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## Comparison of Internalizing Disorders in 8-14-Year-Old Offspring of Opium and Heroin Dependent Parents: A Case-Control Study

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	<b>Abstract</b>
<b>Background:</b>	In general, parental substance abuse is associated with children's emotional and behavioral problems. This study only investigated the internalizing problems (depression, anxiety and physical complains) in children of opioid or heroin-dependent parents in comparison with non-opioid dependent parents in order to determine the effects of drug dependency after excluding the confounding factors.
<b>Methods:</b>	This case-control study compared the internalizing problems of one hundred twenty eight 8 to 14-year-old students in two offspring groups of opioid or heroin-dependent parents (n = 64) and non opioid dependent parents (n = 64). Then we used the Child Behavior Checklist (CBCL). Parents in both groups had no major psychiatric disorders (e.g., personality disorders, mood and anxiety disorders or psychosis), no history of major medical diseases, and no history of divorce. Analysis was performed using chi square or Fisher's exact test.
<b>Findings:</b>	The anxiety/depression subscales in children of non opioid dependent parents were significantly higher in comparison with children of opioid or heroin-dependent parents.
<b>Conclusion:</b>	Substance dependence in addition to reducing parental supervision on children may cause lack of knowledge and unawareness of their children's anxiety and mood problems. Considering study limitations, study repetition in larger statistical population is necessary for generalizing the study findings. In order to assess internalizing problems in further studies, usage of behavioral checklists for self-report of children and youth is recommended.
<b>Key words:</b>	<b>Internalizing problem, Child behavior checklist (CBCL), Opium, Heroin, Opioid</b>
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## Introduction

Oppositional and aggressive behaviors among children and adolescents are the most common reasons for mental health assessment referrals.<sup>1,2</sup> These behaviors may reflect underlying psychiatric disorders such as mood and anxiety disorders in children and adolescents.<sup>1,2</sup> Behavioral problems cause disruption of youth's educational or social performance. Most experts believe that behavioral problems are due to several factors, including biological, temperamental, psychological and learning factors.<sup>1</sup>

According to DSM-IV-TR, substance dependence may lead to abandoning of the important social, occupational and entertaining activities.<sup>3</sup> Emotional and behavioral problems in children of drug-dependent parents have been proven in several studies.<sup>1-5</sup>

Consequences of substance dependence in parents, including spending time to obtain and drug use, less supervision on the family and poverty which subsequently lead to social decline, destruction of social and family relationships and divorce. These outcomes are associated with the offspring's psychological and behavioral problems independently.<sup>1,4</sup>

In addition, ninety percent of opioid dependents have another psychiatric comorbidity of which the most common are major depressive disorder, alcoholism, antisocial personality disorder and anxiety disorders.<sup>1,2</sup>

Very few studies have been conducted on the association of offspring's emotional and anxiety problems and parental opium or heroin-dependency. In most studies, simultaneity of other axis I and II disorders can be seen, which itself is associated independently with the above problems in children. A study in Iran showed that social and educational problems in children of opioid-dependent parents are increasing.<sup>6</sup>

Two non-concurrent and similarly designed studies in the US showed that 60% of school age children of opioid or cocaine-dependent mothers had psychiatric disorders, including oppositional defiant disorder (23 and 18 percent) and attention deficit/hyperactivity disorder (13 and 8 percent). Of course, these mothers themselves had simultaneity of alcoholism, multi drug abuse and depression.<sup>7</sup>

Ziaaddini et al's study on primary school children in Kerman (Iran) indicated that parental psychiatric disorders, especially drug abuse had

no significant relationship with the offsprings' conduct disorders.<sup>8</sup>

Another study concluded that children of opioid-dependent and depressed parents were high risk for conduct disorders compared with children of opioid-dependent and non-depressed parents. This difference was not detected between girls of opioid-dependent and non-depressed parents and girls of non opioid-dependent and non depressed parents. This difference was very low between sons of the two groups.<sup>7</sup>

Considering the consequences and effects of opium and heroin dependence and psychiatric disorders among parents on the offspring's externalizing and internalizing disorders, this study aimed to eliminate the effects of the above factors, and just examined the relationship between parental opium or heroin dependence and the children's psychological and behavioral problems.

