

## The Effects of Lunar Phases and Zodiac Signs on Recurrent Youth Suicide Attempts; Experience of University Hospital

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### ABSTRACT

**Aim:** The purpose of this study is to determine the clinical and demographical features of recurrent youth suicide and identify possible risk factors.

**Material and Methods:** In this study all patients admitted to our pediatric emergency department with adolescent suicide attempts, from the dates of January 2011 and September 2014, were analyzed with the goal to identify the risk factors for reoccurring suicide and clinical outcomes retrospectively.

**Results:** This study included 417 adolescents, 81 men and 336 women with an average age of  $15.55 \pm 1.86$  years. The most common zodiac sign of the patients was Capricorn (48 patients) and Aquarius (44 patients). According to the lunar cycle, 39 (9.4%) attempted suicide during full moon and 34 (8.2%) during the new moon cycle. It has been established that most suicide attempts occurred while being alone (80.2%) and inside the house (90.6%) and the most preferred method is combined drug ingestion (51.0%). The recurrent suicide attempt rate is 13.2%. While determining that attempting the suicide alone is a significant factor in recurrent suicide psychotropic drug intake was found to have a protective effect. The most diagnosed psychiatric disorder in cases of recurrent suicide and first time suicide attempts was depression (49.1% and 8.6% respectively).

**Conclusion:** Triggering risk factors such as lunar cycle or zodiac sign do not have an effect on recurrent suicide attempts. A wide participation in clinical studies is necessary to determine the real effect of these risk factors.

**Keywords:** Emergency department, lunar cycle, risk factors, suicide, zodiac sign

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## **INTRODUCTION**

One of the major causes of mortality worldwide are suicides in adolescence (1). According to the World Health Organization, suicide attempts between the ages of 10-24 rank second as cause of mortality (2). This situation especially increases along with the age in the pediatric age group and keeps increasing in adolescence. Completed incidences of suicide between the ages of 10-14 have been reported to be 1/100000 but at the ages of 15-19 this number increases up to 10 times (3).

Suicides occurring in the adolescent age group tend to be recurrent. The median rate of these cases of suicide attempts to be annually recurrent is 5-15%. Studies showed that the recurrent risk after 6 months is 10% and rises to 42% after 21 months (4). The finding that recurrent suicide attempts in adolescent is rising shows that preventative health care is needed and emergency services show a great potential for that. Studies show that the reason behind this is the fact that a suicide is attempted up to 8-25 before death occurs and 39-40% of these cases have been reported to go to the emergency room at least once a year (5-7) .

Most seen risk factors that cause suicide attempts are mostly age, gender, occupation, history of suicide attempts, mental disorder (anxiety, mood), addictions (alcohol, tobacco, e.g), physical disability, financial stress, personality disorders/impulsivity/aggression, legal problems, lack of religious affiliation, childhood maltreatment, intimate partner violence, suicide in family members, sensational media reporting of suicide, specific cultural factors (Native Americans, immigrants, refugees, e.g), access to lethal means (guns, pesticides), sexual and physical abuse and mourning process (4,8-11).

Studies about the possible effects of lunar phases and zodiac signs on personality and behavior patterns and emerging of some clinical situations are noteworthy. Differences in available moonlight, barometric pressure (weather conditions), geomagnetic and gravitational variations, and solar corpuscular radiation, and other mechanisms are brought forward in

these interactions (12). Clinical studies in which lunar phases and zodiac signs play a role are for example cardiopulmonary resuscitations (13), birth rates (14-15), renal colic (16), postoperative complications (17), survival after therapy (18), and suicide (19-20). There are only few studies that research the effect of lunar phases and zodiac signs of recurrent suicide attempts in childhood (1).

The aim of this study was to determine the clinical and demographic characteristics of adolescent suicide cases reported to the children's emergency department and investigate the effect of lunar phases and zodiac signs in recurrent suicide attempts as a sign of possible risk factors.

