The current classification systems for mental disorders (ICD-10 and DSM-IV) draw a distinction between harmful use of psychoactive substances and dependence on them. This distinction, however, is inappropriate for use in child and adolescent psychiatry, because manifest substance dependence is rarely seen in children and adolescents (box 1). The development of tolerance and withdrawal symptoms may be absent despite the presence of serious damage and impaired psychosocial functioning. In the English-speaking world, the term "substance use disorders" (SUD) is preferred when children and adolescents, rather than adults, are under discussion, and we will adopt this terminology here.

Prevalence

The prevalence of consumption of psychotropic substances is about twice as high among adolescent boys than among adolescent girls, except with regard to tobacco, which is consumed by roughly equal percentages of both sexes (1). Tobacco consumption begins at an average age of 13.5 years, alcohol consumption at 14 years, and cannabis consumption at 15 or 16 (2). In the last few years, the prevalence of tobacco consumption among 12- to 19-year-olds has fallen slightly (24). Alcohol consumption among 12- to 17-year-olds fell from 2004 to 2005, but has risen significantly since then. Dangerous consumption patterns, such as so-called “binge drinking” – defined as 5 or more standard glasses of alcohol per drinking session – have become increasingly prevalent and are a current problem that still awaits a solution (3).
The legal psychotropic substances, tobacco and alcohol, play an important role in the initiation of illicit drug consumption. It has been demonstrated that experience with cigarette smoking and alcohol intoxication makes the consumption of cannabis or other illicit drugs more likely (4). The early onset of tobacco and alcohol consumption should be regarded as a risk factor for the later development of a substance use disorder (e1).

For cannabis, in particular, there has been a steady decrease in the age at which consumption begins, accompanied by widening overall use of the drug (e2, 5). According to data compiled by the Deutsche Suchthilfestatistik (German Addiction Aid Statistics), 2007, the last few years have seen a significant increase in the number of young cannabis users requiring treatment in the ambulatory addiction aid system (6) (diagram 1). Some 80% of children and adolescents who use illicit drugs use only cannabis (4), yet a "polyvalent" pattern of consumption, including not just cannabis but also ecstasy, amphetamines, cocaine, and LSD, is often commonly found among young drug users (7). Moreover, children and adolescents often experiment with psychotropic plants and mushrooms. The use of opiates has declined markedly among children and adolescents in recent years (9).

There are social and demographic differences in the use of legal and illicit psychotropic substances by children and adolescents: in Germany, boys and girls attending a “Hauptschule” (vocational high school) smoke tobacco roughly four times as commonly as those attending a “Gymnasium” (academically oriented high school). Low social status is associated with higher tobacco consumption among girls. Boys and girls smoke more commonly overall in the former East Germany than in the former West Germany.

### BOX 1

**Diagnostic guidelines for the harmful use of psychotropic substances and for dependence syndromes, according to the ICD-10 (e10)**

**Harmful use (ICD-10: F1x.1)**
- This diagnosis requires actual harm to the patient’s mental or physical health.
- The harmful use pattern is often criticized by others and has various negative social consequences.
- Acute intoxication or "hangover" does not constitute a sufficient demonstration of the harm to the patient’s health that the diagnosis requires.
- Harmful use should not be diagnosed when a dependence syndrome, psychotic disorder, or substance-induced disorder is present.

**Dependence syndrome (ICD-10: F1x.2)**
- A strong desire or a type of compulsion ("craving") to consume psychotropic substances or alcohol
- Reduced ability to control the initiation, termination, and quantity of consumption
- A physical withdrawal syndrome
- Demonstrated tolerance
- Progressive neglect of other interests besides substance use
- Persistent substance use despite the demonstration of clearly harmful consequences

*Three or more of these criteria must have been present simultaneously at some time within the past year for the diagnosis to be made. A dependence syndrome always includes harmful use.

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**Age of onset**

The age of onset of substance use among children and adolescents is falling, particularly with regard to cannabis use, while the number of users is rising.

