



# An Analysis of Factors Affecting Teachers' Irrational Beliefs

Fuat TANHAN<sup>a</sup>

Yüzüncü Yıl University

## Abstract

The survival of living beings largely depends on their abilities to recognize and adapt to their environment. This is closely related to the cognitive processes by which information is processed. As they have decisive influence on the outcomes of education, teachers who have the ability to think rationally and make rational decisions are integral to achieving the goals desired from education. The aim of this study is to apply Albert Ellis' theory to an analysis of the factors that affect the irrational beliefs of teachers working in primary and secondary schools. The research was carried out according to a descriptive approach, following a relational design of the general survey model. The study group consisted of 370 randomly-selected and voluntarily-participating teachers working in Van. The data was collected using Personal Information Forms and the Beck Depression Inventory. The regression model was analyzed with the CHAID method of analysis. Teachers' rational and irrational beliefs were selected as the dependent variables. As a result of the CHAID analysis, depression, satisfaction with the teaching profession, seniority, and industry variables were found to be significant.

## Key Words

CHAID Analysis, Cognitive Therapy, Irrational Beliefs, Rational Beliefs, Teacher.

The survival of living beings largely depends on their abilities to recognize and adapt to their environment. The search for the source of knowledge about ourselves and our environment has continued since the pre-psychology period. There are two basic views on this subject. One of these views argues that knowledge is innate, while the other view maintains that experiences are the source of knowledge. The first perspective assumes that there are pre-existing categories of information regulating our sensory experiences. According to the opposing view, knowledge can only exist based on experiences. Neither of these views, which are as old as the history of thought, have been scientifically rejected. Thus, it can be said that knowledge draws on both experiences and pre-existing, innate information (Solso, Maclin, & Maclin, 2007).

With the development of opposing ideas towards the end of the period that was dominated by the behaviorist school of thought (zeitgeist), cognition has been increasingly studied within psychology (Schultz & Schultz, 2001). As cognitive structures gained importance in the field of psychology, cognitive aspects of personality theories were emphasized more and more. However, the idea that cognitive structures have an effect on personality has very deep roots in the past. For example, the proposition of Epictetus -Stoic philosophers in Ancient Greece - that "people are not disturbed by events, but are disturbed by impressions gained from them" (Epiktetos, 2003), as well as Adler's view that emotional reactions and ways of life are linked to basic beliefs and thus occur cognitively (Corey, 2005), gave importance to cognitive structures before Albert Ellis.

<sup>a</sup> Fuat TANHAN, Ph.D., is an assistant professor of Guidance and Counseling. His areas of research include death anxiety, trauma and post-traumatic stress disorder, interpersonal communication, and positive psychology. *Correspondence:* Yuzuncu Yil University, Faculty of Education, Department of Guidance and Counseling, Department of Educational Sciences, Van, Turkey. Email: ftanhan@yuu.edu.tr

With the increasing emphasis on how cognitive structures affect personality, psychotherapies that are based on cognitive approaches have been widely adopted. As its name suggests, the focus of cognitive psychotherapy is thoughts (Burger, 2006). Rational Emotive Behavior Therapy (REBT) developed by Albert Ellis (Ellis & Harper, 1997). This approach was first termed Rational Therapy (RT) in 1955 by Albert Ellis, was changed to Rational Emotive Therapy (RET) in 1961, and then came to be known as Rational Emotive Behavior Therapy (REBT) in 1993. It is considered to be Cognitive Behavioral Therapy's (CBT) first approach. While the approach started off as being excessively cognitive, quite positivist, and very router in nature (Ortakale, 2008), over time it developed a focus on feelings and behaviors (Ellis, 1994; Türküm, 1994).

According to Ellis (1994), as a result of incorrect reasoning and irrational beliefs, individuals experience depression, anxiety, stress, and other similar problems. This situation stems from the relationship between feeling, thought, and behavior. While feelings and behaviors have an effect on beliefs, beliefs and behaviors also affect feelings, and feelings and beliefs affect behaviors. REBT is also known as the ABC model. According to this model, when people are faced with activating events (A), these events stimulate rational and irrational beliefs that they have (B). Their rational beliefs (rB) form appropriate emotional and behavioral outcomes (aC), while their irrational beliefs (iB) produce non-functional and non-effective results (iC). Ellis (2001) describes four basic irrational beliefs: dogmatic demands (should, ought to), pessimism (this is terrible, impossible), low tolerance (I can't bear...), and negative generalizations (poor, worthless) (Ellis, 2001; Türküm, 1994).