## Methods

In this case-control study, one hundred twenty eight 8 to 14-year-old students (boys and girls) were recruited from public and private schools in Kerman from 2008 to 2009. These students were divided into two groups of offspring of opioid or heroin-dependent parents ( $n = 64$ ) and offspring of non opioid-dependent parents ( $n = 64$ ). Seven private methadone treatment clinics (addiction cessation clinics) in Kerman were asked for assistance in sample selection. Their psychologists were informed about the study goals and its methodology as well as inclusion and exclusion criteria.

One hundred fifty referred parents had opioid or heroin-dependence according to DSM-IV-TR, but 61 cases were excluded due to unwillingness of participation and major psychiatric and medical illnesses. The rest (89 cases) received a package containing General Health Questionnaire-28 (GHQ-28), Child Behavior Checklist (CBCL) and a written consent form.

Parents should have completed GHQ- 28 about themselves and CBCL questionnaires about their children at home. If they had more than one child, psychologists selected one of them randomly. Twenty-five cases were excluded from the study because of  $GHQ > 6$ . Therefore, sixty-four patients entered the study. The children's schools were determined by the parents' report. Based on the list and educational scholars, the schools were divided into four groups of deprived, semi-prosperous, prosperous and

private in primary and mid levels.

The control group students ( $n = 64$ ) were matched with cases based on age, gender and school type. For this purpose, after obtaining permission from the Education and Training Department, 16 schools were randomly selected based on the mentioned categories from the school list.

Considering the possibility of sample drop-outs, 263 questionnaires were given to extra-curricular activities of schools to be given to the students selected randomly from the attendance list of students. To prove non drug dependence in parents, we trusted the parents' self-report.

Validity and accuracy of self-report is acceptable in studies if secrecy of the data is assured and data collection is secure.<sup>9</sup>

Studies in Iran also considered self-report data acceptable.<sup>10</sup> In the consent form, parents were asked to complete questionnaires at home and return them to schools if they were willing to participate in the study and had no major medical diseases (hypertension, ischemic heart disease, renal failure, epilepsy or other similar diseases), major psychiatric disorders (major mood disorders, anxiety disorders, psychosis and personality disorders), or a history of divorce.

Sixty-seven parents did not return or complete the questionnaires. Twenty-six had filled them incompletely. Sixty-four cases were selected randomly and were matched with the case group. The psychiatric assistant's cell phone number was given to the parents in both groups to solve any problems and ambiguity about the questionnaires. All stages of planning and research were done under the direct supervision of a child and adolescent psychiatrist and a psychiatric expert.

#### Research instruments

1- Child Behavior Checklist (Achenbach 1991)<sup>9</sup>: In this study, CBCL (parents reporting form) was used. This form includes two sections; the first section contains 13 questions assessing children's competence in four areas of educational, social, overall activities and competence; the second part

is about behavioral and emotional problems in the past 6 months and includes 113 items (which are scored as zero=incorrect, one= correct to some extent, two=mostly or completely correct). This section assesses problems in the following areas: Anxiety/depression, Withdrawal/depression, Physical problems, Social problems, Thought problems, Attention problems, Rule-breaking behavior, Aggressive behavior, Other problems, Internalizing problems (scores of subscale 1 to 3), Externalizing problems (scores of subscale 7+8), Total problems (sum scores of subscale 1 to 9).

Achenbach in 2001 adjusted some of the questions with DSM criteria and provided the following subscales: Emotional problems, Anxiety problems, Physical problems, ADHD problems, Oppositional behavior problems, Conduct problems.<sup>10</sup>

Raw scores of each subscale are converted to T scores based on the software and the child would be categorized in one of the normal, borderline and clinical groups based on the T score of each subscale.

CBCL has a reliability of 90% and a high validity.<sup>10</sup> Its reliability and validity has been proven in Iran.<sup>11</sup>

2. GHQ-28 contains four subscales and 28 questions and is used for screening depression, anxiety, physical disorders and performance impairment in the past month. In bimodal scale, the scoring system (0, 0, 1 and 1) was used<sup>12</sup>. To compare percentages of the two groups, chi square or Fisher's exact test was used.

