

CHILDREN AND FAMILY RESEARCH CENTER

Substance Abuse Assessment Instruments for Women Literature Review

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Executive Summary

Substance abuse by women is a major social issue and has a profound effect on the child welfare system. Substance-abusing women differ from substance-abusing males in many ways, including patterns of drug use, psychosocial characteristics, physiological consequences of drug use, and treatment needs (Nelson-Zlupko, Kauffman, & Dore, 1995; Pagliaro & Pagliaro, 1999). In addition to gender differences, there are subgroup differences among substance-abusing women. To accurately screen for women's substance abuse, these differences should be addressed fully in developing appropriate case plans for maltreating families, whether or not their children enter out-of-home care. Accordingly, this review specifically addresses the following questions:

- a) What are the existing drug assessment instruments that are empirically tested with female substance abusers?
- b) What research has been done on the reliability and validity of these instruments with women?
- c) What is the status of empirical studies on subgroups within the larger category of women?

Primary Findings

A review of the research resulted in finding four drug assessment instruments that were empirically tested with women: They are the ASI, DAST, DUSI, and MMPI-s. This review also found that substance-abusing women, although recognized as a distinct group from their male counterparts, are still treated the same, and gender differences have not been accounted for in existing evaluation studies. First, very few evaluation studies have focused on women. Out of 18 evaluation studies, only two studies focused on women. In addition, in studies that included

women, findings for women were rarely distinguished from findings from men. Out of 16 evaluation studies, only two studies specify results by gender. Due to the lack of uniformity in methodology, it is impossible to conclude that one instrument has better performance than others for women. Studies also fail to differentiate the contribution of distinct profiles among subgroups within substance-abusing women. The validity and reliability of these instruments with women are the following:

- **Addiction Severity Index (ASI):** Six evaluation studies were found. Only one study focused on women and exhibited good internal consistency and high inter-rater reliability. In addition, one study distinguished results by gender and indicated moderate internal consistency. However, the mean score for women was substantially lower than for men, and the women's score was not at acceptable standards.
- **Drug Abuse Screening Test (DAST):** Six evaluation studies were found. Only one study focused on women and indicated high internal consistency.
- **Drug Use Screening Inventory (DUSI):** Three evaluation studies were found. No study focused on women. One study distinguished results by gender and found high discriminant and construct validity, and high internal reliability for both females and males.
- **Minnesota Multiphasic Personality Inventory (MMPI/MMPI-s):** Among three available evaluation studies, no studies focused on women or distinguished results by gender.

Introduction

Substance use by women is a great concern in contemporary society and greatly impacts the child welfare system (Pagliaro & Pagliaro, 1999). Substance use by women who have children has detrimental effects on mothering and childrearing (CWLA, 1998). Consequently, children of substance-abusing mothers are at a significantly increased risk of experiencing child maltreatment (Jaudes, Ekwo & Van Voorhis, 1995; NCASA, 1998). Although a reliable measure of estimating the nature and magnitude of female substance abuse is difficult to obtain, national and special surveys consistently point to the fact that female substance abuse is a serious problem in child welfare today (Clark, 2001). According to a recent National Institute on Drug Abuse study (1994) on estimated use of selected substances during pregnancy, 5.5% of the women surveyed reported using illicit drugs while they were pregnant. The Center for Disease Control and Prevention (CDC) (2003) estimates that between 1,300 and 8,000 children are born each year with fetal alcohol syndrome (FAS), which causes birth defects and developmental disabilities.

Although there is a growing interest and understanding of female substance abuse, we do not have a clear and comprehensive knowledge of substance-abusing women within childrearing age. Until recently, theories and interventions for substance-abusing women have been developed and validated predominately on male populations (Pagliaro & Pagliaro, 1999). Harrison and Belille (1987) estimate that only 8% of studies related to substance abuse treatment outcomes published between 1970 and 1984 are about women. Adequate data and information about substance abuse by women is scarce (CSAT, 1994). In addition, most of the literature about women with substance-related disorders is about women with alcohol problems, despite the different effects, consequences, and treatment needs for women with other often-abused

drugs, such as marijuana, cocaine, and heroin (Pagliaro & Pagliaro, 1999). Less researched are the effects of other drugs.