## **Material and Methods**

### ***Study design and patients selection***

All adolescent cases (age 10-18) of suicide attempts that were reported in the pediatric emergency department of the Ondokuz Mayıs University between January 2011 and September 2014 have been examined retrospectively. Ondokuz Mayıs University Medical Faculty pediatric emergency department is a Level III emergency center that treats 15.000 to 20.000 patients each year. Ethical approval for this prospective study was obtained from the local ethics committee of Ondokuz Mayıs University in accordance with the Helsinki Declaration. The cases of suicide attempts were analyzed upon repetition and the patients were divided into groups based on demographic features (age, gender, distribution of horoscope, season, poisoning time, lunar cycle, type of suicide attempts, place of occurrence, and cause of suicide), clinical and laboratory findings and intensive care and situations that require emergency interventions and were then analyzed with the goal to identify the factors for reoccurring suicide and clinical outcomes. The full and new moon phases were calculated separately for each patient. Like stated in literature (21-22), the time of the full and new moon

was accepted as one day after and one day before the corresponding application date on the time of the full and new moon.

### ***Statistical analysis***

The data has been given as mean $\pm$ SD, median (minimum-maximum) and n (%). All data were analyzed with IBM SPSS 21.0 (Chicago, USA). Eligibility was determined by the normal distribution of data with the Kolmogorov Smirnov method. Data fitting the normal distribution were stated as standard deviation and data not fitting the normal distribution were stated as median and minimum-maximum. For evaluation of categorical data, the Pearson's chi-square test was used. For the analysis of effective factors on recurrent suicide attempts Binary Logistic Regression analysis was performed. To compare the disease rates of recurrent suicide attempts and first time suicide attempts a two proportion t test was performed with Minitab 14.0. The value  $p < 0.05$  was considered statistically significant.

### **Results**

Four hundred seventeen adolescent patients (ages 10-18) were included in this study period, 81 (19.4%) of which are boy and 336 (80.6%) of which are girl. The average annual application rate of adolescent suicide in the study period, was 0.7% (417/56336). The average age of the patients was  $15.55 \pm 1.86$  year. While looking at the age distribution, we can see that 76.0% (317 patients) are  $\geq 15$  years old and 24.0% (100 patients) are between the ages of 10-14. There were more reported cases of suicide attempts in the winter months (160 patients 38.4%) ( $p < 0.001$ ). There was no significant difference in the distribution of cases according to zodiac sign ( $p = 0.059$ ). But it has been seen that the most common zodiac signs were Capricorn (48 patients, 11.5%) and Aquarius (44 patients, 10.6%). According to the lunar cycle, 39 (9.4%) patients attempted suicide during full moon and 34 (8.2%) patients during the new moon cycle. According to the lunar cycle more cases (263 patients, 63.0%) were reported outside the new and full moon periods ( $p < 0.001$ ). The examination of cases

according to the preferred time frame showed a statistically significant difference ( $p < 0.001$ ). It has been identified that most cases of suicide attempts occurred between the hours of 12:01 AM-6:00 PM (144 patients, 34.5%) and between 6:01 PM-00:00 (147 patients, 35.7%). While 94.0% preferred medical poisoning agents in their suicide attempts, 6.0% preferred non-medical poisoning. The most preferred medical poisoning agent in suicide attempts were analgesics (174 patients, 41.7%) and the most preferred non-medical poisoning agent organophosphate poisoning (12 patients, 2.9%) (Table I).

It has been determined that suicide on their own (376 patients, 80.2%) was more common than mass suicide attempts (41 patients, 9.8%) ( $p < 0.001$ ). The frequency of recurrent suicide attempts however, was 13.2% (55 patients). The most preferred environment for suicide attempts was the home environment for 378 patients (90.6%) ( $p < 0.001$ ). The most preferred kind of suicide is combined drug ingestion (213 patients, 51.0%) ( $p < 0.001$ ). While 357 (85.6%) cases were referred to the hospital, 60 (14.4%) applied from home. of patients. Characteristics of all patients' demographic findings, clinical signs, laboratory findings during application, and treatment modalities were represented in Table II-III.