**Consumption patterns**

About 80% of children and adolescents who use illicit psychotropic substances use only cannabis.
Young persons from an immigrant background smoke less tobacco and drink less alcohol than their German counterparts. As for the consumption of illicit psychotropic substances, there are no differences with respect to immigrant background or social status, but pupils attending a "Gesamtschule" (nonselective comprehensive school) consume significantly more cannabis than those in a "Gymnasium" (1).

There are no current epidemiologic studies providing data not just on the consumption of these substances, but also on the prevalence of abuse and addictive disorders in children and adolescents. An older longitudinal study in greater Munich (the EDSP study) revealed the following prevalences of abuse (resp., addiction) in the 14- to 17-year-old age group: alcohol, 10% (5%); cannabis, 3.6% (1.5%); ecstasy/amphetamines, 0.6% (0.4%); cocaine, 0.2% (0%) (9) (tables 1–4).

**Etiology**
Substance use, and the substance use disorders that arise from it, have many different causes in childhood and adolescence. Adolescence is associated with experimentation and taking risks more than any other time of life. Children and adolescents expect drugs to give them a feeling of happiness, to loosen their inhibitions, or to let them forget the troubles of everyday life. Relaxation and fun with friends through group consumption are also mentioned as motivations for substance use (4).

From the perspective of developmental psychology, it can be said that the vast majority of children and adolescents who use these substances do so in an attempt to cope with the typical developmental issues of adolescence. Substance use demonstrates autonomy and an individual lifestyle and thus seems to help the young person become independent of his or her parents (10). It also may be imagined to aid in the accomplishment of interpersonal developmental tasks, such as the attainment or reinforcement of high status within a peer group. With the transition to adulthood, substance use can no longer perform these functions for most young persons. As long as there are no psychosocial limitations in childhood that prevent this developmental step from being taken, and as long as social networks

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**Drug abuse and addictive disorder**
There are currently no studies providing data not just on the consumption of illicit psychotrope substances, but also on the prevalence of abuse and addictive disorders in children and adolescents.
play a protective rather than harmful role, the maturing adolescent will be able to assume the appropriate social roles of adulthood and stop using illegal psychotropic substances (a process called “maturing out”). Nonetheless, a minority of adolescents who had positive risk factors in early life, and for whom the consequences of substance use are problematic, continue to use these substances when they become adults. Edwards’ multifactorial etiological model (11) aids in the precise understanding of this process. It names a number of different vulnerability factors and moderating and interacting variables. According to this model, a substance use disorder tends to develop in persons who are vulnerable and also possess additional risk factors (moderating variables); substance use contributes to the development of addiction in a vicious circle (diagram 2). Neurobiological studies in animal models have revealed the importance of a dopaminergic reward system in the mesocortical-limbic system that reinforces learning and learning-promoting processes (“seeking behavior”), and of a cholinergic and serotoninergic punishment/anxiety system (“avoidance behavior”). The emotional experience of the intoxicated state is stored in an “addiction memory” that is difficult to eradicate and thereby explains the high affinity for these substances. The relevant anatomical structures are located in the amygdala, hippocampus, and septal area (8).

**TABLE 1**

<table>
<thead>
<tr>
<th>The prevalence of tobacco use among 12- to 19-year-olds*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime prevalence (smoking at any time in one’s life)</td>
</tr>
<tr>
<td>Habitual smoking (daily use)</td>
</tr>
<tr>
<td>(of whom 8% smoke more than 10 cigarettes/day)</td>
</tr>
<tr>
<td>Occasional smoking (at least once a week)</td>
</tr>
<tr>
<td>Experimentation with smoking (no more than 100 cigarettes smoked overall)</td>
</tr>
<tr>
<td>Ex-smoker</td>
</tr>
<tr>
<td>Never smoked</td>
</tr>
</tbody>
</table>

*from (24)

**TABLE 2**

<table>
<thead>
<tr>
<th>The prevalence of alcohol use in 12- to 17-year-olds (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 1 alcoholic drink/week</td>
</tr>
<tr>
<td>– adolescent boys</td>
</tr>
<tr>
<td>– adolescent girls</td>
</tr>
<tr>
<td>Average quantity of alcohol consumed</td>
</tr>
</tbody>
</table>

