

### **Co-occurring Psychiatric Problems Among Adolescents: Variations by Treatment, Level of Care, and Gender**

-- by Michael L. Dennis, Ph.D., Susan H. Godley, Rh.D., and Janet C. Titus, Ph.D.,  
Chestnut Health Systems, Bloomington, IL.

Co-occurring psychiatric problems are common among adolescents who regularly use substances and particularly among those entering substance abuse treatment. Increased severity and co-occurring problems are also major criteria in level-of-care placement decisions (ASAM, 1996; CSAT 1993) and should be considered by States and other organizations as they define benefit plans for the Children's Health Insurance Program (CHIP).

The term "co-occurring" is used because, even for experienced diagnosticians, it is difficult to ascertain which comes first – the substance use or the psychiatric problem. Clinicians and researchers have suggested that adolescents may be trying to self-medicate underlying psychiatric problems or may be using substances to cope (inappropriately) with high levels of environmental, personal, and traumatic stress. It is also common for psychiatric symptoms (e.g. hallucinations, depression, anxiety) to follow substance use or to emerge once it subsides. Data from recent studies show that there is considerable variation in the rates of these other problems by pattern of substance use, setting (community, treatment), level of care (outpatient, inpatient) and gender. These patterns suggest the need for a more comprehensive approach to treatment that includes the assessment and integrated treatment of psychiatric issues, including victimization, anger, and poor coping skills.

Over the past two decades, Federal, State, local, and professional groups have pushed for the development of specialized treatment programs targeted at adolescents. The Center for Substance Abuse Treatment (CSAT) has supported this movement through TIPs, block grants, and capacity expansion and demonstration grants (CSAT 1992, 1993, 1999). As part of the Secretary of Health and Human Services' Youth Initiative, CSAT is also currently funding one of the largest randomized experiment ever conducted with adolescents to evaluate five different approaches to adolescent outpatient treatment (Dennis, Babor, Diamond, Donaldson, Godley, Tims, et al, 1998). A pervasive theme throughout this work is that adolescent substance use is correlated with a wide range of co-occurring problems and that these problems are more common among those presenting for treatment. A second theme is that these co-occurring problems vary by level of care, by gender, and from adults.

#### **Adolescent Substance Users in the Community**

Many people assume that adolescent substance use is relatively harmless and that they will eventually grow out of it. However, our analyses of a representative sample of 5,143 adolescents aged 12 to 18 from the National Household Survey on Drug Abuse (NHSDA;

McGeary, Dennis et al., under review) show that more frequent use and use of multiple substances are directly related to increasing rates of both substance “use” disorders (e.g., dependence and abuse) and substance “induced” disorders (e.g., depression, anxiety, health problems). The rates of reporting one or more symptoms of an alcohol-related disorder go from 0 percent among non-users up to 51 percent among weekly alcohol users and 67 percent among weekly marijuana and alcohol users. Rates of reporting one or more symptoms of a marijuana-related disorder go from 0 percent among non-users to 31 percent among marijuana-only users and 77 percent among weekly marijuana and alcohol users. Rates of reporting one or more symptoms of disorder related to other drugs (e.g., cocaine, inhalants, amphetamines, heroin) also follow this pattern, ranging from 0 percent among non-users to 1 percent among weekly alcohol users and 12 percent among weekly marijuana and alcohol users. We have also found that over 85 percent of the people who have one or more symptoms of dependence as adults started using under the age of 18 (40 percent or more under the age of 15) (Dennis, McGeary et al., forthcoming).

More frequent use and use of more types of substances are also associated with a wide range of other problems in the same year. Again using the NHSDA data from adolescents in the community, weekly marijuana and alcohol users were 27 to 2 times more likely than non-users to report symptoms related to

- Delinquent behaviors (27 vs. 1 percent)
- Being arrested (23 vs. 1 percent)
- Externalized behaviors, such as conduct or attention deficit disorders (57 vs. 13 percent)
- Being in a fight (47 vs. 11 percent),
- Other aggressive behaviors (36 vs. 11 percent),
- Being engaged in illegal activity (69 vs. 17 percent) and/or to being admitted to the emergency room (33 vs. 17 percent)

Demographically, substance use patterns were not significantly correlated with income or geography. However, weekly adolescent users of marijuana and alcohol were more likely than non-users to be male (59 vs. 51 percent), white (84 vs. 77 percent), over 15 (84 vs. 42 percent), and in high school (75 vs. 34 percent). Weekly users were also significantly more likely to have been to substance abuse treatment (12 vs. ~0 percent), though overall less than 10 percent of adolescents with past-year symptoms of dependence have ever received any formal treatment (McGeary et al., under review).

