

Six Month Follow up of Adolescents with Inhalant Abuse

İbrahim Taymur¹,
Hidayet Çalışkan², Hasan Varol³

¹Psychiatrist, *Dişkapi Yıldırım Beyazıt Training and Research Hospital, Ankara - Turkey*
²Psychologist, ³Social Service Specialist, *Elazığ Governorship, Social Services and Child Protection Association, Governor Osman Aydın Children and Youth Center, Elazığ - Turkey*

ABSTRACT

Six month follow up of adolescents with inhalant abuse

Objective: This study aims to evaluate 6 month follow up results of adolescents who were found to have inhalant abuse in Elazığ province and voluntarily agreed for follow up and treatment.

Method: Seventeen adolescents with a history of abuse of volatile compounds were voluntarily included in the study. At the beginning and during follow up, families and schools of adolescents were visited. During 6 month follow up, supportive psychotherapy was carried out once a week.

Results: Adolescents participating in the study were all male. 53% of those adolescents had committed a crime or encountered legal problem. The mean age for the onset of inhalant use was 13.6 ± 2.1 . There was also alcohol and marijuana use in 83% of the adolescents. At the end of 6 month follow up, it has been observed that 4 adolescents had a regular job, 4 continued to school regularly, and all of them quitted inhalant use.

Conclusion: The results of the study suggest that, informing about inhalant use, following up and supportive psychotherapy may have been helpful for quitting inhalant abuse.

Key words: Volatile substance, adolescent, individual supportive therapy

ÖZET

Uçucu madde kötüye kullanımı olan ergenlerin altı aylık izlem sonuçları

Amaç: Bu çalışmanın amacı, Elazığ ilinde uçucu madde kullanımı tespit edilmiş ergenler arasında, takip ve tedaviyi gönüllü olarak kabul etmiş olanların 6 aylık izlem sonuçlarının değerlendirilmesidir.

Yöntem: 2006-2007 yılları arasında uçucu madde kullandığı tespit edilmiş 17 gönüllü ergen bu çalışmaya dahil edilmiştir. Çalışmanın başlangıç ve izlem aşamalarında, ergenlerin ailelerine ve okullarına ziyaretlerde bulunulmuştur. Ergenlere 6 aylık izlem boyunca, haftada 1 kez destekleyici psikoterapi uygulanmıştır.

Bulgular: Çalışmaya katılan ergenlerin tamamı erkekti. Çalışmaya alınan ergenlerin %53'ünün yasayla bir sıkıntısı olduğu ve/veya suç işledikleri tespit edilmiştir. Uçucu madde kullanımına başlama yaşının ortalama 13.6 ± 2.1 olduğu görülmüş ve ergenlerin %83'ünde uçucu madde ile birlikte alkol ve esrar kullanımının varlığı izlenmiştir. Altı aylık izlem sonucunda, dört ergenin düzenli bir işte çalışmaya başladığı, dört ergenin düzenli olarak okula devam ettiği ve ergenlerin hiçbirinde uçucu madde kullanımının bulunmadığı gözlemlenmiştir.

Sonuç: Çalışmamızda, ergenlerde uçucu madde kullanımının önlenmesinde, uçucu madde hakkında gerekli bilgilendirme, izlem ve destekleyici psikoterapilerin faydalı olabileceği sonucuna varılmıştır.

Anahtar kelimeler: Uçucu madde, ergen, bireysel destekleyici terapi

Address reprint requests to:
Psychiatrist İbrahim Taymur, Dişkapi Yıldırım
Beyazıt Training and Research Hospital,
Ankara - Turkey

