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Research Article

The Effectiveness of Addiction Prevention Training Program of Turkey on Improved Acquisition of Knowledge and Emotional Awareness about Addiction*

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Abstract

The purpose of this study is to examine the effect that the Addiction Prevention Training Program of Turkey (APT) has on increasing primary, middle, and high school students' knowledge and emotional awareness about addiction. A pre-test/post-test one group experimental design was used in the study. The study group consisted of a combined total of 5,570 primary, middle, and high school students from 12 provinces of Turkey from each of the 12 regions in NUTS-1. A dependent t-test was conducted to examine the program's ability in aiding students to acquire knowledge and emotional awareness. APT was found to be effective in increasing students' knowledge and emotional awareness about technology addiction and to be more successful for primary school and high school than for middle school students. The program is successful in combating tobacco addiction. High school students in particular became more informed about tobacco addiction as a result of the program. APT furthermore helped high school students increase their knowledge and emotional awareness about alcohol and drug addiction. Finally, although the program was effective in improving students' knowledge about healthy living, it did not have the same effect in increasing their emotional awareness about it. As a result, the program was effective in improving students' knowledge and emotional awareness about addictions.

Keywords

Addiction prevention training program • Technology addiction • Tobacco addiction • Alcohol addiction • Drug addiction • Healthy living

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Among the most critical problems adversely affecting society's quality of life of societies around the world, addiction has been subject to many interdisciplinary studies in recent years. The World Health Organization (WHO) defines substance abuse as a willingness to seek and use substances in spite of harmful consequences. The American Medical Association (AMA) defines addiction as a chronic illness caused by continued excessive use of the substance despite the physical, psychological, or social injuries it causes the person (Rinaldi, Steindler, & Wilford, 1988). Addiction is, in its simplest terms, an irresistible use of drugs or stimulants (Müderrisoğlu, 2008). Dependency is a condition where a person makes several attempts to quit using the substance, yet instead gradually increases the dose of the substance, exhibits signs of deprivation upon cessation, continues to use it despite seeing its harm, and spends a large amount of time searching for the substance (Ögel, 2001).

The concept of addiction is mainly used to describe the excessive use of cigarettes, alcohol, or narcotic substances. In the DSM-V, compulsive behaviors that both are and are not accompanied by substance abuse are also considered under addiction (e.g., pathological gambling, sex dependency, and internet dependency) (American Psychological Association [APA], 2013). Green Crescent classifies addiction types under the following categories: cigarette/tobacco, alcohol, substance, technology, and gambling addiction (www.yesilay.org.tr).

Due to the increase in substance use, it is estimated that, worldwide, 200,000 people die annually as a result of substance use (Milli Eğitim Bakanlığı [MEB], 2009). While the number of individuals using narcotic substances increases, the average age of these users decreases (Sarı & Öztürk, 2005). According to the United Nations Office on Drugs and Crime (UNODC), in 2008, 208 million people were using narcotic substances worldwide whereas by 2014 this number increased to 247 million (UNODC, 2016). The use of drugs is lower in Turkey than in many countries. In the 2008 study titled "Adolescent Profile" (Aile ve Sosyal Araştırmalar Genel Müdürlüğü [ASAGEM], 2010) conducted on 65 ages, 1.9% of individuals aged between 13 and 18 were found to have used cannabis at least once in their life (Şen et al., 2008). AMATEM's 2013 data shows that the number of problematic substance users (excluding marijuana and ecstasy) was 59,895 (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2014). According to the results of the two surveys "Attitudes and Behavior Research Towards Tobacco, Alcohol and Substance Use in General Nutrition (GPS)" and "Attitudes and Behavior towards Tobacco, Alcohol and Substance Use in Schools in Turkey (SPS)" conducted by the Turkish National Drug and Drug Addiction Monitoring Center (TUBİM) 2.7% of those surveyed were found to have used a narcotic substance at least once in their life (Turkey Monitoring Center for Drugs and Drug addiction [TUBİM], 2012). The results of the study revealed that 15 to 24-year olds of age were significantly

more likely to use of drug. Moreover, 1.5% of the elementary-aged school children surveyed were found to have used a narcotic substance at least once in their life with the average age of first use being at 14. Since the data indicate increased rates of drug addiction and instances of first use occurring at younger ages, governments should focus their efforts on emergency prevention and protective programs.