### **Adolescents Entering Treatment**

Marijuana is now the most common substance used among adolescents entering treatment, followed by alcohol use and with all other drugs together representing less than 10 percent of admissions to the public treatment system. While the treatment literature has been dominated by residential studies, over two-thirds of adolescents in the public treatment system are seen in outpatient settings (OAS, 1997). Several large studies of adolescents entering treatment have consistently shown that increasing use and polysubstance use are again associated

with higher rates of substance-use disorders, substance-induced disorders, and a wide variety of co-occurring problems. Moreover, studies repeatedly show that adolescents in treatment are even more likely to have multiple problems (Gerstein et al., 1997; Jainchill, Bhattacharya, & Yagelka, 1995; OAS, 1998; Rounds-Bryant, et al., 1998). Findings are somewhat more mixed on variations by level of care. The greatest differences occur where formal placement criteria (e.g., ASAM, 1996; CSAT, 1993) are required and where inpatient treatment is reserved for adolescents with more severe or less manageable problems.

To illustrate some of the key differences between outpatient and inpatient treatment we will use data from 271 patients entering 11 adolescent treatment programs in Illinois, where ASAM's (1996) patient placement criteria are mandated by the State (Dennis, Scott et al., 1998; 1999). Adolescents entering inpatient treatment were more likely than those entering outpatient treatment to be female (35 vs. 26 percent), to come from a controlled environment (73 vs. 46 percent), to have been in treatment before (76 vs. 41 percent), to have been using marijuana weekly (64 vs. 41 percent), and to have been using alcohol weekly (32 vs. 4 percent). Figure 1 illustrates that adolescents entering inpatient treatment were more likely than those entering outpatient treatment to self report meeting criteria for dependence (76 vs. 45 percent), past year health problems like asthma or sexually transmitted diseases (61 vs. 48 percent), general mental distress like depression or anxiety (47 vs. 26 percent), acute stress from victimization or guilt (44 vs. 28 percent), attention deficit/hyperactivity disorders (47 vs. 24 percent), and/or conduct disorder (58 vs. 35 percent). Thus, adolescents entering treatment had higher rates of problems than those in the community, with those entering inpatient treatment having the most severe substance use and other problems.

### **Variation by Gender**

Recent literature has also demonstrated that adolescent females often have higher severity than adolescent males in terms of their substance use and other problems, such as victimization and psychiatric co-morbidity (Bahr et al., 1998; Blechman & Kelly, 1997; Clark et al., 1997; Giancola et al., 1998; Grilo et al., 1998; Kandel et al., 1997; Rounds Bryant et al., 1998). In the Illinois study discussed above, females were more likely than males to have been in treatment before, to have come out of a controlled environment, to have had multiple sexual partners, to have been victimized, to have used drugs weekly in their homes, and to have run away or been homeless. Females reported lower rates of using marijuana and weekly alcohol use in the home.

Figure 2 illustrates how females have greater severity than males in terms of their self reported criteria for dependence (72 vs. 43 percent), past year health problems like asthma or sexually transmitted diseases (76 vs. 41 percent), general mental distress like depression or anxiety (42 vs. 25 percent), acute stress from victimization or guilt (39 vs. 27 percent), attention deficit/hyperactivity disorders (42 vs. 23 percent), and/or conduct disorder (53 vs. 34 percent). To simplify this figure, we collapsed the data across level of care, which was weighted based on the distribution of adolescents in outpatient (7326 admissions) and inpatient (1626 admissions) in Illinois during 1997. However, within each level, females had higher severity than males on every single measure as well. Thus, while there is no definitive study demonstrating the

superiority of gender-based programming, there is clear evidence that female adolescents have more severe and diverse clinical needs to be addressed.