Phone: +90-464-212-3000

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dritay@yahoo.com

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INTRODUCTION

Although inhalant substance abuse is frequently seen, it can be missed in adolescent period. In US, it was reported that up to 20% of adolescents tried inhalants at least once till 8th grade (1). Abused inhalant substances can be found in houses, are relatively cheap and can easily be accessed by poorer and smaller children (2,3). Inhalant substances were classified by National Institute on Drug Abuse (NIDA) as volatile solvents, aerosols, gases and nitrites (4). In studies about volatile substance abuse done in our country, inhalant substance abuse at least once in a lifetime was

found between 3.9% and 12.8% in different provinces. In 5% of students lifetime prevalence of inhalant use was 1-2 times but this prevalence was reported up to 10 times or more for 1.3% of the students. In the same studies, it was mentioned that inhalant use starts at early ages and is a step to the abuse of other substances (5,6). In a study done in primary and secondary school students of nine provinces investigating prevalence of tobacco, alcohol and substance abuse, age of volatile substance use was reported as 12 and 13.4, consecutively (7). In a study conducted with 2800 students in 15 different schools of Istanbul in 1995, inhalant use at least once in lifetime was found 3.8% (8). Inhalant use

at least once in lifetime was found 4% in a study called "Youth Questionnaire" in Istanbul in 1996 (5).

Inhalant use in children and adolescents start approximately at ages of 13-14. It was reported that alcohol and substance abuse may also accompany inhalant abuse (9). In a study investigated the relationship between inhalant abuse and crime between 1996 and 2007, significant correlation was found between inhalant abuse and crime and antisocial behavior (10).

Several acute or chronic medical problems may occur during inhalant use (11). Cognitive evaluation of adolescents with inhalant use of mean 2.3 years showed that impairment in orientation, attention, learning, calculation, abstraction, information, creativity and memory function in 33.3% of them (12).

In recent studies, social conditions were evaluated as strong motivational factors in contact with substances of children and adolescents and reported to cause abuse and dependence (13). Although there are several studies about frequency, risk factors and medical consequences of inhalant abuse among children and adolescents, there are few studies on its treatment both inside and outside of Turkey. In the study of Jumper-Thurman and Beauvais (14) about the treatment of inhalant abuse, importance of group activities and group therapy was emphasized and mentioned that developing basic living skills (school attendance, working skills, hygiene and nutrition etc.) of people with inhalant abuse should be frequently helped.

Non-adherence to treatment is more frequently seen in inhalant abuse than other substance abusers and its treatment has often many challenges. Impairment of social and family support among these people decreases the efficacy of long-term treatment. Home visits were found efficacious for treatment adherence of people with inhalant abuse and their families (15). Furr-Holden et al. (16) showed that class-focused information and education is also important in the prevention of inhalant abuse. It was reported that detoxification period should continue for months, therapy should be performed by fragmenting to longer periods and therapy sessions should not be longer than 15-20 minutes (17).

In our study, 6 months follow-up and treatment of adolescents with inhalant abuse was planned.

Characteristics and severity of inhalant use was determined first at the beginning of the study. In order to prevent adolescents from inhalant use, individual supportive psychotherapy during the follow-up towards conditions which may have risks was predicted to be useful.

METHODS

Study sample consisted of 55 children and adolescents found to have inhalant abuse by Children's Section of Elazığ Provincial Directorate of Security between March 2006 and January 2007. At visits to 33 children and adolescents with address information, address information of 6 children were found to be wrong or their residences changed and one family did not accept the interview. Twenty-six families were talked about the study and 19 did not accept to participate in the study; however, collaboration was settled with 7 families about follow-up and treatment. Nineteen families who did not accept to participate in the study told their reason for not participating as they thought that their children had either never used inhalant substances or left using them. After visiting places which inhalant use is frequently observed, 10 more adolescents were determined and they were included in the study after talking with their parents. Exclusion criteria were determined as presence of mental retardation and lack of motivation to participate in the study. Informed consent was taken from families of adolescents before this study. Study was conducted with 17 adolescents who do not have exclusion criteria out of 22 whom accepted to participate in the study. All adolescents participated in the study were boys and mean age was 16.1±1.2.

During the study, families of adolescents were informed about inhalant substances and their damages so that their participation to the treatment was aimed. It was observed from the beginning of the study that adolescents were not brought to treatment by their families. Participants were taken from their homes, their neighborhoods or places where inhalant use is prevalent by a vehicle of social services and brought to the treatment center and left their addresses after the

treatment session.

