

# SUICIDALITY IN A SAMPLE OF EGYPTIAN ADOLESCENTS WITH SUBSTANCE USE DISORDER

By

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## ABSTRACT

**Background:** Suicide is classified as the highest cause of death among young people compared to other age groups and is the second leading cause of death during childhood and adolescence. Many people who have attempted suicide in their lives during their youth, the beginning of thinking about suicide and attempted suicide usually occurs before the mid-twenties. Substance use disorder and suicide usually occur among adolescents. In young people receiving treatment for substance use, 18% to 36% report a history of patients with suicidal behavior. Furthermore, adolescents diagnosed with substance use disorder were 5 to 13 times more likely to die from suicide than adolescents without this diagnosis.

**Objective:** To find the association of suicidality among adolescents and substance use disorder.

**Patients and Methods:** The sample consisted of 50 adolescent diagnosed with substance use disorder and 50 adolescent diagnosed with other psychiatric disorder not included substance use disorder and their age were range from 12 to 18 years old. After diagnosed clinically, according to DSM-5 through a designed semi structured interview and through application of Mini International Neuropsychiatric Interview for children and adolescents, suicidal probability scale, teen addiction severity index, and Questionnaire of parental attitudes.

**Results:** there was a direct relationship between of addiction and susceptibility to suicide. It was found that there were statistically significant differences between the control and sample groups in terms of family history of addiction. It was found that 68% of the sample cases have a family history of addiction compared to 26% of the control and found that 32% of the sample cases have no family history of addiction compared to 74% of control. There were statistically significant differences in the sample for a major depressive episode, dysthymia, post-traumatic stress disorder, attention deficit hyperactivity disorder and generalized anxiety disorder. For the control, there were statistically significant differences for a particular phobia. There was a relationship between substance used disorder and comorbidity of psychiatric disorder.

**Conclusion:** The results of the study showed that there was a relationship between the severity of addiction and susceptibility to suicide and that there were many psychiatric disorders associated with substance use disorder.

**Key words:** Substance use disorder – suicide – adolescents.

## INTRODUCTION

Adolescence is a time of transition involving multi-dimensional changes: biological, psychological (including cognitive) and social. Biologically, adolescents are experiencing pubertal changes, changes in brain structure and sexual interest, as a start. Psychologically, adolescents' cognitive capacities are maturing. They are experiencing social changes through school and other transitions and roles they are assumed to play in family, community and school (*Scherf et al., 2012*). During adolescence, many unhealthy behaviors often begin and pose significant public health challenges. Substance use disorder has a significant impact on individuals, families and communities, as its effects are cumulative, contributing to increased health and social problems and severely affecting mental health (*Jobes., 2016*).

The nature of the relationship between mental disorders and substance use disorder is complex and multifaceted. Evidence suggests that negative emotional states and stress related to the urge to take drugs create an emotional disturbance for individuals who use drugs. A change in policy levels will be necessary to make the most of vital neurological explorations so that these results can be used to improve the lives of individuals with comorbidity (*Hartwell et al., 2009*).

Many people who have attempted suicide in their lives did so during their youth, as the shelf life of the

beginning of thinking about suicide and attempted suicide usually occurs before the mid-twenties (*Christine et al., 2017*). Substance use disorder and suicide usually occurs among adolescents. In young people receiving treatment for substance use, 18% to 36% report a history of patients with suicidal behavior. It is noted that the presence of a suicidal behavior is associated with an increase of 3 to 4 times in suicide attempts. Furthermore, adolescents diagnosed with substance use disorder were 5 to 13 times more likely to die from suicide than adolescents without this diagnosis (*Glenn et al., 2015*).

A cute effects of alcohol may be risk factors close to suicidal behavior by increasing psychological stress, aggression, cognitive distortion and by reducing the ability to solve problems. With alcohol-induced stress, adolescents considering suicide may be more likely to overcome these thoughts. This may help explain why a large proportion of adolescents, especially those seeking to treat substance use disorders, who used alcohol or other substances before attempting suicide, have a reason. The use of the substance as a risk factor away from suicidal behavior can also result in a negative impact on the adolescent environment, increased stress, and the negative impact of stress it was found that adolescents who suffer from severe psychological pressures associated with substance use, many resort to escape these stresses during suicide (*Glenn et al., 2015*).