## **Variations by Age**

Until the 1980s, adolescents were largely treated as part of the adult systems (White, in press). CSAT, several States, and providers have increasingly advocated for a specialized system targeting adolescents. In addition to the obvious developmental differences, adolescents have different patterns of use and co-occurring problems. To illustrate, we expanded our example with additional data on 465 adults from 11 treatment units in Illinois (Dennis, Scott et al., 1998; 1999). Adolescents were more likely than adults to report episodic and binge use (i.e., all day long) of both alcohol (60 vs. 47 percent) and drugs (51 vs. 42 percent), externalizing problems related to attention deficit/hyperactivity (74 vs. 56 percent) and/or conduct disorder (64 vs. 39 percent), being involved in the criminal justice system (73% vs. 37%), and being in a home environment where others were getting drunk weekly (24 vs. 19 percent). Though substance abuse was still a major problem, adolescents were less likely than adults to meet criteria for substance dependence (48 vs. 67 percent), to have been in treatment before (69 vs. 80 percent), to have internalized problems from general distress like depression/anxiety (45 vs. 51 percent) or a stress disorder (65 vs. 51 percent), to have a history of being physically, sexually or emotionally victimized (72 vs. 78 percent), to report weekly drug use in their home (13 vs. 19 percent), and/or to be homeless or a runaway (18 vs. 38 percent).

Even when they endorsed symptoms of dependence and/or getting in trouble from their substance use, adolescents were also less likely to perceive their substance use as a problem (38 vs. 70 percent). These clinical differences also suggest very different management strategies because of the higher rates of impulsivity/behavior problems and low motivation to change, again suggesting the need for programs specifically for adolescents.

## **Reprise and Recommendations**

In both community and clinically-based samples, we have found that the increasing frequency of substance use and polysubstance use by adolescents is associated with the presence of a substance use disorder and a host of health, psychiatric, and behavioral problems.

Adolescents in treatment had more people meeting clinical criteria (typically 3 to 6 symptoms) than substance users in the community (reporting 1+ symptoms). We also illustrated that

- Placement criteria can be successfully used, triaging only the most severe adolescents into inpatient treatment
- Adolescent females often have a different and higher severity profile than adolescent males, and
- Adolescents overall have a different profile from adults.

These findings have several important implications for program and benefit planning. First, less than 10 percent of adolescents reporting one or more symptoms of dependence in the community had ever been seen in treatment. Given the damage substance use disorders can do to the individual and his/her family, as well as the associated co-occurring problems, there is a need

to increase our penetration. Two issues are likely to confound these efforts: motivation and gender. As noted above, adolescents were much less likely to perceive their substance use as a problem and we may have to rely more on external motivation (e.g, parents, schools, criminal justice system) to get them started in treatment. It also appears that fewer adolescent girls present for treatment than would be expected based on community-based studies like the NHSDA. There are several potential reasons for this (e.g., perceptions of programs as male dominated, higher societal tolerance before referring adolescent females). But more work is needed to ascertain why.

Second, despite the high rates of co-occurring problems reported here and in the literature, many co-occurring problems go unrecognized. In the state of Illinois, for instance, the official rate of dual (substance/other psychiatric) diagnosis is still only 6 percent. Here we need an integrated approach to both assessment and treatment to ensure that these other problems are both detected and addressed.

Third, much of what we know about comparing inpatient and outpatient treatment is based only on adults and predates modern efforts to reserve inpatient treatment for the most severe or unmanageable cases. Moreover preliminary data from adolescent treatment does not replicate adult work (Dennis, Scott, et al., 1999; Pentz et al, 1990; OAS, 1998; Winters et al., 1999). Instead, it suggests that untreated adolescents largely get worse, adolescents treated in outpatient stay about the same, and those treated in inpatient improve more (though end up in about the same place as those in outpatient). Thus we recommend that comprehensive treatment plans should involve more early intervention (i.e., outreach, screening, and brief interventions for substance use), a full continuum of care with higher severity adolescents having inpatient treatment available (and stepping down to outpatient care) as the integrated assessment/treatment of other co-occurring health, psychiatric, and environmental problems .

### References

American Society of Addictive Medicine. (1996). Patient placement criteria for the treatment of psychoactive substance disorders. (2nd ed.). Chevy Chase, MD: Author.

Bahr, S.J., Maughan, S.L., Marcos, A.C., Li, B. (1998). Family, religiosity and the risk of adolescent drug use. Journal of Marriage & the Family, 60(4), 979-992.

Blechman, E. A., & Brownwell, K.D. (Eds.). (1997). Behavioral Medicine and Women: A Comprehensive Handbook. NY: Guilford Press.

Center for Substance Abuse Treatment. (1992). Empowering Families, Helping Adolescents: Family-centered Treatment of Adolescents with Alcohol, Drug Abuse, and Mental Health Problems. (Technical Assistance Publication, Series No. 6, DHHS Publication No. 92-1745 [ADM]). Rockville, MD: Author.