Available studies clearly indicate that substance-abusing women differ from substance-abusing males in many ways, including patterns of drug use, psychosocial characteristics, physiological consequences of drug use, and treatment needs (Clark, 2001; Nelson-Zlupko, Kauffman, & Dore, 1995; Pape, 1993). According to the 2001 National Household Survey on Drug Abuse (NHSDA) (2003) report, females aged 12 to 17 were more likely than their male peers to report that cocaine, crack, LSD, and heroin were fairly or very easy to obtain. Women are more likely to describe the onset of their drug use as sudden and heavy, and men more often describe a gradual, progressive pattern of use (Nelson-Zlupko, Kauffman, & Dore, 1995). Physically, women have more harmful consequences at lower-level doses of drugs and shorter drinking histories than men (CSAT, 1994). Sexually transmitted diseases, HIV, and vaginal and urinary infections are indirect effects among women from using drugs (Pagliaro & Pagliaro, 1999). Mentally, drug-abusing women experience higher levels of guilt, shame, depression, and anxiety than men (CSAT, 1994). Women also have more complicated barriers to drug abuse treatment than men usually do (Pape, 1993). Many drug-abusing women cannot access treatment because of childrearing and family-caring responsibilities, lack of a social network and financial resources, and greater physiological complications (Clark, 2001).

In addition to differences between male and female substance abuse, substance-abusing women have varied characteristics of ethnicity, income, education, and age and have distinct profiles, with possibly different experiences and treatment needs (Miller, 2001; Pagliaro & Pagliaro, 1999). For example, according to the 2001 NHSDA report, rates of current illicit drug use among the major racial/ethnic groups in 2001 were 7.2% for whites, 6.4% for Hispanics, and

7.4% for blacks. The rate was highest among American Indians/Alaska Natives (9.9%) and persons reporting more than one race (12.6%). Asians had the lowest rate (2.8%). Illicit drug use rates are also generally correlated with educational status. Among adults aged 18 or older in 2001, college graduates had the lowest rate of current use (4.3%). The rate was 7.6% among those who had not completed high school.

Standardized psychometric instruments have been commonly used to screen women for possible substance use in child welfare. Without appropriate assessment and diagnosis, a woman with substance abuse problems is not appropriately assessed and, therefore, not entered or delayed in entering into treatment, while others may be misdiagnosed as having a substance abuse problem and erroneously enter into treatment. Consequently, without women-sensitive assessment, it is difficult to ensure the safety and well-being of children. The important question is whether research has been responsive in ensuring that drug assessment instruments account for gender differences. Are the existing assessment instruments reliable and valid in reflecting women's unique experience and needs?

This study aims at reviewing the recent evaluation studies on drug abuse instruments and their relevance with women. To do this, the following research questions are addressed: 1) what are the drug assessment instruments that are empirically tested with female substance abusers?; 2) what research has been done on the reliability and validity of these instruments with women?; and 3) what is the status of empirical studies on subgroups within the larger category of women?

Search Strategy

The following sources were used to locate relevant literature about substance abuse assessment instruments: Eric, MEDLINE, PsychInfo, and Social Work Abstracts. Combinations of the following terms: "substance abuse," "substance abuse screening," "drug abuse," "drug

test,” “test validity,” “test reliability,” “substance abuse assessment,” and names of substance abuse instruments themselves were used to identify appropriate studies. The criteria for the study selection were: (1) evaluations published after undergoing the peer review process on psychological, medical, sociological, and/or social work journals, (b) empirical evaluations of testing psychometric properties, and (c) reviews of professional and accrediting organization standards.

There are two major limitations to this review. First, the number of evaluation studies for each instrument varies due to the shortage of empirical literature on various instruments. Among the 20 empirical studies reviewed are six studies of the Addiction Severity Index (ASI), eight studies of the Drug Abuse Screening Test (DAST), three studies of the Drug Use Screening Inventory (DUSI), and three studies of the Minnesota Multiphasic Personality Inventory (MMPI-2). Interestingly, there were a substantial number of studies that did not indicate gender in their samples.

Second, drug assessments that did not have more than two evaluation studies were not included. For example, the Maternal Substance Use Screening Questionnaire is a six-item psychometric assessment instrument designed by Kemper, Greteman, Bennett, and Babonis (1993) to detect both alcohol and other substance use among mothers. However, the instrument’s validity and reliability have not been formally assessed.

Results

Psychometric Properties of Drug Abuse Assessment Instruments

The psychometric properties of four drug abuse assessment instruments were reviewed in this study. Instruments include: the Addiction Severity Index (ASI), Drug Abuse Screening

Test (DAST), Drug Use Screening Inventory (DUSI), and Minnesota Multiphasic Personality Inventory (MMPI/ MMPI-2).

Psychometric Properties

Test-retest reliability. The test-retest has to do with how consistent a measure is over time (Rubin & Babbie, 2000; Vogt, 1999). Test-retest reliability is based on testing the same examinees twice with the same test and then correlating the results. If the correlation between two observed scores of the instrument is above the .70 or .80 level, then the instrument is considered to have acceptable stability.