There is ample research on irrational beliefs in the literature. However, in the literature about Turkey, there are no studies which directly address the relationship between depression and the irrational thoughts of teachers. Rather, the available studies show the causes of teachers' faulty thinking (Webber & Coleman, 1988), and the relationship between irrational thoughts and emotional stress (Stebbins & Pakenham, 2001), eating disorders (Mayhaw & Edelman, 1989), low self-esteem (Daly & Burton, 1983), anger and anxiety (Zwemer & Deffenbacher, 1984), psychiatric symptoms (Bruce Thyer & Kilgore, 1983), and communication skills (cited in Türküm, 1999).

Historically, teachers have played important roles in the process of social change and transformation

(İnsel, 1996). Teachers are a very important part of their students' spiritual and emotional lives due to their close interaction with students, and they are often viewed as role models of personality and behavior (Sezer, 2010; Tozlu, 1996). However, in many cases, teachers do not use rational thinking skills in the process of interacting with their students (Tanhan & Şentürk, 2011).

### **Purpose**

Teachers' irrational thoughts may have negative effects not only on their behavior, but also on students' behavior. The aim of this study is to examine the factors that have an impact on the irrational thoughts of teachers working in primary and secondary schools.

### **Method**

This study was designed according to descriptive and correlational models of general screening methods. Screening models are research models which aim to define a situation in its own terms which available in the past or present (Balci, 1997). In a correlational research model, the aim is to determine the degree of correlational change between two or more variables (Karasar, 2009).

### **Population and Sample**

The study was conducted on 3,500 teachers working at primary and secondary schools located in five educational regions under the Van Province National Education Directorate during the fall semester of the year 2010-11. Structurally, this study was divided into two parts: primary education and secondary education. Then, according to socio-economic status (SES), each part was further divided into three sub-parts, or layers: "bottom," "middle," and "upper." Two schools were randomly designated to represent each layer. Thus, a total of 12 schools (six primary and six secondary schools), were included. 370 teachers (45 female, 225 male) voluntarily participated, and were randomly selected to form the study group.

### **Data Collection Instruments**

Data for the study were collected using Personal Information Forms (PIF) and the Beck Depression Inventory (BDI). The Turkish version of BDI was conducted by Hisli (1989). The scale consisted of 21

items with four possible answers that increase from lower to higher levels. Each item is scored from 0 to 3. The total score can range from 0 to 63, and high scores show the level or severity of depression. In this study, the Cronbach Alpha value for BDI's reliability study was calculated as 0.88. PIFs were used to determine irrational beliefs of individuals in the study group, and for the collection of personal and demographic data. For face validity and content validity, the PIFs were shown to three experts with at least a doctorate degree in the field, and they evaluated the forms positively. The questionnaire form that was used to determine the irrational beliefs of participants is presented in Table 1.

**Table 1.**  
*Questionnaire to Determine the Irrational Beliefs of Teachers*

Although you issued a warning to a group of students, you noticed that after a while, they continued to talk during the lesson. Which frame of thinking is most suited to your own? Please choose only one of the following thoughts:

A Group Ideas	B Group Ideas
( ) Students must not talk during the lesson.	( ) Sometimes students can talk during the lesson.
( ) It is a disaster when students interrupt the lesson.	( ) It is an ordinary situation when students chat during the lesson.
( ) I cannot bear students' talking during the lesson.	( ) Students' conversations during the lesson do not bother me
( ) Students who talk during the lesson have bad intentions.	( ) Students may not have bad intentions.

As can be seen in Table 1, Ellis' "irrational beliefs" [dogmatic demands (should, ought to), pessimism (this is terrible, impossible), low tolerance (I can't bear...), and generalizations (bad, worthless)] are grouped as "type A ideas", while alternative beliefs are grouped as "type B ideas". Both types were given in a scenario presented to the participants, and teachers were requested to choose only one answer from "group A" or "group B."

### Processing and Data Analysis

Participants were given information about the research being conducted, and then the BDI and PIF were applied. Two step clusters were applied to the independent variable in order to avoid the possibility of getting heterogeneous depression scores from individuals. Two Step Cluster Analysis is a multivariate statistical method by which a sample that exhibits a heterogeneous structure is divided into homogeneous sub-groups, then each sub-groups' descriptive values are calculated separately (Kayri, 2007).

