14 ALCOHOL AND DRUG USE

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ABSTRACT

Alcohol and drug use among children and adolescents are causes of increasing concern in South Africa. They are major contributors to crime, violence and intentional and unintentional injuries, as well as to other social, health and economic problems. This Chapter focuses on children, including adolescents, up to the age of 18 years. Children's and adolescents' substance use can be accounted for by a multiplicity of factors at the societal, community, school, familial and individual levels. A combination of universal, selected and indicated intervention strategies are needed to prevent their substance use problems. In addition, effective specialist services, although inadequate in South Africa, are essential for treating young people who already have substance use disorders. While there is much evidence regarding regulatory interventions that are most effective in reducing substance use problems, many barriers to their implementation exist. Further research to improve understanding of various aspects of young people's substance use and its relationship to crime and violence is needed. Of particular importance are more studies that can shed further light on the factors that constitute protective factors for substance use, and the kind of non-regulatory strategies that can be effective in reducing levels of substance use among children and adolescents in South Africa.

Keywords: substance use, children and adolescents, prevention strategies

INTRODUCTION

The use of psychoactive substances by children and adolescents globally and in South Africa is of major concern, particularly, given young people's increased access to legal and illegal substances, increases in rates of use of certain drugs, and resultant unintentional and intentional injuries and other problems (Flisher, Mathews, Mukoma & Lombard, 2006; Jernigan, 2001; Parry *et al*., 2004b). Globally, based on 2004 figures, an estimated 3.8% of all deaths were attributable to alcohol (with 6.3% for men and 1.1% for women; Rehm *et al*., 2009). Of all alcohol-related deaths among men, 27.3% and 11.4% were attributable to unintentional and intentional injuries, respectively, and among females, the figures were 24.8% and 9.0%, respectively. Rehm *et al*. (2009) estimated the global alcohol-attributable

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burden of disease (in terms of disability-adjusted life-years [DALYs] lost from death and disability) to be 4.6% (with 7.6% for males and 1.4% for females); highest among those aged 15-29 years. For males, unintentional and intentional injuries accounted for 25.4% and 10.7% of all alcohol-attributable burden of disease, respectively, and 25.6% and 9.0%, respectively for females. For young people aged 15-29 years, an estimated 3.5% and 0.6% of deaths are attributable to alcohol consumption and illicit drug use, respectively (Toumbourou *et al*., 2007). Alcohol use and illicit drug use were estimated to account for 3.2% and 1.3%, respectively, of the burden of disease for young people of the same age group.

Using data from 2000, Schneider *et al*. (2007) estimated that 33,699 deaths were attributable to alcohol among South Africans (7.1% of all deaths). A large proportion of the alcohol-related deaths were due to injury, particularly among the younger age groups (of 15-29 years). Alcohol was estimated to contribute to 7.0% of all DALYs. Of all alcohol-attributable DALYs, 63% were due to intentional and unintentional injuries: 39% were due to interpersonal violence, 14.3% to road traffic accidents, 6.0% to other unintentional injuries, and 3.7% to self-inflicted violence. The objectives of this Chapter are:

a. To outline the extent, scope and occurrence of alcohol and other drug use among children.
b. To outline the negative costs of such use with respect to crime, violence and injury in particular.
c. To discuss risk and protective factors for substance use among young people.
d. To outline policy and programmatic interventions for addressing substance use, which can potentially impact indirectly in decreasing crime, violence and injury among children and adolescents.
e. To discuss areas in need of further research among young people in South Africa.

Concepts and terms of reference

In this Chapter the term "substance use" refers to the use of any psychoactive substance, regardless of the frequency or quantity of use, or any problems associated with the use of the substance. Psychoactive substances are referred to as "substances that, when taken, have the ability to change an individual's consciousness, mood or thinking processes" (World Health Organization [WHO], 2004, pp. 1-2). Substance abuse refers to the use of substances wherein the "user fails to fulfil important obligations at work, school or home, has legal problems or social or interpersonal problems due to substance use or uses substances in hazardous situations" (Weich, 2006, p. 436). This can be contrasted with substance dependence, which refers to problems that result from excessive use, and is marked by loss of control, tolerance, withdrawal, the spending of much time on activities related to use of the substance, and continued use despite its harm (Weich, 2006).

EXTENT, SCOPE AND OCCURRENCE

Alcohol, tobacco and cannabis are the psychotropic substances that are most commonly used by children and adolescents in South Africa. They are major causes of violence and crime, injury, and other social problems including sexual risk behaviours (Mpofu, Flisher, Bility, Onya & Lombard, 2005; Plüddemann, Flisher, Mathews, Carney & Lombard, 2008a; Taylor, Dlamini, Kagoro, Jinabhai & De Vries, 2003; Vundule, Maforah, Jewkes & Jordaan, 2001), earlier initiation of sex (McGrath, Nyirenda, Hosegood & Newell, 2009), scholastic problems (Morojele, Parry, Ziervogel & Robertson, 2001; Townsend, Flisher & King, 2007), school drop-out (although the results are mixed; Flisher, Townsend, Chikopvu, Lombard & King, 2010), and mental and physical health problems (Brook, Morojele, Brook & Rosen, 2005; Degenhardt & Hall, 2006; Russell *et al*., 2008; Yen & Chong, 2006). Most of those who use illegal drugs, such as cannabis, tend to first use alcohol and/or tobacco (Flisher, Parry, Muller & Lombard, 2002; Patrick *et al*., 2009). Among learners in Grades 8-11 in a national survey of high schools conducted in 2008 (Reddy *et al*., 2010), half (50%) reported ever

having drunk alcohol, just under one third (30%), ever having smoked cigarettes, and 13% ever having used cannabis in their lifetime (see Figure 1). Almost a third (29%) indicated having engaged in binge drinking (drunk five or more drinks on one occasion) during the preceding one-month period. The most recent South Africa Demographic and Health Survey (of 2003) which involved household samples, found that among adolescents aged between 15 and 19 years, 19.9% of the males and 10.2% of the females had ever used tobacco products, and 31.9% of the males and 17.2% of the females had ever consumed alcohol (Department of Health [DoH], Medical Research Council, OrcMacro, 2007).