Inter-rater reliability. The inter-rater reliability assesses the extent of agreement, or consistency, between observers or raters (Rubin & Babbie, 2000; Vogt, 1999). To assess inter-rater reliability, calculating the percent of agreement or the correlation between the two sets of ratings are used. If there is more than 70% agreement, the inter-rater reliability of the instrument is acceptable.

Internal consistency. The internal consistency assesses the homogeneity of the measure (Rubin & Babbie, 2000; Vogt, 1999). To assess internal consistency, the single instrument is divided into two halves, each of which contains an equal number of items, and then the correlation of the total scores of the two halves is assessed. The most common method to calculate internal consistency reliability is Coefficient alpha, which is the average of all possible split-half reliability.

Discriminant validity. This is a measure of the validity of a construct that is high when the construct fails to correlate with other constructs (Rubin & Babbie, 2000; Vogt, 1999). For example, to prevent the incidence of respondents just giving answers they think are socially

desirable, the researchers include questions that measure the construct “socially desirable responding.” If the two measures are not correlated, the measure has more discriminant validity.

Concurrent validity. This is a way of determining the validity of a measure by seeing how well it correlates with some other measure the researcher believes is valid (Rubin & Babbie, 2000; Vogt, 1999). Concurrent validity can be assessed by comparing a new measure with an already existing measure that has demonstrated validity within a given population.

Construct validity. Construct validity examines the extent to which variables accurately measure the construct of interest. It addresses the question of how well the variables are operationalized, or whether they actually measure what they are attempting to measure (Rubin & Babbie, 1995; Vogt, 1999).

Drug Abuse Assessment Instruments

Addiction Severity Index (ASI). The ASI is a semi-structured interview developed to document current and lifetime problems commonly associated with substance abuse (Leonhard, Mulvey, Gastfriend, & Shwartz, 2000). Specific items are used to document demographic information and problem severity across seven domains of psychosocial functioning: (1) medical, (2) vocational, (3) alcohol, (4) legal, (5) drugs, (6) family-social, and (7) psychiatric. The ASI takes 45 minutes to complete the initial assessment and an additional 25 minutes to complete the follow up version. It is to be used by trained individuals and is available in 17 different languages.

According to research by Comfort, Zanis, Whiteley, Kelly and Kaltenbach’s (1999), the ASI was found to have good inter-rater reliability (coefficient range of .91 to 1) and concurrent validity in a study of 38 women who enrolled in or were applying for substance abuse treatment. Good internal consistency was also reported for six of the domains (coefficient range .75 to .91),

but the coefficient of family-social domain was unacceptable ($\alpha = .52$). The average age of the women in the study was 30.7 years. Of the total, 47 % were Caucasian, 40% were African American, and 13 % were Puerto Rican Hispanic. Among the sample, 16% of families were currently involved in child protection services. With the exception of this study, the other five studies of ASI used mixed gender samples with a female to male ratio of 1:4 (see Table 1). Among these studies, only one differentiated results by gender. Hodgins and Elguebaly (1992) studied 152 psychiatric outpatients, including 56 females, and found moderate internal consistency (mean Cronbach's $\alpha = .68$). However, results indicated that the mean score for females (.45) was substantially lower than for men (.68), and the women's score was not at acceptable standards. Other studies exhibited favorable internal consistency, test-retest reliability, inter-rater reliability, and good validity, including discriminant, convergent, concurrent, and construct validity (Drake, McHugo, & Biesanz, 1995; Dyson, Appleby, Doot, Luchins, & Delehant, 1998; Leonhard et al., 2000; Zanis, McLellan, & Corse, 1997).

Drug Abuse Screening Test (DAST). The DAST is a 28-item self-administrated screening instrument developed by Skinner (1982). The DAST items yield a quantitative index of the range of problems related to drug abuse, with the total score ranging from 0 to 28. A cutoff score of 5 or more indicates a probable drug use disorder. There are two version of the DAST: the DAST-20, a 20-item instrument, and the DAST-10, which consists of 10 items (See Table 2-2). There is only one evaluation study using only women in the sample and seven other studies with mixed gender samples. Saltston, Halliwell, & Hayslip (1994) investigated the internal consistency of DAST with 318 female offenders who were in jail or on probation and reported good internal consistency (Cronbach's $\alpha = .88$). Studies testing psychometric properties of DAST included almost equal numbers of women and men, with a ratio of 1:1.2 (see Table 2-1).

However, no studies differentiated findings by gender. Overall, results suggested that the DAST yields reliable and valid assessment data (Cocco & Carey, 1998; Dyson et al., 1998; El-Bassel, Schilling, Schinke, Orlandi et al,1997; Maistro, Carey, Carey, Gordon, & Gleason, 2000; McCann, Simpson, Ries, & Roy-Byrne, 2000; Staley & el-Guebaly, 1990).

