Juvenile Offences Among Hospitalized Adolescent Inhalant Users in Istanbul: A Comparison Regarding Place of Residence

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Abstract—In this research, juvenile offenses and associated behaviors among adolescent inhalant users in Istanbul were investigated and inhalant users living in the street were compared to inhalant users living with their families. An interview questionnaire developed by the researchers was administered to 200 male adolescent inhalant users who were hospitalized during 2002-2003. More than half of the sample had committed juvenile offenses at least once in their lifetime, 16.3% had entered a house of corrections, 91.5% had friends who committed juvenile offenses, and the majority had been taken to a police station at least once in their lifetime. The rates for juvenile offenses, being taken to the police station, committing crimes to obtain money to buy drugs, and obtaining income through illegal activities were higher among adolescents living in the street than adolescents living with their families. Although the juvenile offense rate is higher among adolescents living in the street, it can be suggested that both groups live in subcultures that have a tendency towards crime, and inhalant use is part of these subcultures. Juvenile offense interventions can be useful for all inhalant users.

Keywords—addiction, crime, homeless youth, inhalant use, juvenile offense, street children

Inhalant use is gradually becoming an important problem in Turkey (Ogel et al. 2001). According to the findings of the State Institute of Statistics (SIS), 9.9% of youth under 18 years have tried some kind of an addictive substance. The most prevalent drug used by 12 to15 year olds are inhalants, and the lifetime prevalence of inhalant use among 15 to 17 year olds is 4% (Ogel et al. 2001; Van 1999). Paint thinner and glue are the most frequently used inhalants. There has been an increase in the number of children living in the streets, particularly in metropolises like Istanbul, and inhalants have become the drug of choice among these children. In Turkey, the concept of *tinerci* (paint thinner user) is being used as a synonym for one predisposed to crime, and inhalant use has been directly related to juvenile offenses (Radikal Daily Newspaper 2002).

It has been found that the rate of carrying weapons and committing offenses is high not only among inhalant users but among substance users in general (Arseneault et al. 2002; Dukarm et al. 1996). The rate of committing crimes among substance users is also high in Turkey. Out of 2,180 adult patients in a substance abuse treatment clinic, 25.6% reported having been imprisoned (Aköz 1996). It is also known that the rate of offenses is higher among inhalant users (Mackesy-Amiti, Fendrich 1999; Gay, Meller & Stanley 1982). In a study conducted during 1979-1981, all 30 adolescents in the sample who regularly used inhalants had committed crimes like robbery, truancy or acts of vandalism, and all had criminal records due to these offenses (Skuse & Burrell 1982). Mcgarvey and colleagues (1996) reported that 65% of adult inhalant users had committed crimes while under the influence of inhalants and 44% of them had committed crimes to obtain money to buy drugs. For inhalant users under 18, the same ratios were 40% and 20% respectively.

An association between inhalant use and risk factors that trigger juvenile offenses such as family problems, alcohol abuse, and antisocial behavior has also been reported (Edeh 1989). Common characteristics of children who are at risk of abusing inhalants are feeling unsuccessful, feeling lonely, avoiding other people, tending towards violence and crime, and blaming other people for their "misfortunate" situation (Richardson 1989).

Preliminary data suggest that the rate of crime is high among inhalant users in Turkey. In a study conducted in Turkey among 78 inpatient adolescent inhalant users, 1.2% of the subjects had been arrested due to a juvenile offense and had to stay out of school. Of the total group, 47 had been arrested for substance use or robbery and violent acts; 14 of these arrests were for robbery under the influence of drugs (Çöpür 1996).

Previous studies indicate that juvenile offense rates are particularly high among adolescent inhalant users who live in the street (Rohr 1996; Medina Mora & Berenzon 1995). However, to our knowledge, no research has been presented comparing juvenile offenses among inhalant users living in the street and those living with their families.

To date, most research on inhalant use has been conducted among juvenile offenders. There are a few studies investigating juvenile offenses among adolescent inhalant users. The aim of the present study is to investigate juvenile offenses among inpatient adolescent inhalant users and to compare adolescents living in the street with adolescents living with their families.

METHOD

The research sample consisted of 200 male adolescent inhalant users who were hospitalized at the Inhalant Use and Addiction Treatment Center (UMATEM) in Istanbul during 2002 and 2003. All the hospitalized adolescents who accepted participation and/or whose parents granted participation of their child were sampled. The UMATEM provides treatment for adolescents who are under 18 and who live either with their parents, in the

streets or in an institution. Inpatient treatment is provided based on personal consent and involves detoxification, psycho education, and rehabilitation. The research was planned and conducted by the UMATEM staff and the Yeniden Health and Education Society (a civic institution founded by psychiatrists, psychologists and educators; while interested in every psychological and social problem, their major areas of interst are addiction, psychological trauma and education).

