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Cannabis Use Among High-Risk Youth in Israel (2004–2011): An Examination of Gender and Country of Origin Status

Richard Isralowitz, PhD, and Alexander Reznik, PhD

Richard Isralowitz, PhD, is Professor and Director; Alexander Reznik, PhD, is Senior Research Associate, Regional Alcohol and Drug Abuse Resources Center, Ben Gurion University, Beer Sheva, Israel.

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Author contact:
richard@bgu.ac.il, with a copy to the Editor: kathleen_r_delaney@rush.edu

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PROBLEM: Scant knowledge exists about high-risk adolescents who are school dropouts in treatment for substance abuse.
PURPOSE: This study aims to examine the patterns of cannabis (i.e., marijuana and hashish) use among school dropouts receiving substance abuse treatment based on their gender and country of origin status (i.e., Israeli and former Soviet Union—FSU).
METHODS: A total of 628 dropouts referred to a residential substance abuse treatment facility in Israel from 2004 to 2011 were studied. Chi-square and *t* test analyses were used to determine the impact of gender and country of origin status on cannabis use.
FINDINGS: Significant differences exist for age of first, lifetime, and last 30-day cannabis use. FSU youths begin cannabis at an earlier age. Cannabis use tends to be higher among males and those with Israeli country of origin status. Furthermore, cannabis use among dropouts is much higher than those attending school.
CONCLUSIONS: Gender and country of origin status have implications that should be of concern to healthcare professionals treating adolescent substance abuse. Further research is needed to validate the study findings both in Israel and other countries for policy, training, and treatment purposes.

Cannabis (i.e., marijuana and hashish) is a major concern for many nations, including its impact on mental health and addiction treatment (McGee, Williams, Poulton, & Moffitt, 2000; Moore et al., 2007; World Health Organization [WHO], 2008). Cannabis is grown and traded almost everywhere and it is the most widely used illicit substance, with as many as 170 million people consuming it at least once a year. This is equivalent to 3.8% of the world's adult population, far more than all other illicit substances combined. The relative importance of the substance, as a resin (i.e., hashish) and herb (i.e., marijuana), varies by region. For example, hashish is more common in the Near and Middle East and South-West Asia. The rest of the world, including the United States, is dominated by marijuana. For decades, Morocco has been the main producer of hashish, especially for European markets. Afghanistan, mostly known as the key source of opium, is now the leading producer of cannabis resin. Marijuana is principally and increasingly cultivated in Mexico, the United States, Paraguay, Brazil, and a number of countries in the Caribbean region and Central America. In Africa, marijuana production takes place in nearly every country; and South Africa is the largest producer (United Nations Office on Drugs and Crime [UNODC], 2012).

Cannabis is usually the first illicit drug most people encounter. In the sense that cannabis use typically precedes other illicit drugs, it has been labeled a "gateway drug" (Joy, Watson, & Benson, 1999). Cannabis use can have a variety of negative physical and mental health effects (Isralowitz & Myers, 2011). Persistent or heavy use has been linked to impaired cognitive functioning psychiatric problems, including anxiety, depression, and schizophrenia. Furthermore, its use is a possible factor associated with lag in social development, poor academic performance, risky sexual behavior, delinquency, crime, and violence (Caron Treatment Centers, 2006). Recent studies have found that its use impairs judgment and motor coordination that doubles a driver's risk of being in an accident (National Institute on Drug Abuse [NIDA], 2012).

In many countries, cannabis use is largely an issue related to youth and young adults. It is mostly consumed by males, but females report a relatively high level of use as well (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2012; Isralowitz & Myers, 2011; Substance

Abuse and Mental Health Services Administration [SAMHSA], 2011; UNODC, 2012). Most information available about hashish and marijuana use among young populations is based on school and/or national surveys (Centers for Disease Control and Prevention [CDC], 2012; EMCDDA, 2012; Johnston, O'Malley, Bachman, & Schulenberg, 2012; SAMHSA, 2011).