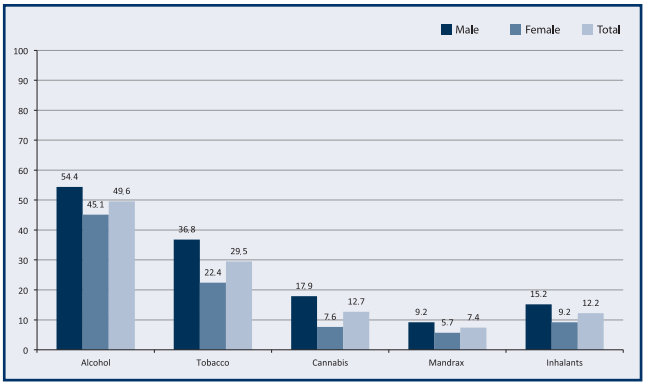

Figure 1. Prevalence rates of alcohol, tobacco and other drug use by Grade 8-11 high school learners in South Africa: 2008 (Reddy *et al*., 2010).

Rates of illicit drug use are particularly high among young people in South Africa. Already in 2002, the rates of use of some illicit drugs among young people were found to be higher than those of their counterparts in the United States (Reddy, Resnicow, Omardien & Kambaran, 2007). Recent reports suggest that there are high rates of methamphetamine use, particularly in the Western Cape, and heroin use in Gauteng and Mpumalanga, particularly among low-income youth. However, most knowledge about heroin use in South Africa is based on Cape Town studies (e.g., Plüddemann *et al*., 2008a), while information about the northern and eastern parts of South Africa is particularly lacking, except from treatment centre reports from the South African Community Epidemiology Network on Drug Use (SACENDU); a sentinel surveillance system that has been tracking treatment demand in South Africa since 1996 (Plüddemann *et al*., 2009).

Rates of entry into substance abuse treatment centres in South Africa have increased among adolescents since the 1990s. Between one fifth and one quarter of the complement of patients in specialised treatment centres in South Africa are under 20 years of age (Plüddemann, Parry & Bhana, 2008b). The range of drugs for which treatment is sought has also increased, with cannabis being the most commonly abused drug among adolescent treatment seekers. In some parts of the country a high proportion of adolescents in treatment have alcohol (Mpumalanga and Limpopo), Mandrax (Eastern Cape), heroin (KwaZulu-Natal) and methamphetamine (Western Cape) as primary drugs of abuse (Plüddemann *et al*., 2008b).

Substance use, crime, violence and injuries

Young people who are involved in criminal activities seem to be disproportionately involved in using substances (Parry, Plüddemann, Louw & Leggett, 2004c). Parry *et al*.'s (2004c) study of 999 arrestees in police holding cells in Cape Town, Durban and Johannesburg found that those who were under the age of 20 years were more likely (66.0%) than arrestees of all ages (45.3%) to test positive for use of any drugs. They were also more likely to test positive for each of the drugs tested, which included cannabis, Mandrax, cocaine, amphetamines, benzodiazepines and opiates.

Both the perpetration and experience of violence are associated with alcohol and other drug use among children and adolescents (Betancourt & Herrera, 2006; King *et al*., 2004; Liang, Flisher &

Lombard, 2007; Morojele & Brook, 2006; Peltzer & Pengpid, 2008; Plüddemann *et al*., 2010). Substance use is recognised to be a major contributor to school violence, along with other factors that can foster an environment that is not conducive to teaching or learning (Matthews, Griggs & Caine, 1999; Zulu, Urbani, van der Merwe & van der Walt, 2004). Bullying (as a perpetrator, and as a perpetrator/victim) is associated with alcohol use among young people (Liang *et al*., 2007). Moreover, Plüddemann *et al*. (2010) found that methamphetamine use was associated with aggressive or delinquent behaviour among high school learners in a study conducted in Cape Town. Other school studies have found that alcohol use was associated with being a victim of sexual assault and sexual abuse (Betancourt & Herrera, 2006; King *et al*., 2004; Peltzer & Pengpid, 2008). In a community-based study, Morojele and Brook (2006) found that adolescents who used substances (such as tobacco, alcohol and cannabis) *frequently* were more likely than those who rarely or never used them to experience multiple violent acts.