The participants declared that their substance of preference was inhalants and they had been using inhalants every day for the last six months. Adolescents living in the street were described as those who spent most nights outside their homes and away from their families and those who stay in the street or in a shelter house for street children. Only male inhalant users were sampled for this research. There were two reasons for this: (1) the researchers' aim was to conduct the research among a homogeneous group and (2) the number of female inhalant users in general is low. Mentally retarded or mentally disordered adolescents were also excluded from the study.

The data were collected via a 120 item questionnaire that was developed by the researchers. The reliability of the questionnaire was tested by using a similar sample that yielded considerable kappa values in sensitive questions (Ogel et al. 2003). The questionnaire included questions on the demographic characteristics, health condition, parental status, personal history, characteristics of substance use, legal status, and peer and environmental relations of the adolescents. The answer format used was categorical. Juvenile offenses were evaluated in terms of lifetime prevalence of crime, using the question "Have you ever committed a crime in your life?" Whether the offense was perceived by the police was not taken into consideration; only the presence of juvenile offense was considered. Having a legal problem and entering a house of corrections were the variables that determined the severity of the offense.

The questionnaires were administered during face-to-face interviews and the information was validated by other sources such as a family member or staff working at

the shelter house in which the child was living. In order to decrease the effects of withdrawal symptoms, the interviews were conducted after the second week of treatment. A consent form was also given to the subjects. For those who were living with their families, the form was filled out by a family member. For those who had no family, the content and aim of the research was explained, and they were asked to fill out the consent form themselves. Other researchers have mentioned using the same method with homeless adolescents (Sanci et al. 2004; Cassel & Young 2002; Meade & Slesnick 2002). None of the subjects refused participation in the research.

The answers were evaluated after they were dichotomized. The aim of dichotomizing the answers was to be able to analyze the cumulative effects of several risk factors and investigate the interactions between variables. Dichotomous data also made it possible to use the odds ratio as a measure of strength of relationship. Data were analyzed by using the T-test, χ^2 and odds ratios (CI = 95%).

RESULTS

Participants living in the streets comprised 51.2% of the sample. Some participants who were living in the street stated that they were returning to their family house for short time periods (7.0%). The average age of the whole sample was 15.6±2.0. The proportion of adolescents who were not born in Istanbul was 65%. Primary school drop-outs constituted 29.5% of the sample. The majority of the sample had separated parents, and the average number of siblings was 4.2±2.4. The most prevalent substance of use was tobacco, followed by glue, alcohol and paint thinner (Table 1).

The majority of inhalant users reported having been taken to a police station. The juvenile offense rate was 65%, and 16.3% of the group had been placed in a house of corrections. The rates of having a legal problem prior to the onset of substance use and entering a house of corrections were low. The rate of carrying a weapon was very high.

Almost half of the subjects were gang members. Among the inhalant-using juvenile offenders, 73% had committed crimes in order to obtain money to buy drugs. The majority of inhalant users had friends who engaged in criminal behaviors, and half had a family history of crime (Table 2).

Inhalant users who lived in the streets had twice the risk of committing juvenile offenses and crimes in order to obtain money to buy drugs when compared to inhalant users who lived with their families. Similarly, among inhalant users who lived in the streets, the risk of being taken to the police station was considerably greater than for those who lived with their families. There was no significant difference between adolescents who lived in the streets and adolescents who lived with their families in terms of entering a house of corrections, having a legal problem prior to the onset of substance use, carrying a weapon, and gang involvement (Table 2). None of the subjects living with their families had entered a house of corrections due to substance-related offenses (such as selling of illegal drugs). Among adolescents living in the streets, three had entered a house of corrections due to substance-related offenses. No statistical difference was present between the two groups with regard to family history of crime (Table 2).

Offense types committed under and without the influence of inhalants were similar. Of the subjects who had committed only theft without the influence of inhalants, 38% reported having committed crimes against other people in addition to theft while under the influence of inhalants. No significant difference was present in types of offenses committed both under and without the influence of inhalants between those living in the streets and those living with their families (Table3).

More than half of the inhalant users reported obtaining their income through illegal activities. The rate of being involved in illegal activities to provide income was higher among inhalant users living in the street than inhalant users living with their

families. Among inhalant users, those living with their families had a higher rate of receiving income from the family than those living in the street (Table 3).