The present work aimed to study the clinical presentation of the adolescent substance use disorders, including the patterns and the severity of abuse. And to find the association of suicidality and substance use disorder among adolescents who, attended to Helwan Mental Health Hospital during the period from May 2018 to April 2019.

## PATIENTS AND METHODS

This study was conducted at Helwan Mental Health Hospital (adolescent unit) where 50 adolescent diagnosed with substance used disorder and 50 adolescent diagnosed with other psychiatric disorder not including substance used disorder, were chosen randomly during the period between May 2018 to April 2019 to seek medical help and to complain about some changes in their life and study problems and their age ranged between 12 and 18 years old. Tools were used is Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID) Arabic version (*Sheehan et al., 1990*), Arabic version (*Awaad et al., 2002*), Suicidal Probability Scale (*Gull and Gill., 1982*) Arabic version (*Albehairy., 2013*), Teen Addiction Severity Index (*Kaminer et al., 1991*) and Questionnaire of parental attitudes (*Abd El-Maksood A., 1995*). Used

tools were standardized. All patients signed informed written consents after explanation of the aim of the study and its details

### Inclusion criteria included

The age range was 12-18 years, both sexes were included, according to case group diagnosed as substance use disorder according to control group patients diagnosed as other psychiatric disorder by the previously mentioned tools .

### Exclusion criteria included

Patients with medical co-morbidity or neurological disorders

### Ethical and approval considerations:

Oral and written consent was taken from patients taking into considerations maintaining the confidentiality of the data, and approval of Training Department of the General Secretariat of Mental Health to do the research.

### Statistical analysis:

All data were collected and analyzed using SPSS program 25 edition using t-test p-value was considered significant > 0.05 and Pearson's correlation coefficient was also used.

## RESULTS

During the description of the sample in terms of the type of substances abuse, it was found that the use of synthetic cannabis (strokes or Voodoo) was 84%, the use of cannabis was 72%, the proportion of abuse of tramadol was 40% , the proportion of abuse of benzo

derivatives was 26% , the proportion of abuse of opiates was 6% and that alcohol consumption was 50% . Use of other substances such as benzene derivatives, glue and cough drugs was 10%, and the tobacco smoking in the sample was 100% (Table 1).

**Table (1): Distribution of the studied patients according to type of substance abuse**

Substance	N =50	%
<b>Main substance:</b>		
Synthetic drug (e.g. strokes-vodo)	42	84
Hashish	36	72
Tramadol	20	40
Benzo derivative	13	26
Heroin	3	6
Alcohol	25	50
Others	5	10
Tobacoo	50	100

According to suicide probability scale, mean of hoplessness cases was 32.28 while the control was 32.54. Mean of suicidal ideation was 26.14 while that of control 26.86. Mean of negative self-

evaluation was 16.62 and that of control war 17.32. The hostility was 20.50, while control was 21.60 and the total in the case 95.54,while control was 98.32 (Table 2).

**Table (2): Distribution of the studied patients according to Suicide probability scale**

Parameters	Groups		mean	SD	p-value
	mean	SD			
<b>Hopelessness</b>	32.54	7.53	32.28	8.64	0.873
<b>Suicidal ideation</b>	26.86	5.32	26.14	7.15	0.569
<b>Negative self-evaluation</b>	17.32	1.97	16.62	2.49	0.119
<b>Hostility</b>	21.60	4.77	20.50	5.03	0.265
<b>Total</b>	98.32	14.36	95.54	17.02	0.379

There was a direct relationship between the severity of addiction and the probability of suicide, and there was an

inverse relationship between the severity of addiction and negative self-evaluation (Table 3).

**Table (3): the relation between suicidality and severity of addiction**

	P-value	Pearson coefficient
<b>Hopelessness</b>	0.080	0.250
<b>Suicidal ideation</b>	0.001	0.465**
<b>Negative self-evaluation</b>	0.009	-0.364**
<b>Hostility</b>	0.042	0.288*
<b>Total</b>	0.011	0.355*

## DISCUSSION

By comparison of case and control according to gender was found 38 people were males and 12 war females, while the control was 36 males and 14 females had substance use disorder. *Jain et al. (2016)* stated that the proportion of substance used disorder in males more than females, but the severity of addiction is more in females than males.