*corresponds to 1.25 liters of beer or 0.65 liters of wine

**Etiology**

Substance use, and the substance use disorders that arise from it, have many different causes in childhood and adolescence.
Mental comorbidity

Mental comorbidity is the simultaneous presence of a substance use disorder and one or more other mental disorders. More than 60% of children and adolescents with substance use disorders have mental comorbidity (12). The following comorbid mental disorders have been found, in order of decreasing frequency (2, 8):

- Disorders of social behavior, with and without hyperactivity
- Depressive disorders
- Anxiety disorders, social phobic disorders
- Personality developmental disorders, e.g., incipient borderline disorder
- Eating disorders, particularly binge eating and bulimia nervosa
- Substance-induced psychosis (from the use of cannabis, ecstasy, amphetamines, psychotropic plants and mushrooms, cocaine, LSD), defined as separate disorders when their manifestations persist for at least 4 weeks despite abstinence from the inducing substance
- Schizophrenic psychosis.

The complex interrelation of substance abuse and comorbid mental disorders in childhood and adolescence has been the subject of very little research to date. The problem of comorbidity can be stated as follows (e3): On the one hand, many psychopathological manifestations are consequences of the substance use disorder (e.g., amotivational syndrome in cannabis dependence, drug-induced psychosis). On the other hand, a number of other psychiatric diseases affecting children and adolescents can promote the development of substance use disorders and influence their course with a worsening of manifestations, e.g.,

Comorbidity

More than 60% of children and adolescents with substance use disorders have a mental comorbidity requiring treatment.
hyperkinetic disorders combined with impaired social behavior, or dissocial personality developmental disorder. Continued substance consumption, in turn, complicates the course of the psychiatric disorder.

**Early recognition**
The symptoms and signs of substance use disorders in children and adolescents are quite heterogeneous. The following clinical manifestations should be regarded as non-specific warning signs (Box 2):

- Difficulty concentrating, agitation
- Mood fluctuations
- The parents’ impression that the child has changed
- Difficulties in school, sudden decline in scholastic performance
- New circle of friends, switch to “in” clothing styles
- Social withdrawal
- Self-neglect, disregard for personal hygiene
- Dissocial behavior, criminal behavior to obtain drugs, prostitution.

**Diagnosis**
The most important factor for successful diagnosis and treatment is the establishment of an open, trusting, and matter-of-fact relationship between the therapist and the child or

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**Non-specific warning signs**
A sudden decline in scholastic performance may indicate the imminent development of a substance use disorder.
adolescent patient. Once this has been achieved, the patient’s own reports of his or her substance consumption are generally trustworthy and often more informative than laboratory testing (13). The addictive substance history should be taken in a standardized manner, because even experienced clinicians tend to underestimate, rather than overestimate, the actual substance use of young persons (14). It should be made clear to the child or adolescent that information will be obtained from third parties about his or her family life and school situation as part of the clinical history. Detailed instructions on how to explore the patient’s history are given in the AWMF guidelines on the diagnosis and treatment of mental disorders in childhood and adolescence (in German, reference 7).

Urinary drug screening is a standard method of obtaining objective evidence of current substance-use behavior. Screening can be used to detect cannabinoids, amphetamines, ecstasy/MDMA, cocaine metabolites, benzodiazepines, barbiturates, opioids, and methadone, and can be repeated if necessary. It cannot, however, reveal the severity of a substance use disorder. Psychotropic plants and mushrooms (e.g., psilocybin-containing mushrooms, fly agaric, angel’s trumpet) are also used by children and adolescents and are not detectable with standard drug screens; their active substances can be revealed only with special, expensive and technically difficult tests.

At present, no German-language structured interview instruments are available for the diagnosis of substance use disorders in children and adolescents. A helpful self-test for screening is the “RAFFT,” which was developed in the USA for the self-assessment of alcohol and drug use among 12- to 18-year-olds. It provides evidence of risky patterns of consumption that promote the development of substance use disorders (e4) (box 3).