The average age for committing first offenses without the influence of inhalants was younger compared to the average age of committing those offenses under the influence of inhalants. On the other hand, the average age of onset and regular use of inhalants was higher compared to the average age of onset of juvenile offenses. Similarly, the average age of onset of inhalant use was higher compared to the average age of onset of juvenile offense for adolescents both living with their family and living in the street. No significant difference was found between those living in the street and those living with their families in terms of the average age of committing juvenile offenses without the influence of inhalants. Similarly, there was no significant difference between these two groups regarding the average age of committing juvenile offense while under the influence of inhalants (Table 4).

The average number of offenses committed was lower for crimes committed under the influence of inhalants compared to those committed without the influence of inhalants. No significant difference was found between those living in the street and those living with their families in terms of the average number of offenses committed under and without the influence of inhalants and with regard to the average number entering a house of corrections ($p > 0.05$).

CONCLUSION

According to the 1999 census findings in Turkey, 883 adolescents out of 100,000 had committed juvenile offenses and only 1.8% of these offenders were living in the streets (Yücel & Cengiz 2003). More than half of the inpatients in our sample had committed juvenile offenses. When compared to the general age group, this ratio is very high and it indicates that juvenile offense rates are higher among adolescent inhalant users.

The finding that the risk of juvenile offense was higher among inhalant users living in the streets when compared to inhalant users living with their families is consistent with previous research reporting that crime among street children is prevalent (Slesncik & Meade 2001; MacCaskill, Toro & Wolfe 1998; Forster, Tannhauser & Barros 1996; Rohr 1996). Thus, it can be suggested that crime is an essential behavior pattern in children living in the streets in order to survive street life. Due to the absence of authority figures such as parents or family who set limits, adolescents living in the street have a greater risk of developing conduct problems. This argument is supported by the finding that the primary income source of these adolescents is illegal activities.

Although the risk of being taken to a police station is also higher among adolescents living in the street, this cannot be the sole reason for juvenile offenses because adolescents living on the street probably encounter police forces more frequently than those who do not live in the street. Carrying a weapon is also more common among adolescent inhalant users. Prior research shows the relation between juvenile offense, substance use and carrying a weapon (Kodjo, Auinger & Ryan 2003). With regard to factors increasing the risk of juvenile offense such as carrying a weapon and gang involvement, no significant difference was detected between adolescent inhalant users living in the street and adolescent inhalant users living with their families. This indicates that both groups are living in a subculture that may have a tendency toward criminal offense.

Prior reports suggest that having a peer group that engages in criminal acts may increase the risk of committing crimes (Henry, Tolan & Gorman-Smith 2001; Farrington, Loeber 2000). In our study, adolescent inhalant users both living in the streets and living with their families reported a high rate of juvenile offenses among their friends; this may be an indication that both groups are at risk. Peer group characteristics may have an important effect on treatment outcome. Therefore intervening with the peer group of inhalant users is of great importance.

Another risk factor for juvenile offenses is a family history of offenses. Substance use and criminal offenses among family members (and particularly a history of maternal substance use) are found to be significant risk factors (Farrington & Loeber 2000; Gabel et al. 1998; McGarvey, Canterbury & Waite 1996). It has been shown that in negative environmental conditions, such as a high crime rate and high prevalence of substance use, families lose their protective characteristics (Frauenglaas et al. 1997). There was no significant difference between the two groups in this study with regard to family history of crime, which may indicate that both groups are under equal risk of committing crimes.

Although inhalants are quite inexpensive in Turkey, the present findings showed that the rate of committing offenses to obtain money to buy drugs is very high among adolescent inhalant users. This indicates that the socioeconomic status of inhalant users is very low. This assumption is also validated by the higher rate of offenses among inhalant users who live in the streets and the presence of substance-related offenses among those who entered a house of corrections. Substance-related offenses cannot be attributed exclusively to offenses committed to obtain money to buy drugs. The findings reveal that one of the reasons for entering a correction house is dealing with illegal substances use.

Previous research in Turkey revealed that crime rates were high among substance users. However, the majority of these crimes were for possessing and selling these drugs (Ogel 2002; Ergül 1997). Although inhalants are legal, offenses committed by adolescent inhalant users are mostly related to acquiring money for drugs.

It has been stated that, considering the fact that street children have neither a family nor the ability to hold a steady job to support their living, it should be expected that children living in the street will acquire their income through illegal means (Peker 1994). Our research findings show that 74.0% of the children living in the street acquired their income through illegal activities; this finding is consistent with the above statement.