"Having irrational beliefs" was selected as the dependent variable, while teachers' gender, seniority, marital status, branch, school level (elementary school or secondary school), job satisfaction, location satisfaction, and level of depression were selected as independent variables and included in the regression model. The regression equation for the model was  $\text{Statuses of Having Irrational Beliefs} = \text{constant} + b_1 * \text{level of depression} + b_2 * \text{gender} + b_3 * \text{seniority} + b_4 * \text{marital status} + b_5 * \text{branch} + b_6 * \text{school level} + b_7 * \text{job satisfaction} + b_8 * \text{location satisfaction}$ . The model was tested with a CHAID analysis, and the study was analyzed with the SPSS 16.0 software package program

In general, decision trees are used as a non-linear discrimination method to progressively separate independent variables into possible small groups (Türe, Kurt, Kurum, & Özdamar, 2005). The working mechanism of decision trees is that every divided branch of a tree is iterated with algorithms that model the strongest interaction of independent variables with dependent variables (Michael & Gordon, 2004). One decision tree is CHAID analysis, which is considered an effective technique that repeatedly separates the whole structure of the data set into two or more nodes (Türe et al., 2005). CHAID analysis examines the factors that significantly affect the change in variables of prediction. It also tries to determine the interaction and co-working combination of the variables (Doğan & Özdamar, 2003). In other words, CHAID analysis is a statistical method that divides the data set of categorical variables into homogeneous sub-groups in order to explain the dependent variable in detail. CHAID analysis can be used when predicted variables are classified, sorted, or continuous, and can also be used for predictor variables in the case of categorical or continuous variables (Doğan, 2003). CHAID analysis determines a tree structure to be ideal when it finds a relationship between categories of predictor variables and predicted variables paired significantly on cross-tables (Pehlivan, 2006).

### Results

Teachers' answers to the survey questions of irrational beliefs were examined using the Kolmogorov-Smirnov test to determine whether they exhibited normal distribution or not (Büyükoztürk, 2009). According to the Kolmogorov-Smirnov test ( $Z = 10.028, p = 000$ ), the responses did not show normal distribution. In terms of their irrational beliefs, the arithmetic mean of teachers' scores was 1.87 and the

standard deviation was 0.33. Teachers' depression scores were considered an independent variable in this study, so they were also examined using the Kolmogorov-Smirnov test to show whether the scores exhibited normal distribution or not. The test result ( $Z = 2.861, p = 0.000$ ) showed that the scores were not distributed normally. The findings of the two-step cluster analysis, in which homogeneous lower classes were obtained in terms of depression scores, are shown in Table 2.

**Table 2.**  
*Results of Two-Step Cluster Analysis*

Cluster	N	$\bar{X}$	%	ss
1. Cluster (No depression)	268	6,033	72,4	3,030
2. Cluster (Mid-level depression)	91	16,296	24,6	3,475
3. Cluster (High level depression)	11	38,909	3,0	10,348
<b>Total</b>	<b>370</b>	<b>9,535</b>	<b>100</b>	<b>7,641</b>

Table 2 shows that teachers' depression scores were  $16.296 \pm 3.475$  in the second cluster, and this was determined to be a threshold value for the depression scores of the teachers in the study group. Individuals with depression scores above the threshold value were deemed to have high levels of depression, while those with scores lower than the threshold value were deemed to have no depression.

CHAID analysis was applied to the data, taking into account a 0.05 significance level and 0.95 importance level. As a result, a tree structure was obtained which included predictor variables that have effects on the irrational beliefs of teachers.

**Discussion and Conclusion**

In this research, variables explaining the rational and irrational beliefs of teachers working at primary and secondary schools were modeled. "Having irrational beliefs" was selected as the dependent variable, while teachers' gender, seniority, marital status, branch, school level (elementary school or secondary school), job satisfaction, location satisfaction, and level of depression were selected as the independent variables and included into regression analysis. The model was tested using CHAID analysis, one of the decision trees methods. In this study, the model was examined using a tree structure describing the hierarchical flow of factors that impact primary and secondary teachers' rational and irrational beliefs.

