

## Original Article

# Correlation between Irrational Beliefs and the Depressive Symptom Levels of Secondary School Children

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## Abstract

**Background:** Irrational beliefs play a central role in cognitive theory and therapy and are related to a variety of disorders, such as depression.

**Objectives:** This study was undertaken to determine the extent to which depression in early adolescents and irrational beliefs are associated.

**Methodology:** This descriptive and correlational study was conducted with 414 students recruited from secondary schools in Turkey. The Information Form, the Irrational Beliefs Scale for Adolescents and the Child Depression Inventory were the data collection instruments.

**Results:** In this study we observed a significant positive correlation between irrational beliefs and depression. There was a correlation between family structure, family interaction, school performance and depression in child and adolescent populations.

**Conclusion:** School nurses are encouraged to screen secondary school children for depressive symptoms and consider family structure, family interaction, school performance factors and irrational beliefs when intervening in depression.

**Keywords:** adolescent, depression, irrational beliefs, mental health, school nursing, Turkey

## Introduction

Irrational beliefs are defined as the beliefs that hinder individuals from achieving their basic aims, targets, happiness and survival

(Altıntaş, 2006). Ellis (2005) notes that people are born with the potential to behave rationally (realistic and positive toward themselves) and the potential

to behave irrationally (hurt themselves). It is asserted that irrational beliefs lie at the base of the emotional-psychological disorders of an individual. Irrational, unrealistic thoughts and beliefs of an individual about himself/herself, others and the world lead to unhealthy negative emotions, such as anxiety, depression and anger (Bernard, 2006; Çivitci, 2006). According to Ellis, the individual has emotional and behavioral reactions toward the events s/he encounters. These occur as self-destructive behaviors, such as anxiety, depression and anger and as dysfunctional behaviors, such as withdrawal or procrastination. The irrational beliefs of the individual regarding particular events leads to these harmful emotional and behavioral consequences for the individual (Ellis, 2000).

Depression in childhood and adolescence is prevalent, frequently recurrent, and highly deteriorating (Abela, 2008). Depressive disorders occur in approximately 2% of primary school-aged children and 4% to 8% of adolescents (Olfson, 2003; Fives et al., 2011; Thapar et al., 2012). Depressive disorders occur in 4.2-37% of the children in Turkey (Cebeci et al., 2003; Ceylan et al., 2003; Karakaya et al., 2004; Demir et al., 2011; Tezel et al., 2012). The short-term consequences of a depressive episode during adolescence include disrupted school achievement, peer isolation, and the tragic consequences of suicidal behaviors. On a long-term basis, the presence of a depressive episode during adolescence represents a major risk for the occurrence of a second episode later in adolescence or as a young adult (Marcotte et al., 2006). Several psychosocial risk factors for depression have been identified, including negative life events, relationship difficulties, deficits in interpersonal skills, and a cognitive style characterized by pessimistic attributions and anticipation (Spence et al., 2003).

The cognitive model of depression is a model of depression etiology that has been the focus of much research. In Beck's cognitive theory, depressive disorder is explained in terms of depressogenic schemata (Marcotte et al., 2006). These cognitive schemata produce different types of cognitive errors that are reflected in the

pessimistic self-talk of the depressed individual.

This model also teaches cognitive techniques to identify and challenge negative or irrational thoughts that may lead to the development of negative affect and depressive symptoms (Spence et al., 2003).

Rational-Emotive Behavior Therapy (REBT) is a cognitive behavioral approach that presumes that psychological problems are caused by irrational beliefs. According to this cognitive approach, an individuals' unrealistic, irrational beliefs and thoughts about themselves, others and the world lead to unhealthy negative emotions, such as anxiety, depression and anger (Bernard, 2006; Çivitci, 2006a; Davies, 2006; Boyacıoğlu & Kucuk, 2011).

