Chapter 11
Adolescents

Kimberly Bender, Stephen Tripodi, and Jacoba Rock

Substance use and abuse during adolescence is a serious concern with substantial consequences for adolescents and their families. Several risk factors have been shown to predict adolescents' substance involvement, informing development of interventions to address these concerns. As the field of adolescent addictions has grown, several intervention approaches have been tested, and certain interventions show promising effects in reducing substance use. This chapter reviews what is known about adolescent substance use, its prevention and treatment, and adolescent resiliency in the presence of risk. Finally, the chapter concludes with a look forward to young adulthood and substance abuse trends as adolescents move on to this next developmental period.

Prevalence and Trends for Adolescent Substance Use and Abuse

According to the Monitoring the Future survey, an annual national survey of self-reported adolescent drug use in the USA, drug use rates have fluctuated over the past 20 years (Johnston, O'Malley, Bachman, & Schulenberg, 2010). Figure 11.1 shows changes in lifetime prevalence rates of use of different substances from 1991 to 2009. Rates of use declined in the early 1990s followed by increases in use in late 1990s. Since then, adolescents' use of most substances has demonstrated slow but

K. Bender (✉) • J. Rock
University of Denver, Denver, CO, USA
e-mail: Kimberly.Bender@du.edu

S. Tripodi
Florida State University, Tallahassee, FL, USA
e-mail: stripodi@fsu.edu

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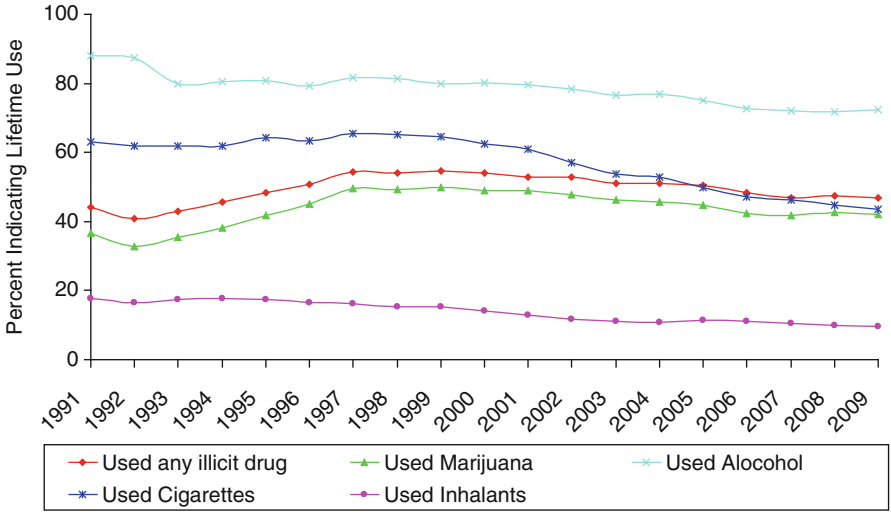

Fig. 11.1 Lifetime prevalence of illicit drug use by 12th graders (1991–2009). Data from: Monitoring the Future, 2010, Volume II; 2009 Data Collection

steady declines. Recent data, however, indicate use of certain substances, such as alcohol and marijuana, have stopped declining in the past few years, causing concern. While use of substances is common among adolescents, addiction rates are less so; results from a nationally representative sample of 4,175 adolescents indicate 3% meet criteria for substance abuse or dependence disorders (Roberts, Roberts, & Chan, 2009).

Substance use generally increases with age during the adolescent years, with high school seniors reporting greater use than adolescents in the 8th and 10th grades. Figure 11.2 depicts the prevalence rates of use during the past 30 days for different substances. While rates of use of illicit drugs in general, and alcohol and marijuana use specifically, are lower in earlier grades and highest among 12th graders, inhalant use follows a different pattern, most commonly used among younger adolescents and declining in later adolescence.