Drug Use Screening Inventory (DUSI). The DUSI is a 149-item self-administrated instrument to quantify severity of problems. The DUSI is a multidimensional assessment designed to be completed in 20 minutes. The measurement domains are: (1) substance use; (2) behavior patterns; (3) health status; (4) psychiatric disorder; (5) social competence; (6) family system; (7) school adjustment; (8) work adjustment; (9) peer relationships; and (10) leisure and recreation (see Table 3-2).

Three studies were found that evaluated the DUSI (see Table 3-1); however, no studies differentiated findings by gender. Tarter and Kirisci (1997) investigated psychometric properties of DUSI for adults. Their study included 238 adults, including 119 persons with lifetime Psychoactive Substance Use Disorder (PSUD) and 119 persons with non-PSUD. The sample consisted of 123 females and 115 males. They found high discriminant and construct validity, and high internal reliability for both females and males, with the average reliability coefficient for males at .76 for males and for females at .72.

Other studies looked at psychometric properties of DUSI for adolescents. Kirisci, Tarter, and Hsu (1994) included 846 adolescents, of which 448 were female. Results indicated moderate internal reliability, with the overall average reliability at .72 and a range of .53 to .81. In another study, De Micheli and Formingoni (2000) looked at 100 Brazilian adolescents including 51 females and found good concurrent validity.

Minnesota Multiphasic Personality Inventory (MMPI/ MMPI-2). Although the MMPIs (MMPI and MMPI-2) were originally designed for the assessment of personality, they are often used to assess a full range of psychopathology, including substance abuse (Tarter & Hegedus, 1991). The MMPI has three subscales that are used to measure substance abuse problems: The MacAndrew Alcoholism Scale-Revised (MAC-R), the Addiction Acknowledgement Scale (AAS), and the Addiction Potential Scale (APS). The MMPI-2 is a self-report questionnaire that consists of 567 true or false questions. MMPI-2 takes 60-90 minutes to complete.

While no studies were found of samples consisting only of women, the studies predominantly consisted of females, with a female to male ratio of 2:1. Despite the dominant number of women in the samples, studies failed to differentiate findings by gender. Rouse, Butcher, and Miller (1999) studied 460 persons in outpatient psychotherapy (271 females and 189 males) and found good discriminant validity with a classification ratio of .80, sensitivity (percentage correctly identified as being substance abusers) at .71, and specificity (percentage correctly identified as not being substance abusers) at .82. The majority of those included in the sample were well-educated (69% had more than a high school education), self-referred (33%), and white (90%). The other two reviewed studies focused on university student samples, with a female to male ratio of 2:1 (Svanum, & Ehrmann, 1992; Svanum, McGrew, & Ehrmann, 1994). Studies failed to report findings by gender, and results exhibited poor discriminant validity (see Table 4).

Discussion

This review found that substance abusing women, although recognized as a distinct group from their male counterparts, are still treated the same, and gender differences have not been accounted for in existing evaluation studies. First of all, the review found that very few

evaluation studies have focused on women. Only two evaluation studies (one for ASI and one for DAST) were found that used women-only samples. In addition, in studies that included women, findings for women were rarely distinguished from findings for men. Among studies with mixed gender samples (a female to male ratio of 2:3), only two studies distinguished findings by gender. Furthermore, this review also reveals there is a lack of specification of subgroups of women within existing evaluation studies. Research has failed to demonstrate or even look at particular subgroups within the larger category of women for which particular kinds of instruments are more or less effective.

The lack of women-specific evaluation studies potentially decreases the relevance of current drug assessment instruments for substance-abusing women. Women's unique physical, psychological, and social characteristics must be addressed fully when assessing women for possible substance abuse and when planning and implementing treatment programs for them. No intervention can be determined as most effective until we assure that women with substance abuse problems are accurately identified. Further research is required to evaluate how the current assessment instruments reflect women's symptoms, patterns, and unique needs. Only through this can we provide the best available treatments, as well as devise and implement strategies to facilitate women's entry and retention in treatment. Evaluating the sensitivity of the existing drug assessment instruments in relation to cultural and historical characteristics of minorities is also needed. In addition, there needs to be research to develop assessment instruments specifically designed to address the particular issues and characteristics of substance-abusing women.

One major finding from this review is that many of the existing drug assessment instruments have not been evaluated since 1990. The performance of many of the other existing drug assessment instruments is unknown, especially with women samples. Furthermore, this

review revealed that research efforts have been disproportionately focused on particular instruments, such as the ASI and DAST. Few instruments were fully investigated as to their psychometric properties, including both reliability and validity.