The study showed that 12.7% of participants had irrational beliefs, while 87.3% percent of them had

rational beliefs. In the literature, the relationship between depression and irrational beliefs has been examined in various studies (Beck, 2008; Bozkurt, 1998; Çakır, 2006). Similarly, the result of the present study showed that depression is a significant predictor of teachers' cognitive beliefs. As a result of CHAID analysis, the predictor values determined to most affect teachers' rational and irrational beliefs were depression, job satisfaction, seniority, and branch. Accordingly, the non-depressed teachers had more rational beliefs, while more irrational beliefs were observed among teachers with medium or higher level depression. This finding is similar to the findings of previous research (Beck, Freeman, & Davis, 2008; Bozkurt, 1998; Çakır, 2006; Erözkan, 2005). Furthermore, teachers' job satisfaction is a significant predictor of their level of depression.

Depression is defined as a mood disorder caused by living conditions, bad experiences, personality, negative thinking, alcohol use, and drug use, as well as physical discomforts and accompanying changes in the brain (Richard & Lazarus, 2012; Plotnik, 2009; Solso et al., 2007; Türkçapar, 2009). As such, there is a negative correlation between depression and motivation (Asmus, 1987; Richard & Lazarus, 2012; Moon, 2000; Plotnik, 2009; Stipek, 1993; Türkçapar, 2009). Depression converts people into individuals who are prone to being passive and to having difficulties starting a new activity, who have low satisfaction (Amerikan Psikiyatri Birliği, 2007; Atkinson, Atkinson, Smith, Bem, & Hoeksema-Nolen, 2002), are incapable of self-improvement or of fulfilling the demands of their situations, are unwilling to work, and have low motivation (Amerikan Psikiyatri Birliği, 2007; Quinn, 2002). In this respect, the findings of the present study on the relationship between depression and work satisfaction obtained from the teachers are similar to those discussed in the literature (Davis & Wilson, 2001; Kızıltepe, 2008).

An analysis of the tree classification of the study results showed that the variable "seniority" had a meaningful effect on teachers' "job satisfaction," while the variable "branch" had a meaningful effect on the variables "partial job satisfaction" and "job dissatisfaction." In general, individuals who have recently started a career tend to be satisfied with that career (Yelboğa, 2007), as they face various incentives and develop different skills and abilities. Because the job is new, it can be perceived as more interesting and attractive by individuals. Studies have shown that job satisfaction was found to be

higher in the early years of working life (Schultz & Schultz, 1998). However, other research on the relationship between seniority and job satisfaction found that after the first few years of a job, a burnout may start (İncir, 1990). In other words, the early feeling of job satisfaction at the beginning tends to decrease with time (Schultz & Schultz, 1998). This finding is in line with research conducted on university students who reported their disappointments after their first year of a job (Tanhan & Kayri, 2012).

There is also a positive correlation between seniority and age of an individual. Some studies reported that professional satisfaction of individuals who were in their 30s was high, but that this took a downward turn in their 40s, increasing once again in the later years of their job (Greenberg & Baron, 1997). This is because toward the end of the profession, after the age of 50, workers may come to accept the job conditions. There is also evidence to suggest that as individuals' seniority increased, they showed better adaptation skills (Mortimer, 1979). An increase in seniority may increase the possibility of receiving promotions, raises, or better benefits which may also increase job satisfaction (Spector, 2008).

The CHAID analysis showed that the variables of "seniority" and "branch" were good predictors of job satisfaction. This finding conforms to the findings of the literature. The "branch" variable in relation to the options of "partially satisfied" and "dissatisfied" also clearly affects teachers' beliefs. Classroom teachers, social science teachers, and teachers in health care had more "rational beliefs" than teachers of profession and science teachers. The regression model was also tested using CHAID analysis. The variables "alcohol use" and "smoking," "marital status," "branch," "job satisfaction," "gender," "location satisfaction," "wage satisfaction," "seniority," and "school level" (primary or secondary school) were included in the model. The results of the CHAID analysis showed that from among the predictor variables, teachers' "rational beliefs" and "irrational beliefs" were impacted by depression, job satisfaction, seniority, and branch. In conclusion, the result obtained from the regression model parallels the findings in the literature.