Alcohol is the drug used most by adolescents. In 2009, substantial proportions of 12th graders reported being drunk in the past 30 days (46%) and binge drinking (12%), generally defined as having at least five consecutive drinks (Johnston et al., 2010). Similar rates have been reported by Simons-Morton, Pickett, Boyce, Ter Bogt, and Vollebergh (2010), with monthly drinking reported by 34% of 10th grade boys and 20% of 10th grade girls in the USA; 28% of the boys and 24% of the girls report frequent drunkenness. Marijuana is the second most commonly used drug by adolescents and the most commonly used illicit drug. In 2009, 33% of 12th graders, 24% of 10th graders, and 11% of 8th graders reported using marijuana (Johnston et al., 2010). The trends for marijuana and alcohol use have been parallel over the years. Inhalants, the third most commonly used drug, have demonstrated increased rates for 8th graders from 2001 to 2004 and again in 2007. The most commonly

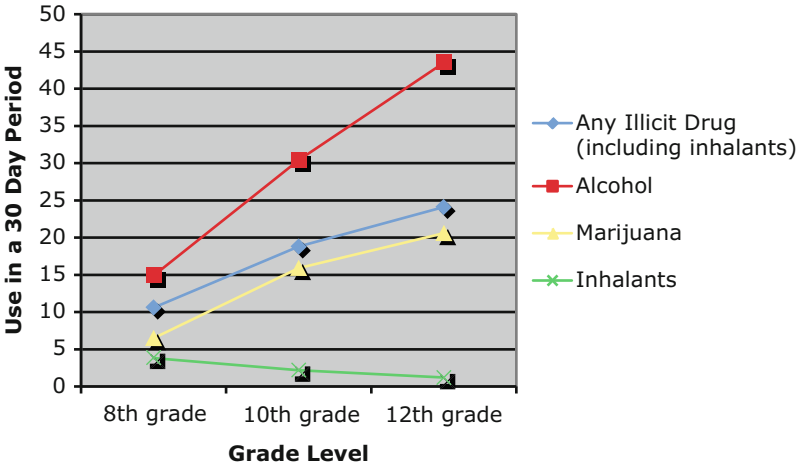

Fig. 11.2 Prevalence of substance use during the past 30 days for 8th grade, 10th grade, and 12th grade students. Data from: Monitoring the Future, 2010, Volume II; 2009 Data Collection

used inhalants are glue, shoe polish, toluene, lighter fluid, and gasoline. There appears to be a strong association between inhalant use and juvenile delinquency. Among 723 incarcerated adolescents in Missouri, for example, 37% participated in inhalant use, much higher rates than reported in the general adolescent population (Howard, Balster, Cottler, Wu, & Vaughn, 2008).

Research documents some significant gender and ethnic differences for substance use and abuse. Males have higher rates of illicit drug use and binge drinking compared to their female counterparts. However, gender differences are reduced in regards to alcohol use; while 8th grade males traditionally report higher rates of use, girls demonstrated higher rates starting in 2002 and this has continued through 2009. African-American students have lower rates of illicit drug use and alcohol use than Whites. Hispanic students' substance use rates fall between the rates for African Americans and Whites but closer to rates reported by White adolescents (Johnston et al., 2010).

Risk Factors for Adolescent Substance Use and Abuse

There are many risk factors that increase the chances adolescents will use and abuse substances. In fact, risk factors are stronger predictors of substance use outcomes than protective factors, regardless of grade level or type of substance (Cleveland, Feinberg, Bontempo, & Greenberg, 2008). Individual factors associated with risk for adolescent substance abuse, include several social and emotional problems (Cleveland et al., 2008), such as low self-esteem and poor body image (particularly among girls) (Roberts et al., 2009), Attention Deficit Hyperactivity Disorder

(ADHD) and conduct disorders (Gau et al., 2007; Lynskey, Fergusson, & Horwood, 1998), and sensation-seeking behavior (Gunning, Sussman, Rohrbach, Kniazev, & Masagutov, 2009). Furthermore, youth who experience school stress (Roberts et al., 2009), spend time in counterproductive after-school settings (Schinke, Fang, & Cole, 2008), and experience poor academic performance are at increased risk for use and abuse (Gau et al., 2007; Gunning et al., 2009).