This research review raises two methodological issues in evaluation studies on drug assessment instruments. First is the issue of the lack of uniformity in methodology. There appears to be no agreement regarding the examination of reliability or validity. For example, many studies used correlation coefficients in measuring inter-rater reliability, while a few studies used Cohen's Kappa. Compared with Cohen's Kappa, correlation coefficient has been criticized as misleading because high correlation does not necessarily mean actual agreement among raters (Rubin & Babbie, 2000). Accordingly, it is not easy to conclude that one instrument has better inter-rater reliability than another due to the lack of methodological uniformity. The differences in methodology make it harder to compare performance among different drug assessment instruments.

The second methodological issue is that existing drug instruments were applied to indiscriminant types of drugs. While previous studies indicated the great diversity in patterns of use and clinical features associated with types of drugs, this review found that evaluation studies ignored these subtypes of drugs. There is a great need for assessments that cover many different drugs, individually.

Conclusion

A review of the research literature yields little evidence that research has been responding to ensure that gender differences in drug assessment instruments are taken into account. This review also suggests the great need for further research on validating existing drug assessment

instruments and the development of women-sensitive assessment instruments. The subgroup differences among substance-abusing women also requires further attention.

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Table 1: Evaluation Studies on Addiction Severity Index (ASI)

Study	Sample	Female Proportion	Results Distinguished by Gender	Test Reliability	Test Validity	Test Results
Hodgins & Elguebaly (1992)	152 psychiatric outpatients (56 female; 96 males)	36.8%	Yes	Yes	No	-Moderate internal consistency (mean Cronbach's alpha .68: males .68; females .45)
Drake, McHugo, & Biesanz (1995)	189 homeless (60 females; 129 males)	31.7%	No	Yes	No	-Moderate test-retest reliability
Zanis, McLellan, & Corse (1997)	62 mentally ill clients in community mental health center (14 females; 46 males)	22.5%	No	Yes	No	-Good/moderate internal consistency -Moderate inter-rater reliability -Moderate test-retest reliability
Dyson, Appleby, Doot, Luchins, & Delehant (1998)	100 public psychiatric patients (28 females; 72 males)	28%	No	Yes	Yes	-Good inter-rater reliability -Good concurrent and good construct validity
Comfort, Zanis, Whiteley, Kelly & Kaltenbach (1999)	38 women who enrolled in or applied for substance abuse treatment	100%	Yes (Women Only)	Yes	Yes	-Good internal consistency for five domains -High inter-rater reliability -Good concurrent validity
Leohard, Mulvey, Gastfriend, & Shwartz (2000)	8,984 from inner-city alcohol and drug abuse clinics (2,708 females; 7,222 males)	30.1%	No	Yes	Yes	-Good internal consistency -Good discriminant and convergent validity

Table 2-1 Evaluation Studies on Drug Abuse Screening Test (DAST)

Study	Samples	Female Proportion	Results Distinguished by Gender	Test Reliability	Test Validity	Test Results
Staley & el-Guebaly (1990)	250 psychiatric inpatients and outpatients (163 females; 87 males)	65.2%	No	Yes	Yes	-High internal consistency reliability -Discriminant validity.
Saltston, Halliwell, & Hayslip (1994)	318 female offenders in jail or on probation	100%	Yes (Women Only)	Yes	No	-High internal consistency
El Bassel, Schilling, Schinke, Orlandi, et al (1997)	176 (94 females; 82 males)	53.4%	No	Yes	No	-High internal consistency -High test-retest reliability
Cocco & Carey (1998)	97 psychiatric outpatients (24 females; 72 males)	24.7%	No	Yes	Yes	-DAST 20: High internal consistency and high test-retest reliability -DAST 10: High internal consistency and good test-retest reliability -Good discriminant validity for both DAST 20 and DAST 10
Dyson, Appleby, Doot, Luchins, & Delehant (1998)	100 public psychiatric patients (28 females; 72 males)	28%	No	Yes	Yes	-High interrater reliability -High internal consistency -Good concurrent/construct validity. -Good criterion validity

Maistro, Carey, Carey, Gordon, & Gleason (2000)	162 state psychiatric hospital outpatients (69 females; 93 males)	42.5%	No	No	Yes	-Good sensitivity and moderate specificity validity
McCann, Simpson, Ries, & Roy-Byrne (2000)	143 adults who seeking evaluation for Attention-Deficit/Hyperactivity Disorder (45 female;98 male)	31.4%	No	Yes	Yes	-High internal consistency -Overall good diagnostic validity