Center for Substance Abuse Treatment. (1993). Guidelines for the Treatment of Alcohol and Other Drug-abusing Adolescents. Treatment Improvement Protocol (TIP) (Series 4). Rockville, MD: Author.

Center for Substance Abuse Treatment. (1999a). Comprehensive Community Treatment Program for the Development of New and Useful Knowledge. (Program Announcement (PA No.

PA 99-050). Rockville, MD: Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment.

Center for Substance Abuse Treatment. (1999b). Grants for Evaluation of Treatment Models for Adolescents. (Guidance for Applicants [GFA] No. TI 99-001). Rockville, MD: Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment.

Clark, D.B., Lesnick, L., & Hegedus, A.M. (1997). Traumas and other adverse life events in adolescents with alcohol abuse and dependence. Journal of the American Academy of Child & Adolescent Psychiatry, *36*(12), 1744-1751.

Dennis, M.L. (1998). Global Appraisal of Individual Needs (GAIN) Administration Manual. Bloomington, IL: Lighthouse Publications.

Dennis, M.L., Babor, T., Diamond, G.C., Donaldson, J., Godley, S., Tims, F., Chirikos, T., Fraser, J., French, M.T., Glover, F., Godley, M., Hamilton, N., Herrell, J., Kadden, R., Kaminer, Y., Lennox, R., Liddle, H., McGeary, K.A., Sampl, S., Scott, C., Titus, J., Unsicker, J., Webb, C., & White, W.L. (1998). Treatment for Cannabis Use Disorders General Research Design and Protocol for the Cannabis Youth Treatment (CYT) Cooperative Agreement. Bloomington, IL: Chestnut Health Systems.

Dennis, M.L., Scott, C.K., Godley, M.D., Godley, S.H., Funk, R.H. (1998). Variation in Adolescent Substance Abuse Patterns Relative to Adults and Level of Care. Presentation at the NIAAA Adolescent Research Methods Conference, November 19-20, 1998, Bethesda, MD.

Dennis, M., Scott, C.K., Godley, M., Godley, S.H., Funk, R. (1999). Variation in Adolescent Substance Abuse Patterns Relative to Adults and Level of Care. Presentation at the NIAAA Adolescent Research Methods Conference, November 19-20, 1998, Bethesda, MD (<http://www.chestnut.org/li/posters>).

Giancola, P.R., Mezzich, A.C., & Tarter, R.E. (1998). Disruptive delinquent and aggressive behavior in female adolescents with a psychoactive substance use disorder: Relation to executive cognitive functioning. Journal of Studies on Alcohol, *59*(5), 560-567.

Grilo, C.M., Becker, D.F., Fehon, D.C., Walker, M.L., Edell, W.S., & McGlashan, T.H. (1998). Psychiatric morbidity differences in male and female adolescent inpatients with alcohol use disorders. Journal of Youth & Adolescence, *27*(1), 29-41.

Jainchill, N., Bhattacharya, G., & Yagelka, J. (1995). Therapeutic communities for adolescents. In: E. Rahdert and D. Czechowicz (Eds.), Adolescent Drug Abuse: Clinical Assessment and Therapeutic Interventions. (NIDA Research Monograph 156). Rockville, MD: U.S. Department of Health and Human Services.

Kandel, D.B., Johnson, J.G., Bird, H.R., & Canino, G. (1997). Psychiatric disorders associated with substance use among children and adolescents: Findings from the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) Study. Journal of Abnormal Child Psychology, *25*(2), 121-132.

McGeary, K.A., Dennis, M.L., French, M.T., Titus, J.C. (Under review). National estimates of marijuana and alcohol use among adolescents: Overlap in use and related consequences. Miami, FL: University of Miami (Paper being submitted for publication in 4/99).

Rounds-Bryant, J.L., Kristiansen, P.L., Fairbank, J.A., & Hubbard, R.L. (1998). Substance use, mental disorders, abuse, and crime: Gender comparisons among a national sample of adolescent drug treatment clients. Journal of Child & Adolescent Substance Abuse, *60*(4),

979-992.