Article 58 of the Constitution of the Republic of Turkey states that “The State shall take necessary measures to protect young people from alcohol addiction, drug substances, guilt, gambling and similar bad habits and ignorance.” This provision shows that fighting drugs or other substance addictions is among the Turkish state’s main tasks. On the basis of this provision, the “National Strategy and Policy Document” covering 2006-2012 was devised and the corresponding “National Drug Action Plan” in force between 2007 and 2009 was executed. Per the National Drug Policy and Strategy Document (2013-2018), Turkey has implemented an approach that facilitates division of labor, linked work, cooperation, and coordination among related parties by developing a broad, unified and complementary mentality, organizations, and practices to effectively combat substance dependence. To this end, the National Drug Action Plan (2013-2015) seeks to engender coordination and cooperation between the central government, local governments, and NGOs in all areas and at all levels to establish and maintain a holistic and multilateral system to prevent drug use and dependence. Green Crescent has the distinction of being the first and only non-governmental organization to combat addictions and species on a national scale in Turkey. The National Drug Policy and Strategy Document and the National Drug Action Plan are included in the preparatory studies and conduct guiding and fundamental work on state policies. At the same time, Green Crescent is not only developing relevant activities by following up on current scientific applications and international standards and studies but also implementing exemplary practices (Yeşilay, 2015).

All of these documents emphasize preventive and protective initiatives against addiction. Prevention is to strengthen individuals and systems against the challenges of life events and transitional periods, bringing about healthy behaviors and lifestyles (Busiol & Lee, 2015). Prevention includes all of the strategies and activities aimed at ensuring a healthy and productive life for a community. Among the objectives of prevention are: (i) to prevent the use of addictive substances in society, (ii) to prevent addictions from developing, (iii) to prevent individual and social problems caused by using these substances, and (iv) to promote healthy behaviors in society (Ogel, 2010). Through prevention, individuals’ healthy development can lead to increased quality of life and to their being able to manage risks more effectively. The most effective and economic methods in combating addiction are preventive and early intervention oriented programs (Leshner, 1997). While discussing risk and protective factors in preventive programs seeking to combat addiction, programs’ efficiency will be increased by (i)

including families, schools, and social resources in the ecological context (NIDA, 2003), (ii) early intervention for at-risk groups and all children (Best & Witton, 2001; Ogel, 2010), (iii) developing conscious awareness (Tiriskan, Onnar, Çetin, & Çömert, 2015), (iv) enhancing the effectiveness of cooperative and interactive opportunities. When the literature on substance dependence prevention is examined, it is seen that many prevention programs have been developed and that these programs provide meaningful contributions to the struggle against addiction (Coşkun, 2006; Dabaghi & Valipour, 2016; Davasligil, Çakıcı, & Ogel, 1998; Dusenbury, Falco, & Lake, 1997; Griffin & Botvin, 2010; Korkut, 2007; Ogel, 2010; Sevgi, Ogel, Comert, & Eke, 2007; Siyez & Palabıyık, 2009; Topçuoğlu, 2016). When examined, while some of these preventive programs focus on building conscious awareness by increasing individuals' knowledge who are using or at risk of using narcotic substances, other programs seek to minimize risk factors by focusing on skill development.

When programs executed with the aim of preventing substance use in Turkey are examined, it is seen that preventive activities are carried out more in the form of seminars and that the number of comprehensive training programs is very low. However, studies evaluating the effectiveness of substance abuse prevention programs have shown that preventive programs, including those that only provide information, do not significantly change attitudes and behaviors, despite contributing to an increase in adolescents' knowledge (Moskowitz, 1989). On the other hand, it is known that preventive and developmental models supported by life skills education, have achieved important achievements in combating substance dependence (Faggiano, Vigna-Taglianti, & Versino, 2008; Griffin & Botvin, 2010). Life skills education seeks to provide research-based, individualized education in accordance to scientific criteria in EU countries and especially in the US. It seems that these models have been transformed into state policy and are made from an interdisciplinary point of view. Having undertaken the basic duties in combating addiction, Green Crescent has prepared the Addiction Prevention Training Program of Turkey* (APT) to increase social awareness at the national level. The program is a science-based educational program that includes a variety of application examples around the world aimed at minimizing the risk of non-dependent individuals entering the addiction process. The aim of the current study, therefore, is to examine APT's effect on primary, middle, and high school students' knowledge and emotional awareness about addiction. To this end, answers to the following questions have been solicited:

- Is the Addiction Prevention Training Program of Turkey effective in increasing knowledge and emotional awareness about technology and tobacco addiction and healthy life in primary and middle school students?