Information about cannabis use among school dropouts is sparse because of the difficulty in locating them and their general reluctance to be involved in surveys. Yet, school dropouts comprise a large percentage of adolescents. For example, one third of the U.S. school-age population and more than half of the young people in urban population centers are school dropouts (Educational Testing Service, 2005; SAMHSA, 2003; White House, 2010). This problem is not restricted to the United States; it is also endemic to many developed and underdeveloped countries (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2010). For example, Israel—a country with a highly diversified population of 7.7 million people, about 75% Jewish, 20% Muslim, and about 5% other including Christian and Druse (Israel Central Bureau of Statistics, 2010)—is experiencing an increase of school dropouts especially among immigrants, ultra-Orthodox Jews, and Arabs (Kashti, 2010).

This article focuses on cannabis use among Israeli school dropouts referred for substance abuse treatment. Gender and country of origin status (i.e., Israeli and former Soviet Union—FSU) factors are examined, and implications for treatment and further research are discussed.

Method

Sample

The facility used for this research is one of two in Israel that provides residential substance abuse treatment to adolescents. It is staffed by a physician, nurse, social workers, and other support personnel. The study cohort included 628 youths, 68% male (n = 424) and 32% female (n = 204), referred by probation, social service, and healthcare workers for treatment from 2004 to 2011. The majority was of Israeli (36.9%) and FSU (38.1%) origin as determined by the birthplace of their mothers. The remaining 25% included youths from Ethiopia, Latin America countries, and elsewhere. The youths ranged in age from 13 to 18 years with a median age of 17; 82.3% identified themselves as being Jewish, 40.3% reported that their families were in contact with welfare services, and 82.3% indicated they were unemployed.

Procedures

During their intake interview for the 90-day treatment, youths were asked to complete a simply worded self-report questionnaire in Hebrew. Data were collected from youths with their assent complying with human subject guidelines of the residential treatment facility. A staff member responsible for the interview was available to help youths understand the questions if necessary. Anonymous data were transferred from the treatment facility to the Regional Alcohol and Drug Abuse Resources Center, Ben Gurion University, for analysis. Approval for this study was received from the university's research authority.

Measures

The data collection instrument used, Substance Use Survey Instrument (SUSI), consists of 31 questions about personal background characteristics, substance use patterns, and related problem behavior. Many of the SUSI questions are similar to those used for the NIDA Monitoring the Future—Adolescent Drug Use Survey and the SAMHSA National Survey on Drug Use and Health. The instrument was developed by the Regional Alcohol and Drug Abuse Research Center, Ben Gurion University, with grant support from the U.S. Agency for International Development—Middle East Regional Cooperation Program and input from experts affiliated with universities, government agencies, and regional nonprofit organizations. Prepared in English, the questionnaire was translated to Hebrew and then back translated. The questionnaire was examined for construct validity and reliability purposes by the Integrated Substance Abuse Programs, University of California, Los Angeles (Reiber, 2002). For the youths receiving substance abuse treatment, the instrument has been found to be reliable (Cronbach's α, 0.93). Sample questions include: Where was your mother born? (e.g., Israel, Russia, Ukraine, Ethiopia, etc.); During your last month have you used the following substances? (e.g., cigarettes, alcohol, marijuana, etc.); During the last month, have you had five or more alcohol beverages in one drinking occasion?

Analysis

For purposes of this article, aggregate data were analyzed for the study period. Results are reported for cannabis that includes marijuana and hashish. Statistical analyses, chi-square, and t test were performed using Statistical Package for the Social Sciences (SPSS) version 19.