Family can also be source of risk for adolescent substance use; parents play an especially influential role (Jones, Hussong, Manning, & Sterrett, 2008). Youth are particularly at risk if they have poor relationships with their parents (Roberts et al., 2009) or if their parents hold low expectations for their child's success (Nash, McQueen, & Bray, 2005). Youth from families characterized by authoritarian parenting styles (Castro, Brook, Brook, & Rubenstone, 2006), poor family management practices (Tobler, Komro, & Maldonado-Molina, 2009), poor communication, and low family cohesion (Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007) are at increased risk. Moreover, parents' own use of substances significantly predicts their adolescents' use (Castro et al., 2006; Gunning et al., 2009), especially maternal drug use, parental drug use with a child (Castro et al., 2006), and parental alcoholism (Poelen, Scholte, Willemsen, Boomsma, & Engels, 2007; Scholte, Poelen, Willemsen, Boomsmsa, & Engels, 2007).

Among social context variables, peer substance use is the strongest predictor of alcohol use (Gunning et al., 2009). Several peer group risk factors are associated with adolescent substance use, including peer influence (Nash et al., 2005), peer alcohol use (Poelen et al., 2007; Scholte et al., 2007), best friend's substance use for female adolescents (Schinke et al., 2008), and gang involvement (Ryan, Miller-Loessi, & Nieri, 2007).

Finally, community and environmental risk factors include: economic stress; neighborhood effects (Kulis, Marsiglia, Sicotte, & Nieri, 2007); and disorganized neighborhood structure (Lambert, Brown, Phillips, & Ialongo, 2004). Neighborhood perceptions are associated with substance use particularly among African Americans (Lambert et al., 2004).

Consequences of Substance Abuse

Adolescent alcohol use disorders are associated with serious psychosocial problems both in adolescents and later in life as adults (Rowe, Liddle, Greenbaum, & Henderson, 2004). Substance abusers demonstrate greater risk for cognitive deficits (Tapert, Brown, Myers, & Granholm, 1999), reduced motivation to succeed academically (Baer, Garrett, Breadnell, Wells, & Peterson, 2007), and increased risk for subsequent adult alcohol abuse and related problems (D'Amico, Miles, Stern, & Meredith, 2008).

Despite popular perception, there are many physical, mental, and social consequences associated with marijuana use for adolescents (Volkow, 2005), including but not limited to the following: impairment to coordination and reaction time

(Degenhardt, Hall, & Lynskey, 2001); poor school performance and reduced likelihood of graduating from high school (Brook, Balka, & Whiteman, 1999; Lynskey & Hall, 2000); delinquent and sexually risky behaviors (Brook et al., 1999); and disruptions in transitions to young adulthood, including unemployment, increased rebelliousness, and increased risks of teenage pregnancies (Brook, Adams, Balka, & Johnson, 2002).

Finally, recurrent inhalant use is associated with conditions such as Parkinsonism, cerebellar ataxia, encephalopathy, trigeminal neuropathy, hepatoxicity, heptorenal syndrome, delayed neurological recovery, and deaths due to drug actions and accidents. Adolescents who use inhalants are frequently more likely to experience adverse consequences than adolescents who moderately or rarely use inhalants. Common related consequences include committing acts of violence and vandalism, committing property crimes, driving under the influence, having unprotected sex, suffering serious injury while high, having suicidal thoughts, and disrupting friendships (Howard et al., 2008).