Office of Applied Studies ( September, 1998). Services Research Outcomes Study. (Analytic Series: A-5). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

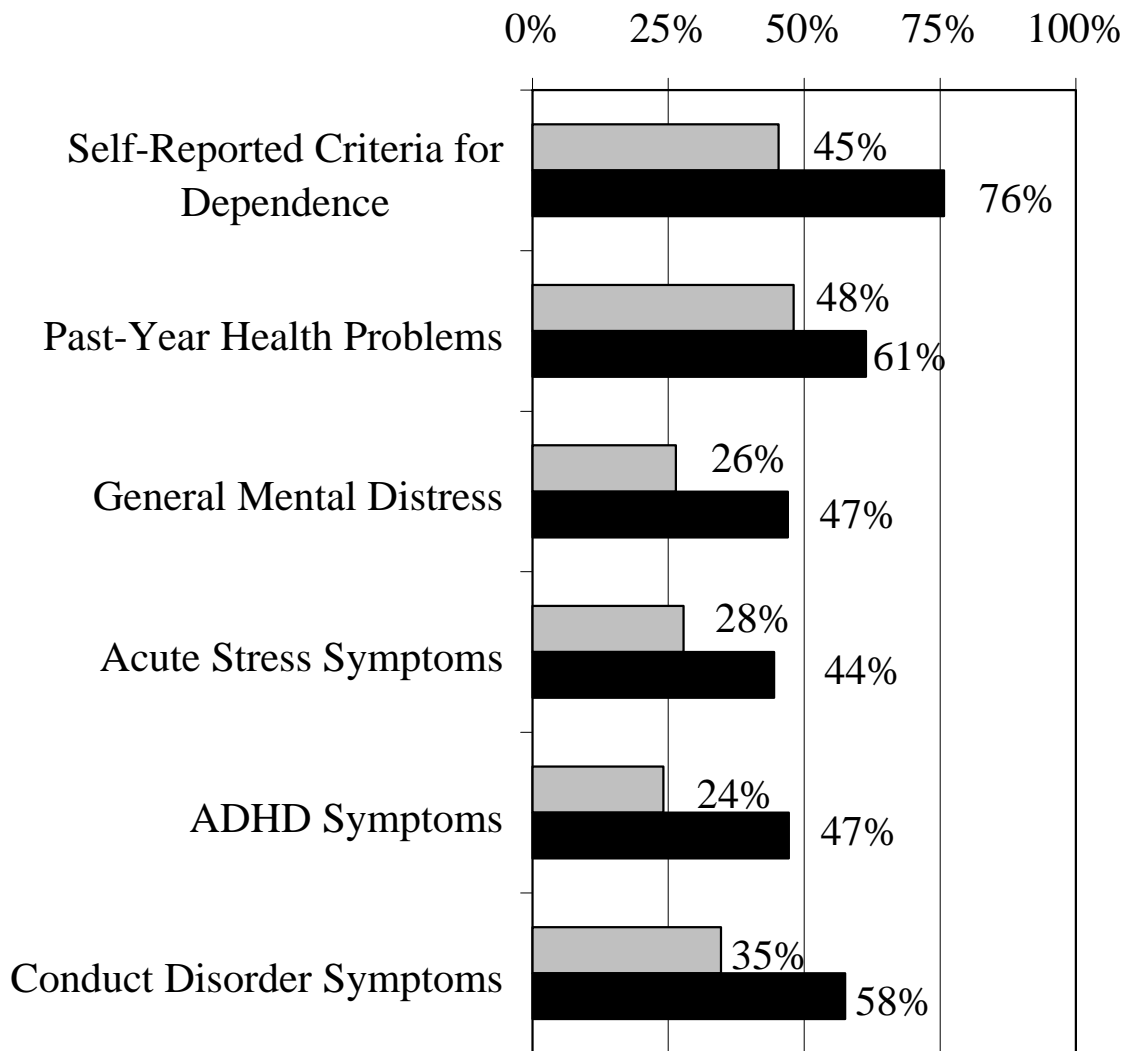
Pentz, M.A., Trebow, E.A., Hansen, W.B., MacKinnon, D.P, Dwyer, J.H., & Johnson, C.A. (1990). Effects of program implementation on adolescent drug use behavior: The Midwestern Prevention Project (MPP). *Evaluation Review*, *14*(3), 264-289.

