changed according to the monthly income of the family and that this change was in favor of families with a high monthly income.

Regression analysis was performed to determine the degree to which the variables of attachment to friends, friendship quality and perceived social support from friends, which are the main subjects of the study, can predict loneliness in adolescents. When the analysis results were examined, it was seen that when gender was controlled, the variables of attachment to friends, friendship quality and perceived social support from friends significantly predicted loneliness when considered together. When the effect of each variable on loneliness was examined, it was also seen that each variable significantly predicted loneliness on their own terms. The relative order of importance of variables that predict loneliness were perceived social support, friendship quality, secure attachment to friends, avoidant attachment to friends and anxious attachment to friends.

According to the results, the most important variable predicting loneliness is perceived social support from friends. The second most important predictor of loneliness is the quality of the friendship variable. The study has also found that the quality of a relationship is inversely related to loneliness in terms of the relationships between individuals. In his research on the relationship between loneliness and the quality of friendship, Bilgen (1989) found a negative correlation between the level of loneliness and level of social harmonization and discovered that the level of social, personal and general harmonization suffers from an increase in loneliness levels. In the current study which examines whether perceived social support predicts loneliness or not, it has been found that perceived social support actually predicts loneliness. At the same time, it has been established that perceived social support from friends is the most important predictor of loneliness among other variables including attachment styles and the quality of friendship. There are similar studies in the literature whose results coincide with those of the current study (DiTommaso et al., 2003; Duru, 2008; Eker et al., 1995; Menteş, 2006; Özlale, 1999). This result shows that when an individual does not feel like they get the support they need from their friends, it pushes them to loneliness. It can be argued that support from friends is the key to banishing loneliness from one's life. As can be inferred from the results of the research, encouraging individuals to establish close relationships with others and having such relationships is one of the effective methods to deal with loneliness (Schmitt & Lawrence, 1985; Cited by: Duru, 2008).

Among the variables used in the study, the third most important one predicting loneliness is the secure attachment subscale of attachment to friends. One of the results is that the individuals who are securely attached to their friends will experience less loneliness, that is, there is an inverse relationship between secure attachment to friends and loneliness. The avoidant attachment subscale of attachment to friends is the fourth variable that best predicts loneliness and while the fifth variable that best predicts the loneliness of adolescents is the anxious attachment subscale of attachment to friends. It has been established that those who adopt an avoidant and anxious style of attachment to friends tend to experience loneliness more intensely. Individuals who prefer secure attachment to others have positive feelings about themselves. At the same time, these individuals with high levels of personal autonomy do not hesitate to establish close relations with others and have no fears of abandonment. Those with an avoidant style of attachment consider themselves reliable, while they find others distrustful. These individuals think that they will be abandoned and so avoid establishing close relationships with people around them.

Individuals with an anxious style of attachment have negative feelings both about themselves and the people around them. Although these individuals want to establish and develop close relationships, they

cannot do so because of their negative perceptions (Bartholomew, 1990; Bartholomew and Horowitz, 1991; Cited by: İlhan, 2009). A review of the related studies show that the attachment style has an impact on individual's level of well-being, self-esteem and life satisfaction, ability to cope with stress, perception of social competence and the perceived social support level (Armsden & Greenberg, 1987; Rice, Cunningham & Young, 1997; DiTommaso, Brannen-McNulty, Ross & Burgess, 2003; Deniz, Hamarta & Arı, 2005). In addition to studies on bonding between the mother and the child in the childhood period, studies on attachment in adults indicate that attachment continues well into the later chapters of life, starting from childhood (Shaver & Hazan, 1989).

There are other studies that support the findings of this current study (Deniz et al., 2005; Kozaklı, 2006, Nicpon et al., 2006). Bartholomew and Shaver (1998) found that attachment significantly predicts loneliness and that anxious attachment is a more important predictor of loneliness than avoidant attachment. Bogaerts et al. (2006) conducted another study where they argued that attachment predicts loneliness and showed that loneliness is mostly suffered by fearful and obsessive individuals, while it is least suffered by those who can develop a secure attachment to others (Cited by: İlhan, 2009).

This is a descriptive study in its design and execution. Examining the effect of increasing the quality of friendship and social support behaviors on loneliness through an experimental study will contribute to the literature. The importance of perceived social support from friends in terms of adolescents demonstrating a healthy development has been mentioned in this study. Encouraging psychological counseling and guidance services at schools to do more to allow students to support each other, besides supporting academic progress, will have benefits in terms of improving student behavior. This study has found that girls tend to develop more secure attachments on a significant level than boys and their perceived social support is higher. Psychological counseling and guidance services at schools, school counselors, families and the school administrations can also develop further projects to help male students open up more about themselves and widen the pool of social support resources available at their disposal. This study has also found that friendship quality predicts loneliness and that loneliness increases as friendship quality decreases. Practitioners (psychiatrists, psychologists, psychological counselors) who advise students suffering from loneliness can take a closer look at their current relationships with their friends to alleviate their social adaptation problems.

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