Psychopathological findings
The therapist should search for psychopathology in every contact with the child or adolescent patient, paying particular attention to possible comorbid mental disorders, e.g., persistent affective disturbances, suicidality, and drug-induced psychosis. Polyvalent drug consumption is common in adolescence (7, 8); thus, abrupt abstinence may be followed by

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**BOX 2**

**Diagnostic indicators for a potential substance use disorder in childhood and adolescence (15)**

- Family history: substance use by other family members, particularly parents and siblings, disocial behavior in the family, disturbed parent-child relationships, mental illness in the family
- Comorbid disorders: disorders of social behavior, persistent affective disorder, anxiety disorders, suicidality
- Experienced negative (withdrawal, craving) and hoped-for positive (status, problem reduction) effects of substance use, earlier tobacco use
- Emotional trauma, history of being abused (or witnessing abuse), early sexual contacts, early pregnancy
- Declining scholastic performance, social withdrawal, termination of schooling
- Disocial behavior (lying to adults, stealing from parents), delinquency
- Substance use and delinquency among peers
- Socioeconomic disadvantage, belonging to a marginal social group, deprived living environment, high crime rate

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**The clinical interview**
The therapist can gain a more accurate impression of substance use by taking a substance-use history in a confidential talk with the patient and obtaining further information from third parties.
multiple, overlapping withdrawal phenomena peaking at different times and associated with widely fluctuating psychopathological and physical manifestations.

**Physical examination and laboratory testing**

Physical examination can reveal further evidence of a substance use disorder. The following findings are particularly significant:

- Pupillary width and reactivity (intoxication)
- Skin (needle marks, infections, sexually and parenterally transmitted diseases)
- Peripheral and central nervous system (impaired balance and coordination, cranial nerve deficits, impairment of consciousness, cognitive impairment)
- Cardiovascular system (arrhythmia)
- Laboratory tests (hepatic and pancreatic enzymes, renal function tests, complete blood count, protein, coagulation values, antibodies to hepatitis A, B, and C, and HIV [only with the explicit permission of the patient and his/her parent or guardian]) and a tuberculin test round out the clinical picture.

Electroencephalography may be useful in special clinical situations and for further diagnostic assessment (alteration of the seizure threshold by psychotropic substances, signs of withdrawal) (7).

**Early intervention**

Early intervention may prevent the further development of a substance use disorder and thereby avert the patient's descent into addiction. Whenever a substance use disorder is suspected, the possibility should be openly discussed, and the subject should never be treated as a taboo. It is useful for parents to take part in the discussion as well. Useful additional history can often be obtained from the school, other members of the peer group, and/or the local Department of Youth and Family Services. Children and adolescents often show little awareness of the problem and tend to trivialize the consumption of psychotropic substances. They can be helped to understand that a problem exists by a discussion of declining performance in school or vocational training, the social isolation that often goes along with it, and other unpleasant accompaniments of substance use (16). From the very beginning, the physician should attempt to bolster the patient's confidence in his or her own positive personal development and should not characterize recurrent substance-use behavior reproachfully as a personal failure. We recommend the use of various types of motivational interviewing techniques that have been developed to aid highly ambivalent patients (17).

**Physical exam**

The physical examination can also yield evidence of a substance use disorder.
Underlying these techniques is the assumption that motivation is not a stable state, but a changeable and interactive process that is susceptible to influence by the style of the physician/therapist. An important aim of motivational interviewing is to enable the individual to perceive the discrepancy between his or her problematic behavior and personal goals such as succeeding in school or acquiring a driver’s license (box 4).

**Treatment**

Outpatient treatment in a specialized counseling center, or in a child and adolescent psychotherapist’s or psychiatrist’s office, is indicated for patients who have not yet undergone much treatment, who have no comorbid mental disorders or, at most, mild ones, and who are still functional in everyday life. The chance of success is higher if the patient has social relationships that are not determined by substance use and if he or she is able to refrain from substance abuse for at least a short period of time. If treatment in an inpatient unit for child and adolescent psychiatry is indicated because of severe substance abuse and/or mental comorbidity, with marked impairment of the level of psychosocial functioning, then biopsychosocial and developmental considerations imply that the treatment should be of a multimodal, interdisciplinary type.

In cases of severe substance abuse with imminent danger to the patient and/or other persons, the patient’s parents or guardians can take steps to initiate inpatient hospitalization and treatment for a limited time, even against the patient’s will. In Germany, involuntary commitment requires a decision to this effect by the Family Court based on acute danger to the well-being of a child (§1631b BGB).