The age of first juvenile offense is approximately 11 in our sample, which can be regarded as very early. No significant difference was found when the first age of juvenile

offense was compared for adolescents living in the street and those with their families. This may indicate that place of residence has no direct effect on the age of onset of juvenile offenses.

The results of this study show that the age of onset of juvenile offense is lower than the onset of substance use. Adolescent inhalant users living in the street started to use substances and commit offenses at an earlier age compared to adolescent inhalant users living with their families. Similarly, among children living in the streets, the age of onset of juvenile offense is also younger than the onset of substance use. Although data are not present to determine whether the adolescents had started using inhalants before or after they started living in the street, still these findings indicate that inhalant use may not be directly related to juvenile offense. The small difference between the ages of first juvenile offense and first substance use may indicate that the adolescent has entered a period involving high risk for committing offenses and using substance.

On the other hand, the rate of having a legal problem and entering a house of corrections prior to the onset of substance use is very low. While committing offenses occurs before the onset of substance use, adolescent inhalant users start to have legal problems after the onset of substance use. This indicates that characteristics of crime change after the onset of substance use and this may lead to more frequent legal problems or entering a house of corrections.

More than two thirds of juvenile offenders reported committing offenses 10 times or more. The average number of offenses committed was more than two. This suggests that crime is a specific way of life and behavior style among inhalant users. It can be claimed that once an inhalant user commits a crime, juvenile offense becomes habitual and repetitious. For this reason, early interventions directed toward adolescent inhalant users are necessary for the prevention of risk behaviors such as committing crimes.

As we stated previously, the concept of *tinerci*, a word used in Turkey to describe paint thinner users, is considered to be synonymous to a tendency to commit crime. The

high juvenile offense rate in the sample can be interpreted as evidence validating this statement. However, there are other findings indicating that inhalant use is not directly related to juvenile offenses. Rather, we can claim that these two concepts are observed together. This finding is in line with previous research showing that substance use and crime are discrete concepts and involve different dynamics (Paradise & Cauce 2003). Antisocial behavior patterns of inhalant users were not investigated in this research. However, we know that the presence of antisocial behavior negatively influences the prognosis of substance use (Roberts & Ryan 2002; White et al. 1999; Randall et al. 1999; Dülger et al. 1997). Thus, the concept of *tinerci* may involve antisocial characteristics in its nature.

The comparison of adolescent inhalant users and nonusers reveals that inhalant users have greater risk for committing juvenile offense and that living in the streets increases that risk (Dukarm et al. 1996, Inciardi & Surratt 1998). When adolescent inhalant users who lived in the streets were compared with adolescent inhalant users who lived with their families, there was no significant difference in offense behavior except for those due to the special conditions of living in the streets, such as being taken to the police station or obtaining income through illegal means. The findings in the present study show that both groups have histories of offenses among friends and family and that they all live in environments with a tendency towards crime. These environments are mainly the suburban areas of the city. Although it is reported that adolescents living in the street display more conduct problems (Booth & Zhang 1996), our findings suggest that both groups live in subcultures that are inclined to crime. Inhalant use can also be regarded as a behavior pattern in this subculture. All of these findings point to the need of juvenile offense intervention programs for both inhalant users living in the streets and living with their families.

There are similarities between the characteristics of inhalant users who live in the streets in this sample and other research conducted among similar groups. These studies

also showed that the onset of inhalant use was earlier among inhalant users living in the streets and that these adolescents were frequently involved in crime (Morakinyo & Odejide 2003; Ayaya & Esamai 2001; Inciardi & Surratt 1998; Noto et al. 1997; Forster, Tannhauser & Barros 1996).

Adolescents born in Istanbul constituted only one third of the sample. This implies that the rest of the sample is composed of children of migrant families. Therefore, the social, economic and psychological impacts of migration should also be taken into consideration when evaluating the findings of this study.

This is a cross-sectional study and therefore is limited in explicating the causal relations between offenses and inhalant use. On the other hand, the findings represent a specific population, since the sample group is comprised exclusively of hospitalized male inhalant users. The findings do not elucidate the social domain of the problem since the sociocultural characteristics influencing inhalant use were not fully covered. Further research is warranted with a broader sample that also involves nonhospitalized inhalant users and nonusers, which will enable the comparison of adolescent inhalant users with adolescents who do not use substances.