Adolescents increase their risk of being injured, sometimes fatally, when under the influence of alcohol and/or other drugs (Maruping, 2006). Substance abuse is associated with the main forms of unintentional injuries (traffic, drowning, poisoning, burns and falls), as well as intentional injuries (interpersonal violence, including suicide, child abuse and neglect, and sexual violence) that befall young people. The role of alcohol in non-natural deaths is evident from the findings of the 2008 National Injury Mortality Surveillance System (NIMSS) pertaining to children (Donson, 2010). Donson's (2010) report shows that in 2008, half of the non-natural deaths of those aged 0-19 years were due to violence, while the remainder were due to transport-related injuries (25%), suicide (13%), other unintentional injuries (8%), and undetermined causes of death (4%). A total of 78% of children who died in 2008 died as a result of non-natural causes. Just under half (43%) of those aged between 15 and 19 years who were tested had positive blood alcohol concentrations (BACs). The average BAC among those who tested positive was high at 0.14 g/mmol. Alcohol positivity was highest among those who died from violence (54.2%), followed by transport-related deaths (40%), undetermined and other intentional deaths (31% each), and the lowest percentage was for suicides (17.0%). Older adolescents (15-19 years) were more likely (45.0%) to test positive for alcohol than younger adolescents (10-14 years; 26.9%). Males (46.3%) were also more likely to test positive for alcohol than females (30.6%). The scene of injury most likely to be associated with testing positive for alcohol was an informal settlement (61.2%). Alcohol-related deaths occurred most commonly in the early hours of the morning (00h00-03h00) or at night (between 20h00 and 23h00), and during weekends. Those who died as a result of a sharp object (most likely, a stabbing) were most likely to be alcohol positive (65.3%), followed by those who died due to blunt force (54.5%). Of concern is that the BAC levels of those who were alcohol positive were more likely to be in the 0.05-0.14 g/mmol category than in the 0.01-0.04 g/mmol category, with the exception of suicide deaths. In other words, young people who died of non-natural causes and who were alcohol positive were more likely to have moderate to high levels, than low levels of alcohol in their systems, suggesting heavy drinking and/or intoxication at the time of their deaths.

RISK FACTORS

The terms risk factor and protective factor have been variously defined. In his discussion of definitions of risk, Burt (2001) concluded that there is general consensus that a risk factor can be defined as "an exposure which is statistically related in some way to an outcome" (p. 1007), but there is still uncertainty or disagreement in the literature regarding whether or not a risk factor ought to be truly causal, and what the strength of the association should be, in

order for an issue to be considered to be a risk factor. Burt (2001) also noted a lack of consensus regarding whether or not a risk factor ought to refer to immutable or modifiable factors. For the purposes of this Chapter, we have employed the generally-accepted conceptualisation of risk factor described above, and focus on modifiable, as opposed to immutable risk factors such as age, gender and 'race/ethnicity' (the latter variable has been inconsistently associated with alcohol and other drug use in adolescents). This approach is adopted particularly since one of this Chapter's objectives is to outline policy and programmatic interventions for addressing substance use among children and adolescents. It is acknowledged, however, that knowledge about which factors are immutable can inform the targeting of intervention efforts.

Protective factors have been defined in at least two main ways. One conceptualisation of protective factors is that they are opposite to risk factors. A second, more common, conceptualisation of protective factors is that they moderate or mediate the effects of exposure to risk and inhibit negative outcomes (e.g., drug abuse) among those at risk (Hawkins, Catalano & Miller, 1992). Accordingly, protective factors account for differences in outcomes among individuals who are exposed to the same risks, and are not necessarily the polar opposite of risk factors (Hawkins *et al*., 1992). There have been very few research studies that have identified this manner of protective factors for substance use among young people in South Africa, and hence a detailed discussion of protective factors is not possible in this chapter.

Substance abuse among children and adolescents is associated with multiple risk factors which are operative at different levels. In the next sections we discuss risk factors within the following domains: society, community, school and academic environments, parental/familial, peers/friendships domain, and the individual domain. The Box shows examples of risk factors for substance abuse within each domain.

Risk factors for substance use

Societal Factors
- Culture
- Demographic and economic shifts
- Social inequality/socio-economic disadvantage

Community Factors
- Access to alcohol and drugs
- Societal norms favouring alcohol use (e.g., in mass media)
- Exposure to public drunkenness
- Personal knowledge of adult consumers of alcohol and other substances/subjective adult norms in favour of substance use

School and Academic Environment
- Permissive drinking norms
- Availability of alcohol in school proximity
- Low academic aspirations and sub-optimal performance in school

Familial Environment
- Parental/caregiver consumption of alcohol (modelling)
- Insufficient time spent with adolescent
- Little monitoring
- Lack of nurturing in the home environment

Peers/Friends
- Peers' substance use
- Peer engagement in anti-social behaviours

Individual Factors
- Engagement in rebellious and anti-social behaviours
- Low religious involvement
- Short-term goals in life
- Depressive symptoms and a poor sense of well-being
- Self-esteem

Societal factors

Demographic and economic shifts

Although empirical evidence is relatively limited in this area, globalisation and policies which promote

open markets are purported to indirectly influence substance use by children and adolescents. Globalisation poses a challenge for drug control and has been accompanied by greater access to drugs (Spooner & Heatherington, 2005). Furthermore, globalisation has been associated with untoward competitive pressures on many sectors of society, including increased job demands, longer working hours, less job security, and a growth in part-time and casual jobs without benefits, especially for women and the youth (Arnett, 2002; Daly, 2004). Such pressures lead to strain particularly on parents who struggle to strike a balance between work demands and family needs, compromising their availability to fulfil their child-care obligations (Daly, 2004). Globalisation may also give rise to identity confusion and powerlessness among adolescents, leading to depression and increased substance use problems (Arnett, 2002; Spooner & Heatherington, 2005).

Social inequalities/socio-economic disadvantage

Poverty increases the probability of later substance use primarily in contexts of extreme economic deprivation which co-occurs with childhood behaviour problems (Hawkins *et al*., 1992). Children and adolescents from economically deprived families and communities are at increased risk of engaging in substance use. Their situations render them more likely to: (a) live under chronic stress, which in turn negatively affects their mental health and social well-being, and consequently, substance abuse; (b) use substances for the purposes of modulating negative mood resulting from chronic stress; (c) lack access to mental health services, social support, education and recreation; (d) be unsupervised by parents and/or other caregivers who are themselves under everyday stress due to their economic situation; and (e) be exposed to community violence and unemployment, both of which provide a conducive environment for substance use (Spooner & Heatherington, 2005). Moreover, such communities have high levels of unemployment, and the sale of illegal drugs, and illegal sales of alcohol, become much-needed forms of income generation (Matthews *et al*., 1999), thereby increasing the availability of these drugs in communities.