Table 2-2: The DAST

<i>1. Have you used drugs other than those required for medical reasons?</i>
<i>2. Have you abuse prescription drugs?</i>
<i>3. Do you abuse more than one drug at a time?</i>
<i>4. Can you get through the week without using drugs (other than those required for medical reasons)?</i>
<i>5. Are you always able to stop using drugs when you want to?</i>
<i>6. Do you abuse drugs on a continuous basis?</i>
<i>7. Do you try to limit your drug use to certain situations?</i>
<i>8. Have you had "blackouts" or "flashback" as a result of drug use?</i>
<i>9. Do you ever feel bad about your drug abuse?</i>
<i>10. Does your spouse (or parent) ever complain about your involvement with drugs?</i>
<i>11. Do you friends or relatives know or suspect you abuse drugs?</i>
<i>12. Has drug abuse ever created problems between you and your spouse?</i>
<i>13. Has any family member ever sought help for problems related to your drug use?</i>
<i>14. Have you ever lost friends because of your use of drugs?</i>
<i>15. Have you ever neglected your family or missed work because of your use of drugs?</i>
<i>16. Have you ever been in trouble at work because of drug abuse?</i>
<i>17. Have you ever lost a job because of drug abuse?</i>
<i>18. Have you gotten into fights when under the influence of drugs?</i>
<i>19. Have you ever been arrested because of unusual behavior while under the influence of drugs?</i>
<i>20. Have you ever been arrested for driving while under the influence of drugs?</i>
<i>21. Have you engaged in illegal activities in order to obtain drugs?</i>
<i>22. Have you ever been arrested for possession of illegal drugs?</i>
<i>23. Have you ever experienced withdrawal symptoms as s result of heavy drug intake?</i>
<i>24. Have you had medical problems as a result of your durg use?</i>
<i>25. Have you ever gone to anyone for help for a drug problem?</i>
<i>26. Have you ever been in hospital for medical problems related to your drug use?</i>
<i>27. Have you ever been involved in a treatment program specifically related to drug use?</i>
<i>28. Have you been treated as an outpatient for problems related to drug abuse?</i>

Table 3-1 Evaluation Studies on drug Use Screening Inventory (DUSI)

Study	Sample	Female Proportion	Results Distinguished by Gender	Test Reliability	Test Validity	Test Results
Tarter & Kirisci (1997)	238 (119 with lifetime Psychoactive Substance Use Disorder; 119 with non-PSUD (123 females; 115 male)	51.6%	Yes	Yes	Yes	-High internal reliability (average reliability coefficient of .76 for males, .72 for females) -High discriminant validity and construct validity
Kirisci, Tarter, & Hsu (1994)	846 adolescents (448 females; 398 males)	50.9%	No	Yes	No	-Good internal reliability
De Micheli & Formingoni (2000)	100 Brazilian adolescents (51 female; 40 male)	51%	No	No	Yes	-Good concurrent validity

Table 3-1: DRUG USE SCREENING INVENTORY (DUSI)

DOMAIN I: SUBSTANCE USE

A. Drug Preference

<i>1. How many times have you used each of the drugs listed below in the last month? Put an "X" in each box that applies to you.</i>
<i>2. Circle the drugs that you think you may have a problem with.</i>
<i>3. Shade in the circle of the drug that you prefer the most.</i>

B. Drug Involvement

<i>1. Have you ever had a craving or very strong Yes No desire for alcohol or drugs?</i>
<i>2. Have you ever had to use more and more drugs or alcohol to get the effect you want?</i>
<i>3. Have you ever felt that you could not control your alcohol or drug use?</i>
<i>4. Have you ever felt that you were "hooked" on alcohol or drugs?</i>
<i>5. Have you ever missed out on activities because you spent too much money on drugs or alcohol?</i>
<i>6. Did you ever break rules, miss curfew, or break the law because you were high on alcohol or drugs?</i>
<i>7. Do you change rapidly from very happy to very sad or from very sad to very happy because of drugs?</i>
<i>8. Have you ever had a car accident after using alcohol or drugs?</i>
<i>9. Have you ever accidentally hurt yourself or someone else after using alcohol or drugs?</i>
<i>10. Have you ever had a serious argument or fight with a friend or family member after drinking or or drug use?</i>
<i>11. Have you ever had trouble getting along with any of your friends because of alcohol or drug use?</i>
<i>12. Have you ever experienced any withdrawal symptoms following use of alcohol or drugs (e.g., headaches, nausea, vomiting, shaking)?</i>
<i>13. Have you ever had a problem remembering what you had done when you were under the effects of drugs or alcohol?</i>
<i>14. Do you like to play drinking games when you go to parties?</i>
<i>15. Do you have trouble resisting using alcohol or drugs?</i>