Psychotherapeutic approaches (individual and group psychotherapy performed according to the principles of various “schools,” family therapy, training to prevent recidivism, so-called booster sessions) are used in combination with complementary forms of treatment (movement and body therapy, ergotherapy, music therapy). Pedagogic counselling and in-hospital school classes complement the treatments offered in the inpatient setting (box 5).

Both acute and post-acute therapy should be provided. Acute therapy (withdrawal or qualified detoxification) usually takes 3 to 4 weeks and has the following major goals: medical diagnostic assessment, treatment of withdrawal phenomena and accompanying physical illness, psychological, psychiatric, and psychosocial diagnostic assessment, and the fostering of insight into the problem of substance use and of motivation to quit.

**Drug screening**

Screening can yield objective evidence of current consumption but cannot reveal the severity of a substance use disorder.

**Treatment**

The treatment of a substance use disorder in a child or adolescent is abstinence-oriented. There is generally no indication for treatment with drug substitutes.
Once the patient’s situation has stabilized adequately, a transition from the acute therapeutic setting to further treatment as an outpatient can be considered. Because of the high prevalence of comorbid mental disorders, however, a brief period of post-acute inpatient treatment in a child and adolescent psychiatry unit is indicated in most cases. The main goals of this phase of treatment are the etiologic treatment of the comorbid mental disorder and the preparation of the patient for the period of outpatient rehabilitation that will follow. When substance abuse has already been of long duration, and when it has already been treated and has nonetheless recurred numerous times, rehabilitation can be provided in the inpatient setting as a continuation of long-term post-acute care, i.e., as rehabilitative long-term treatment in a specialized facility (for 12 to 18 months). In Germany, this measure is usually paid for by legally mandated health insurance in accordance with the relevant legal provisions (SGB V), though it is sometimes paid for by the "Jugendhilfe" (youth welfare service, SGB VIII). When a supportive social structure is lacking, and when the family structure is dysfunctional, the therapist and patient can consider the possibility of following up the period of inpatient treatment and rehabilitation with housing in a suitable home for troubled youth (§§34 and 35 of the Child and Youth Welfare Law [Kinder- und Jugendhilfegesetz] according to SGB VIII) (7).

Pharmacotherapy
In the authors’ experience, clinically relevant withdrawal syndromes do not regularly develop after the discontinuation of addictive substance use by children and adolescents, and therefore there is usually no need to give medications to buffer the severity of withdrawal

**OX 5**

**Individual elements of the treatment of substance use disorders and the level of evidence for them (18)**

- Contact phase: appropriate, confidential atmosphere (A); “motivational interviewing” to promote insight into illness (C)
- Outpatient detoxification, with adjuvant pharmacotherapy where indicated (C); withdrawal treatment in a specialized inpatient facility if a supportive social environment is lacking (A), with temporary substitution to buffer withdrawal phenomena if indicated (C)
- Weaning/distancing (in an inpatient or inpatient/outpatient setting): psychotherapy, family therapy (A), and psychoeducation (C); training of social skills (B); learning of self-control techniques (behavioral therapy), mainly in groups (B); prevention of recidivism (C)
- Sports programs, exercise, ergotherapy, occupational therapy (C)
- Rehabilitation: supportive techniques for psychosocial (C) and scholastic-occupational improvement (B); psychoeducation (C)
- Follow-up care: further treatment, sociotherapy (B)
- Cooperation of parents, treatment personnel, counseling centers, and the youth welfare system (C)
- No aversive techniques (C); no simultaneous treatment of mixed user groups in a single setting (alcohol and lifestyle drugs, etc.) (C)

Level A evidence is the most reliable, level C the least reliable. C, observational studies, unsystematic reviews, textbook information. B, controlled clinical studies, case-control or cohort studies. A, meta-analysis, randomized clinical studies.