Treatment Modalities

Many of the risk factors described below have informed development of interventions to address adolescent substance use and abuse. Interventions for adolescent substance use include several individual and family-based approaches. Individual treatments are often behavioral and/or cognitive in nature and often utilize motivational interviewing. The goal of behavioral approaches is to first identify internal and external stimuli that trigger use and then to learn and practice techniques for refusal, relaxation, coping, and behavior management. Often treatment is structured with the therapist modeling behaviors, youth rehearsing skills, and then youth having assignments between sessions; praise for progress is considered essential. Planners are used to structure time and keep track of behaviors in each environment. Significant others (family, partners, friends) are invited to attend sessions to promote safe activities and support avoidance of risky situations (Azrin et al., 1994) often by providing positive reinforcements for desired behavior.

Cognitive behavioral treatment (CBT) is often provided in an didactic format. It is based on the concept that thoughts affect feelings, and feelings are connected to particular substance use behaviors. Clients are encouraged to identify and challenge distorted thoughts and maladaptive perceptions that lead to negative feelings connected to the desire to use substances. With practice, the goal is for youth to accurately assess problems, evaluate their own thoughts related to the problem, and find a balanced interpretation that results in more productive and healthy behaviors. Thus, cognitive approaches rely greatly on problem solving.

Motivational Interviewing (MI) is a therapeutic technique for recognizing a problem behavior and building internal motivation toward behavioral change. It is considered to be a low-demand intervention that can be provided in a brief format. Aimed at increasing the individual's motivation to use services and reduce substance

use, the approach is non-confrontational and nondirective for substance users. The therapist works with the client to explore his or her own thoughts about substance use and readiness for change (Baer et al., 2007).

Family and multi-systemic approaches move beyond individual interventions with youth to also include reduction of risk factors in youths' families and other important systems, including schools, peers, and communities. Multi-systemic approaches with empirical support include Multi-systemic Therapy (MST), Integrated Family and Cognitive Behavioral Therapy (IFCBT), Multidimensional Family Therapy (MDFT), and Brief Strategic Family Therapy (BSFT); each is briefly described below.

MST is performed with youth in the context of their homes, schools, and neighborhoods, to reduce substance use and associated risk factors. MST provides services in the natural environment (home and community) around the clock, with therapists on-call to respond to crises in the home. The therapist is goal-oriented and offers pragmatic interventions to change risk factors across systems and reduce substance use. For example, MST may focus on: (1) changing family dynamics (empowering the parent to set rules and structure, and improve discipline techniques), (2) reducing deviant peer associations, and (3) helping teachers to encourage greater academic success (Henggeler, Smith, & Melton, 1992). The MST model also focuses on strengths and available support systems (Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006).

IFCBT integrates family therapy with peer group therapy, using a cognitive-behavioral approach. This therapy is informed by neuroscience evidence that demonstrates youth who use substances have deficits in certain executive functions such as response inhibition, planning, concept formation, cognitive flexibility, and language that might prevent engagement and success in drug treatment. IFCBT aims to help youth develop skills in problem solving. Like other approaches, IFCBT also aims to address and reduce risk factors in various ecological systems (Latimer, Winters, D'Zurilla, & Nichols, 2003).

Multidimensional Family Therapy (MDFT) is a family-focused treatment that includes four domains: adolescent, parent, interactional, and extra-familial. The goal of the adolescent domain is to engage the youth in treatment and help the youth to effectively communicate their thoughts and feelings to parents and other important adults in their lives, develop methods of coping and regulating difficult emotions, develop problem-solving skills, increase social skills and functioning in school and work environments, and participate in alternative behaviors to substance use. MDFT also works in the parent domain to engage parental figures in the treatment process, develop and improve parenting strategies, increase parental monitoring, help parents to establish clear limits and expectations (and follow through with consequences), and help parents to enhance their own psychosocial functioning as to be a better support in the youth's life. MDFT therapists also work in the interactional domain, where they aim to decrease conflicts and increase bonding and attachment through improvements to communication and family problem solving. Finally, the MDFT therapists aim to address the extra-familial domain by helping the family interact competently with other systems involved in the youth's life, such

as school, recreational agencies, or the juvenile justice system (Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008).