Cultural orientation

There has been an increased trend in various parts of the developing world, and especially among young people, to espouse aspects of 'Western' culture and values (e.g., Arnett, 2002; Eckersley, 2005). Key among these values are tolerance of individual differences, and self-determination. While the espousal of 'Western' cultural values is said to have some benefits, it has also been associated with substance use and other social problems (Eckersley, 2005; Eide & Acuda, 1996, 1997). In particular, some commentators have argued that the adoption of 'Western' values and beliefs such as individualism, secularism, and consumerism may all indirectly be associated with more substance use among children and adolescents (Eckersley, 2005).

Individualism

Individualism is argued to be associated with reduced formation and maintenance of attachments (Eckersley, 2005) which are recognised to be associated with drug use. Among adolescents, for example, parent-child attachment is a protective factor against drug use (e.g., Brook, Brook, Gordon, Whiteman & Cohen, 1990). In essence, individualism is argued to compromise some core elements of collective life (collective action and common good) which are protective of substance use in adolescents.

Secularism

According to Roberts *et al*. (2008), 'Western' societies' discounting of religion in the context of civic matters, deprives their citizens from holding common sets of 'higher' values associated with a sense of social cohesion and purpose or meaning in life. Yet, a society in which a sense of 'higher purpose',

beyond the satisfaction of personal desire, is absent provides an environment conducive to substance use (Roberts *et al*., 2008). In support of this view, it is noteworthy (as will be seen below), that local and international studies have found religiosity to be a protective factor for adolescent substance use, albeit with small effect sizes (Hawkins *et al*., 1992; Parry, Morojele, Saban & Flisher, 2004a; Steinman & Zimmerman, 2004).

Consumerism/materialism

Today's aggressive marketing of goods targeted at young people has led young people to increasingly link their identity with possession of material goods (Eckersley, 2005). Yet, it is argued that in general, materialism (the pursuit of money and possessions) results not in happiness but in dissatisfaction and negative emotions such as alienation, depression, anger, and anxiety (Kasser, 2002). Young people, it is argued, may engage in drug use in order to modulate the negative mood/feelings which result from materialism. Furthermore, Eckersley (2005) states that inherent in consumerism is the insatiable 'hunger' for more in life:

> ''As it seeks ever more ways to colonize our consciousness, consumerism both fosters — and exploits — the restless, insatiable expectation that there has got to be more to life. In creating this hunger, consumerism offers its own 'remedy': more consumption, including more consumption of drugs, whether licit or illicit'' (p. 159).

Community factors

Both legal and illegal drugs are readily available to many young people in South Africa at the broader societal and the specific community levels (Prinsloo, Ladikos & Neser, 2005). Access to alcohol and other drugs is positively associated with their use (Brook *et al*., 2005). Although current legislation prohibits the sale of alcohol to people under the age of 18 years, it is relatively easy for young people to access alcohol either indirectly or directly, since laws are not enforced consistently.

Societal norms and portrayals of drinking and drug use in films and advertisements encourage drinking and other drug use, and alcohol advertisements often target young people (Snyder, Milici, Slater, Sun & Strizhakova, 2006). Recent studies have shown very strongly that alcohol advertisements are linked to earlier onset of alcohol consumption as well as to greater quantities of consumption among those who have already initiated use (Smith & Foxcroft, 2009).

Children's and adolescents' exposure to public drunkenness places them at risk of drunkenness themselves (Parry *et al*., 2004a). Also, personal knowledge of adults who engage in anti-social behaviour is associated with smoking, while subjective adult norms against drug use and community affirmation of positive behaviour have been found to be related to less smoking behaviour among young people (King *et al*., 2003).

School and academic environment

Alcohol and drug use are more prevalent among children and adolescents who attend schools where alcohol and drugs are more available. Alcohol and other drugs are brought to and consumed on the premises of some schools, particularly in disadvantaged communities (Zulu *et al*., 2004). The availability of drugs in and around schools facilitates their acquisition and use. Furthermore, where school lessons are not stimulating, learners are more likely to become prone to using drugs (Matthews *et al*., 1999). In addition, having low academic aspirations and performing poorly at school have been found to be related to adolescents' use of alcohol (Morojele *et al.*, 2001), as have absenteeism and repeating a year at school (Flisher, Parry, Evans, Muller & Lombard, 2003).

Familial environment

Children and adolescents whose parents and caregivers use alcohol and other drugs are more inclined than those who do not experience drug-taking in their homes to also use alcohol and other drugs. Adolescents who are exposed to such behaviour are more likely to model it and/or to consider it acceptable (Brook, Morojele, Pahl & Brook, 2006; Onya, 2005). The quantity and quality of time that parents and other caregivers spend with their children is linked to their children's use of alcohol and other drugs (Brook *et al*., 2006). Spending time with children enhances their feelings of self-worth and may also minimise their use of alcohol and other drugs (Brook *et al*., 2006). Similarly, increased child monitoring is associated with a decreased risk of alcohol and other drug use (Amoateng, Barber & Erikson, 2006). In the absence of such nurturing home environments children and adolescents often become more inclined to seek out others, who are mostly fellow peers, to fulfil their need for acceptance and recognition with a greater risk of drug use (Brook *et al*., 2006).