* TR: Türkiye Bağımlılıkla Mücadele Programı (TBM)

- Is said program effective in developing knowledge and emotional awareness about technology, tobacco, alcohol, drug addiction, and healthy life in high school students?

Method

Research Design

A pre/post test single group experimental design was used to test the effectiveness of APT in improving primary, middle, and high school students' information and emotional dimensions. Dependent variables are knowledge and psychological state of addiction and healthy life. The independent variable is APTPT, whose effect is tested. The effect of the program in developing students' awareness of addiction was tested separately for each level of education.

Addiction Prevention Training Program of Turkey. APT was developed to be an effective action plan in the fight against addiction. It is a unique program that consists of protective, preventive, and constructive elements. APT aims to increase children's and adolescents' knowledge and emotional awareness of addictive substances and to live a safer and healthier life away from addiction risks. Formed in a modular structure, the program aims to raise awareness about cigarettes, alcohol, drugs, and technology addictions. Furthermore, as a complementary element, it seeks to instill healthy living-related principles to students.

National and international literature was taken into consideration while preparing APT. The views of experts in the field of the goals / achievements of the program, its content, and the process of training and assessment are utilized. Prepared draft programs were brought to their final form through the contributions of Green Crescent's Science Board. Table 1 presents the program's modules by education level. Accordingly, primary and middle school students partook in three modules (i.e., technology addiction, tobacco addiction, and health-living) whereas high school students partook in five (i.e., technology addiction, tobacco addiction, alcohol addiction, drug addiction, and health-living).

Table 1
APT Content

	Technology Addiction	Tobacco Addiction	Alcohol Addiction	Drug Addiction	Healthy Life
Primary School (Grades 1-4)	+	+			+
Middle School (Grades 5-8)	+	+			+
High School (Grades 9-12)	+	+	+	+	+

A *Guidebook for APT Implementers* has been prepared in order to create a standard for the program's execution and includes (i) target groups' characteristics, (ii) how to use materials, including those prepared separately for each target group, and (iii)

the necessary conditions for executing activities. The modules are composed of both classic and more contemporary educational materials. Modern teaching materials include interactive content based on new generation learning features. A distance learning system (<http://lms.tbm.org.tr>) was prepared to provide interactive content for the use of CPC to ensure the integrity and continuity of information throughout Turkey. This system is a first for Turkey and has been misunderstood by LMS (Learning Management System). The program is integrated into Turkey's national education system and is implemented through Public Education Centers located throughout Turkey's provinces.

A two-stage program was executed to teach trainers how to implement the training programs. In the first stage, 498 developmental guidance counselors were trained by Green Crescent field specialists. In the second stage, the developmental guidance counselors trained 28,349 APT practitioners throughout Turkey and aimed to co-ordinate practices throughout the country. The training sessions conducted throughout Turkey's various provinces were executed by APT practitioners who had been educated during the 2015-2016 academic year. A pilot implementation program was carried out in the province of Istanbul before the nationwide implementation. Approximately 60 thousand students from 515 high schools participated in the pilot practice in 39 districts within the province of Istanbul. The results of the pilot program and the results of the workshop with field experts followed the revision studies on the training program, training materials, program implementation process, dissemination method, and the final form of TBM was given.

Sample

The sample was selected according to the classification of statistical site units (NUTS1). The program was carried out on a total of 12 sites, one in each region (Table 2).

Table 2
Distribution of Cities in Sampling and Sample Size

Site	City	Site	City
01. North-East Anatolia	Iğdır (N=343)	07. East Marmara	Bursa (N=107)
02. Central Anatolia	Malatya (N=236)	08. West Anatolia	Manisa (N=74)
03. South-East Anatolia	Urfa (N=637)	09. Mediterranean	Hatay (N=459)
04. Marmara	İstanbul (N=2002)	10. Central Anatolia	Kayseri (N=260)
05. West Marmara	Tekirdağ (N=342)	11. West Black Sea	Amasya (N=376)
06. Aegean	Aydın (N=243)	12. East Black Sea	Rize (N=113)

The pre- and post-test applications of the measurement tools were performed with 12 primary, middle, and high school students included in the sampling. Among the total number of students participating in the experimental study ($n = 5,192$), 1,411 attended primary school, 1,845 attended middle school, and 1,936 attended

high school. The programs were standardized and APT trainers participated in the pilot programs after having received training. The pilot programs were conducted in meeting halls and lasted for two hours. The distributions of the research sample by different school levels are given in Table 3.