Only 21 patients (5.0%) required intensive care. The median value of the intensive care follow up period of these cases was 2 days (1-8). Demographic characteristics of the patients in intensive care, clinical and laboratory findings and treatment and follow-up procedures are summarized in Table IV. The majority of patients requiring intensive care (14 patients, 66.6%) were diagnosed with CDI. Only 2 (0.48%) of the patients in intensive care were recurrent suicidal.

While examining the affecting factors of recurrent suicide showed that the effect of type of suicide attempts is higher (OR: 11.911 (95% CI: 2.241-63.319,  $p = 0.004$ ) psychotropic drug intake was found to have a protective effect (OR: 0.006 (95% CI: 0.002-0.020),  $p < 0.001$ ) (Table V).

When examining the underlying psychiatric diseases, the most diagnosed psychiatric disorder in cases of recurrent suicide and first time suicide attempts was depression (49.1% and 8.6% respectively). The most consumed medications in both groups were antidepressants and antipsychotics (Table VI).

When examining the medical interventions we see that 353 (84.7%) were given gastric lavage, 345 (82.7%) activated charcoal treatment, 57 (13.7%) antidote application, 403 (96.6%) fluid therapy, 3 (0.7%) cardiotoxic treatment, 39 (9.4%) oxygen therapy and 6 (1.4%) mechanical ventilation treatment (Table II). During the follow-up, only one patient (0.2%) had died and 416 patients (99.8%) had been discharged.

## **Discussion**

Adolescent patients admitted to the pediatric emergency department after a suicide attempt were included in the study. As a result it has been found out that most cases of suicide attempt were reported in winter months between the hours of 12:01 PM-00:00. Especially in cases requiring emergency intervention in the adolescent age group, time of full moon and new moon was observed to be not effective in adolescent attempt. In addition it was found out that people with the zodiac sign Capricorn and Aquarius are more likely to attempt suicide but statistically it is of no value. Combined drug ingestion in the home environment has been found out to be the preferred method of attempted suicide. While determining that attempting the suicide alone is a significant factor in recurrent suicide psychotropic drug intake was found to have a protective effect. In cases of recurrent adolescent suicide attempt, depression was found to be a common factor.

Youth suicide is an important problem rising in the admissions of emergencies in childhood. The suicide attempts in this age group have increased fourfold in the recent years (10). According to the Centers for Disease Control and Prevention, we experienced an increase of 8% in the last 15 years (2). Although suicide is rare in childhood it seemingly

increases in with the start of adolescence (1) and this increase arrives its peak in late adolescence and the beginning of the twenties. While the prevalence of suicide thoughts in adolescence is approximately 15-25% (21), the suicide attempt rate of men differs between 1.3-3.8% and the rate of women between 1.5-10.1 % (4).

The first suicide attempt is likely to be a messenger for recurrent suicide attempts in adolescence. The recurrent suicide rate in the adolescent age group increases with the years after the first attempt. In studies this rate ranges from 10-42% (2, 4). While recurrent suicide attempts in adolescence is much higher in women, successful suicide attempts are 30 times higher in men (8, 23). Our study showed a similar rate to the one in literature (13.2%) in recurrent suicide. Although the female-male ratio was 4.1 in our study it had no effect on recurrent suicide attempts.

The annually mortality rate because of suicide attempts is between 0.5-1.0% (4). The rate in studies for the necessity of intensive care in youth suicide was determined to be 3.1-8% (24-25). A significant portion of these patients requiring intensive care attempted suicide by multiple drug ingestion. Studies showed that the rate lies between 31-45% (24-25). In our study the rate was 5.0% and 66% of the cases attempted suicide with multiple drug ingestion.

Preferred methods for suicide differ according to geographic and cultural differences (4-5). More preferred suicide methods in adolescence in developed or developing countries are gunshot wounds and poisonings with medical or non-medical agents (4-5,25). Among the most commonly used agents in adolescence for suicide are analgesics, anti-inflammatory agents and anti-psychotic agents (24, 26-27). Non-medical agents are organophosphates, pesticides, insecticides, organic solvents and household cleaning products (2,27-29). While 94.0% of patients in our study preferred medical poisoning agents in their suicide attempts, 6.0% preferred non-medical poisoning. The most preferred medical poisoning agents were, like stated in literature, analgesics and antidepressants.