**Outpatient treatment**

Outpatient treatment is indicated for patients who are functional in everyday life, have intact social relationships, and do not suffer from comorbid mental disorders.
phenomena. If such phenomena do appear, they can generally be dealt with by nursing and physical-therapeutic measures. Acupuncture, too, is experienced as supportive by most patients (8). Nonetheless, adjuvant pharmacotherapy is helpful in many cases (7): thus, sedating neuroleptic agents such as chlorprothixene are useful in cases of severe cannabis dependence (e5), tricyclic antidepressants can be used to lessen the manifestations of cocaine withdrawal, and benzodiazepines are transiently given to patients who are dependent on amphetamines or ecstasy. Severe alcohol withdrawal phenomena are treated in an inpatient setting with clomethiazole (p.o.), and opioid dependence syndrome is treated with the transient administration of levomethadone (8). Potentially addicting medications should not be prescribed in the outpatient setting, because they can be used as substitute drugs or sold.

Etiological, psychopharmacologic treatment of a comorbid mental disorder should, in principle, be considered only when the child or adolescent patient has already been drug-free for an adequate period of time and has been able to undergo a thorough diagnostic evaluation.

The following are indications for treatment with medications: preexisting mental disorders that persist during the drug-free period, significant familial mental disorders, failure of prior attempts at rehabilitative treatment, and success of prior attempts to treat comorbid mental disorders with medication (7). Depending on the indication, the medications to be used may include selective serotonin reuptake inhibitors (SSRIs), stimulants (methylphenidate), or atypical neuroleptic agents (e7). Unfortunately, many of these medications must be used in individual, off-label fashion in child and adolescent psychiatry, because study data concerning their use in this patient group are not available. Therapeutic drug monitoring should be practiced and ought to be the subject of future studies (e8).

A family-based approach should be an integral part of the treatment of children and adolescents (7, 12). In training programs for family interaction, parents learn how to set clear goals, take appropriate disciplinary measures, and communicate clearly and positively (e8). The complex, reciprocal relationships between substance use, family interpersonal conflicts, and child-rearing styles can be addressed in family therapy. Here, too, an attempt can be made to improve the emotional well-being of all members of the family. The fact that certain family habits can promote substance use or contribute to recidivism is a further reason why therapeutic work with the parents is an important contributor to long-term therapeutic success (8). When dealing with the family, the physician should counsel and support the parents while maintaining a matter-of-fact, impartial attitude, in order not to imperil his or her position of trust with the young patient.

Family and parental support groups are mainly helpful for the parents of untreated and unmotivated patients. They unburden the parents of feelings of guilt and failure, provide them with perspective, and make it easier for them to cope with their substance-abusing child (8). The authors have led such groups in the last few years at their outpatient drug and alcohol unit for adolescent and young adult patients and their families at the Hamburg-Eppendorf University Clinic, but, unfortunately, such groups are available in only a few other places in Germany at present, leaving many geographical areas uncovered.

**Treatment outcome and prognosis**

The rate of cessation of substance use after a course of treatment that has been pursued to its conclusion is generally considered the best indication of long-term therapeutic success.

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**Etiological pharmacotherapy**

Etiological treatment for a comorbid mental disorder is indicated only when the patient has undergone a thorough diagnostic evaluation and is currently drug-free.

**Family-based approach**

A family-based approach should be an integral part of the treatment of children and adolescents with substance use disorders.
In all countries taken together, the cessation rates for adolescents for all forms of treatment range from 60% to 65% (19). Family therapy has the highest cessation rate, at 70% to 90% (20). In Germany, the abstinence rate ranges from 55% to 73% at the end of treatment and from 30% to 50% one year later (19, 21). The following treatment components are important factors for successful treatment and a good prognosis:

- Regular termination of treatment (pursuance of a course of treatment to its conclusion)
- Quantitatively low substance use at beginning of treatment
- Protective psychosocial factors (abstinent peers, supportive family situation, good prospects for schooling or vocational training)
- No comorbid disorders, or only mild ones
- Intense, structured treatment
- Flexibility in response to the patient’s needs
- Utilization of available resources for follow-up care after treatment
- Good therapist-patient relationship
- Experience of the therapist.

Conclusion

Because of their increasing prevalence and high risk of chronification, substance use disorders in childhood and adolescence are an important public health issue. At present, there is hardly any uniform standard for the care of the affected children and adolescents.