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TABLE 1
Social, Demographic and Substance Use Characteristics

	N	%
Age		
12 and younger	9	4.6
13 to 15	87	44.2
16 and older	101	51.3
Birth place		
Istanbul	70	35.0
Other than Istanbul	130	65.0
Place of residence		
With family	90	41.8
In the streets	110	51.2
Both	5	7.0
Education		
Illiterate	13	6.5
Primary school drop-out	57	28.5
Primary school graduate	113	56.5
Secondary school graduate	17	8.5
Parental characteristics		
Parents together	33	16.5
Mother or father dead	41	20.5
Parents separated	60	30.0
Step mother or father	54	27.0
Both parents step	12	6.0
Substance use		
Tobacco	199	99.5
Alcohol	170	85.0
Paint thinner	148	74.0
Glue	182	91.0
Cannabis	113	56.5
Flunitrazepam	13	6.5
Clonezapam	3	1.5
Opioid	4	2.0

TABLE 2
Comparison of Inhalant Users who Live with their Families or in the Streets with Regard to Offence or Legal Status

	Total		Lives on the Streets		Lives with Family		Street/family OR (CI)*
	N	%	N	%	N	%	
Taken to police station	170	85	102	92.7	68	75.5	5.2 (2.0-13.6)
Juvenile offense	130	65	83	75.5	47	52.2	2.7 (1.4-4.9)
Placed in a correction house	32	16.5	22	20.0	10	11.1	2.0 (0.9-4.5)
Legal problem prior to substance use	26	12.7	16	14.5	10	11.1	1.4 (0.6-3.5)
Entering a correction house prior to substance use	23	11.4	17	15.4	6	6.7	2.5 (0.9-6.7)
Entering a correction house due to an offense related to substance use	3	13.6	3	2.7	---	---	—
Crime among friends	183	91.5	104	94.5	79	87.7	1.4 (0.5-4.0)
Family history of crime	103	51.5	63	57.2	40	44.4	1.6 (0.9-2.8
Committing crime to obtain money to buy drugs	146	73.0	86	78.2	60	66.7	2.0 (1.0-4.0)
Carrying a weapon	169	84.5	91	82.7	78	86.7	0.6 (0.3-1.4)
Gang involvement	88	44.0	54	49.1	34	37.8	1.5 (0.8-2.6)

*OR=Odds ratio CI= 95% confidence interval

TABLE 3
Comparison of Offense Types and Income Sources While Under and Without the Influence of Inhalants with Regard to Place of Residence

	Total		Lives in the Streets		Lives with Family	
	N	%	N	%	N	%
Without the influence of inhalants*						
Crimes against property	52	42.3	32	60.0	20	40.0
Crimes against other people	50	40.7	31	62.0	19	38.0
Other	21	17.1	10	47.6	11	52.4
Under the influence of inhalants**						
Crimes against property	47	42.0	25	53.2	22	46.8
Crimes against other people	36	32.1	12	33.3	14	66.7
Other	29	25.9	18	62.0	11	38.0
Source of income ***						
From family	27	13.8	5	18.5	22	81.5
Legal activities	25	12.8	10	40.0	15	60.0
Illegal activities	108	55.1	80	74.1	28	25.9
Other	36	18.4	12	33.3	14	66.7

*Comparison of offense types committed without the influence of inhalants with regard to place of residence, X^2 = 1.323, df = 2, p = 0.516

**Comparison of offense types committed under the influence of inhalants with regard to place of residence, X^2 = 0.786, df = 2, p = 0.675

***Comparison of income source with regard to place of residence, X^2 = 37.632, d f= 3, p = 0.000

TABLE 4
Comparison of Age of First Juvenile Offence Under and Without the Influence of Inhalants, Age of First Substance Use, and Offence Rate Regarding the Place of Residence

	Total Mean (SD)	Lives in the Street Mean (SD)	Lives with Family Mean (SD)
Age of first juvenile offense			
Without the influence of inhalant	11.7 (3.2)	11.1 (3.1)	12.5 (3.3)
Under the influence of inhalant	12.9 (2.4)	12.4 (2.6)	13.4 (2.1)
Age of onset of inhalant use			
Age of first paint thinner use*	12.3+2.4	11.5+2.1	13.0+2.3
Age of regular paint thinner use*	12.6+2.2	11.5+2.0	13.2+2.2
Age of first glue use *	12.5+2.2	11.9+2.3	13.2+2.0
Age of regular glue use *	12.6+2.3	12.0+2.3	13.1+2.2
Number of juvenile offense			
Without the influence of inhalant	2.97±2.43	3.14±2.5	2.71±2.3
Under the influence of inhalant	2.25±1,81	2.32±1.8	2.17±1.7
Times entered house of corrections	1.09±0.9	1.10±0.32	1.09±0.29

*There is a significant difference between adolescents living on the street and adolescents living with their families ($p < 0.05$)