## References/Kaynakça

- Amerikan Psikiyatri Birliđi. (1994). *Amerikan Psikiyatri Birliđi: Mental bozuklukların tanıs ve sayımsal elkitabı* (4. baskı, çev. E. Körođlu) Ankara: Hekimler Yayın Birliđi.
- Asmus, E. P. (1987, May). *The effect of grade level and motivation level on high school student's beliefs of the courses for their success in music*. Paper presented at the Southeastern Music Education Symposium, University of Georgia, Athens, Georgia.
- Atkinson, L. R., Atkinson, C. R., Smith, E. E., Bem, D. J. ve Hoeksema-Nolen, S. (2002). *Psikolojiye giriř* (Çev. Y. Alogan). Ankara: Arkadař Yayınları.
- Balçı, A. (1997). *Sosyal bilimlerde arařtırma yöntem, teknik ve ilkeler*. Ankara: PegemA.
- Beck, A. T. (2008). *Biliřsel terapi ve duygusal bozukluklar* (Çev. V. Öztürk ve A. Türkcan). İstanbul: Litera Yayıncılık.
- Beck, A. T., Freeman, A., & Davis, D. D. (2008). *Kiřilik bozuklukların biliřsel terapisi* (Çev. Ö. Yalçın ve E. N. Akçay). İstanbul: Litera Yayıncılık.
- Bozkurt, N. (1998). *Lise öğrencilerinin okul başarısızlıklarının altında yatan, depresyonla iliřkili otomatik düşünce kalıpları* (Doktora tezi, Dokuz Eylül Üniversitesi, Sosyal Bilimler Enstitüsü, İzmir). <http://tez2.yok.gov.tr/> adresinden edinilmiřtir.
- Burger, J. M. (2006). *Kiřilik* (Çev. İ. D. Erguvan Sarıođlu). İstanbul: Kaktüs Yayınları.
- Büyükköztürk ř. (2009). *Sosyal bilimler için veri analizi el kitabı* (10. baskı). Ankara: PegemA Yayıncılık.
- Çakır, E. (2006). *Anadolu öğretmen liselerinde okuyan öğrencilerin depresyon ve motivasyon düzeyleri* (Yüksek lisans tezi, Sakarya Üniversitesi, Sosyal Bilimler Enstitüsü, Sakarya). <http://tez2.yok.gov.tr/> adresinden edinilmiřtir.
- Corey, G. (2005). *Psikolojik danıřma, psikoterapi kuram ve uygulamaları*. Ankara: Mentis Yayınları.
- Davis, J., & Wilson, S. M. (2000). Principals' efforts to empower teachers: effects on teacher motivation and job satisfaction and stress. *Journal of Educational Strategies*, 73(6), 349-353.
- Dođan, N. (2003). Holřtayn ırkı ineklerde süt verimine etki eden faktörlerin Chaid analizi ile incelenmesi. *Ankara Üniversitesi Veterinerlik Fakültesi Dergisi*, 50, 65-70.
- Dođan, N. ve Özdamar, K. (2003). Chaid analizi ve aile planlaması ile ilgili bir uygulama. *Temel Klinik Tıp Bilimleri*, 23, 392-397.
- Ellis, A. (1994). *Reason and emotion in psychotherapy, revised*. NY: Kensington.
- Ellis, A. (2001). *Over coming destructive beliefs, feelings, and behaviors*. Amherst, NY: Prometheus Books.
- Ellis, A., & Harper, R. A. (1997). *A guide to rational living*. North Hollywood, CA: Melvin Powers Books.
- Epiktetos. (2003). *İçsel huzur iyi yařamın kapısını açar* (Çev. C. Erengil). İstanbul: Alkım Yayınevi.
- Erözkan, A. (2005). Üniversite öğrencilerinin kiřilerarası duyarlılık ve depresyon düzeylerinin bazı deđişkenlere göre incelenmesi. *Muđla Üniversitesi SBE Dergisi*, 14(Bahar), 131-155.
- Greenberg, J., & Baron, R. A. (1997). *Behavior in organizations: Understanding and managing the human side of work*. Upper Saddle River, NJ: Prentice-Hall.
- Hisli, N. (1989). Beck depresyon envanterinin üniversite öğrencileri için geçerliđi güvenirliliđi. *Psikoloji Dergisi*, 23, 3-13.