Peers/ friends

The strongest and most consistent predictor of substance use among children and adolescents is their peers' substance use (Brook *et al*., 2005, 2006; Parry *et al*., 2004a). Young people often report their initial use of alcohol and/or other drugs with friends and peers as primarily serving recreational purposes. *Peer pressure* may give rise to drug use, whereby young people are encouraged by their friends to use drugs, or conversely, *peer selection* may be in operation, when young people choose as their friends, other young people who use drugs and engage in other deviant behaviours. They then become drug users themselves (Brook *et al*., 2006). Drug use is a feature of adolescent gangs and other marginalised peer group networks such as street children, and being a member of such groups often necessitates the use of different drugs (Bility, 1999).

Individual factors

Children and adolescents who tend to engage in rebellious and anti-social behaviours tend to also be prone to using drugs (Brook *et al*., 2005). On the other hand, greater religious involvement is associated with less alcohol use and drunkenness (Parry *et al*., 2004a). Steinman and Zimmerman (2004) have proposed that involvement in religious activities may be protective against adolescent risk behaviour by influencing affiliation to pro-social peer group(s), improving relationships with the family, increasing involvement in pro-social behaviours, and internalising beliefs that certain risk behaviours are 'immoral'. Being positively disposed to drug use increases the chances of the behaviour being carried out; and generally, young people who have a short-term focus are more likely to abuse substances than those with a longer-term view of life (Ziervogel, Morojele, Van de Riet, Parry & Robertson, 1997, 1998). Depressive symptoms and a poor sense of well-being have also been shown to be associated with the use of tobacco and illegal drugs among young people (Brook *et al*., 2005, 2006; Plüddemann *et al*., 2010; Saban & Flisher, 2010; Visser & Routledge, 2007). Finally, there have been mixed findings regarding the association between self-esteem and substance use; results differ by gender and the link is seemingly dependent on the domain within which self-esteem is measured and the drug of concern (Wild, Flisher, Bhana & Lombard, 2004).

RECOMMENDATIONS

Substance abuse is a problem among children and adolescents in many communities in South Africa, but its complexity makes it unwise to adopt one approach to address problems among all groups (United Nations Office on Drugs and Crime [UNODC], 2004). For example, structural factors, such as poverty and unemployment, make substance abuse-related problems particularly devastating and difficult to address in marginalised and disadvantaged communities. Decisions about how best to address substance abuse problems should take cognisance

of the nature of the community for which intervention efforts are intended (McBride, 2005). Consequently, prior to embarking on prevention intervention projects in any particular community, it is important to conduct an initial baseline situation assessment to determine the particular drugs that are used, the substance-related problems that are of most concern, and the risk and protective factors that are likely to apply to young people in that community. In addition, an evaluation component is a useful adjunct to new policy and programmatic interventions in order to determine whether and how one's efforts are impacting on the communities being targeted (McBride, 2005; UNODC, 2004; WHO, 2007). The next sections address prevention and treatment interventions for substance use problems among young people in turn.

Prevention

Prevention intervention programmes need to focus on targeting risk factors and enhancing protective factors at all levels. Prevention intervention approaches for mental disorders may differ on the basis of the population being targeted, and can be categorised into universal, selected and indicated prevention interventions (Institute of Medicine [IOM], 1994). According to the IOM, universal prevention interventions are those that "are targeted to the general population or a whole population group that has been identified on the basis of individual risk" (p. 24); selected prevention interventions target "individuals or a subgroup of the population whose risk of developing mental disorders is significantly higher than the average" (p. 25); and indicated prevention interventions target "high-risk individuals who are identified as having minimal but detectable signs or symptoms foreshadowing mental disorder, or biological markers indicating predisposition for mental disorder but who do not meet DSM-III-R diagnostic levels at the current time" (page 25). Although the latter definition refers to DSM-III-R, it applies for all mental health disorders regardless of the clinical diagnostic system used.

The following recommendations focus on universal, selected and indicated prevention approaches to address alcohol and other drug use among children and adolescents, and consist of intervention strategies that have been shown to be effective (Babor *et al*., 2003; Foxcroft, Ireland, Lister-Sharp, Lowe & Breen, 2002, 2003). For each approach we discuss specific interventions that focus on the society or community, young people's families and caregivers, and lastly young people (and their peers) themselves. The Box to follow gives examples of different types of prevention strategies at different levels.

Universal prevention strategies

The recommendations on universal prevention programmes that are outlined below are based on findings on the strategies that have been shown to be most effective in preventing or delaying young people's uptake or abuse of substances (Babor *et al*., 2003; Foxcroft *et al*., 2002, 2003).

Universal interventions involving communities mainly focus on reducing young people's access to alcohol and other drugs (supply), and modifying societal/community norms that promote their use (demand). Most universal interventions focusing on the societal or community level involve regulatory interventions; i.e. those that involve making or changing laws in order to change behaviour(s). Many relevant programmes and policies exist but are not enforced appropriately. Potentially beneficial amendments to laws that could reduce alcohol-related road crashes and unintentional injuries could include graduated licensing regulations for novice drivers applicable for three years after receipt of licenses. In addition, stricter restrictions on alcohol advertisements would be beneficial. A list of policies and legislation that is most relevant for addressing substance abuse among children and adolescents is listed later in this section.