## Results

Two groups were matched regarding age and gender. The mean (SD) age of the opioid-dependent group and the non opioid-dependent group was 11/1 (1.6) and 11.2 (1.6), respectively ( $P = 0.779$ ). In both groups, 34 students were female (53.1%). Comparisons of the frequency of internalizing subscales based on experience are presented in table 1. There was significant difference in term of anxiety and depression.

Table 1. Comparison of frequency of internalizing subscales based on experience (of CBCL-P) in children of non opioid dependent and opioid- dependent parents

Subscale	Dependent (n = 64)			Non Dependent (n = 64)			P value
	Normal	Borderline	Clinical	Normal	Borderline	Clinical	
Depression/Anxiety	61 95.3%	2 3.1%	1 1.6%	51 79.9%	8 12.5%	5 7.8%	0.026
Withdrawn/Depression	58 90.6%	6 9.4%	0 0%	53 82.8%	7 10.9%	4 6.3%	0.136
Physical Complaint	56 87.5%	7 10.9%	1 1.6%	51 79.7%	10 15.6%	3 4.7%	0.384

## Discussion

The results showed that there is no significant difference between the two groups in term of general internalizing scale. However, a significant difference was detected in anxiety and depression subscales. Although several studies have shown that drug abuse among parents are associated with children's behavioral disorders<sup>1,4,13-15</sup> the results of this study were different. Therefore, various possibilities are considered in this matter:

1- Comorbidity of psychiatric disorders in 90% of opioid-dependents and consequences of its outcomes may independently cause psychiatric problems in children.<sup>1</sup>

In the study, two groups of parents were enrolled who had no simultaneity of psychiatric disorders. Hence, results of this study are similar with results from similar structured studies. In Nunes et al's study, sons of depressed opioid-dependent parents had a higher risk of conduct disorder in comparison with the sons of non-depressed and opioid-independents. Girls of non-depressed and opioid-dependents had no difference with the control group and sons had just a small difference.<sup>8</sup>

In Howard's study, children who had drug-dependent parents with an antisocial personality disorder were in high-risk psychopathology of internalizing and externalizing in comparison with children who had drug-dependent parents without an antisocial personality disorder or children who had parents without both.<sup>3</sup> In a similar study, there was no significant and clear relationship between parental alcoholism without an antisocial personality disorder with conduct disorder and scales of the behavioral checklist.<sup>13</sup> Ziaaddini et al also found no relationship between the parents' psychiatric disorders (especially drug abuse) and the children's conduct disorder.<sup>7</sup>

2- Competence and skills in school and strong links with at least one parent are protective factors against emotional and behavioral problems and antisocial behaviors in children.<sup>1</sup> Competency and activities in school between the two study groups did not present significant difference. In this study, it is necessary to pay attention to the role of the mother. The maternal role in child rising in the Iranian culture is very important and strong and may reduce stress in the family. Families enrolled in this study had mothers who took care of children while tolerating their spouse's drug dependency. Close relationship with the mother

can be considered as a very effective protective factor.

3- According to scientific literature, economic problems caused by high costs (even up to hundreds of dollars daily) and declining social and family performance are due to substance abuse,<sup>1,2</sup> which are related to children's behavior disorders. In Iran, this issue is a little bit different since the most abused substance is opium and one out of 17 consumes opium.<sup>16</sup>

Iran is among the countries with the highest per capita opium consumption in the world.<sup>17</sup> For some reasons including increase of industrial substance abuse, the taboo of opium consumption is weakening now.<sup>18</sup> On the other hand, it is necessary to consider the low expense and easy access of opium. It seems that opium consumption in Iran is associated with lower economic and family problems and as a result has fewer consequences.

The frequency of anxiety/depression subscale in children of non opioid-dependent parents were significantly higher in comparison with children of opioid or heroin-dependent parents. Its significance can be due to the following reasons: a) The phenomenon of multiple comparisons that lead to first type error (p value is close to 0/05). b) Completing questionnaires carelessly in the case group, i.e. opioid-dependent parents. c) Neglect and lack of parental supervision in the case group, consequently leading to unawareness of children's anxiety and depression problems. d) Failure to use self-report CBCL for children and youth, which has more validity for determining internalizing problems.