Many risk factors were examined in the studies that are thought to cause suicide attempts occurring in the adolescent age group. Except the risk factors of age and genders the rest is categorized as affective, cognitive, family and peer factors (8). Nearly 90% of suicidal teenagers are known to have a psychiatric disorder (8). Most commonly psychiatric disorders are depression, bipolarity and drug abuse (8). If we look at the data of 25 emergency rooms of the Pediatric Emergency Care Applied Research Network (PECARN) Core Data Project we can see that depression is one of the top five diseases accompanying suicide attempts (30). Other studies show that depression accompanies suicide attempts with a rate of 25% (31). Previously attempted suicide, panic attacks, post-traumatic stress disorder, risky behavior (interpersonal violence, excessive alcohol consumption, tobacco use, illicit drug use, high risk sexual behavior), stressful life events, sexual abuse, family conflicts, family history of suicide, self injuries behavior and many more are known risk factors of adolescent suicide (5-6,8-9). Protective factors include strong social relationships, legal regulations and psychotropic drug use (4,8,32). Our study showed, like stated in literature, that the most distinctive disease accompanying a suicide attempt is depression. However, intake of psychotropic drugs were found to have preventive properties in recurrent suicide attempts.

The Lunar cycle and zodiac sign and its effect on human physiology and behavior is one of the frequently discussed issues in socio-cultural life and scientific fields. Although the topic is very popular there are no complete scientific ideas about the effects. While some studies support this idea (32-33) some state that the lunar cycle and zodiac sign are not an effective factor (13,35-36). Along the associated clinical conditions with lunar phases and zodiac signs are psychosis, depression, anxiety, violent behavior (37), cardiopulmonary resuscitations (13), birth rates (14-15), renal colic (16), postoperative complications (17,38), survival after therapy (18), and suicide (19-20). Alterations of moonlight, barometric pressure (weather conditions), geomagnetic and gravitational variations, and solar corpuscular

radiation are stated to be effective on human behavior during a lunar cycle (12). These alterations are said to occur to the organs inside the body because of zodiac signs (39). In particular, it has been determined that the Aries sign has an effect on the central nervous system, which is acknowledged to be the center of human behavior (39). Our study showed similarities to the literature of Martin SJ and colleagues (39) about suicide and lunar cycle and stated that there is no effect of the lunar cycle on recurrent adolescence suicide. Most commonly seen signs in adolescent suicide was Leo and Aquarius. The Zodiac sign did not have a similar effect of recurrent suicide attempts like the lunar cycle did.

Recurrent suicide attempts in adolescent age group in developing countries are increasingly seen as a important growing health problem. Taking preventive measures against possible triggers such as depression and conduct disorder and accompanying other factors is important in this age group with suicide recurring suicide attempts. In our study, we have found no effect on the triggers that include lunar cycle and zodiac signs in the adolescent age group with recurrent suicide attempts which were stated in the results we acquired from one single center. However, we believe that a broad participation and more clinical studies are needed to determine and evaluate the real impact of risk factors such as lunar cycle and zodiac signs together with other possible risk factors.

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## Recurrent Youth Suicide

Table 1: The distribution of poisoning agents used in suicide attempts

<b>Medical poisoning agents</b>	
Analgesics	174 (41.7)
Antidepressant	115 (27.6)
Antipsycotics	58 (13.9)
Antihypertansifler	58 (13.9)
Antihistaminic and decongestants	48 (11.5)
Digestive system drugs	41 (9.8)
Antibiotics	36 (8.6)
Psikostimulant ajanlar	30 (7.2)
Myelorelaksan	27 (6.5)
Antiagregants	16 (3.8)
Antidiabetics	12 (2.9)
Vitamins	12 (2.9)
Iron medications	11 (2.8)
Others	98 (23.5)
<b>Non-medical poisoning agents</b>	
Organophosphate poisoning	12 (2.9)
Narcotic substance intake	8 (1.9)
Other	5 (1.1)