- İncir, G. (1990). *Çalışanların iş doyumu üzerine bir inceleme*. Ankara: Milli Produktivite Merkezi Yayınları.
- İnsel, M. (1996). Öğretmen yetiştirme. *Yeni Türkiye Dergisi Eğitim Özel Sayısı*, 2(7), 371-376.
- Karasar, N. (2009). *Betimsel araştırma yöntemi* (20. baskı). Ankara: Nobel Yayın Dağıtım.
- Kayri, M. (2007). Araştırmalarda iki aşamalı kümeleme analizi ve bir uygulaması. *Eğitim Araştırmaları Dergisi*, 28(1), 177-189.
- Kızıltepe, Z. (2008). Motivation and demotivation of university teachers. *Teachers and Teaching*, 4(5-6), 515-530.
- Richard, S., & Lazarus, R. S. (2012). Evolution of a model of stress, coping and discrete emotions. In V. R. Rice (Ed.), *Handbook of stress, coping, and health: Implications for nursing research, theory, and practice* (pp. 199-226). CA: Sage.
- Michael, J., & Gordon, S. (2004). *Data mining technique for marketing sales and customer support* (2nd ed.). New York: Wiley Computer Publishing.
- Moon, M. J. (2000). Organizational commitment revisited in new public management: motivation, organizational culture, sector, and managerial level. *Public Performance ve Management Review*, 24(2), 177-194.
- Mortimer, J. T. (1979). *Changing attitudes toward work*. New York: Work in American Institute.
- Ortakale, Y. (2008). *Akılcı davranış eğitimi* (Doktora tezi, Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Adana). <http://tez2.yok.gov.tr/> adresinden edinilmiştir.
- Pehlivan, G. (2006). *Chaid analizi ve bir uygulama* (Yüksek lisans tezi, Yıldız Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul). <http://tez2.yok.gov.tr/> adresinden edinilmiştir.
- Plotnik, R. (2009). *Psikolojiye giriş* (Çev. T. Geniş). İstanbul: Kaknüs.
- Quinn, B. (2000). *Depresyon* (Çev. A. E. Danacı). Ankara: HBY Yayınları.
- Schultz, D. P., & Schultz, S. E. (1998). *Psychology and industry today: An introduction to industrial and organizational psychology*. New York: Macmillan.
- Schultz, D. P. ve Schultz, S. E. (2001). *Modern psikoloji tarihi* (Çev. Y. Aslay). İstanbul: Kaknüs Yayınları.
- Sezer, S. (2010). Bilişsel davranışçı yaklaşımla bütünleştirilen hobi terapi uygulamasının bir eğitim kurumunun örgüt depresyonu üzerindeki etkisi. *Balikesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(23), 36-50.
- Solso, R. L., Maclin, M. K. ve Maclin, O. H. (2007). *Bilişsel psikoloji* (A. Ayçiçeği-Dinn). İstanbul: Kitapevi Yayınları.
- Spector, P. E. (2008). *Industrial and organizational psychology: Research and practice*. New Jersey: John Wiley and Sons Inc.
- Stipek, D. J. (1993). *Motivation to learn: Theory to practice* (2th ed.). Massachusetts: Allyn and Bacon, A Davison of Simon and Schuster Inc.
- Tanhan, F. ve Kayri, M. (2012). Üniversite öğrencilerinin öğretim elemanlarına ilişkin algılarını etkileyen faktörlerin CHAİD analizi yöntemi ile incelenmesi. *Kuram ve Uygulamada Eğitim Bilimleri*, 12, 807-821.
- Tanhan, F. ve Şentürk, E. (2011). Sınıf içi istenmeyen davranışlara karşı öğretmen tutumlarının bazı sosyo demografik değişkenler açısından incelenmesi. *Milli Eğitim Dergisi*, 40(192), 62-73.
- Tozlu, N. (1996). İnsan yetiştirme modelimiz, geleceğimiz ve eğitim felsefemiz [Eğitim Özel Sayısı]. *Yeni Türkiye Dergisi*, 2(7), 430-436.
- Türe, M., Kurt, İ., Kurum, A. T., & Özdamar, K. (2005). Comparing classification techniques for predicting essential hypertension. *Expert Systems with Applications*, 29, 683-688.
- Türkçapar, H. (2009). *Depresyon; Klinik uygulamalarda bilişsel davranışçı terapi*. Ankara: HYB Basım Yayın.
- Türküm, S. (1994). Akılcı-Duygusal terapide yansımalar. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 27(2), 969-974.
- Yelboğa, A. (2007). Bireysel demografik değişkenlerin iş doyumu ile ilişkisinin finans sektöründe incelenmesi. *Çağ Üniversitesi Sosyal Bilimler Dergisi*, 4(2), 1-19.