*Michael Dennis, Ph.D., is a senior research psychologist in the Lighthouse Institute of Chestnut Health Systems and is the coordinating center PI of SAMHSA/CSAT's Cannabis Youth Treatment Cooperative Agreement Study.*

*Susan H. Godley, Rh.D., is a senior research consultant in the Lighthouse Institute of Chestnut Health Systems and is one of the site PIs of SAMHSA/CSAT's Cannabis Youth Treatment Cooperative Agreement Study. ...*

*Janet B. Titus, Ph.D., is a project coordinator in the Lighthouse Institute of Chestnut Health Systems and a co-investigator in the coordinating center of SAMHSA/CSAT's Cannabis Youth Treatment Cooperative Agreement Study.*

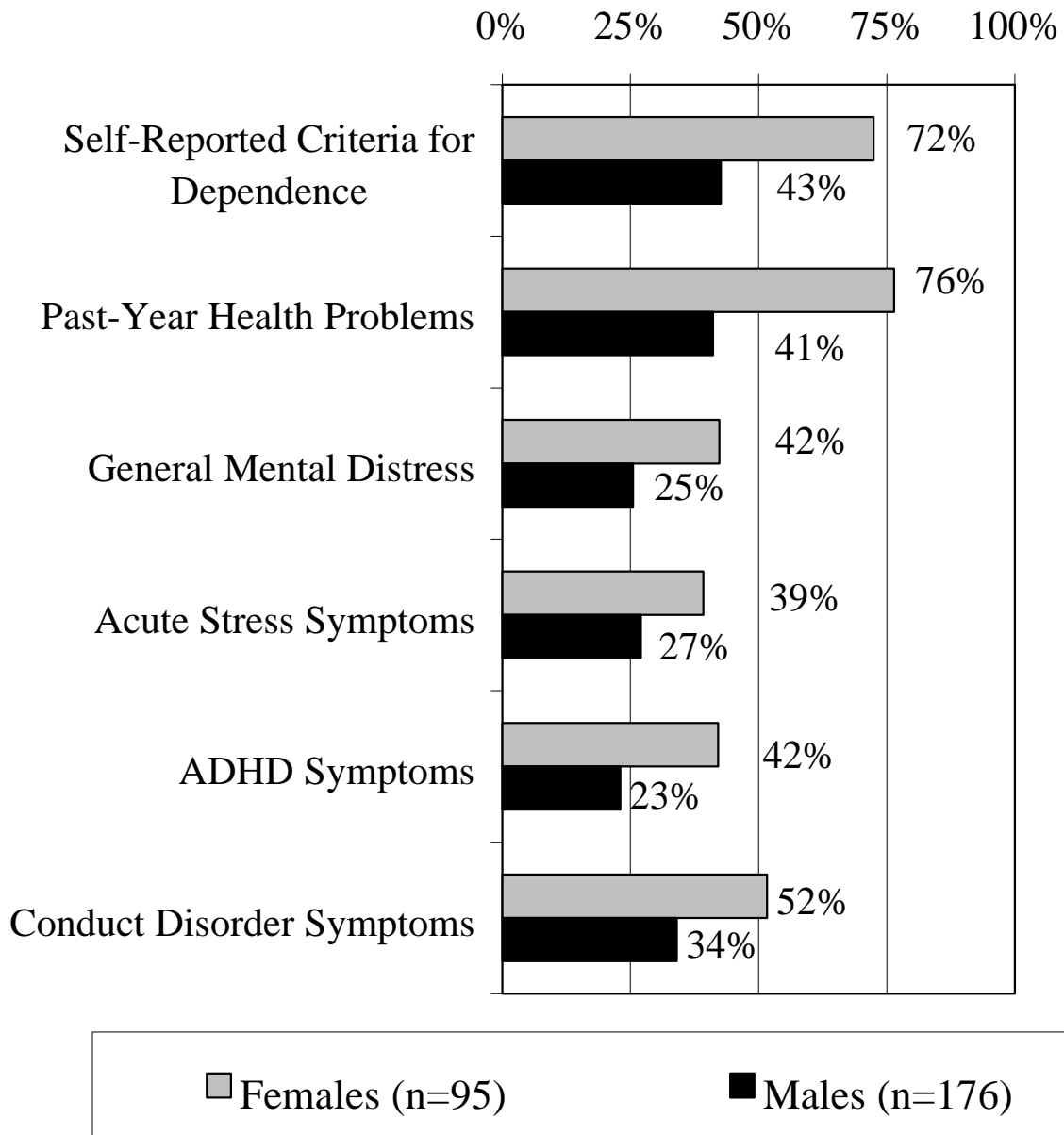
Figure 1. Substance Use, Health, and Psychiatric Severity by Level of Care for Adolescents



Outpatient (n=54)
  Inpatient (n=81)

Source: Drug Outcome Monitoring Study (DOMS)

Figure 2. Substance Use, Health, and Psychiatric Severity by Gender



Source: Drug Outcome Monitoring Study (DOMS)