Table 2: The Distribution of Patients according to demographic findings

	<b>All patients</b>
<b>Age (year(min-max))</b>	16 (10-18)
<b>Gender (n, %)</b>	
Male	81 (19.4)
Female	336 (80.6)
<b>Distribution of horoscope</b>	
Capricorn	48 (11.5)
Aquarius	44 (10.6)
Cancer	39 (9.4)
Leo	39 (9.4)
Libra	39 (9.4)
Taurus	37 (8.9)
Gemini	35 (8.4)
Virgo	33 (7.9)
Aries	29 (7.0)
Pisces	26 (6.2)
Scorpio	24 (5.8)
Sagittarius	24 (5.8)
<b>Season distribution (n, %)</b>	
Winter months	160 (38.4)
Spring months	114 (27.3)
Summer months	82 (19.7)
Autumn months	61 (14.6)
<b>Poisoning time (n, %)</b>	
<i>According to moon calendar</i>	
New moon	34 (8.2)
First Quarter	32 (7.7)
Full moon	39 (9.4)
Last Quarter	49 (11.8)
Other time	263 (63.0)
<i>Time zone</i>	
00:01-06:00	39 (9.4)
06:01-12:00	64 (15.3)
12:01-18:00	144 (34.5)
18:01-00:00	149 (35.7)
Unknown	21 (5.0)
<b>Type of suicide attempts (n, %)</b>	
Mass suicide	41 (9.8)
Alone suicide	376 (90.2)
<b>Frequency of suicide attempts (n, %)</b>	
Recurrent suicide	55 (13.2)
First suicide	362 (86.8)
<b>Place of occurrence (n, %)</b>	
Home	378 (90.6)
School	4 (1.0)

## Recurrent Youth Suicide

Other areas (sea, forest, street, etc)	35 (8.4)
<b>Cause of suicide (n, %)</b>	
Single drug ingestion	179 (42.9)
Combined drug ingestion	213 (51.0)
Organophosphate poisoning	12 (2.9)
Narcotic substance intake	8 (1.9)
Other	5 (1.2)
<b>Self injuries behaviour (n, %)</b>	
Piercing	5 (1.2)
Forearm laceration	39 (9.4)
<b>Application form (n, %)</b>	
Referred to hospital	357 (85.6)
Applied from home	60 (14.4)
<b>Patient follow-up clinics (n, %)</b>	
Emergency Department	396 (95.0)
Pediatric Intensive Care Unit	21 (5.0)
<b>Patient outcome (n, %)</b>	
Discharged	416 (99.8)
Exitus	1 (0.20)
<b>Total patients (n,%)</b>	<b>417 (100.0)</b>

Table 3: Characteristics of all patients' clinical signs, laboratory findings, and treatment modalities.

<b>GCS (median)</b>	<b>All patients</b>	
	<b>15 (7-15)</b>	
<b>Clinical signs and symptoms (n,%)</b>		
Miosis	35	8.3
Convulsion	4	1.0
Vomiting	86	20.6
Arrhythmia	3	0.7
Hypothermia	3	0.7
Hyperthermia	5	1.2
Hypertension	15	3.8
Hypotension	3	0.7
Tachycardia	29	7.0
Bradycardia	37	8.9
Tachypnea	24	5.8
Cardiopulmonary arrest	1	0.2
<b>Laboratory findings (n,%)</b>		
Leucocytosis	25	6.0
Neutropenia	33	7.9
Thrombocytopenia	4	1.0
Hyponatremia	19	4.6
Hypernatremia	3	0.7
Hypokalemia	57	13.7
Hyperkalemia	4	1.0
Hypoglisemia	3	0.7
Hyperglycemia	61	14.6
Elevated liver enzymes	3	0.7
Metabolic acidosis	65	15.6
Coagulation disorders	5	1.2
Renal function impairment	4	1.0
<b>Treatment modalities</b>		
Gastric lavage	353	84.7
Activated charcoal	345	82.7
Antidote application	57	13.7
Fluid therapy	403	96.6
Cardiotonic treatment	3	0.7
Oxygiene therapy	39	9.4
Mechanical ventilation	6	1.4
<b>Total</b>	<b>417</b>	<b>100</b>