Weekly individual supportive psychotherapy was implemented to adolescents participated in the study during 3-6 months of follow-up. Therapy sessions were conducted by the co-participation of a psychiatrist, psychologist and social service specialist. Adolescents participated in the study were required to attend psychiatry outpatient clinic for their medical treatment. Follow-up of medical treatment was not included in the study. Certain issues were focused at individual supportive psychotherapy. These were positive and negative life events in family, expectations and disappointments about family, information about substance abuse, educational levels and expectations from education, communication styles in interpersonal relationships, positive and negative life events in interpersonal relationships, evaluation of problem solving skills and its restructuring, expectations from the future and creating alternatives about what can be done in the future.

Material

Inhalant uses of adolescents participated in the study were evaluated according to diagnostic criteria of DSM-IV axis I alcohol and substance abuse disorders (18).

Yeniden Inhalant Use Severity Scale (YUKUD) and YUKUD general information form which were developed by Ögel et al. (19) were used to assess the severity of inhalant substance abuse in the study. YUKUD consists of 18 question items which were frequency, using more than planned, time consumption, not taking responsibilities, tolerance, cognitive problems, physical problems, crime, problems in

relationships, working, intoxication, aggressive behaviors, school attendance, home attendance, self-mutilation, coping/substitution, regret, and severe desire. Scale assesses severity of inhalant use in adolescents, is semi-structured and is implemented by an interviewer. In the validity and reliability study of the scale, YUKUD mean score was 61.37 in inhalant dependents and 38.97 in inhalant abusers.

Statistical Analysis

Data collected were analyzed by Windows 15.0 SPSS software. Descriptive statistical analysis was used for socio-demographic information.

RESULTS

All adolescents participated in the study were found to have diagnosis of "Inhalant substance abuse" according to DSM-IV-TR axis I disorders of alcohol and substance use diagnostic criteria. Inhalant use started at 13.6 ± 2.1 years old. Regular daily inhalant use was found in 14 adolescents using only "Bali" (which is a kind of glue common in Turkey) and they were using 2.8 ± 2.5 tubes (small size) daily. Fifteen out of 17 adolescents told that they tried to quit inhalant use at least once and this "off" period continued for 4.9 ± 8.8 months. YUKUD mean score which assessed severity of inhalant substance use was found 18.9 ± 6.2 (Table 1).

Fourteen adolescents were using only Bali, 2 of them were using only thinner and one of them was using both. Concomitant alcohol and cannabis use was found in 83% of adolescents using inhalants (Table 2).

Legal problems or committing crime in the past was found in 53% of adolescents included in the study.

Table 1: Socio-demographic data and mean YUKUD scores

	n	Minimum	Maximum	Mean±S.D
Age	17	13.00	17.00	16.1±1.2
Age of onset of working	15	6.00	15.00	11.7±2.4
Age of the first inhalant use	17	10.00	16.00	13.6±2.1
Daily amount of use (bali tube)	17	0.50	10.00	2.8±2.5
Longest withdrawal duration (month)	15	0.50	36.00	4.9±8.8
Age of the first commitment of crime	10	12.00	16.00	13.9±1.6
YUKUD severity score	17	3.88	28.88	18.9±6.2

Mean age of history of the first crime was 13.9 ± 1.6 and it was reported that first crime was injury by stabbing and theft. Sixteen adolescents (94.1%) were found to have self-mutilating behavior; this behavior was cutting themselves at all of them.

Table 2: Data from YUKUD general information form

	n=17	%
Parents alive	14	82.3
Mother alive, father dead	2	11.8
Both of them dead	1	5.9
Presence of legal problems	9	52.9
Literate	1	5.9
Primary school graduate	2	11.8
Secondary school graduate	8	47.1
Going to high school or left it	6	35.2
Working in any kind of job	15	88.2
Bali	14	82.3
Thinner	2	11.8
Bali and thinner	1	5.9
Concomitant alcohol use	3	17.7
Concomitant cannabis use	1	5.9
Concomitant alcohol and cannabis use	10	58.7
Committing any crime once	3	17.6
Committing any crime more than once	7	41.2
Presence of self-mutilating behavior	16	94.1

None of 17 adolescents were living in streets at the time of the study. In the past, none of them lived in streets more than a few days and 14 (82.4%) of them were living with their parents. When their educational levels were evaluated, it was found that 6 of them were at high school, 8 of them were at secondary school, 2 of them were primary school graduates and 1 of them was illiterate. None of the adolescents were working when the study started. However, before study started, 15 (88.2%) of them worked at some kind of a job and mean age of starting working was 11.7 ± 2.4 .