DOMAIN II: BEHAVIOR PATTERNS

<i>1. Do you argue a lot? Yes No</i>

2. Do you brag a lot?
3. Do you tease or do harmful things to animals?
4. Do you yell a lot?
5. Are you stubborn?
6. Are you suspicious of other people?
7. Do you swear or use dirty language a lot?
8. Do you tease others a lot?
9. Do you have a bad temper?
10. Are you very shy?
11. Do you threaten to hurt people?
12. Do you talk louder than other kids?
13. Are you easily upset?
14. Do you do things a lot without first thinking about the consequences?
15. Do you do risky or dangerous things a lot?
16. Do you take advantage of people if you can?
17. Do you generally feel angry?
18. Do you spend most of your free time by yourself?
19. Are you a loner?
20. Are you very sensitive to criticism?

DOMAIN III: HEALTH STATUS

1. Have you had a physical exam or been under Yes No a doctor's care in the last year?
2. Have you had any accidents or injuries that still bother you? 3. Do you sleep too much or too little?
4. Have you recently lost or gained more than 10 pounds?
5. Do you have less energy than you think you should have?
6. Do you have trouble with your breathing or with coughing?
7. Do you have any concerns about sex or trouble with your sex organs?
8. Have you ever had sex with someone who shot up drugs?
9. Have you had trouble with abdominal pain or nausea in the past year?
10. Have your eyewhites ever turned yellow?

DOMAIN IV: PSYCHIATRIC DISORDER

<i>1. Have you ever intentionally Yes No damaged someone else's property?</i>
<i>2. Have you stolen things on several occasions?</i>
<i>3. Have you gotten into more fights than most kids?</i>
<i>4. Are you a fidgety person?</i>
<i>5. Are you restless and can't sit still?</i>
<i>6. Do you get frustrated easily?</i>
<i>7. Do you have trouble concentrating?</i>
<i>8. Do you feel sad a lot?</i>
<i>9. Do you bite your fingernails?</i>
<i>10. Do you have trouble sleeping?</i>
<i>11. Are you nervous?</i>
<i>12. Do you get easily frightened?</i>
<i>13. Do you worry a lot?</i>
<i>14. Do you have trouble getting your mind off things?</i>
<i>15. Do people stare at you?</i>
<i>16. Do you hear things that no one else around you hears?</i>
<i>17. Do you have special powers nobody else has?</i>
<i>18. Are you afraid to be around people?</i>
<i>19. Do you often feel like you want to cry?</i>
<i>20. Do you have so much energy that you don't know what to do with yourself?</i>

DOMAIN V: SOCIAL COMPETENCY

<i>1. Do kids your own age dislike you? Yes No</i>
<i>2. Are you usually unhappy with how well you do in activities with your friend? 3. Is it difficult to make friends in a new group?</i>
<i>4. Do people take advantage of you?</i>
<i>5. Are you afraid to stand up for your rights?</i>
<i>6. Is it very hard for you to ask for help from others?</i>
<i>7. Are you easily influenced by other kids?</i>
<i>8. Do you prefer doing things with kids much older than you?</i>
<i>9. Do you worry about how your actions will affect others?</i>
<i>10. Do you have difficulty standing up for your opinions?</i>
<i>11. Do you have trouble saying "no" to people?</i>

<i>12. Do you feel uncomfortable if someone gives you a compliment?</i>
<i>13. Do people see you as not being a friendly person?</i>
<i>14. Do you avoid eye contact when talking to people?</i>

DOMAIN VI: FAMILY SYSTEM

<i>1. Has a member of your family (mother, Yes No father, brother, or sister) ever used marijuana or cocaine?</i>
<i>2. Has a member of your family used alcohol to the point of causing problems at home, at work, or with friends?</i>
<i>3. Has a member of your family ever been arrested?</i>
<i>4. Do you have frequent arguments with your parents or guardians which involve yelling and screaming?</i>
<i>5. Does your family hardly ever do things together?</i>
<i>6. Are your parents or guardians unaware of your likes and dislikes? 7. Are there no clear rules about what you can and cannot do?</i>
<i>8. Are your parents or guardians unaware of what you really think or feel about things that are important to you?</i>
<i>9. Do your parents or guardians argue a lot with each other?</i>
<i>10. Are your parents or guardians often unaware of where you are and what you are doing?</i>
<i>11. Are your parents or guardians away from home most of the time?</i>
<i>12. Do you feel that either of your parents or guardians don't care about you?</i>
<i>13. Are you unhappy about your living arrangements?</i>
<i>14. Do you feel in danger at home?</i>