To healthfully and successfully overcome the adolescent period, which is a very important risk period in terms of mental health services, individuals, their families and their schools share responsibility. This group of people constitutes a significant part of the population in Turkey. Research into irrational beliefs, which are among the important factors creating depression in this group of people, is limited. When creating a healthy state of mind in adolescents, who are the foundation of society, school nurses should take an active part in the school environment. Hence, this research will contribute in terms of detecting irrational beliefs and reconstructing them and other variables that play a role in depression.

### **Aim**

The aim of this study was to determine the association between irrational beliefs and depression in secondary school students. The specific research questions were as follows:

**Research Question 1:** What are the levels of depressive symptoms in students?

**Research Question 2:** Is there any relationship between irrational beliefs and depressive symptoms?

### **Methodology**

#### **Research Design and Participants**

This descriptive, cross-sectional and correlational study was conducted during

January - May 2014. Four hundred and fourteen (209 boys and 205 girls) of the 892 students (aged 12- 14) who were being educated in Usküdar in Istanbul agreed to participate in the study and complete the questionnaires (response rate: 46%).

### Data Collection Tools

The study was conducted using the Information Form, the Irrational Beliefs Scale for Adolescents and the Child Depression Inventory.

### Information Form

The information form was developed for this study based on the literature. It consisted of 12 questions related to the student's characteristics, such as gender, age, economic status, mother's and father's educational level, family type, family structure (e.g., democratic, strict), number of siblings and school achievement.

A pilot study was conducted with 12 students who did not participate in the study. The pilot study included four students in each grade (6, 7, 8). The questionnaires were finalized according to expert opinions and the results of the pilot practice.

### Irrational Beliefs Scale for Adolescents (IBS-A)

The IBS-A was developed by Çivitçi (2006) to assess the irrational beliefs of adolescents. The IBS-A consists of 21 items and three subscales: (1) Demand for Achievement (8 items); (2) Demand for Comfort (7 items); and (3) Demand for Respect (6 items). Participants respond to each of the 21 IBS-A items on a 5-point Likert scale (1=strongly disagree, 2=rarely agree, 3=not sure, 4=mostly agree, 5=strongly agree). The total score on the scale can range from 21 to 105. High scores indicate irrational thinking (Kılıçarslan, 2009). In the analysis for internal consistency of the IBS-A, Cronbach's alpha coefficient of reliability was  $\alpha = .71$  (Çivitci, 2006a). The Chronbach's alpha value of the scale was 0.69 in this study.

### Child Depression Inventory (CDI)

The CDI consists of 27 self-report questions that cover the symptoms of depression

(Kovacs, 1980). Each item of the scale contains 3 sentences, which are scored as 0, 1 or 2, depending on the severity of the symptom. A total CDI score can range between 0 and 54. The reliability and validity of the CDI for the Turkish population has been confirmed for children between 6 and 17 years of age. According to the Turkish validation criteria, a cut-off point of 19 is the ideal threshold for a child at risk of depression (Öy, 1991). The Cronbach's alpha value was 0.80 in the study conducted by Öy (Öy, 1991). The Chronbach's alpha value for the CDI had a good reliability score (0.77) for the total scale in this study.

### Data analysis

The data were analyzed using the SPSS statistical software program (windows version 16). In the data analysis, Cronbach's alpha was used to investigate the internal consistency of the scales. The students' socio-demographic characteristics were expressed as a percentage and as the mean and standard deviation. In addition to descriptive statistics, t-tests, ANOVA variance analyses and chi-square tests explored the associations between the questionnaire scores. The threshold for statistical significance was  $p < 0.05$ .

### Ethical considerations

Permission was obtained from the institution in which the study was implemented. Parents, adolescents, and tutors were provided with written and oral information about the study (in accordance with the Helsinki Declaration- WMA) and its voluntary nature. The school principal, parents, and participants gave their written informed consent.

### Results

The average age of the participants in the study was  $12.77 \pm 0.74$ . Of these, 49.5% ( $n=205$ ) were female and 50.5% ( $n=209$ ) were male. The mothers (47.8%) and fathers (32.4%) of many children were primary school graduates. The mothers were largely housewives (76.1%) and the fathers worked (72.5%) in a job. Most of the families had an average economic condition (59.7%), were nuclear families (82.6%) and included two children (35.5%).