Instruments

APT's basic aim is to increase students' awareness about addiction and limits its scope to these two dimensions. As such, three modules were implemented for primary and middle school students and five for high school students to increase students' knowledge and positive feelings. To this end, forms were developed to measure students' knowledge and emotions. These forms were devised after reviewing national and international literature and were revised after consulting field experts.

According to this, while three measurement tools were used to collect data on tobacco addiction, technology addiction, and healthy living from primary and middle school students, five were used to collect data on alcohol addiction and drug addiction in addition to the three previously mentioned areas from high school students. Each measurement tool consisted of a total of 17 items; the first 12 items gauged participants' knowledge whereas the last 5 items measured their emotions. Twelve of the forms' items measuring knowledge were structured as true/false questions. Participants' true responses were coded as 1 and false responses as 0 before conducting any analysis. The option No idea is coded as "0", assuming that the student has the property measured by the substance, not having the defined knowledge. If an item was left unanswered, it was similarly coded as 0 based on the assumption that the participant did have the knowledge to answer the item. Students' raw scores on the 12-item information test ranged from 0 to 12. To facilitate interpretation and understanding of participants' knowledge, their raw scores were converted into a percentage on which subsequent analyses were based. Additionally, a 5-item scale was used to measure students' moods related to technology, tobacco, alcohol, and drug addiction and healthy living. A five-point scale was used for item answers. The two extreme points of the scale were defined by adjectives. A sample item is as follows:

Excessive use of technology. Safe (1) - (2) - (3) - (4) - (5) Dangerous

Here, a high score for an item and therefore for the entire scale indicates a propensity to consider the overuse of the technology as dangerous, that is, a positive feeling of societal expectation for addiction.

The validity of the test measuring students' knowledge about addiction was ascertained by examining its content. Experts were consulted to ensure the validity of the content. Experts were asked to evaluate whether the items in the test were sufficient in number

and quality to measure participants' addiction awareness. According to these experts' opinions, the forms were revised and brought to their final design. Test scores' reliability was calculated using [Mislevy and Bock's \(1990\)](#) formula. For this, the implicit attribute of the individual, or in other words, the correlation between the actual score and the factor scores was examined. In this sense, the reliability values for the knowledge test were estimated based on actual scores instead of the classical reliability coefficient. The program FACTOR (ver. 10.3.01) was used to analyze reliability.. The reliability values for the forms measuring primary school students' knowledge were .86 for the technology addiction test, .89 for the tobacco addiction test, and .86 for the healthy life test. The same values were .96, .93 and .85, respectively, for the secondary school forms. The reliability values for the forms measuring high school students' knowledge were .94 for the technology addiction test, .91 for the tobacco addiction test, .84 for the alcohol addiction test, .93 for the drug addiction test, and .80 for the healthy life test.

The validity of the scales measuring students' emotional state was assessed using construct validity principles. A factor analysis was done for this as factor analysis results are also used as proof of measurement instruments' construct validity ([Ogel, 2001](#); [Stapleton, 1997](#)). Reliability values for the emotional scales were calculated using the Cronbach Alpha formula. SPSS was used to perform these analyses. According to the results of the factor analysis of the single dimension, the load values were higher than .30 for all items. The variance explained for this dimension and scores' reliability values are given in Table 3.

The variance explained by this dimension was between 25% and 74% and the calculated reliability values between .78 and .91 for the emotional scales.

Data Analysis

To test whether APT increases students' addiction and healthy life awareness, a

Table 3
Explained Variance and Reliability Value of Emotional Awareness Scales

Education Level	Scale	Emotional State	
		Variance Explained (%)	Reliability (Alpha)
Primary School	Technology Addiction	66.17	0.87
	Tobacco Addiction	65.25	0.85
	Healthy Life	60.51	0.80
Middle School	Technology Addiction	68.02	0.88
	Tobacco Addiction	64.75	0.86
	Healthy Life	56.70	0.78
High School	Technology Addiction	68.17	0.88
	Tobacco Addiction	66.57	0.89
	Alcohol Addiction	73.82	0.91
	Drug Addiction	71.93	0.90
	Healthy Life	72.71	0.90

t-test was applied to dependent groups during the analysis of the data obtained from the single-group pre- and post-tests. Since the number of students participating in the study was very high and the distributions were normal, parametric statistics were used while comparing students' pre- and post-tests. Following the analysis and program's implementation, changes in students' knowledge and emotional awareness were investigated. In addition to the study, the effect size (i.e., Cohen's *d*) was calculated and reported on the tables for the analysis results. Cohen's *d*, the standardized difference between the averages, is considered to be small when .20, medium when .50, large at .80, and larger than one standard deviation at 1 and greater (Cohen, 1998).