Limitations of this study include:

Urine test for morphine in order to rule out opioid dependency of parents in the control group was not conducted because of the possible lack of cooperation by the parents. Instead, self-reports by the parents were used.

Considering the high number of questionnaires and the possibility of lack of cooperation in non opioid-dependent parents, the antisocial personality disorder assessment was not performed for these parents. However, the prevalence of this disorder was very low in men (3%).

It seems that the taboo of opium dependency and abuse is waning. One of its main causes is the gradual change in the consumption pattern toward using illegal industrial substances such as heroin and semi-amphetamines. Therefore, firstly,

improving social skills, especially enhancing communication skills with children, expressing feelings and attention to the maternal role can reduce the risk of antisocial behaviors, depression and anxiety problems in children or may lead to early detection and intervention.<sup>1-4</sup>

School-based prevention programs with the widespread use of psychologists and psychiatrists for training problem-solving strategies in school as a course can strengthen social and emotional skills and decrease aggressive behaviors for any reason.<sup>1</sup>

Secondly, considering co morbidities in drug-dependent parents of children with psychiatric problems, treatment of co morbidities must be considered even if the patient does not express, the existence of these disorders must be questioned and the appropriate treatment should be advised.

Considering study limitations, study

repetition in a larger statistical population is necessary for generalizing the study findings. Further studies are suggested on the personalities of drug dependents' spouses and on the problem solving strategies in these families. In addition, it is recommended to use self-report behavioral checklists for children and youths.

**Conflict of interest:** The Authors have no conflict of interest.

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## مقایسه مشکلات درونی سازی در فرزندان ۱۴-۸ ساله والدین

## وابسته به تریاک یا هروئین نسبت به گروه شاهد

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## چکیده

به طور کلی سوء مصرف مواد در والدین با بروز مشکلات رفتاری و عاطفی در فرزندان ارتباط دارد. پژوهش حاضر تنها به بررسی مشکلات درونی سازی (افسردگی، اضطراب و شکایات جسمانی) فرزندان والدین وابسته به تریاک یا هروئین در مقایسه با فرزندان والدین غیر وابسته به تریاک یا هروئین پرداخت تا میزان تأثیر مصرف این مواد بعد از حذف عوامل مخدوش کننده بر مشکلات فوق معلوم گردد.

مطالعه از نوع مورد - شاهدی بود. مشکلات درونی سازی در ۱۲۸ دانش آموز ۱۴-۸ ساله در دو گروه فرزندان والدین وابسته به تریاک یا هروئین ( $n = 64$ ) و فرزندان والدین غیر وابسته ( $n = 64$ ) با پرسش نامه چک لیست رفتاری کودکان (CBCL یا Child Behavior Checklist) مورد بررسی قرار گرفت. والدین هر دو گروه فاقد اختلالات روانی عمده (مثل اختلالات شخصیتی، اختلالات خلقی و اضطرابی یا روان پریشی)، اختلال طبعی عمده و سابقه طلاق بودند. جهت مقایسه درصدها بین دو گروه از آزمون  $\chi^2$  و در صورت نیاز آزمون دقیق (Exact test) استفاده شد.

زیر مقیاس های اضطراب و افسردگی در فرزندان والدین غیر وابسته به طور معنی داری بیشتر از فرزندان والدین وابسته به تریاک یا هروئین بود.

وابستگی به مواد ممکن است علاوه بر کاهش نظارت والدین بر فرزندان، باعث عدم آگاهی و شناخت آنها از مشکلات اضطرابی و خلقی فرزندان شود. تعمیم داده های این مطالعه با توجه به محدودیتها، نیاز به تکرار در جامعه آماری بزرگ تر دارد و بهتر است در مطالعات بعدی از چک لیست رفتاری کودکان و نوجوانان خود گزارشی جهت بررسی مشکلات درونی سازی استفاده شود.

مشکلات درونی سازی، چک لیست رفتاری کودکان (CBCL)، تریاک، هروئین، اپیوئید.

مقدمه:

روش ها:

یافته ها:

نتیجه گیری:

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تعداد جدولها: ۱

تعداد نمودارها: -

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