Universal interventions that are applicable for delivery to parents/caregivers/families have two

Prevention strategies for adolescent substance use

Societal and community level interventions	Universal	Selected	Indicated
Regulatory interventions:			
• Increase excise tax on alcohol and tobacco products	√	--	--
• Reduce the number of outlets that sell tobacco products and alcohol	√	--	--
• Enforce laws that ban purchase of alcohol and tobacco products by minors	√	--	--
• Increase the penalties for breaching alcohol and tobacco legislation	√	--	--
• Strengthen law enforcement agents' ability to reduce drug trafficking	√	--	--
• Support community mobilisation initiatives to reduce the sale of legal and illegal drugs	√	--	--
• Restrict or ban alcohol-related sports sponsorships when minors exceed 10% of the likely viewing audience	√	--	--
• Institute counter-advertising measures to counteract alcohol-industry sponsored drinking messages	√	--	--
• Reinforce drink driving law	√	--	--
• Random breath testing of drivers	√	--	--
• Institute graduated licensing programmes for novice drivers up to 3 years	√	--	--
Harm Reduction Strategies:			
• Breath testing of repeat offenders	--	√	√
• Environmental enhancement strategies such as serving alcohol in shatter-resistant glasses	--	√	√
• Syringe exchange programmes for injecting drug users	--	--	√
• Sobriety checkpoints	--	--	√
Outreach and community mobilisation activities	√	√	√
Interventions among parents/caregivers/families			
Reduce substance abuse among adults/parents/caregivers			
• Improve the enforcement of existing legislature/regulations for drinking and driving, and retail sales of alcohol	√	√	√
• Increase the total tax on all alcohol products by three to five percentage points	√	√	√
• Pilot test and facilitate brief interventions and other forms of treatment for high risk and hazardous drinkers	√	√	
• Implement a coherent liquor outlet policy	√	√	√
• Increase restrictions on alcohol marketing	√	√	√
• Encourage community mobilisation against alcohol misuse	√	√	√
• Implement product restrictions on the size of alcohol packaging, requiring specific labelling (Parry, 2005)	√	√	√
Facilitate optimal parenting			
• Nurturing children	√	√	√
• Setting and monitoring children's compliance to rules	√	√	√
• Clear communication of parental expectations	√	√	√
• Applying appropriate discipline	√	√	√
• Effective parents'/caregivers' communication with children	√	√	√
• Supervision and monitoring of children's activities including behaviour related to drug use	√	√	√

Interventions involving children and adolescents	Universal	Selected	Indicated
Reversing positive attitudes to drugs	√	--	--
Redressing the norm – young people's exaggerated estimations of the extent of drug use among their peers are made more realistic	√	--	--
Social competence/resistance skills training – children and adolescents are taught skills to resist pressure from peers to use drugs and/or other generic inter-personal and intra-personal skills	√	--	--
Clarifying values with young people -- taking them through exercises where they have to answer questions on future aspirations	√	--	--
School based life skills programs (which enlist parental involvement)	--	√	--
After-school programs			
• Behavioural life skills development	--	√	--
• Active participation	--	√	--
Brief interventions in primary care settings, criminal justice, correctional services, and social services with adolescents and youth			
• Psycho-education	--	√	√
• Behavioural coping skills training	--	√	√
Cognitive coping skills training	--	--	√
Addressing symptoms of mental health problems that may cause and/or exacerbate abuse of substances	--	--	√
Screening for alcohol and drug problems	--	√	√
Psycho-social support	--	--	√
Alcohol interlock systems	--	--	√

main ultimate aims: (a) to reduce substance abuse among adults/parents/caregivers, and (b) to facilitate optimal parenting. Strategies proposed by Parry (2005) as likely to be effective in reducing alcohol abuse among adults and the general population in South Africa can also be seen in the Box referred to above. Supporting parents/caregivers to improve their parenting behaviours can have positive benefits with respect to children's engagement in substance use. In particular, increasing parental warmth/nurturing, effective communication, monitoring and discipline are important strategies.

Participation in programmes for improving parenting behaviours may translate into less substance abuse among adult programme recipients, and indirectly, less substance abuse among their children. One family programme which has been singled out (Foxcroft *et al*., 2002) because of its apparent long-term effectiveness is known as the Strengthening Families programme (Molgaard, n.d.). This programme provides parents with skills to nurture and manage their children while concurrently running workshops for children aged between 10 and 14 years. The training for parents focuses on such topics as the importance of nurturing one's children; setting rules (e.g., having house rules); monitoring children's adherence to rules; and applying appropriate discipline (e.g., acknowledging and rewarding children's achievements and positive behaviours). Also, 6-12 months after completion of initial training, booster sessions are provided in order to revise the topics that have been learned and empower parents to deal with issues such as stress and communication problems that may arise while they seek to apply their newly acquired skills (Molgaard, n.d.).

Universal programmes may also involve working with young people directly and taking into account their peers' influence on their behaviour. Efforts to lessen substance abuse by children and adolescents may involve reversing positive attitudes to drugs, redressing the norm, resistance