Many of the participants were the first child in the family (41.8%) and defined their family structure as democratic (58.2%). Further, 79.7% of the children noted that their intra-family communication was good and their school success was average (58.2%).

On the IBS-A, the mean score for achievement demand was  $22.44 \pm 6.14$ , the mean score for comfort demand was

$16.60 \pm 6.12$ , the mean score for respect demand was  $25.42 \pm 4.05$  and the total score average was  $64.47 \pm 1.07$ . The mean score for depression was  $14.73 \pm 6.65$  (Table 1).

The study revealed that 31.64% of the sample had depressive symptoms (Figure 1), and there was a positive correlation between depressive symptoms and irrational beliefs ( $r=.231, p=.000$ ) (Table 2).

**Table 1: Irrational Beliefs and Depression Mean Scores**

	Scales	Mean	Min	Max	SD
Irrational Beliefs Scale	Demand for Achievement (8-40)	22.44	9.00	40.00	6.14
	Demand for Comfort (7-35)	16.60	7.00	35.00	6.12
	Demand for Respect (6-30)	25.42	8.00	30.00	4.05
	Total Score (21-105)	64.47	34.00	102.00	1.07
Child Depression Inventory	Child Depression Inventory (0-54)	14.73	2.00	40.00	6.65

**Table 2. The Relationship Between Irrational Beliefs Scale and Depression Scale Ratings**

Irrational Beliefs Scale	Child Depression Inventory	
	r	p
Demand for Achievement	.103	.036
Demand for Comfort	.433	.000
Demand for Respect	-.195	.000
Total Scores	.231	.000