School administrators confirmed that adolescents, who were not eager to attend school at the beginning of the study, attended their schools till the end of the study. One student had to change his school due to problems he experienced with his friends and school. Four adolescents were provided to attend the school at the end of the study. Ones who left school before were not eager to attend the school again. Four out of 13 adolescents who did not continue to attend school at the end of the study started working at a job which they

and their parents decided together. No inhalant substance use was observed among adolescents at the end of the study.

DISCUSSION

Important findings of this study are high prevalence of crime, harming him/her and others, concomitant use of cannabis and alcohol, high prevalence of inadequate family support and lack of information about inhalant substances and their medical consequences in our sample of adolescents with inhalant abuse. Also, all adolescents told that they quit inhalant substance use at the end of the study.

It is known that spending time with their peers who do not use inhalants is important for adolescents to be away from inhalants. Their motivation to attend school was endorsed during individual supportive therapies. Working at more than one job of 15 out of 17 adolescents and starting working at a mean age of 12 showed that income levels of families are low. Relatives of adolescents whom attendance to school was low were contacted at visits to the addresses of them. At the end of six-months follow-up, it was observed that four adolescents attended school regularly and other four started a regular job.

In epidemiological studies performed in our country, inhalant abuse was mostly observed among boys (20). All of participants of our study were boys and this can be explained by the design of our study (not designed as an epidemiological study) and socio-cultural structure of Elazığ province. Medina-Mora and Real reported in their study published in 2008 (21) reported that age of onset of inhalant use is 12. In that study, they also reported that inhalant substance use creates predisposition to psychiatric disorders, suicidal thoughts, concomitant use of other substances (especially injectable substances) and HIV infection. We also found that inhalant use age was 13.6 ± 2.1 and concomitant alcohol and cannabis use was 83% which are consistent with these findings. Antisocial behaviors such as legal problems and crime were found in 53% of adolescents participated in the study. Self-mutilating behavior was found in all adolescents except one. In a

study by Howard et al. (22), antisocial behaviors were observed at 38.6% of 723 adolescents with inhalant abuse who were participated in the study. In another recent study, in young men who committed a crime and recorded at the police files, significant correlation was found between psychiatric disorders, substance abuse and antisocial behaviors (23).

At the beginning of our study, none of the adolescents were aware of the dangerous consequences of inhalant use. Although most of the adolescents reported that their perception and thoughts returned to their previous state in a short time after using inhalants, they described comprehensive difficulties, lethargy, indifference, apathy and fatigue during follow-up. Symptoms and harms of inhalant use should be explained to children and adolescents using inhalants, their parents and teachers as well (2).

In a study which social and psychosocial factors of children and adolescents using inhalants were evaluated, these children and adolescents were found to have anger and alienation (9). At individual supportive therapies in our study, irrational thoughts of adolescents were determined and compared to rational thoughts. Interpersonal communication skills were focused for

anger formation and coping with anger. Adolescents told that their anger bursts and self-mutilating behaviors were decreased at the end of the study. Focusing these issues in treatment of adolescents with inhalant abuse may be considered effective in order to put inhalants away from them.

Our study has some limitations. Rate of refusal to participate in the study was high. A different method was used to add 10 adolescents to 7 already participated. Substances other than inhalants were not evaluated according to whether they were being misused (abuse or dependence) or not. One of the limitations of the study was that our sample consisted of only boys. It is not possible to determine the efficacy of individual supportive therapy due to absence of cases that therapy was not implemented. Also, substance use was evaluated by only clinical examination but not urine metabolite tests.

Despite these limitations, our results suggest that social support added to individual supportive therapies in adolescents with inhalant abuse may be beneficial. Early awareness of inhalant use and information of adolescents, their families and teachers towards its dangerous consequences may be beneficial as well.

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