The mean age of the sample in the study was 15.55 years, the study showed a decrease in the average age of abuse. Such result was close to *Helmi (2009)* who found that mean age is 17.38 years.

Regarding the social status of parent in the present work the study showed that 52% of the parents of the cases living together compared to 46 % of tha control, and 32% of the parent cases was separated compared to 42% of control, and 10% of cases had one parent's death compared to 6% of the control, and 6% for both control and cases had death of both parents. *Brown et al. (2010)* found that teens in single-mother families or married stepfamilies are nearly one-and-a-half times as likely, and those in cohabiting stepfamilies are 2.2 times as likely, to smoke and drink as teens in families with two biological married parents.

According to family history of mental illness ,the study found that 92% of the cases did not have a family history of

mental illness compared to 84% of the control, and that 8% of the cases have a family history of mental illness compared to 16% of the control. The study showed that there was no statistical significance in family history of mental illness. *Sitnick et al. (2014)* found an association between clinical levels of maternal depression and later substance use problems, with children of a clinically depressed mothers being five times more likely to experience alcohol dependence during adolescence than children whose parents are not clinically depressed.

According to family history of addiction, it was found that there were statistically significant differences between the sample and control groups in terms of family history of addiction. It was found that 68% of the sample cases have a family history of addiction compared to 26% of the control, and 32% of the sample cases have no family history of addiction compared to 74% of control. *Becker (2017)* stated that there was a link between substance use disorder in adolescents and some parents using narcotics. *Nishimura et al. (2013)* found a link between parental alcoholism and higher levels of substance use in adolescence.

The results of that study showed that synthetic cannabis (strokes or Voodoo) was the most prevalent narcotic

substances among adolescent. *Johnson et al. (2016)* stated that 48.9% of high school students in the United States use illegal drugs (not including alcohol or tobacco). *Wilens et al. (2011)* found that the use of more than one substance in the category of adolescents is the rule, not the exception.

According to the results of Mini-Kid Test (diagnostic test). It was found that there were statistically significant differences in the sample for a major depressive episode, dysthymia, post-traumatic stress disorder, attention deficit hyperactivity disorder and generalized anxiety disorder. For the control, there are statistically significant differences for a particular phobia.

There was a relationship between substance use disorder and comorbidity of psychiatric disorders. *Salah et al. (2013)* stated that substance use disorder (cannabis, tranquilizers and stimulants) was significantly associated with depression. *Engelhardt (2017)* found that prevalence of anxiety disorders among adolescents with substance use disorder has been reported to increase from 22% to 27%. *Uchida, M., et al., (2018)* found that there was a relationship between attention deficit hyperactivity disorder (ADHD) and substance use disorder. *Molina et al. (2014)* stated that children were diagnosed as ADHD has increased risk of substance use in adolescence.

In that study, a group of adolescents attending outpatient and inpatient departments suffering from substance abuse had a prevalence of psychotic disorders 4.1% for females and 4.3% for males. *Griffith-Lendering et al. (2013)* stated that, during adolescence exposure

to psychosis was associated with cannabis. In that study, there was an association between the presence of psychotic symptoms and the use of synthetic cannabis such as (strokes and voodoo), but there were many patients who used these substances disappeared psychotic symptoms after a period of withdrawal symptoms and that a small proportion of them about 6% continued with these symptoms more than one month.

The results of the study showed that there was a direct relationship between the severity of addiction and susceptibility to suicide. *Arnlio et al. (2014)* stated that there was an association between suicide and not only illicit drugs, but also legal drugs such as tranquilizers and alcohol were closely linked to suicide thinking and attempt. *Hakansson et al. (2010)* found that suicide attempters are more likely to report binge drinking, intake of illicit drugs, injection of drugs, physical and mental illness, problematic family history, and history of being abused. *Franklin et al. (2014)* found that alcohol abuse and dependence appeared to be strongly associated with suicide attempt.