Results

Table 1 provides data about age of first use, lifetime, and last 30-day cannabis use by gender status. The median age of first use (14 years) follows the age reported for first tobacco and alcohol use (Isralowitz & Reznik, 2011; Kron, 2010). Males and females reported the same age of first cannabis use (males −14.2; females −14.1, ns). A significant difference was found

Table 1. Male and Female Cannabis Use (2004–2011)

Variables	Males[a] (*N* = 424)	Females[a] (*N* = 204)	Total (*N* = 628)	χ^2 or *t* (df)
Cannabis, age of first use, *M* (SD)	14.23 (1.89)	14.07 (1.85)	14.18 (1.88)	0.807 (442)
Lifetime cannabis use, % (*n*)	91.9 (388)	90.1 (183)	91.4 (571)	0.56 (1)
Current cannabis use, % (*n*)	72.0 (303)	63.1 (128)	69.1 (431)	5.10 (1)*

*$p < .05$ (χ^2 test).

[a]Up to six subjects in each group with missing data on one or more variables.

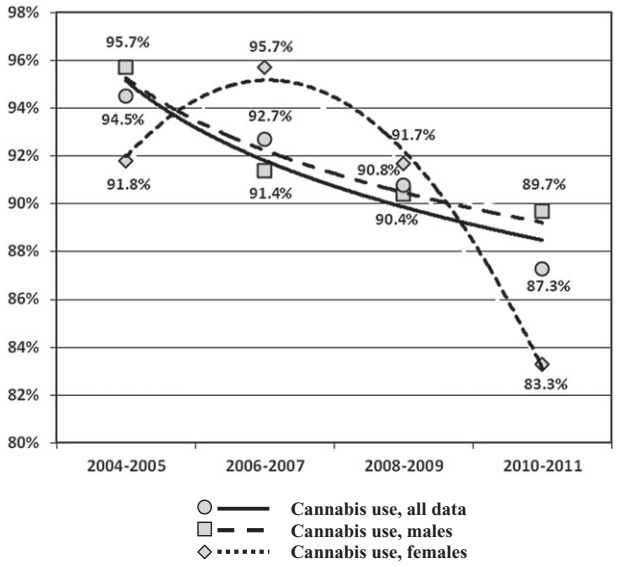

Figure 1. Lifetime Cannabis Use Trends

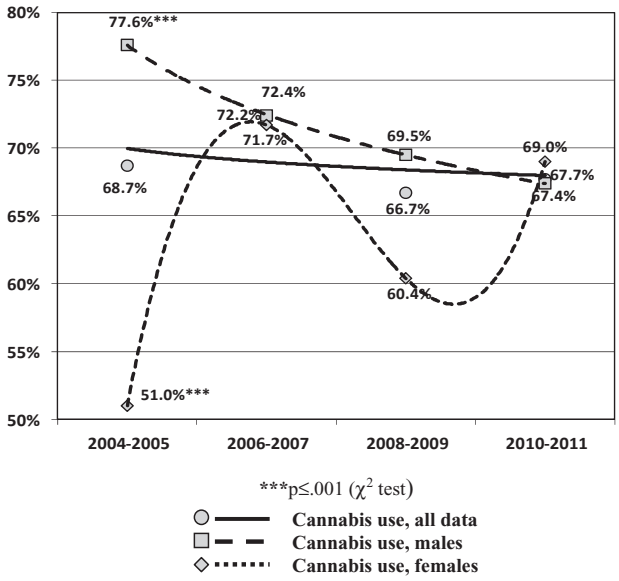

Figure 2. Last 30-Day Cannabis Use Trends

for current (last 30-day) cannabis use based on gender status (males –72.0%; females –63.1%; $p < .05$)—see Table 1.

Figure 1 shows a downward trend of cannabis lifetime use for males and females from 2004 to 2011. Figure 2 shows patterns of last 30-day cannabis use for 2-year intervals during the study period.