**Table 3. According to Demographic Characteristics of Irrational Beliefs**

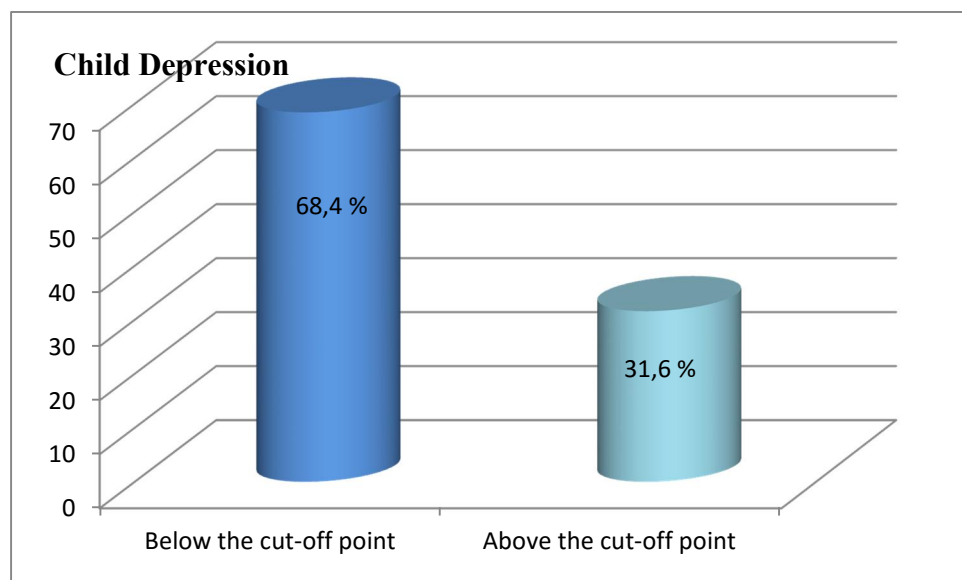
Variables		Irrational Beliefs Scale							
		The Demand for Success		The Demand for Comfort		The Demand for Respect		Total	
		Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
Gender	Female (N=205)	22.22	6.26	15.72	5.98	25.72	3.73	63.67	10.86
	Male (N=209)	22.66	6.03	17.46	6.14	25.12	4.32	65.25	10.68
	<i>Statistic</i>	t=.721; p=.471		<b>t=2.91; p= .000</b>		t=1.50; p=.134		t=1.49; p= .137	
Age	12 Age (N=172)	22,43	6,59	16,31	6,36	25,63	3,95	64,37	10,77
	13 Age (N=167)	23,11	5,89	17,04	6,15	25,38	4,23	65,54	11,02
	14 Age(N=78)	21,06	5,43	16,32	5,48	25,05	3,89	62,43	10,05
	<i>Statistic</i>	F=2.97; <b>p=.050</b>		F=.697; p=.499		F=.567; p=.568		F=2.21; . p=.110	
Mother's Education	Uneducated (N=19)	30.05	5.37	19.94	6.26	25.36	4.33	75.36	11.7
	Literate (N= 23)	22.95	6.95	18.43	6.25	26.30	4.22	67.69	11.9
	Elementary School (N=198)	22.01	5.97	15.83	5.55	25.17	4.19	63.02	10.42
	Secondary School (N=79)	22.49	5.45	14.78	5.43	25.54	3.07	62.82	9.56
	High School (N=70)	21.02	6.31	18.12	6.87	25.22	4.73	64.38	10.75
	University (N=25)	23.40	5.08	19.92	6.97	26.84	3.02	70.16	8.74
	<i>Statistic</i>	F=7.44; <b>p=.000</b>		F=6.27; <b>p=.000</b>		F=1.02; p=0.400		F=7.29; . <b>p=.000</b>	
Father's Education	Uneducated (N=26)	24.50	6.70	16.57	6.02	26.65	3.91	67.73	11.30
	Literate (N= 134)	22.53	6.32	16.39	5.98	24.74	4.54	63.67	11.24
	Elementary School(N=102)	22.50	5.87	15.95	5.81	25.11	3.96	63.57	10.38
	Secondary School (N=104)	21.93	6.09	16.33	5.88	25.99	3.40	64.25	10.24
	High School (N=48)	22.04	6.02	19.16	7.21	26.08	3.89	67.29	10.73
	University (N=19)	24.50	6.70	16.57	6.02	26.65	3.91	67.73	11.30
	<i>Statistic</i>	F=.968 ;p= .425		F=.2.51 <b>p=.041</b>		F=.2.54; <b>p=.039</b>		F=1.79;p=.129	
Family Type	Nuclear Family (N=342)	22.40	6.10	16.43	6.06	25.64	3.94	64.47	10.56
	Extended Family (N=54)	22.24	5.88	17.40	6.31	24.14	4.34	63.79	11.55
	Broken Family (N=18)	23.77	7.74	17.44	6.74	25.16	4.71	66.38	12.65
	<i>Statistic</i>	F= .458; p= .633		F= .767; p= .465		F= 3.23; p= .040		F= .390; p= .677	
Economic Status	Good (N=156)	22.30	5.95	17.03	6.19	25.35	3.97	64.68	10.27
	Mild (N=247)	22.50	6.33	16.39	6.16	25.60	3.98	64.49	11.13
	Poor (N=11)	23.27	5.16	15.36	3.98	22.64	5.97	61.27	10.03
	<i>Statistic</i>	F=.151 ; p= .860		F=.742 ; p= .477		F= 2.87; <b>p= .058</b>		F=.513; p= .599	
Family Structure	Democratic (N=241)	22.66	6.40	15.96	6.09	25.76	3.80	64.38	10.80
	Strict (N=35)	22.29	4.71	17.77	5.81	26.00	4.07	66.06	9.83