Brief Strategic Family Therapy (BSFT) was initially developed as a treatment for addressing family conflict among Latino immigrant families, but has since expanded to address family issues, including youth substance use, across a range of ethnic/racial backgrounds. BSFT changes family interactions in the context of cultural factors that influence youth substance use. The family is seen as the base of development where youth learn how to think and feel and respond to their environment. BSFT, like many of the other family interventions above, recognizes the impact other social systems can have on the family and the individual, and aims to help families, and parents in particular, to reduce risk factors inherent in the broader social systems. The primary goal of BSFT is to improve relationships within and outside of the family. To do so, BSFT uses planed interventions that are pragmatic and problem-focused. The family problems and patterns that most directly affect the youths' substance use are addressed first, and then other interaction problems are addressed subsequently. In implementing planned interventions, the therapist focuses on joining the family, reducing resistance, and engaging them as active partners in treatment. Specifically, the treatment focuses on the family hierarchy, making sure the parents are most powerful in the family, are engaging in behavior control, are nurturing, are aligned with one another, and have healthy boundaries (Winters & Leitten, 2007).

Although each multi-systemic approach may address substance use with a unique framework, several commonalities are seen across multi-systemic approaches to adolescent substance abuse. Multi-systemic approaches often focus on addressing risk and protective factors associated with the substance use; involve important individuals from a variety of other systems influencing youth behaviors (parents, schools, peers, etc.); and often include a common intervention emphasis on problem solving and parental skill development.

Synthesis of Intervention Effectiveness

With the proliferation of studies examining the effects of substance abuse prevention and intervention approaches, researchers have conducted several meta-analyses and systematic reviews to synthesize findings across studies, enabling them to make broader claims about overall effectiveness and to identify approaches most successful in reducing substance use and abuse. A meta-analysis is a kind of study of studies that attempts to arrive at a statistical conclusion regarding the status of research in a given area. Several meta-analyses have focused on prevention programs provided to youth before substance use has been initiated or problem use has occurred. Meta-analytic results indicate variation in the effectiveness of substance use prevention programs (Tobler et al., 2000). Tobler et al.'s (2000) meta-analysis of substance use prevention programs found prevention programs demonstrating the greatest effects are those that employ interactive methods where youth are given the

opportunity to exchange ideas, communicate with other students and with facilitators, and practice refusal skills. These approaches demonstrate better effects than knowledge-based, noninteractive methods in which youth are merely taught about substances and encouraged to clarify their own values and feelings related to use. Research suggests that the more interactive programs utilized a social influence approach that combated peer pressure by helping youth develop assertiveness, coping and communication skills (Tobler et al., 2000).

Other meta-analyses of substance use prevention programs, specifically implemented in school-based settings, found small yet positive effects across programs with greatest support for programs that utilize behavior and cognitive behavioral interventions (Wilson, Gottfredson, & Najaka, 2001). School-based prevention programs providing more general, noncognitive behavioral counseling or social work showed negative effects, and alternative programs such as mentoring, tutoring, and recreational programs were not associated with significant reductions in use. It is also important to note that prevention programs are not equally effective for all types of students. Prevention programs targeting higher risk youth had larger effects than those provided to general school samples (Wilson et al., 2001). It appears that teaching specific behavioral or cognitive behavioral skills is an important part of effective in school-based substance use prevention programming; methods in skill building should include repeatedly exposing students to new skills, providing ample opportunities for practice and rehearsal, and provision of feedback to refine skill development (Wilson et al., 2001). In addition, programs should include booster sessions in which students are reminded of skills learned several months after the program ends (White & Pitts, 1998).