Relevant policies and legislation for substance use

Relevant policies and legislation	Focus/objectives
The National Drug Master Plan (2006-2011)	Outlines programmes and policies of the government to address substance use problems in South Africa.
The Prevention of and Treatment for Substance Abuse Act, 2008	Establishment and registration of programmes and services, including prevention, early intervention, treatment and reintegration, and after-care; and facilitate collaboration among government departments and other stakeholders; establishment of the Central Drug Authority (CDA) to monitor and oversee activities of the CDA.
The National Liquor Act, 2003	The primary focus is on regulation of the liquor industry. The Act seeks to facilitate the reduction in the costs of alcohol abuse and promote the development of a responsible and sustainable liquor industry; and provides for public participation in liquor licensing issues.
Provincial Liquor Bills/Acts	Provision of liquor licenses for retail sale of alcohol; establishment of Liquor Boards to; establishment of liquor officers and inspectors; and to provide for appointment of municipalities as agents of the Liquor Board and liquor licensing authorities.
Education Laws Amendment Act, 2007	Provides for random search and seizure and drug testing at schools.
National Road Traffic Act, 1996)	Deals with matters related to drinking and drug use while driving; breath tests, blood tests and recognition of signs of drug use/intoxication; testing/enforcement equipment; transportation of drugs; legal blood alcohol limit.
Drugs and Drug Trafficking Act, 1992)	Prohibition of use of drugs and possession, dealing/supply, manufacture, search and seizure.
Minimum Norms and Standards for In-Patient and Out-Patient Treatment Centres (National Department of Social Development [DSD])	Specifies acceptable quality of care for people, including children, receiving in-patient and out-patient treatment; regulation of treatment centres to ensure services are delivered in accordance with human rights culture and legal and constitutional frameworks; include special provisions for protection of children.

skills training and values clarification exercises. The Department of Education (DoE) has as its mandate the implementation of life orientation classes, with one main focus area being substance abuse (DSD, National Drug Master Plan, n.d). The DoE is also involved in drug testing in schools, although the evidence regarding such an approach is equivocal (see Coetzee, 2005). Although most universal programmes for young people are implemented at schools, many school-based programmes are of minimal effectiveness (Faggiano et al., 2005; McBride, 2005; Plant & Plant, 2006). Education-only programmes have been shown to be particularly ineffective, and programmes that are implemented among groups of high-risk youth are sometimes associated with more rather than less subsequent drug use (Toumbourou et al., 2007). On the other hand, the types of school-based programmes that have positive results can be seen in the Box on the next page.

Selected prevention strategies

Selected prevention strategies focus on individuals/groups with a higher than average risk of developing substance use problems. At the community level, they mainly involve harm reduction strategies, outreach activities, and community mobilisation activities. For example, the provincial Liquor Acts make provision for communities to play a role in decisions regarding the allocation of liquor licenses in their communities. Harm reduction interventions that have been found to be effective among young people include breath testing of repeat offenders, and environmental enhancement strategies such as serving alcohol in shatter-resistant glasses (Toumbourou *et al*., 2007). At the level of the family,

Positive strategies and approaches to be incorporated in school-based programmes

- Redressing the norm – young people's characteristically exaggerated estimations of the extent of drug use among their peers are made more realistic.
- Social competence/resistance skills training – teaching skills to enable children and adolescents to resist pressure from peers to use drugs and/or other generic inter-personal and intra-personal skills.
- Clarifying values with young people – participation in exercises involving discussions about values and future aspirations.
- Parenting and community programmes that are run concurrently.
- Multiple sessions in the short-term, followed by regular booster sessions over time.

selected prevention interventions that reduce parents' levels of substance use and improve their parenting behaviours can also be effective. Finally, selected prevention interventions that are delivered at the individual level include school-based life skills programmes, after-school programmes, and screening of young people for alcohol and other drug problems.

Indicated prevention strategies

Indicated prevention interventions are measures targeted at those who use substances at problematic levels but whose use has not yet progressed to the pathological levels of abuse or dependence. At the community level, appropriate indicated prevention approaches include harm reduction strategies, outreach activities, community mobilisation (similar to those that can be applied as selected intervention programmes e.g., syringe exchange programmes for injecting drug use, and sobriety checkpoints). At the level of the family, indicated prevention interventions involve strategies to reduce parents'/caregivers' levels of substance use, and strengthen their parenting behaviours. At the level of the individual, the most appropriate indicated prevention strategies include screening for alcohol/drug problems, addressing symptoms of mental health problems that may cause and/or exacerbate the abuse of substances, brief interventions, psycho-social support, and alcohol interlock systems, often implemented following a drink-driving offense (Burnhams, Myers & Parry, 2009).

Treatment

Although most children and adolescents who use substances do not fall into this category, specialist treatment is required for individuals with diagnosed or diagnosable substance use disorders. Screening for drug problems, detoxification and brief interventions should ideally be available at schools, primary health clinics, police holding cells, prisons, and trauma units. Support, counselling and treatment are needed for children and adolescents with substance use disorders. Counselling or psychological interventions with adolescents and youth could take the form of family-based or parent-directed contingency management programmes (Kamon, Budney & Stanger, 2005), or cognitive behavioural therapy and motivational enhancement (Toumbourou *et al*.,

Treatment needs of children and adolescents

- More support should be given to community-based and self-help programmes.
- Court diversion programmes for rehabilitation and treatment should be available to young people who are involved in criminal activities due to an addiction to drugs.
- More research should be conducted to determine 'best practices' for the treatment of substance use disorders among adolescents in South Africa.
- More specialised, public sector inpatient and outpatient treatment centres should be established; and existing and new private facilities should receive state subsidies (Myers, 2004).
- More age-appropriate services, including ancillary (psychological and medical) care should also be made available to young people (Myers, 2004).
- More specialised halfway houses should be established to assist those who are being re-integrated into society post-treatment.

2007). However, in South Africa, treatment services are limited for most young people in general and those from disadvantaged communities in particular (Myers, 2004). Without treatment for substance use disorders, problems seldom disappear, but turn into lifelong difficulties with addictions and their related social and health consequences. See the Box on treatment needs of children and adolescents with substance use disorders.

Despite the relative shortage of programmes to address substance use in South Africa, there are a few key agencies and organisations involved in prevention and treatment of substance abuse problem among children and adolescents. The Box below shows some key agencies and their main areas of work.