On the other hand, *Poorolajal et al. (2016)* showed that drug abuse/dependence was not significantly associated with suicide attempt. Study showed that impulsivity has a role in suicide not substance abuse.

In spite of the relationship between the severity of addiction and parental treatment there was an inverse relationship between discrimination and methods of treatment of the level according to the image of the father and methods of treatment of the level according to the image of the mother so,

the more parent were treated properly, the less addictive they were.

There was an inverse relationship between the social status of the parents control and discrimination according to the image of the father and the oscillation according to the image of the mother.

*Penjor (2019)* found that more disordered parenting patterns were associated with more distress and alcohol abuse in general. Further analyzes to assess the relationship between parenting patterns and alcohol use found no role for moderation, but significant mediation indicated that more dysfunctional parenting patterns were associated with greater distress which in turn was associated with increased alcohol abuse.

### CONCLUSION

The results of the study showed that there was a relationship between the severity of addiction and susceptibility to suicide. There were many psychiatric disorders associated with substance use disorder these disorders are major depression disorder , dysthymia, hyperactivity disorder, attention deficit, generalized anxiety disorder and post-traumatic stress disorder.

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## الإنتحار في عينة من المراهقين المصريين مع اضطراب تعاطي المخدرات

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**خلفية البحث:** يُصنّف الانتحار كأعلى سبب للوفاة بين الشباب مقارنةً بالمجموعات العمرية الأخرى ويُعتبر السبب الرئيسي الثاني للوفاة خلال الطفولة والمراهقة، في حين أنه السبب الرئيسي العاشر للوفاة بين جميع الفئات العمرية.

**الهدف من البحث:** العثور على إرتباط بين الإنتحار و اضطراب تعاطي المخدرات في المراهقين.

**المرضى وطرق البحث:** تم حصر المراهقين الذين تتراوح أعمارهم من 12-18 عام من الإناث والذكور و الذين تم تشخيصهم باضطراب تعاطي المخدرات في العيادة الخارجية لإدمان المراهقين والقسم الداخلى الخاص بإدمان المراهقين والمراهقين المترددين على عيادة طب نفسى مراهقين في مستشفى الصحة النفسية بحلوان طبقاً لمعايير المقياس العالمي المصغر النفسى للأطفال و المراهقين (ميني كيد).

وقد تم اجراء مقابلات شبه مقننة مع كل من المراهقين ,واستبعاد الحالات التي انطبقت معايير الاستبعاد فيها, كما تم أخذ موافقة شفاهية وكتابية من كل المشاركين في الدراسة وذلك بعد تعريفهم بمنهج الدراسة وهدفها وحقهم في الانسحاب منها في أي وقت . وقد تم تطبيق المقياس العالمي المصغر النفسى العصبى للأطفال و المراهقين (ميني كيد), ومقياس احتمالية الإنتحار, ومقياس شدة الإدمان للمراهقين, ومقياس المعاملة الوالدية .

**نتائج البحث:** هناك علاقة طردية بين اضطراب تعاطي المخدرات والقابلية للإنتحار من حيث وجود تاريخ عائلى للإدمان وقد وجد أن هناك فروقاً دالة إحصائياً بين المجموعتين العينه والضابطه من حيث التاريخ العائلى للإدمان حيث وجد أن 68% من حالات العينة لديها تاريخ عائلى للإدمان مقارنة بـ 26%

من حالات الضابط , كما وجد أن 32% من حالات العينة ليس لديها تاريخ عائلي للإدمان مقارنة ب 74% من حالات الضابط.

وقد وجد فروق دالة إحصائية فى العينة لكل من نوبة اكتئاب جسيم و عسر المزاج, و اضطراب كرب ما بعد الصدمة, واضطراب نقص الانتباه, وفرط الحركة, وإضطراب العناد الشارد, وإضطراب القلق العام وقد كان هناك فروقاً دالة إحصائية بالنسبة للرهاب خاص.

**الاستنتاج:** أظهرت نتائج الدراسة أن هناك علاقة مباشرة بين شدة الإدمان والقابلية للانتحار وأن هناك العديد من الاضطرابات النفسية لها علاقة باضطراب تعاطي المخدرات.