Meta-analyses have also examined the effectiveness of treatment programs aimed at reducing substance use and abuse among youth with established substance use problems or addictions. Vaughn and Howard (2004) reviewed controlled trials of adolescent substance abuse across various types of substances. Although several interventions demonstrated reductions in substance use, their review found the greatest levels of support for Multidimensional Family Therapy and Cognitive Behavioral Therapy provided in a group format. With growing pressure to provide substance abuse treatment in abbreviated formats, Tait and Hulse (2003) focused their synthesis of the literature more narrowly on brief interventions (four or fewer treatment sessions) for their effectiveness in reducing adolescent substance use. The authors found brief treatments to be beneficial, but benefits differed by the substance targeted. Interventions targeting tobacco use had very small effects; alcohol interventions had small but significant effects; and interventions to reduce multiple substances showed medium effects (Tait & Hulse, 2003). These findings suggest adolescents may respond differently to treatment depending on the type of substance they are using. To investigate this further, recent meta-analyses have examined the effects of treatments for specific commonly abused substances.

A recent meta-analysis synthesized the evidence of rigorously controlled studies of interventions to reduce adolescent alcohol use (Tripodi, Bender, Litschge, & Vaughn, 2010). After a thorough search of existing studies, Tripodi et al. (2010) identified 16 random clinical trials, and, synthesis across these findings indicated

interventions were successful in significantly reducing alcohol use and had medium effects. Specific interventions highlighted for producing particularly large effects included several brief interventions such as Cognitive Behavioral Therapy integrated with a 12-step approach, Brief Motivational Interviewing and Multidimensional Family Therapy. It is important to note that the evidence base is still growing, so few interventions have been tested in multiple studies; this prevents clear conclusions regarding the most effective intervention approach. Also important, the effects of interventions begin to wane after treatment is over. Youth may reduce their use of skills learned in therapy and may reengage with risk factors such as negative peer groups, resulting in reduced effects after treatment. Of interventions tested for long-term effects, behaviorally oriented treatments appear the best at sustaining outcomes up to 1 year after treatment ends.

Similar efforts to synthesize the effects of interventions to reduce adolescent marijuana use through meta-analytic techniques similarly found significant yet moderate effects (Bender, Tripodi, Sarteschi, & Vaughn, 2011). Youth who received marijuana interventions did 67% better in reducing their marijuana use compared to youth in control conditions. Cognitive Behavioral approaches were again highlighted for particularly large effect sizes, including Cognitive Behavioral Therapy provided individually and when integrated with family therapy. Other interventions, including Multidimensional Family Therapy, Behavioral Treatment, and Motivational Interviewing also reported large effects. Similar to evidence on alcohol treatment, marijuana treatment effects appear to decrease over time post-treatment (Bender et al., 2011). Although not surprising, these waning treatment effects are still of clinical concern. Clinicians working with adolescent substance users are encouraged to provide booster sessions to reinforce skills learned in treatment several months after treatment ends. They should also consider involving parents or other professionals (at school or other community organizations) who can continue to help youth practice skills and avoid risk factors.

To summarize, efforts to synthesize the substance abuse intervention literature reveal that many different interventions may be effective in preventing or reducing adolescent substance use. Yet, certain approaches have stronger support, including behavioral, cognitive-behavioral, and skill-building interventions. Brief interventions may be effective when settings require it, but post-treatment follow-up or booster sessions are recommended.

Comorbidity

A primary challenge of treating adolescent substance use is addressing comorbid psychiatric mental health problems. Approximately 50–90% of adolescents abusing substances also report other psychiatric mental health problems (Rounds-Bryant, Kristiansen, & Hubbard, 1999), leading some scholars to assert dually diagnosed adolescents are not a special subpopulation but are the norm in substance abuse treatment (Roberts & Corcoran, 2005). Youth with co-occurring disorders often

present with more severe symptoms and serious disorders; they begin using substance earlier and use more frequently and chronically than youth with only substance use disorders (Rowe et al., 2004). Dually diagnosed adolescents are often difficult to engage in treatment, have poor compliance rates, and end treatment early; this is of concern as poor treatment retention is associated with poor prognosis (Crome, 2004). Relapse is a major concern for youth with comorbid disorders, and gains made in treatment may be lost for youth struggling with both types of disorders (Dakof, Tejeda, & Liddle, 2001).