	Overprotective (N=77)	23.44	5.56	16.96	6.23	25.36	4.04	65.77	10.36
	Others (N=61)	20.43	6.23	18.02	6.07	23.87	4.71	62.31	11.56
	<i>Statistic</i>	F= 3.01; p= <b>.030</b>		F= 2.50 ; p= <b>.050</b>		F= 3.85 ; p= <b>.010</b>		F= 1.45; p= .227	
Number Of Siblings	1 Sibling (N=48)	24,39	6,00	18,97	7,81	26,02	3,84	69,39	11,87
	2 Siblings (N=147)	21,63	5,96	16,55	5,87	25,57	3,93	63,75	9,964
	3 Siblings (N=141)	22,45	6,02	16,23	6,21	25,29	4,23	63,97	11,20
	4 Siblings (N=43)	22,48	6,60	15,584	5,21	25,11	3,79	63,18	10,040
	5 Siblings (N=35)	23,08	6,67	16,31	4,50	24,91	4,46	64,31	10,36
	<i>Statistic</i>	F= 1.96; p= .099		F= 2.28; p= .060		F= 5.45; p= .703		F= 2.95; p= <b>.020</b>	
School Performance	Good (N=152)	21.11	5.96	15.77	6.32	25.74	3.77	62.62	10.43
	Mild (n=241)	23.30	6.17	17.02	5.99	25.35	4.00	65.67	10.81
	Bad (n=21)	22.24	5.75	17.86	5.68	24.05	6.08	64.14	11.49
	<i>Statistic</i>	F= 6.07; p= <b>.003</b>		F= 2.42; p= .090		F= 1.71 ; p=.182		F= 3.80; p= <b>.023</b>	

**Table 4: According to Demographic Characteristics of Depression Symptoms Levels**

Variables		Child Depression Inventory	
		Mean	SD
Gen der	Female (n=205)	14.29	6.63
	Male (n=209)	15.16	6.65
	<i>Statistic</i>	t= .003; p=.960	
Family Structure	Democratic (n=241)	13.72	6.15
	Strict (n=35)	20.25	8.54
	Overprotective (n=77)	14.68	5.71
	Others (n=61)	15.60	6.91
	<i>Statistic</i>	<b>F= 10.99; p= .000</b>	
Family Interaction	Good (n=330)	13.74	6.20
	Mild (n=84)	18.61	6.94
	Bad (n=0)	0	0
	<i>Statistic</i>	<b>F= 39.32; p= .000</b>	
School Performance	Good (n=152)	12.62	6.11
	Mild (n=241)	15.40	6.17
	Bad (n=21)	22.28	8.63
	<i>Statistic</i>	<b>F= 24.99; p= .000</b>	

**Figure 1: According to the Child Depression Inventory Score Distributions (N= 414)**



**\* Child Depression Inventory's cut-off point: 19 and above**

When the parameters that affect irrational beliefs were investigated, a statistically significant difference was found between the following factors: comfort demand and gender ( $t=2.91$ ;  $p=.000$ ) among IBS-A subdimensions; achievement demand subdimension and age ( $F=2.97$ ;  $p=.050$ ); education level of mother and achievement demand ( $F=7.44$ ;  $p=.000$ ); and comfort demand and total score ( $F=7.29$ ;  $p=.000$ ). There was a relationship between the education level of the father and both the comfort ( $F=2.51$ ;  $p=.041$ ) and the respect subdimension ( $F=2.54$ ;  $p=.039$ ). There was a statistically significant correlation between the following factors: economic condition and respect demand ( $F= 2.87$ ;  $p= .058$ ); family structure and achievement ( $F= 3.01$ ;  $p=.030$ ); family structure and comfort ( $F= 2.50$ ;  $p=.050$ ); family structure and respect demand ( $F= 3.85$ ;  $p= .010$ ); and family type and respect demand ( $F=.3.23$ ;  $p=.040$ ). The relationship between the number of siblings

and respect demand ( $F= 2.95$ ;  $p=.020$ ) was significant, as was the relationship between school achievement and both achievement demand ( $F= 6.07$ ;  $p=.003$ ) and total score ( $F= 3.804$ ;  $p=.023$ ) (Table 3).