Based on country of origin status, males of FSU origin reported a younger age of first cannabis use than their Israeli counterparts (FSU—13.8 [*SD* = 2.0]; Israeli—14.9 [*SD* = 1.7], $p < .001$). Israeli females reported a higher rate of lifetime cannabis use than those with FSU status (FSU—88.8%; Israeli—98.7%; $p < .05$). FSU and Israeli males reported similar patterns of last 30-day cannabis use (FSU—72.8%; Israeli –75.7%; ns); Israeli females reported a higher rate of last 30-day cannabis use than those with FSU origin (FSU—57.5%; Israeli—73.4%; $p < .05$) (see Table 2).

Lifetime and last 30-day rates of cannabis use among the study youths were compared to those of high-school-age youths in national surveys carried out by the Israel Anti-Drug Authority (2009) and the CDC (2012), the SAMHSA (2011) National Survey on Drug Use and Health, and the Monitoring the Future Survey (Johnston et al., 2012). The study cohort of dropouts reported higher rates of use than those attending school in Israel and the United States (see Table 3). While not specific to cannabis, patterns of other substance use (i.e., inhalants) among youths receiving residential treatment in the United States tend to be similar to the present study of youths (Howard & Perron, 2009; Isralowitz & Reznik, 2012).

Discussion

Over the study period, no significant differences were found for male and female patterns of lifetime cannabis use. Last 30-day use tends to be more common among males than females. Cannabis use is linked to country of origin; FSU origin youths begin cannabis use at a younger age and Israeli females report a higher rate of lifetime and last 30-day cannabis use than those with FSU origin status. Over the study period, lifetime and last 30-day cannabis use declined among the study participants. A similar downward trend has been reported in the United States (CDC, 2012; Johnston, O'Malley, Bachman, & Schulenberg, 2011; SAMHSA, 2011).

It is not surprising that lifetime and last 30-day rates of cannabis use among dropouts prior to entering treatment are higher than those reported by youths attending school in

Table 2. Cannabis Use: Country of Origin and Gender Status (2004–2011)

	Country of origin			Male			Female		
Variables	FSU[a] (*N* = 239)	Israel[a] (*N* = 232)	χ^2 or *t* (df)	FSU[a] (*N* = 159)	Israel[a] (*N* = 153)	χ^2 or *t* (df)	FSU[a] (*N* = 80)	Israel[a] (*N* = 79)	χ^2 or *t* (df)
Cannabis, age of first use, *M* (*SD*)	13.87 (1.97)	14.56 (1.78)	3.32*** (333)	13.75 (2.00)	14.88 (1.67)	4.43*** (221)	14.17 (1.88)	14.07 (1.86)	0.29 (110)
Lifetime cannabis use, % (*n*)	93.7 (224)	95.6 (219)	0.84 (1)	96.2 (153)	94.0 (142)	0.80 (1)	88.8 (71)	98.7 (77)	6.62 (1)*
Current cannabis use, % (*n*)	67.6 (161)	74.9 (173)	3.00 (1)	72.8 (115)	75.7 (115)	0.33 (1)	57.5 (46)	73.4 (58)	4.45 (1)*

*$p < .05$ (χ^2 test); ***$p < .001$ (*t* test).
[a]Up to six subjects in each group with missing data on one or more variables.
FSU, former Soviet Union.

Israel or the United States (CDC, 2012; Israel Anti-Drug Authority, 2009; Johnston et al., 2012; SAMHSA, 2011). This high-risk population for substance use tends to exhibit school failure, risky sex behavior, delinquent or criminal activity, unemployment, and poor living conditions that too often are neglected resulting in the need for intervention (Cohen-Navot, Ellenbogen-Frankovits, & Reinfeld, 2001; Isralowitz & Myers, 2011; Isralowitz & Reznik, 2007; Isralowitz, Reznik, & Straussner, 2011; Rumberger, 2004).

The findings of this study have implications for clinical intervention as well as for further research. Given the level of cannabis use reported in this study, there is a need for early intervention in school before dropout. Moreover, treatment must decrease the negative repercussions of substance use for youths, young adults, and their future children (Isralowitz et al., 2011). Among the interventions that evidence effectiveness in reducing cannabis use and dependence among adolescents are brief interventions including the dissemination of information to youths and parents, motivational enhancement therapy, and cognitive behavioral skills training (Martin & Copeland, 2008; National Cannabis Prevention and Information Centre, 2008; Walker et al., 2006).