DOMAIN VII: SCHOOL PERFORMANCE ADJUSTMENT

<i>1. Do you dislike school? Yes No</i>
<i>2. Do you have trouble concentrating in school or when studying?</i>
<i>3. Are your grades below average?</i>
<i>4. Do you cut school more than two days a month? Are you absent from school a lot?</i>
<i>6. Have you thought seriously about quitting school?</i>
<i>7. Do you often not do your school assignments?</i>
<i>8. Do you often feel sleepy in class?</i>
<i>9. Are you often late for class?</i>

<i>10. Do you have different friends at school than you did last year?</i>
<i>11. Do you feel irritable and upset when in school?</i>
<i>12. Are you bored in school? 13. Are your grades in school worse than they used to be?</i>
<i>14. Do you feel in danger at school?</i>
<i>15. Have you ever failed a grade in school?</i>
<i>16. Do you feel unwelcome in school clubs or extracurricular activities?</i>
<i>17. Have you ever missed or been late to school because of alcohol or drugs?</i>
<i>18. Have you ever been in trouble at school because of alcohol or drugs?</i>
<i>19. Have alcohol or drugs ever interfered with your homework or school assignments?</i>
<i>20. Have you ever been suspended?</i>

DOMAIN VIII: WORK ADJUSTMENT Yes No

<i>1. Have you ever had a paying job that you were fired from?</i>
<i>2. Have you ever stopped working at a job because you just didn't care?</i>
<i>3. Do you need help from others to go about finding a job?</i>
<i>4. Have you been frequently absent or late for work?</i>
<i>5. Do you find it difficult to complete work tasks?</i>
<i>6. Have you ever made money doing something that is against the law?</i>
<i>7. Have you ever used alcohol or drugs while working on a job?</i>
<i>8. Have you ever been fired because of drugs?</i>
<i>9. Do you have trouble getting along with bosses?</i>
<i>10. Do you mostly work so that you can get money to buy drugs?</i>

DOMAIN IX: PEER RELATIONSHIPS Yes No

<i>1. Do any of your friends regularly use alcohol or drugs?</i>
<i>2. Do any of your friends sell or give drugs to other kids?</i>
<i>3. Do any of your friends cheat on school tests?</i>
<i>4. Do your parents or guardians dislike your friends?</i>
<i>5. Have any of your friends ever been in trouble with the law?</i>
<i>6. Are most of your friends older than you?</i>
<i>7. Do your friends cut school a lot?</i>
<i>8. Do your friends get bored at parties when there is no alcohol served?</i>

9. <i>Have your friends brought drugs or alcohol to parties in the past year?</i>
10. <i>Have your friends stolen anything from a store or damaged school property on purpose during the past year?</i>
11. <i>Do you belong to a gang?</i>
12. <i>Are you bothered now by problems you are having with a friend?</i>
13. <i>Is there no friend you can confide in?</i>
14. <i>Compared to most kids, do you have few friends?</i>

DOMAIN X: LEISURE/ RECREATION Yes No

1. <i>Compared to most kids, do you do less sports?</i>
2. <i>Do you go out for fun on school nights without permission?</i>
3. <i>On a typical day, do you watch more than two hours of TV?</i> 4. <i>Are the parents absent at the parties you have gone to recently?</i>
5. <i>Do you exercise less than most kids you know?</i>
6. <i>Is your free time spent just hanging out with friends?</i>
7. <i>Are you bored most of the time?</i>
8. <i>Do you do most of your recreation or leisure activities alone?</i>
9. <i>Do you use alcohol or drugs for recreational reasons?</i>
10. <i>Compared to most kids, are you less involved in hobbies or outside interests?</i>
11. <i>Are you dissatisfied with how you spend your free time?</i>
12. <i>Do you get tired very quickly when you exert yourself?</i>
ed.

Table 4 Evaluation Studies on Minnesota Multiphasic Personality Inventory (MMPIs)

MMPI

Study	Sample	Female Proportion	Results Distinguished by Gender	Test Reliability	Test Validity	Test Results
Svanum, & Ehrmann (1992)	466 university students (314 female; 154 male)	67.3%	No	No	Yes	-Poor discriminant validity
Rouse, Butcher, & Miller (1999)	460 samples in outpatient psychotherapy (271 female; 189 male)	58.9%	No	No	Yes	-Good discriminant validity

MMPI-2

Study	Sample	Female Proportion	Results Distinguished by Gender	Test Reliability	Test Validity	Test Results
Svanum, McGrew, & Ehrmann (1994)	308 college students (222 female; 86 male)	72%	No	No	Yes	-Poor discriminant validity