Disorder-specific treatment in child and adolescent psychiatric units is not yet available everywhere in Germany, and this situation must be remedied. At the same time, the prevention of substance use disorders should be intensified and broadened on all relevant levels (family, school, community). A basis for these measures should be provided by more active scientific investigation of the efficacy and cost-effectiveness of the various preventive measures that can be taken.

Conflict of Interest Statement

Professor Thomasius receives third-party funds from the “Teen Spirit Islands” foundation and from the Foundation for the Prevention of Nicotine Addiction in Children and Adolescents in Hamburg and Environments (Förderverein zur Prävention der Nikotinsucht bei Kindern und Jugendlichen in Hamburg und Umgebung e.V.). Dr Stoffe and Dr Sack state that they have no conflict of interest as defined by the guidelines of the International Committee of Medical Journal Editors.

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Translated from the original German by Ethan Taub, M.D.

REFERENCES

For e-references please refer to the additional references listed below.


**ADDITIONAL REFERENCES**


Question 1
Which of the following criteria is part of the ICD-10 definition of a dependence syndrome?
(a) Tolerance
(b) Acute intoxication
(c) Financial distress
(d) Socioeconomic disadvantage
(e) Progressively increasing involvement with hobbies

Question 2
Which of the following statements about substance use in childhood and adolescence is true?
(a) Adolescents do not use plants and mushrooms containing psychotropic substances to any significant extent.
(b) There is no connection between cigarette smoking and cannabis use.
(c) In recent years, tobacco use among children and adolescents has declined.
(d) Only about 20% of 12- to 17-year-olds have ever used tobacco.
(e) 12- to 17-year-old girls drink just as much alcohol as boys in the same age group.

**Question 3**
Which of the following is a common comorbid disorder in children and adolescents with substance use disorders?
(a) Encopresis
(b) Depression
(c) Asperger’s syndrome
(d) Somatoform disorder
(e) Atypical autism

**Question 4**
Which of the following statements is true?
(a) Cannabis use has declined as a result of various legal changes that have been put into effect.
(b) Ecstasy is now more commonly used than cannabis by children and adolescents.
(c) Heroin use among children and adolescents has markedly declined in recent years.
(d) So-called sniffed substances are very commonly used by children and adolescents.
(e) Older adolescents use cocaine more commonly than cannabis.

**Question 5**
Which of the following is a risk factor for the development of a substance use disorder?
(a) Substance abuse by the parents
(b) High socioeconomic status
(c) Being an only child
(d) Late onset of cigarette smoking
(e) An immigrant background

**Question 6**
Which of the following statements about the development of substance use disorders in children and adolescents is true?
(a) Intensive cannabis use is almost inevitably followed by the use of “hard drugs.”
(b) About 90% of adolescents use illicit drugs only transiently.
(c) Children and adolescents are especially prone to the rapid development of overt physical dependence.
(d) Girls use psychotropic substances more often than boys.
(e) The intensive consumption of alcohol generally does not begin till age 17 or 18.

**Question 7**
Which of the following statements about drug screening and the clinical history is true?
(a) Urinary drug screening reveals the severity of a substance use disorder.
(b) Drug screening is more informative than a substance use history obtained in a confidential interview.
(c) If substance use is suspected, alcohol should always be measured in the urine in addition to cannabis and other illicit drugs.
(d) Information provided by the patient himself or herself suffices for a reliable history.
(e) Urinary drug screening is an integral part of the thorough diagnostic assessment of a substance use disorder.

**Question 8**
One of the features of a motivational interview is:
(a) A confrontational attitude that breaks the young patient’s reserve
(b) An attempt to build up the patient’s self-confidence
(c) A distancing attitude
Question 9
Which of the following statements about the treatment of substance use disorder is true?
(a) A multimodal, interdisciplinary treatment concept is helpful.
(b) Ambulatory treatment is indicated even for patients who suffer from comorbid disorders and whose everyday life is dysfunctionally structured.
(c) Qualified detoxification should always be performed in the outpatient setting.
(d) To bolster the patient’s autonomy, the parents should be kept on the edges of the treating situation.
(e) Even when the patient himself/herself or other persons are in imminent danger, treatment can only be provided with the patient’s consent.