## Recurrent Youth Suicide

Table 4: Table 4: The characteristics of all patients with suicide attempt and followed up in the pediatric intensive care unit

Age	Sex	Cause of suicide	Number of tablet by oral ingestion	GCS	Clinical signs / Laboratory findings	Entubation	Fluid therapy / Antidote application	Hospitalization (days)	Outcomes
12	M	CDI	50	15	Not detected	-	+ / + (NAC)	1	Discharged
12	FM	SDI	20	11	Confusion Tachypnea	-	+ / -	2	Discharged
13	FM	CDI	30	15	Not detected	-	+ / -	6	Discharged
14	FM	OP	-	8	Convulsion, Coma, Hyperglycemia	+	+ / + (PAM)	4	Discharged
14	FM	CDI	3	15	Vomiting, Hyponatremia	-	+ / -	3	Discharged
15	FM	OP	-	10	Confusion Hypertension, Tachypnea Hypokalemia, Hyperglycemia, Leukocytosis	+	+ / + (PAM)	4	Discharged
15	FM	CDI	44	10	Confusion Bradycardia Hypoglycemia, Elavated Liver enzymes, Leukocytosis,	+ / CPR	+ / -	4	Discharged
15	FM	CDI	68	15	Bradycardia, Hypertension, Tachypnea, Vomiting Hyponatremia	-	+ / -	4	Discharged
15	FM	CDI	25	15	Tachycardia	-	+ / + (NAC)	1	Discharged
15	FM	SDI	20	15	Convulsion, Vomiting	-	+ / -	3	Discharged
15	M	SDI	Unknown	15	Tachypnea	-	+ / -	3	Discharged
16	FM	CDI	8	15	Not detected	-	+ / -	2	Discharged
16	FM	CDI	60	15	Prerenal failure, Leukocytosis	-	+ / -	3	Discharged
16	M	SDI	50	15	Hyperkalemia, Prerenal failure, Leukocytosis	-	+ / -	5	Discharged
17	M	CDI	71	7	Confusion Bradycardia Hyperglycemia,	+	+ / -	4	Discharged
17	FM	CSI	-	15	Vomiting	-	+ / -	9	Discharged
17	FM	CDI	31	13	Confusion Convulsion, Hypokalemia	-	+ / -	2	Exitus
17	FM	CDI	39	15	Hypokalemia	-	+ / -	2	Discharged
17	M	CDI	21	10	Confusion Convulsion, Bradycardia Hypokalemia, Hyperglycemia,	-	+ / -	4	Discharged
18	FM	CDI	5	15	Vomiting Hypokalemia, Hyperglycemia, Neutropenia	-	+ / -	9	Discharged
18	FM	CDI	Unknown	11	Confusion Tachycardia, Vomiting Neutropenia	-	+ / -	2	Discharged

GCS; Glaskow Coma Score, M; Male, FM; Female, CDI; Combined drug ingestion, SDI; Single Drug Ingestion, OP; Organophosphate poisoning, CSI; Corrosive Substance Ingestion, CPR; Cardiopulmoner resuscitation, NAC; N-asetilcysteine, PAM; Pralidoxim