There is a growing literature on ethno-cultural and gender-specific prevention and treatment needs and approaches (Straussner, 1997; Straussner & Brown, 2002; Tuchman, 2010). Some experts believe treatment may be enhanced if particular needs are considered and met in a treatment environment (American Psychiatric Association [APA], 1995; Bartholomew, Courtney, Rowan-Szal, & Simpson, 2005; Isralowitz & Reznik, 2008; Walton-Moss & McCaul, 2006). However, there is not full agreement that separate programs are superior to mainstream efforts with respect to outcomes (Sullivan & Fleming, 1997).

Dropout rates in many countries continue to grow and make headline news (White House, 2010), but the connection between substance use and dropping out is being ignored (DuPont, 2010). Studies of the relationship between substance use and dropping out of school are lacking. It is difficult to know if substance use increases school dropout or vice versa as well as the possible impact of other mediating factors that may account for this behavior.

Limitations

This study has a number of limitations that affect the ability to generalize the findings. First, a random probability sample was not used. Second, adolescents, especially those who are mandated into a residential treatment facility, can be suspicious about information gathering and as such may provide arbitrary or inconsistent responses (Hawke, Hennen, & Gallione, 2005). Another limitation is based on the unique cultural characteristics of youths in Israel that may limit the

Table 3. Cannabis Use in Israel and the United States: Dropouts and Youths Attending School

	Lifetime use				Last 30-day use			
	2004–2005	2006–2007	2008–2009	2010–2011	2004–2005	2006–2007	2008–2009	2010–2011
School dropouts (Israel), % (*n*)	94.5 (156)	92.7 (140)	90.8 (138)	87.3 (137)	68.7 (115)	72.2 (109)	66.7 (102)	67.7 (105)
Youths attending school (Israel)[a], %	—	—	7.08 (2009)	—	3.6 (2005)	—	4.44 (2009)	—
	2005	2007	2009	2011	2005	2007	2009	2011
Youths: United States[b], %	38.4	38.1	36.8	39.9	20.2	19.7	20.8	23.1
Youths: United States[c], %	31.3	28.6	29.8	31.6	13.6	12.7	14.2	15.5
Youths: United States[d], %	17.4	16.2	17.0	—	6.8	6,7	7.3	—

[a]Israel Anti-Drug Authority (2009)—cannabis.
[b]CDC (2012)—marijuana.
[c]Johnston, O'Malley, Backman, & Schulenberg (2011)—average estimate for grades 8, 10, and 12—cannabis (marijuana/hashish).
[d]NSDUH (SAMHSA, 2011)—marijuana.

ability to generalize the findings to school dropouts in the United States or other countries.

Conclusion

Given the paucity of literature on cannabis use among school dropouts, this article makes an initial contribution to understanding a growing segment of society that is neither well understood nor adequately addressed in terms of education, employment, health, and social services. Further research is needed to validate these findings both in Israel and other countries so that such information may be useful for healthcare professionals treating adolescent substance abuse.

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References

American Psychiatric Association. (1995). *Practice guide for treatment of patients with substance use disorders: Alcohol, cocaine, opioids*. Washington, DC: Author.

Bartholomew, N., Courtney, K., Rowan-Szal, G., & Simpson, D. (2005). Sexual abuse history and treatment outcomes among women undergoing methadone treatment. *Journal of Substance Abuse Treatment*, *29*(3), 231–235.