Results

The results of the hypothesis tests conducted to assess APT's effect on students' knowledge and emotional awareness of addiction types and healthy life are presented separately for the different educational levels.

Primary School

The t-test results of the difference between pre- and post-test mean scores for tests measuring primary school students' knowledge and emotional awareness regarding technology addiction, tobacco addiction, and healthy living are given in Table 4.

There is a meaningful difference between primary school students' mean scores on the tobacco addiction knowledge test and tobacco addiction emotional scale pre- and post-implementation ($p < .05$). Since students' test scores increased following the application, it can be said that the practitioner was effective in increasing students' knowledge about smoking. There seems to be a meaningful difference between students' tobacco addiction emotional state mean scores pre- and post-implementation. Since the magnitude of the analysis' effect is very low, a statistically significant difference is not considered to be important in practice.

A meaningful difference was observed to exist between students' pre- and post-test mean scores on the healthy life knowledge test ($p < .05$). There is an increase in students' knowledge post implementation. Accordingly, it can be said that the program is effective in increasing students' knowledge about healthy living. There was no meaningful difference between students' average scores before and after the healthy life emotional awareness scale was implemented ($p > .05$).

Middle School

The results of tests measuring middle school students' knowledge and emotional awareness regarding technology addiction, tobacco addiction, and healthy living are given in Table 5.

Table 4

T-test Results of Primary School Students' Pre- and Post-test Scores on Tests Measuring Knowledge and Emotional Awareness For Technology Addiction, Tobacco Addiction, and Healthy Living

Variable		Measurement	N	$\bar{X}$	S	sd	T	<i>p</i>	Cohen's d
Technology Addiction	Knowledge	Pre-test	926	48.58	17.29	925	8.64	.000	.28
		Post-test	926	53.97	16.75				
	Emotion	Pre-test	909	18.12	6.10	908	10.68	.000	.35
		Post-test	909	20.18	5.52				
Tobacco Addiction	Knowledge	Pre-test	1,040	75.36	16.43	1039	5.30	.000	.16
		Pos-ttest	1,040	78.33	16.87				
	Emotion	Pre-test	994	22.80	4.21	993	2.00	.046	.06
		Pos-ttest	994	22.46	5.17				
Healthy Living	Knowledge	Pre-test	1,113	71.58	18.3	1112	6.47	.000	.19
		Post-test	1,113	75.51	19.60				
	Emotion	Pre-test	1,036	21.40	4.69	1035	1.12	.263	.03
		Post-test	1,036	21.59	5.20				

Table 5

T-test Results of Middle School Students' Pre-test and Post-Test Average Scores

Variable		Measurement	N	$\bar{X}$	S	sd	t	p	Cohen's d
Technology Addiction	Knowledge	Pre-test	1,729	69.83	21.44	1728	5.11	.000	.12
		Post-test	1,729	72.44	23.50				
	Emotion	Pre-test	1,670	18.36	5.96	1669	9.41	.000	.23
		Post-test	1,670	19.55	6.03				
Tobacco Addiction	Knowledge	Pre-test	1,528	76.71	21.77	1527	8.46	.000	.22
		Post-test	1,528	81.61	23.06				
	Emotion	Pre-test	1,474	22.01	4.72	1473	3.71	.000	.10
		Post-test	1,474	22.51	4.91				
Healthy Living	Knowledge	Pre-test	1,817	60.91	16.25	1816	11.47	.000	.27
		Post-test	1,817	66.02	19.77				
	Emotion	Pre-test	1,743	20.79	4.51	1742	3.93	.000	.10
		Post-test	1,743	21.25	4.87				

An examination of Table 5 reveals there to be a significant difference between middle school students' pre- and post-implementation mean scores on the technology addiction knowledge and emotional awareness tests ($p < .05$). The mean scores of both these tests increased following the program's implementation, indicating that the program was effective in improving students' knowledge and emotional awareness about technology addiction.