When depression symptom levels and demographic variables were compared, a statistically significant correlation was found between family structure ( $F= 10.99$ ;  $p=.000$ ), intra-family communication pattern ( $F= 39.32$ ;  $p=.000$ ) and school achievement ( $F= 24.99$ ;  $p=.000$ ) (Table 4).

### Discussion

This study extended our knowledge of cognition and depression in adolescents by investigating the role of irrational beliefs in depression.

The incidence of depression increases dramatically from the early to late adolescent years (Hankin, 2006; Barta, 2013; Fatiregun and Kumapay1, 2014).

Depression is complex and affects adolescents physically, psychologically, developmentally, emotionally, and academically. Adolescence is a significant time in the identification of depression.

Irrational beliefs in adolescents, such as "I am unhappy, and this situation is a result of my parents' mistake", "I can't put up with criticism", "I have to obey my friends", "It is better to run away from challenges than to be unsuccessful", "If my friends don't like me, this is a terrible situation", and "I should not make mistakes, especially in social gatherings", can lead to unhealthy, negative emotions (Çivitci, 2006a; Kılınç and Sevim, 2005).

The finding that both the irrational beliefs total score and the subdimension scale scores of the students were high (Table 1) suggests that students densely widely experience irrational self-defeating thoughts. These results are similar to the findings of Fives and colleagues (2011), Flett and colleagues (2012), and Schniering and Rapee (2000).

We observed that 31.4% of the students experienced some type of depressive symptoms. This rate is higher than the rates reported in many national (Demir et al., 2011 [4.2%]; Pınar & Tel, 2012 [6.2%]; Tezel et al., 2012 [20.2%]) and international studies (Cheung & Dewa, 2006 [15.4%]; Moffitt et al., 2010 [15-18%]; Thapar et al., 2012 [5-20%]). The rates for depression in children and adolescent vary widely. It is not surprising that the rates reported in the literature exhibit variation because different samples (including only children or adolescents; children in different age groups; samples in which the majority of the participants were girls/ boys; and patients or healthy individuals, in hospitals/community/school), sample sizes, study administration times (research implementation time was during spring/exam) and methodologies (retrospective reporting, medical reports, students'/parents' notification, using different questionnaires to evaluate depression) have been considered.

In this study, a positive correlation was found between depressive symptoms and irrational beliefs (Table 2). Children who explain a negative situation with consistent, permanent and situation-inherent reasons experience more despair (Güloğlu & Aydın, 2007; Göller, 2010) and are more likely to succumb to depression (Rueger & Malecki, 2007; Flett et al., 2012; Rood et al., 2012), experience anxiety (Marien and Bell, 2004; Bridges and Harnish, 2010; Rood et al., 2010), and resort to aggression (Atıcı & Kılıçarslan, 2010; Fives et al., 2011) than children who do not use these types of explanations.

A significant correlation was found between the achievement demand sub-scale, defined as "I must be talented, competent and successful, and I must be approved of by almost every significant person in my life. Otherwise, I am worthless." and depressive symptom levels. Depressive symptoms are high in people who care about how they look or expect gratitude. Individuals who strongly endorse such irrational beliefs tend to feel incompetent, worthless, anxious and depressive (Çivitci, 2006a).

A significant correlation was found between the comfort demand, which is placed in the irrational beliefs subdimension, and depressive symptom levels. The comfort subdimension expresses thoughts such as "Other people must treat me kindly, fairly and considerately or it is awful. Those who treat me like this are bad and worthless." Individuals who strongly endorse this irrational belief tend to experience anger, guilt, hatred and hostility.

A significant correlation was also found between the respect aspect, which is an IBS-A subdimension, and depressive symptom levels. The respect aspect is defined by statements such as "The conditions under which I live absolutely must be easy, comfortable and gratifying. I must get what I want when I want it without discomfort or inconvenience. Otherwise it is terrible and intolerable".



An individual holding such a belief usually tends to experience anger, low frustration tolerance, self-pity and depression.