Table 5: Analysis of influential factors on recurrent suicide attempts

Parametres	Recurrent	First suicide	Multivariate analysis		
	suicide attempts n=55 (13.2%)	attempts n=362 (86.8%)	OR	95%CI	p
<b>Male</b>	9 (16.4)	72 (19.9)	1.656	0.568-4.825	0.356
<b>Age (mean±SD)</b>	15.62±1.87	15.55±1.64	0.892	0.702-1.133	0.348
<b>Distribution of horoscope</b>			1.005	0.883-1.144	0.943
Capricorn	5 (9.1)	43 (11.9)			
Aquarius	8 (14.5)	36 (9.9)			
Cancer	7 (12.7)	32 (8.8)			
Leo	8 (14.5)	31 (8.6)			
Libra	6 (10.9)	33 (9.1)			
Taurus	3 (5.5)	34 (9.4)			
Gemini	3 (5.5)	32 (8.8)			
Virgo	2 (3.6)	31 (8.6)			
Aries	3 (5.5)	26 (7.2)			
Pisces	2 (3.6)	24 (6.6)			
Scorpio	4 (7.3)	20 (5.5)			
Sagittarius	4 (7.3)	20 (5.5)			
<b>Type of suicide attempts</b>			11.911	2.241-63.319	0.004
Mass suicide	2 (3.6)	39 (10.8)			
Alone suicide	53 (96.4)	323 (89.2)			
<b>Season distribution</b>			1.276	0.833-1.954	0.262
Winter months	24 (43.6)	136 (37.6)			
Spring months	13 (23.6)	101 (27.9)			
Summer months	9 (16.4)	73 (20.2)			
Autumn months	9 (16.4)	52 (14.4)			
<b>Poisoning time (n, %)</b>					
<i>According to moon calendar</i>			1.012	0.623-1.244	0.910
New moon	0	34 (9.4)			
First Quarter	5 (9.1)	27 (7.5)			
Full moon	8 (14.5)	31 (8.8)			
Last Quarter	8 (14.5)	41 (11.3)			
Other time	34 (61.8)	229 (63.3)			
<i>Time zone</i>			0.723	0.448-1.168	0.185
00:01-06:00	6 (10.8)	33 (9.1)			
06:01-12:00	6 (10.8)	58 (16.0)			
12:01-18:00	22 (40.0)	122 (33.7)			
18:01-00:00	20 (36.4)	129 (35.6)			
Unknown	1 (1.8)	20 (5.5)			
<b>Cause of suicide (n, %)</b>			0.758	0.535-1.075	0.120
Single drug ingestion	18 (32.7)	161 (44.5)			
Combined drug ingestion	32 (58.2)	181 (50.0)			
Organophosphate poisoning	3 (5.5)	9 (2.5)			
Narcotic substance intake	1 (1.8)	7 (1.9)			
Other	1 (1.8)	4 (1.1)			
<b>Self injuries behaviour</b>	9 (16.4)	34 (9.4)	1.007	0.319-3.181	0.991
<b>Psycotropic drug intake</b>	52 (94.5)	46 (12.7)	0.006	0.002-0.020	<0.001

## Recurrent Youth Suicide

<b>Place of occurrence (n, %)</b>			1.143	0.739-1.767	0.549
Home	49 (89.1)	329 (90.9)			
School	1 (1.8)	3 (0.8)			
Other areas (sea, forest, street, etc)	5 (9.1)	30 (8.3)			

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Table 6: Distribution of psychiatric diagnosis, treatment modalities and outcomes of all patients

	<b>Recurrent suicide attempts</b>	<b>First suicide attempts</b>	<b>p</b>
	<b>(n,%)</b>	<b>(n,%)</b>	
<b>Diagnosis</b>			
Depression	27 (49.1)	31 (8.6)	<0.001
Conduct disorder	8 (14.5)	10 (2.7)	0.001
Attention deficit hyperactivity disorder	7 (12.7)	13 (3.6)	0.009
Bipolar affective disorder	5 (9.0)	1 (0.2)	<0.001
Post-traumatic stress disorder	3 (5.4)	1 (0.2)	0.008
Generalized anxiety disorder	3 (5.4)	4 (1.1)	0.050
Mental retardation	2 (3.6)	-	0.017
Conversion disorder	2 (3.6)	-	0.017
Prolonged pattern of mourning	1 (1.8)	1 (0.2)	0.247
Performance anxiety	1 (1.8)		0.132
Unknown	11 (20.0)	5 (1.4)	<0.001
Obsessive compulsive disorder	-	2 (0.5)	1.000
<b>Drugs used in therapy</b>			
Antidepressant drugs	28 (50.9)	3 (0.8)	<0.001
Antipsychotic drugs	25 (45.4)	2 (0.5)	<0.001
Psychostimulant drug	6 (10.8)	-	<0.001
Antiepileptic drug	2 (3.6)	-	0.017
Anxiolytic drug	1 (1.8)	-	0.132