A meaningful difference was found to exist between students' mean scores on the tobacco addiction knowledge and emotional awareness tests pre and post implementation ($p < .05$). Students' test scores following the program's implementation were higher than those prior to it, meaning that the program was effective in increasing students' knowledge and emotional awareness about tobacco use.

Finally, a meaningful difference was found to exist between students' mean scores on the healthy living knowledge and emotional awareness tests pre and post

implementation ($p < .05$). Students' test scores after the application were higher than those before, suggesting that the program is effective in increasing not only students' knowledge toward healthy living but also their sense of well-being.

High School

The results of tests measuring high school students' knowledge and emotional awareness regarding technology, tobacco, alcohol, drug addiction, and healthy living are presented in Table 6

Variable		Measurement	N	$\bar{X}$	S	sd	<i>t</i>	<i>p</i>	Cohen's d
Technology Addiction	Knowledge	Pre-test	1,447	66.53	26.21	1446	11.14	.00	.29
		Post-test	1,447	75.20	27.85				
	Emotion	Pre-test	1,383	18.60	5.66	1382	14.28	.00	.38
		Post-test	1,383	21.01	5.265				
Tobacco Addiction	Knowledge	Pre-test	1,496	64.65	21.88	1495	13.09	.00	.34
		Post-test	1,496	73.41	23.42				
	Emotion	Pre-test	1,431	20.54	5.31	1430	9.74	.00	.25
		Post-test	1,431	21.86	4.71				
Alcohol Addiction	Knowledge	Pre-test	1,588	59.86	21.31	1587	15.87	.00	.40
		Post-test	1,588	69.78	24.11				
	Emotion	Pre-test	1,517	21.11	5.49	1516	5.20	.00	.13
		Post-test	1,517	21.85	5.06				
Drug Addiction	Knowledge	Pre-test	1,625	68.30	22.32	1624	9.21	.00	.23
		Post-test	1,625	73.56	23.40				
	Emotion	Pre-test	1,538	21.04	5.45	1537	6.45	.00	.16
		Post-test	1,538	21.88	5.10				
Healthy Living	Knowledge	Pre-test	1,536	43.69	15.03	1535	41.79	.00	1.07
		Post-test	1,536	67.80	21.40				
	Emotion	Pre-test	1,452	19.78	6.13	1451	.67	.504	.02
		Post-test	1,452	19.67	6.78				

An examination of Table 6 reveals the existence of a meaningful difference between high school students' pre- and post-implementation mean scores on the technology addiction knowledge and emotional awareness tests ($p < .05$). Students' knowledge and emotional awareness scores increased post implementation, suggesting that the program is effective not only in increasing high school students' knowledge concerning technology addiction but also in developing positive emotions.

There is a meaningful difference between students' tobacco addiction knowledge emotional awareness test mean scores pre- and post-implementation ($p < .05$). The mean scores of the students' knowledge and emotional awareness tests increased following the program's execution, indicating that the program has a powerful effect on increasing high school students' knowledge and emotional awareness of tobacco addiction.

The table also shows there to be a meaningful difference between students' alcohol addiction knowledge and emotional awareness test mean scores pre and post implementation ($p < .05$). Students' average post-implementation scores were higher than they were prior to the program's implementation, suggesting that the program is effective in increasing high school students' knowledge and emotional awareness of alcohol addiction.

Table 6 also reveals there to be a meaningful difference between high school students' mean scores on the drug addiction knowledge and emotional awareness tests pre and post implementation ($p < .05$). Since student's post-test scores were higher than pre-implementation, it can be said that the program is effective in increasing high school students' knowledge and emotional awareness regarding drug addiction.

Finally, Table 6 shows there to be a meaningful difference between high school students' mean scores on the healthy living knowledge tests pre and post implementation ($p < .05$). Students' post-implementation knowledge test average scores were higher than before the program's execution, suggesting that the program is effective in improving high school students' knowledge about healthy living. There was, however, no meaningful difference between high school students' pre- and post-test average scores on the emotional awareness test for healthy living ($p > .05$).

Discussion

The results and interpretations of the Addiction Prevention Training Program of Turkey (APT) on its effect on primary, middle, and high school students' knowledge and emotional awareness are discussed individually in their own paragraph.