When the parameters that affect irrational beliefs were investigated (Table 3), a correlation was found between comfort demand, which is an IBS-A subdimension, and gender. Male students were more inclined to think that "Other people must treat me kindly, fairly and considerately or it is awful. Those who treat me like this are bad and worthless." than were female students. This situation can be associated with the importance placed on male children within the traditional male-dominant Turkish culture.

A significant correlation was found between the mother's level of education, comfort demand and total score. The students whose mothers were illiterate were more likely to experience thoughts such as "I must be talented, competent and successful, and I must be approved of by almost every significant person in my life."

A significant correlation between the level of education of the father and the comfort and respect subdimension was found. The students whose fathers were illiterate and whose fathers were university graduates experienced beliefs such as "The conditions under which I live absolutely must be easy, comfortable and gratifying. I must get what I want when I want it without discomfort or inconvenience." This situation can be explained in terms of education. Students whose fathers are illiterate tended to think "I should not live like my father, I should live in better conditions." Students whose fathers were university graduates tended to think "I should have a comfortable lifestyle at least as much as my father had."

Individuals who were the only child in a family had strong irrational beliefs related to respect demand, such as "The conditions under which I live absolutely must be easy, comfortable and gratifying. I must get what I want when I want it without discomfort or inconvenience." This is a predictable result if

we believe that the families raised their only child in a more attentive way.

The respect demand score average was higher in students from a low economic condition. Economic difficulties make a comfortable life difficult. Therefore, it is a predictable result that students who are in bad economic conditions aspire to better living conditions and that their scores of respect demand for living conditions are higher.

Family structure was related to all irrational beliefs in these three dimensions. The students from overprotective families scored higher for irrational beliefs about achievement, whereas the students from strict families scored higher for comfort and respect demand. The findings indicate similarities with other reports of family structure (Çivitci, 2006b; Garber & Flynn, 2001; Boyacıoğlu, 2010; Güler, 2012; Lumley et al., 2012)

The students who evaluated their school performance to be average had higher total scores and more frequent beliefs that "I must be talented, competent and successful, and I must be approved of by almost every significant person in my life."

When the correlation between depressive symptom levels and demographic changes was investigated (Table 4), the students who came from strict families, evaluated their intra-family communication to be average, and had poor school performance had higher depression score averages. This finding supports the results from other studies that there is link between family structure (Güler, 2012), family interaction (Restifo & Bögers, 2009; Thapar et al., 2012), school performance (Fröjd et al., 2008; Nguyen et al., 2013) and depression in child and adolescent populations.

### **Limitations**

This study has some limitations that provide opportunities for future research. The main limitation is that it relies exclusively on self-reports (not hospital records), which may

reveal an increased rate of depression in child/ adolescent populations. Another limitation is the use of a cross-sectional design, which does not allow for causal and temporal sequences of variables. Conclusive statements cannot be drawn about whether irrational beliefs occurred before, after, or at the same time as depression.

### Conclusion

In conclusion, it was found that irrational beliefs were an important variable in the depressive symptom levels of students. To change these negative thoughts to sensible thoughts, families, school nurses and the school mental health team have very important duties. It is suggested that school nurses play an active role that is to be realized with various structured psychoeducation programs.

### Implications

Depressive symptoms in children/ adolescents are an important elementary school issue. With the growing recognition of interdisciplinary interventions, school nurses are in a good place to bring mental health promotion programs to schools (Cowell, 2013). We must perform evaluations and publish them so we can learn from each other and thereby provide the best care for our children and adolescents at school.

The young population is an important part of the population in general. Physical and psychosocial identification of young people is very important for creating healthy future generations. In this context, along with the physical identification of current school nurses, students should also be evaluated in cognitive and social ways. When we discuss physical and mental health, it is suggested that there should be group work aimed at sharing emotions and thoughts in groups that consist of adolescents.

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### Contributions

Study Design: LK, KG, Data Collection and Analysis: KG, NŞ, ZÇ, Manuscript Writing: LK, NEB, KG

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