Question 10
Which of the following statements about pharmacological treatment is true?
(a) During therapeutic drug withdrawal, no sedatives may be given as treatment.
(b) Benzodiazepines are not allowed to be used in the inpatient setting.
(c) The etiological treatment of a comorbid depressive disorder with an SSRI is not indicated in patients with a prior history of substance abuse.
(d) Medications can often only be given “off-label” in child and adolescent psychiatry for individual therapeutic use.
(e) Once the diagnostic evaluation has been completed, there is no role for the use of atypical neuroleptic agents in the treatment of persistent psychotic manifestations.

ADDITIONAL MATERIAL

Case illustration
Drug use in childhood and adolescence

Johannes, 15 years old, presented to his family physician accompanied by his mother, who complained of having “lost her connection to him” over the past six months. She stated that he had become very withdrawn and had stopped going to school regularly, so that there was a risk of his being left back and having to repeat the 9th grade. He no longer saw his friends from the football club and was spending the day playing computer games for hours at a time. He sometimes “haunted” the family apartment at night, and he ate at very irregular times. He gave his parents and older sister the impression of being weighed down with troubles, though he also sometimes suddenly flew into a rage about relatively trivial matters. A week before presentation, his mother discovered some “hash cigarettes” while cleaning his room and confronted him about them. At that point, Johannes “flipped out” and stormed off. The next day, his mother saw by chance that he had cut himself multiple times on his forearm. It took several days before she was able to persuade him to go with her to the doctor.

Addiction history and extended history

The doctor had known the family for many years and took the time to speak with Johannes alone and in confidence. At first, Johannes was defensive and monosyllabic in his responses, but he finally calmed down and said that he had been...
using cannabis for two years and was currently consuming about 2 grams a day. For a long time, his parents had not noticed anything – “they don’t get how I’m really feeling” in any case. He had also been smoking cigarettes for about 2 years, currently 10 or 15 a day. He drank almost no alcohol and denied taking any other drugs. As to his family situation, Johannes related that he lived with his parents and his sister, with whom he had previously gotten along well. He described his relationship with his father (a senior manager by occupation) as conflicted, but said this was not so bad because “he’s never there anyway.” He said that his mother (a housewife, working part-time in a health-food shop) “got on his nerves,” was overprotective, and failed to understand what it was all about.

**Psychopathological findings**

Johannes went on to describe how he sometimes brooded for hours and manifested increasingly social-phobic behavior (he only enjoyed being in contact with others through an Internet game-playing group). In school, everything went past him, he could not concentrate, and he no longer wanted anything to do with schoolwork. He sometimes asked himself what life was good for. He had inflicted the injury on himself after the argument with his mother because he had been “so incredibly angry,” but he had no concrete thoughts of committing suicide. His mood seemed depressed and did not fluctuate. He described his predicament erratically, but the form and content of his thoughts seemed to be well-ordered. The family physician found no evidence of psychosis.

**Further diagnostic assessment**

The findings of physical examination were unremarkable except for three well-healed superficial cuts on the left forearm. The urinary drug screen was strongly positive for cannabinoids, and negative for amphetamines, ecstasy, cocaine metabolites, and opiates.

**Course**

The family physician made the diagnoses of cannabis dependence, continuous use (ICD-10: F12.25), tobacco dependence, continuous use (ICD-10: F17.25), and a possible, moderately severe depressive episode (ICD-10: F32.10). He arranged to see Johannes and both of his parents in the office one week later and advised him to get an appointment at the nearby outpatient child and adolescent psychiatric unit as soon as possible. Four weeks later, a physician from the unit phoned the family physician to say that Johannes had been admitted to the inpatient addiction ward of the child and adolescent psychiatry department for qualified cannabis detoxification. The comorbid depressive disorder would be treated immediately thereafter, still in the inpatient setting at first, and then further ambulatory treatment would be arranged when Johannes was ready for discharge. The parents were very relieved by this turn of events, even though “hell sometimes broke loose” in their regularly-held family discussions. Johannes was considering attending a boarding school after being discharged from the hospital.