The addiction prevention program was effective in increasing primary, middle, and high school students' knowledge and emotional awareness about technology addiction. The program's effect on students' awareness about addiction was also compared by school level. However, no comparison was made between groups because the questions measuring primary, middle, and high school students' knowledge were different whereas the questions measuring the same groups' emotional awareness were the same. Differences in education level were descriptively compared using Cohen's d to gauge effect size. Programs seeking to increase primary and high school students' technology addiction knowledge were found to be more effective than those designed for middle school students. One possible explanation for the program's lower effectiveness for middle school students is because this specific age group is more closed to external influences, exhibits more egocentric attitudes, and is more apt to succumb to peer pressure and adopt bad habits in an attempt to fit in. Moreover, primary and high school students were found to develop greater emotional awareness about technology addiction than middle school students. One explanation for this is based on technology

involvement. An examination of other studies aimed at preventing technology addiction (Busiol & Lee, 2015; Koo, 2011, 2013) reveals that such programs are effective in reducing students' internet and technology addiction levels. Considering the results of previous and the current study, it can be concluded that programs designed to prevent students from developing internet and technology addictions are successful in their aim and constitute an effective method to combat addiction.

The program pertaining to tobacco addiction was found to be successful in increasing primary, middle, and high school students' emotional awareness about tobacco addiction. In terms of knowledge, high school students' knowledge about tobacco addiction increased more than primary and middle school students' knowledge did. Since tobacco use rates are higher among high school students (Smith, 2004), they may be more interested in learning about tobacco addiction than primary and middle school students. Regarding effect sizes, it is seen that the highest level is the effect, secondary school and primary school level in the high school level. Similarly, the results on tobacco addiction in the current student were found to be consistent with those of previously implemented prevention programs (Aydemir, 1992; Bektaş, 2009; Bektaş & Öztürk, 2012; Gokgoz, 2004; Sarı & Öztürk, 2005; Storr, Ialongo, Kelam, & Anthony, 2002). This find illustrates that preventive programs is successful in helping students to become more knowledgeable about, less accepting toward, and more resistant to tobacco.

In terms of increasing emotional awareness, primary, middle, and high school students all benefited from the program in question. Although the program's effect is statistically significant, the small effect size for primary and middle school students suggests that the program's ability to increase emotional awareness for these groups is limited.

The program made a significant contribution to high school students' knowledge and emotional awareness about alcohol and drug addiction. Namely, the program was particularly effective in increasing students' overall awareness about alcohol addiction. Furthermore, the program was more successful in increasing high school students' knowledge and emotional awareness levels. Previously executed prevention programs designed to prevent alcohol and drug addiction (Bektaş & Öztürk, 2012; Carmack, 2005; Froeschle, 2005; Mason, 2003; Siyez & Palabıyık, 2009) were consistent with the results of the current study. It can therefore be said that the program discussed in this paper meets high school students' information needs about alcohol and drug addiction.

While APT made significant contributions to middle school students' emotional awareness, it made meaningful contributions to primary, middle, and high school students' knowledge about healthy living. However, the effect size of the program's emotional awareness dimension for middle school students was found to be very

low. As such, the program can be said to be especially effective in increasing high school students' knowledge about healthy living. Since high school students are in the process of forming their own self image during this period of development, the program's effectiveness in this vein may be amplified by emphasizing physical appearance and shedding light on the necessity of healthy life. The current study's results in regard to improving knowledge about healthy living are consistent with those of previous studies on healthy living and prevention programs in the literature (Durusu, 1996; Tahiroğlu, 2011). With this in mind, the program can be interpreted as being effective in increasing students' knowledge about healthy life but not in increasing emotional awareness about healthy living.

The effect of APT on increasing knowledge and emotional awareness about addiction in primary, middle, and high school students was tested by a single-group experimental study conducted at 12 regions throughout Turkey (NUTS-1). The specific design of the study has two basic limitations. The first is the lack of a reference group and the second is that the unwanted exogenous variables that threaten internal and external validity were not controlled for. Another limitation relates to measurement methods and tools. Only structured tools were used to measure students' knowledge and emotional awareness about addiction. The use of other methods, such as interviewing and observation, in such studies is important in terms of providing richness and depth in discussing the results of qualitative data on the implementation process and gains. On the other hand, the lack of a follow-up program resulted in there being limited evidence of the program's effect. It can be argued that a follow-up program is even more important in studies lacking a control group. Consideration of these limitations is necessary in addressing the current study's results.

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