Barriers to implementing the recommended interventions

There are a number of barriers to implementing the recommended interventions. Most importantly, financial and human resource constraints are among the greatest challenges, as many of the proposed interventions do exist as policies and laws but are not enforced (Matthews *et al*., 1999). In addition, more training is needed within government departments to enable individuals to deliver the services more effectively. Second, despite the existence of the CDA, a body mandated to coordinate government policies and programmes, there is still a need for better coordination of efforts among government departments. Third, poverty, socio-economic inequities and unemployment are key challenges. The sale of alcohol and other drugs is a viable income source in many communities facing high

Prevention and service agencies in the substance abuse sector in South Africa

Agency/Organisation	Activities
Central Drug Authority (CDA)	Addresses substance use-related matters among children in South Africa, and mandated to carry out the activities according to the National Drug Master Plan (NDMP). http://www.dsd.gov.za/cda/
Cape Town Drug Counselling Centre (CTDCC)	Prevention, treatment, family counselling, parent support; training in the workplace, schools, families, communities, and of professionals. Special programmes are run for adolescents. http://www.drugcentre.org.za/
South African National Council on Alcoholism and Drug Dependence (SANCA)	Substance abuse prevention, treatment (in- and out-patient), and after-care; Employee Assistance Programmes; Diversion programmes. http://www.sancanational.org.za/
Soul City Institute for Health and Development Communication	Areas of focus include HIV prevention and violence prevention through alcohol control. Conducts mass media campaigns, and social mobilisation and advocacy activities. Soul Buddyz is a special project for children focusing on issues related to substance abuse including relationships, sexuality, bullying, abuse, corporal punishment, disability, road safety and other accidents, like burns and drowning. http://www.soulcity.org.za/
Khulisa Crime Prevention Initiative	Focuses mainly on crime prevention with many programmes addressing substance abuse as a contributor to crime. http://www.khulisaservices.co.za/
DSD and United Nations Office on Drugs and Crime	The KeMoja project was a large scale drug awareness campaign for young people. http://www.dsd.gov.za/

unemployment, and can be expected to continue unabated, until conditions improve and alternative sources of income become available. Fifth, alcohol-producing companies make up a powerful industry that provides much-needed jobs. Despite having numerous social responsibility programmes, some of their practices, such as their marketing practices, provide their audiences with messages that are in clear contradiction with those that would discourage alcohol initiation and use among young people. Finally, the criminal justice and correctional services systems are not prepared to deal with the influx of drugs and domestic trafficking of drugs, and again more resources and training are needed in these areas.

Research needs

More research is needed to be able to better address substance abuse among young people in South Africa. For example, from our search of the South African literature we uncovered a paucity of research that identifies protective factors (as in, factors that buffer risk) for substance use. Such research is needed particularly given that substance-related crime and violence occur among the most vulnerable of young people. Also, a great deal of research is needed to better understand the processes involved in the continuity or discontinuity of alcohol and other drug use. Of special significance will be future investigations to identify mediating and moderating mechanisms. For example, there may be certain unexplored cognitive or social processes that mediate the continuity of alcohol and other drug use. Similarly, social and personal circumstances (e.g., a romantic relationship), personality characteristics (such as emotional instability), or even more general cultural or social changes may moderate (either intensify or reduce) the continuity of alcohol and other drug use between adolescence and young adulthood. These issues merit consideration in the future. Furthermore, local research to establish the effectiveness of particularly, demand reduction strategies for preventing substance abuse among youth in South Africa is urgently needed. Efficacy and effectiveness studies should also be conducted on programmatic and policy interventions (Toumbourou *et al*., 2007). In addition, studies are needed to obtain reliable estimates of the economic costs of young people's substance abuse to society and South Africa's development, as such information is currently unavailable. There is also a need for efficacy studies on pharmacotherapy for substance use in adolescents (Toumbourou *et al*., 2007).

Key messages

- Regulatory interventions - involving policy reform, policy formulation and the enforcement of existing legislation - are the most effective in reducing substance abuse problems among young people.
- Harm reduction efforts and selected prevention measures are also effective strategies and reduce the levels of crime, violence and sexual risk behaviour that result from young people's use of alcohol and other drugs. Of note are random breath testing, graduated licensing and the enforcement of drink driving laws (which reduce drinking and driving), and early screening and brief intervention programmes to prevent the escalation of substance use to substance abuse and dependence.
- The expansion of more accessible treatment interventions which are tailored specifically to adolescents and youth with substance use disorders is vital.
- Careful scrutiny and selection of school-based programmes is vital in order to ensure that programmes that are implemented include the key components of programmes that are most likely to be beneficial. Stand-alone and once-off intervention programmes should be discouraged.
- Education and persuasion programmes that are considered for implementation should, at a minimum, be intensive and accompanied by media persuasion campaigns that are broad-based and accompanied by community/social movements and regulatory measures (Rehm, Babor & Room, 2006).

CONCLUSION

Levels of substance use are on the increase among young South Africans and it is a growing cause of concern, particularly due to its contribution to social and health problems, most notable among them being crime, violence and intentional and unintentional injuries. To effectively address substance abuse problems among young people it is important to recognise that they are complex and multi-faceted requiring a multi-sectoral and holistic approach. To enable government departments to work together on key interventions, the Central Drug Authority (CDA) should be supported to enable it to better coordinate the activities of DoH, DSD, DoE, as well as the departments of Finance, Community Safety, and Correctional Services. Substance abuse prevention is not only the responsibility of governments, but non-governmental organisations and members of civil society also have a role to play in addressing substance abuse among young people (Parry, Morojele & Jernigan, 2008).

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