Caron Treatment Centers. (2006). *Cannabis-marijuana: Addiction, treatment and recovery*. Retrieved from http://www.caron.org/media_center/files/Cannabis-Marijuana.AddictionTreatment.Recovery.pdf

Centers for Disease Control and Prevention. (2012). *Trends in the prevalence of marijuana, cocaine, and other illegal drug use, national YRBS: 1991–2011*. Retrieved from http://www.cdc.gov/healthyyouth/yrbs/pdf/us_drug_trend_yrbs.pdf

Cohen-Navot, M., Ellenbogen-Frankovits, S., & Reinfeld, T. (2001). *School dropouts and school disengagement*. Jerusalem: the JDC-Brookdale Center for Children and Youth and the Knesset Research and Information Center.

DuPont, R. (2010). *Connecting substance use and high school dropout rate; the impact of alcohol and drug use on academic achievement*. Institute for Behavior and Health. Retrieved from http://www.ibhinc.org/pdfs/ConnectingSubstanceUseandHighSchoolDropoutRates022310.pdf

Educational Testing Service. (2005). *One-third of a nation: Rising dropout rates and declining opportunities*. Retrieved from http://www.ets.org/Media/Research/pdf/PICONETHIRD.pdf

European Monitoring Centre for Drugs and Drug Addiction. (2012). *Statistical bulletin, 2011*. Retrieved from http://www.emcdda.europa.eu/stats11

Hawke, J., Hennen, J., & Gallione, P. (2005). Correlates of therapeutic involvement among adolescents in residential drug treatment. *American Journal of Drug and Alcohol Abuse*, *31*(1), 163–177.

Howard, M., & Perron, B. (2009). A Survey of inhalant use disorders among delinquent youth: Prevalence, clinical features, and latent structure of DSM-IV diagnostic criteria. *BMC Psychiatry*, *9*(8), 1–11.

Israel Anti-Drug Authority. (2009). *Illegal use of drugs and alcohol in Israel 2009. Seventh national epidemiological survey*. Retrieved from http://antidrugs.gov.il/template/default.asp?maincat=12&catId=41&pageId=1554&parentId=224 (Hebrew).

Israel Central Bureau of Statistics. (2010). *Statistical abstract of Israel 2010*. Retrieved from http://cbs.gov.il/reader/shnatonenew_site.htm

Isralowitz, R., & Myers, P. (2011). *Illicit drugs*. Santa Barbara, CA: Greenwood/ABC-CLIO.

Isralowitz, R., & Reznik, A. (2007). Former soviet union immigrant and native-born adolescents in Israel: Substance use and related problem behavior. *Journal of Ethnicity in Substance Abuse*, *6*(1), 131–138.

Isralowitz, R., & Reznik, A. (2008). Problem severity profiles of substance abusing women in therapeutic treatment facilities.

International Journal of Mental Health and Addiction, *7*(2), 368–375.

Israelowitz, R., & Reznik, A. (2011). Patterns of alcohol use among Israeli high-risk youth, 2004–2009. *Journal of Substance Use*, *16*(6), 496–501.

Israelowitz, R., & Reznik, A. (2012). Ethnicity and inhalant use among high-risk youth. *Journal of Ethnicity in Substance Abuse*, *11*(2), 192–196.

Israelowitz, R., Reznik, A., & Straussner, S. (2011). Prescription drug use trends among Israeli school dropouts: An analysis of gender and country of origin. *Journal of Social Work Practice in the Addictions*, *11*(1), 75–86.

Johnston, L., O'Malley, P., Bachman, J., & Schulenberg, J. (2011). *Monitoring the future national results on adolescent drug use: Overview of key findings, 2010*. Ann Arbor, MI: Institute for Social Research, the University of Michigan.

Johnston, L., O'Malley, P., Bachman, J., & Schulenberg, J. (2012). *Monitoring the future national results on adolescent drug use: Overview of key findings, 2011*. Ann Arbor, MI: Institute for Social Research, the University of Michigan.

Joy, J., Watson, S., & Benson, J. (Eds.). (1999). *Marijuana and medicine: Assessing the science base*. Washington, DC: National Academy Press.