A systematic review by Bender, Springer, and Kim (2006) examined interventions for dually diagnosed adolescents. Several interventions produced large reductions in substance use, such as cognitive-behavioral therapy and family-based therapy, and youth continued to show these effects at follow up. Preliminary guidelines for treating dually diagnosed adolescents mirror components of effective treatments mentioned above, including multipronged, ongoing assessment; strategic engagement and retention; flexible treatment plans; integrated treatment to address mental health and substance use disorders concurrently; developmental and cultural sensitivity; ecological (systems-oriented) foundation; problem-solving, decision-making, affect regulation, communication skills, and family relations; and goal-directedness (Bender et al., 2006).

Resiliency Processes

Parents can play an important role in protecting their adolescents from developing substance use problems. Showing affection and developing a close parent–child bond is important in protecting adolescents from substance abuse (Cohen, Richardson, & LaBree, 1994). Bonds can be developed through providing parental support and encouragement and effective communication patterns (Castro et al., 2006). Such bonds may allow adolescents to talk to their parents about their problems which is, in turn, associated with lower levels of use (Stronski, Ireland, Michaud, Narring, & Resnick, 2000). Adolescents alienated from their parents are less likely to adopt conventional norms of behavior, and subsequently, more likely to abuse substances. Parents should also establish clear rules and discipline, monitor their adolescent's behavior, and send a message of intolerance for their substance use to buffer against substance use risks (Castro et al., 2006; Ryan et al., 2007).

The school environment is also a strong source of resiliency to adolescent substance use. High academic performance is a protective factor for risky adolescent behavior in general (Ryan et al., 2007) and a protective factor for binge drinking more specifically (Piko & Kovacs, 2010). Youth who report being attached to their teachers, enabling them to talk comfortably with their teachers about problems, are less likely to abuse substances (Fitzpatrick, Piko, Wright, & LaGory, 2005).

Culturally specific protective factors have been noted in the literature. For African-American adolescents, strong racial identity, including endorsement of positive attitudes toward being African American, has been found to be associated

with antidrug attitudes and less substance use (Sellers, Copeland-Linder, Martin, & Lewis, 2006; Szapocznik et al., 2007). For Hispanic adolescents, acculturation is negatively associated with substance use (Szapocznik et al., 2007), such that youth born in the USA, youths who have lived more years in the USA, and youths with higher levels of acculturation exhibit higher rates of substance use (Turner, Lloyd, & Taylor, 2006). Discrepancies in acculturation (i.e., when adolescents from immigrant families are more likely than are their parents to master English and to adopt U.S. values) promotes risk for drug abuse in Hispanic immigrants because it creates additional familial conflict that undermines adolescent bonding to the family and erodes parental authority (De La Rosa, Vega, & Radisch, 2000). Thus, for Hispanic adolescents, family cohesion, effective parenting, family communication, and low family drug problems all increase resiliency against drug use.

Transitions to Adulthood

Though researchers have historically given less consideration to young adulthood (ages 18–25) than adolescence (Osgood, Foster, Flanagan, & Ruth, 2005), this life stage is increasingly seen as its own entity, requiring its own unique considerations and services. Many life changes prevalent in young adulthood are generally considered to reduce risk for substance use, including completing education, beginning careers, advancing relationships (often to marriage and parenthood), and renting or even purchasing independent housing; these roles may protect young adults because they require increased responsibility-taking behavior (Maggs & Schulenberg, 2004). However, young adults are taking on these roles with more hesitancy and ambivalence than ever before. Emerging adulthood is increasingly a stage of experimenting before making life commitments. During this time, young adults express uncertainty about taking on the freedoms and responsibilities of adult roles, and often carry unrealistic expectations about life (Arnett, 2007). Those who have used substances and engaged in other at-risk behaviors during adolescence are less likely to experience the positive role changes characteristics of emerging adulthood (Baer & Peterson, 2002).

Figure 11.3 depicts substance use rates during young adulthood from the national Monitoring the Future survey. While most illicit drugs, including marijuana decrease into young adulthood, alcohol use shows increases in early adulthood before tapering off in the late twenties. Although most young adults will consistently engage in light drinking for all or most of young adulthood, a smaller subgroup will binge drink—an indicator of problem use (Maggs & Schulenberg, 2004). Dishion and Owen (2002) suggest that use of 'heavier' drugs during young adulthood may greatly predict the chronic usage of those drugs later in life, unlike alcohol use.

Problems with substance use during young adulthood are predicted by early use of substances in adolescence (DiClemente, 2006) and poor achievement in high school (Schulenberg, Bachman, O'Malley, & Johnston, 1994). However, high-school students who attend college increase alcohol use for a limited period of time, as alcohol

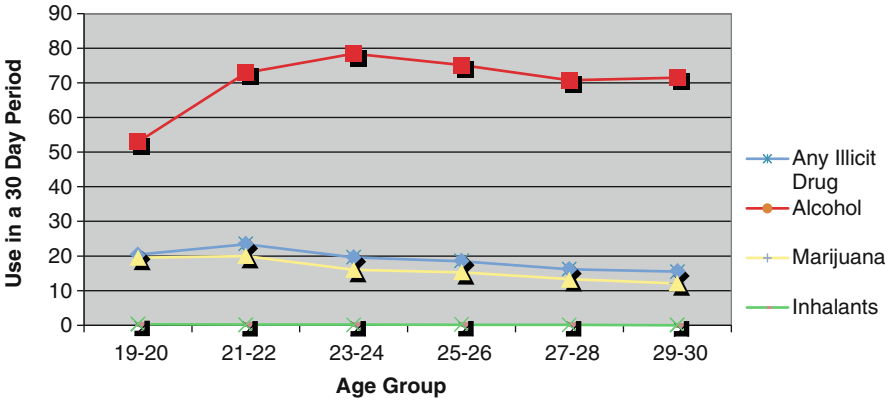

Fig. 11.3 Thirty-day prevalence of substance use for young adults. Data from: Monitoring the Future, 2010, Volume II; 2009 Data Collection

is considered normative and drinking is considered a "rite of passage" (Miller, Turner, & Marlatt, 2001). A survey of college students across 140 universities found 44% engage in binge drinking during young adulthood (Miller et al., 2001). Like in adolescence, peer influence continues to be a predictor of substance use and abuse in young adulthood; friends influence drug use, and drugs influence friendship selection (Dishion & Owen, 2002). Though there may be significant impact such as health risk, academic failure, and motor vehicle accidents, research shows that for young adult college students, alcohol abuse is most often not chronic. Yet, young adulthood is a pivotal time in which successful milestones in college predict better paid employment down the road; likewise, having difficulty during this time period including abusing drugs and alcohol can predict further difficulties (Osgood et al., 2005). Because of the diverse trajectories substance use takes during young adulthood, various approaches are required for this population. Those interventions that are brief, focused on reducing harm (instead of abstinence-only), and incorporate the peer group seem to be most applicable and beneficial for the young adult population (Baer & Peterson, 2002).

Conclusion

Adolescence is a developmental period characterized by increased experimentation with substances. Prevention programs, particularly skill building interventions provided in school-based settings, have been successful in preventing substance use. For some youth, those with elevated levels of individual, family, and societal risk factors, experimentation with substances may result in substance addiction. Several individual and family-based interventions are effective in treating adolescent addiction. Interventions that use behavioral, cognitive-behavioral, and motivational enhancing approaches are particularly effective, as are interventions that ameliorate risks across multiple systems (home, school, community). Despite heightened risk

during adolescence, many youth, especially those with supportive parents and teachers, avoid substance use problems, and most will reduce use naturally as they transition to young adulthood. Although findings from intervention studies are promising, further research is needed to rigorously test potentially effective interventions in order to identify methods for reducing adolescent substance abuse and its detrimental social consequences.

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