Kashti, O. (2010). *Student dropout rate jumps by nearly 40 percent*. Retrieved from http://www.haaretz.com/print-edition/news/student-dropout-rate-jumps-by-nearly-40-percent-1.296633

Kron, M. (2010). Dropouts: Age of first drug use. Magal/Lifta Adolescent Drug Treatment Program (personal correspondence—9 July 2010).

Martin, G., & Copeland, J. (2008). The adolescent cannabis check-up: Randomized trial of a brief intervention for young cannabis users. *Journal of Substance Abuse Treatment*, *34*(4), 407–414.

McGee, R., Williams, S., Poulton, R., & Moffitt, T. (2000). A longitudinal study of cannabis use and mental health from adolescence to early adulthood. *Addiction*, *95*(4), 491–503.

Moore, T., Zammit, S., Lingford-Hughes, A., Barnes, N., Jones, P., Burke, M., & Lewis, G. (2007). Cannabis use and risk of psychotic or affective mental health outcomes: A systematic review. *Lancet*, *370*(9584), 319–328.

National Cannabis Prevention and Information Centre. (2008). *Evidenced-based interventions for cannabis use disorder*. Retrieved from http://ncpic.org.au/ncpic/publications/research-briefs/article/evidence-based-interventions-for-cannabis-use-disorder

National Institute on Drug Abuse. (2012). *Drug facts: Marijuana*. Retrieved from http://www.drugabuse.gov/publications/drugfacts/marijuana

Reiber, C. (2002). Issues of reliability and validity—Substance Abuse Survey Instrument. Integrated Substance Abuse Programs, University of California, Los Angeles (personal correspondence—12 April 2002).

Rumberger, R. (2004). Why students drop out in school. In G. Orfield (Ed.), *Dropouts in America: Confronting* (pp. 131–135). Cambridge, MA: Harvard Education Press.

Straussner, S. (1997). Gender issues in addictions: An overview. In S. Straussner & E. Zelvin (Eds.), *Gender and addictions: Men and women in treatment* (pp. 1–2). Northvale, NJ: Jason Aronson.

Straussner, S., & Brown, S. (Eds.). (2002). *The handbook of addiction treatment for women: Theory and practice*. San Francisco, CA: Jossey-Bass.

Substance Abuse and Mental Health Services Administration. (2003). *Substance use among school dropouts*. Retrieved from http://www.oas.samhsa.gov/2k3/dropouts/dropouts.htm

Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 national survey on drug use and health: Summary of national findings*. Retrieved from http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.htm

Sullivan, E., & Fleming, M. (1997). *A guide to substance abuse for primary care clinicians*. Washington, DC: DHHS (SMA), 97–3139.

Tuchman, E. (2010). Women and addiction: The importance of gender issues in substance abuse treatment. *Journal of Addictive Diseases*, *29*(2), 127–138.

United Nations Educational, Scientific and Cultural Organization. (2010). *Education for all: Reaching the marginalized*. Retrieved from http://unesdoc.unesco.org/images/0018/001865/186525E.pdf

United Nations Office on Drugs and Crime. (2012). *World drug report*. Vienna: UNODC.

Walker, D., Roffman, R., Stephens, R., Wakana, K., Berghuis, J., & Kim, W. (2006). Motivational enhancement therapy for adolescent marijuana users: A preliminary randomised trial. *Journal of Consulting and Clinical Psychology*, *74*(3), 628–632.

Walton-Moss, B., & McCaul, M. (2006). Factors associated with lifetime history of drug treatment among substance dependent women. *Addictive Behaviors*, *31*(2), 246–253.

White House. (2010). *President Obama announces steps to reduce dropout rate and prepare students for college and careers*. Retrieved from http://www.whitehouse.gov/the-press-office/president-obama-announces-steps-reduce-dropout-rate-and-prepare-students-college-an

World Health Organization. (2008). *Health policy for children and adolescents, No. 5*. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0005/53852/E91416.pdf