THEORIES OF ADOLESCENT SUBSTANCE USE AND ABUSE

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ABSTRACT

This article reviews nine different theories regarding adolescent substance use and abuse. Amongst these theories the following are emphasised: (a) substance specific cognitives, (b) social learning processes, (c) commitment to conventional values and (d) intra-personal processes. Some similarities and differences among these theories as well as the conceptual boundaries of each theory are addressed. In order to integrate these theories and to explain the etiology of youth substance use and abuse, a framework or model is presented to the reader.

INTRODUCTION

Over the decades social scientists have tried to understand why some adolescents do and others do not use substances. However, understanding the causes of this phenomenon has presented a challenging puzzle. Moreover, as the number of constructs that apparently contribute to adolescent substance use/abuse has grown, so has the number of pieces in that increasingly complex puzzle (Petraitis, Flay & Miller, 1995:67). However, by describing both how and why different constructs are related to adolescent substance use/abuse, numerous theories have attempted to assemble various pieces from this puzzle into more coherent pictures of youth substance use/abuse. It is argued that there is nothing so practical as a good theory. Good theories of adolescent substance use/abuse can organise that which appears disorganised, contribute towards the prediction of future events, guide the analysis of etiological data, and form the foundation of prevention programmes. In fact, Simons, Conger and Whitbeck (Petraitis *et al.*, 1995:67) lamented that "...while research has established a number of correlates of adolescent drug use, no theoretical model has been developed which specifies the causal ordering of these associations and explicates their relationship to each other". Stated another way, social scientists might be aware of many (if not most) of the constructs that contribute to adolescent substance use/abuse, but they do not yet know how all of these constructs (or pieces in the puzzle) fit together. As a result, scientists are currently without a clear, comprehensive and coherent picture of what causes adolescent substance use/abuse and how to prevent it.

In fact, it is believed that a clear picture of adolescent substance use/abuse cannot emerge until existing theories are first compared, organised and, where possible, integrated. If theories of adolescent substance use/abuse are to be practical, we need to understand in what ways they are similar, in what ways they are different, in what ways they overlap, and where there are gaps among them. Consequently, in this article the core propositions from those theories that most influenced the researchers' approach to youth substance use/abuse, are described namely (a) theory of dynamic lifetime interplay, (b) cognitive-affective theories of substance use, (c) cognitive-behavioural theory of adolescent chemical dependency, (d) problem behaviour theory, (e) economic theory of alcohol use, (f) social cognitive/learning theory of substance use, (g) symbolic interactionism theory of substance use/abuse, (h) social control theory of substance use among adolescents, and (i) availability theory of substance use. In fact, theories that are reviewed

were selected because they all have empirical support and they all help clarify part of the puzzle of adolescent substance use/abuse. This is merely intended to help articulate the conceptual boundaries of existing theories. Then, in an attempt to clarify and/or explain adolescent substance use/abuse, we offer a framework/model for organising the different constructs from the reviewed theories of adolescent substance use/abuse.

THEORIES OF ADOLESCENT SUBSTANCE USE AND ABUSE

Theory of dynamic lifetime interplay

Tarter and Mezzich (1992) proposed the theory of dynamic lifetime interplay and they focus on the influence of genetic and social environmental effects on the development of substance abuse among children, adolescents and adults. According to Tarter and Mezzich (1992:149-177), a genetic predisposition (ranging from low to high) is assumed to be normally distributed in the general population. Substance abuse, as a complex behavioural disorder, is thought to have its genetic basis in the addictive effects of many genes located on several chromosomes (Pagliaro & Pagliaro, 1996:93; Schaffer, 1994:3; Velleman, 1992:11.) This concurs with the views of genetic theorists who believe that substance abuse is an inherited disease (Daley & Raskin, 1991:16; Winger, Hofmann & Woods, 1992:7). That is, it affects a large number of people and it has a cluster of symptoms, a predetermined outcome and a prescribed treatment. However, Tarter and Mezzich (1992) emphasise that genetic susceptibility is neither a necessary nor a sufficient condition for an adverse outcome. Genetic linkage shows that some individuals might be more vulnerable to developing substance dependence, not that they certainly would develop dependency. In fact, a person who has high genetic vulnerability (i.e. who has many of the genes) can be protected from a substance abuse outcome by a protective social environment (e.g. low drug availability, cultural sanctions and strong social support). On the other hand, a person who has low genetic susceptibility may have an adverse outcome where drug exposure is high and the social environment is conducive (Pagliaro & Pagliaro, 1996:93).

Tarter and Mezzich (1992:161) argue that a substance abuse outcome can theoretically occur at any stage in life, because it is contingent on the dynamic interplay among genetic and social environmental factors: Not only does the individual predisposed to drug abuse react to social environmental contingencies, but such persons seek out specific social environmental circumstances (e.g. high stimulus intensity and/or non-normative peers). The quality of these interactions additionally determines outcome throughout the life span. Therefore, there is some degree of risk for an adverse outcome at any stage in life. Depending on the changing contingencies involved in gene-environment interactions, the triggering of a drug abuse disorder at one stage in the life span (e.g. adolescence) may be different from the precipitating factors at another stage (e.g. late adulthood).

This theory emphasises genetic individuality, idiosyncratic developmental history, and unique micro- and macro-social environmental effects. The theory implies also that everyone in a given population is theoretically at risk of substance abuse, an outcome contingent on changes in either the individual or the social environment.

The implication of this theory on prevention can thus be the need to change the social environmental conditions – in other words, incorporating a community-change strategy.

Cognitive-affective theories of substance use

Cognitive-affective theories of substance use focus on how perceptions about the costs and benefits of substance use contribute to adolescents' decisions to use various substances (Petraitis *et*

al., 1995:68). These theories share the assumptions that (a) the primary causes of decisions to use substances lie in the substance-specific expectations and perceptions held by adolescents, and (b) the effects of all other variables – including, for example, adolescents' personality traits or involvement with peers who use substances – are mediated through their effects on substance-specific cognitions, evaluations and decisions (Boyd, Howard & Zucker, 1995:200).

Among the most comprehensive of these theories is the theory of reasoned action. According to Ajzen and Fishbein's (1980) theory of reasoned action (TRA), substance use is determined exclusively by an adolescent's decisions or reasoned intentions to engage in substance-specific behaviour (Petraitis *et al.*, 1995:69). In turn, these decisions are determined exclusively by two cognitive determinants. First, the theory of reasoned action claims that intentions are affected by adolescents' attitudes to their own substance use. Adapting a value-expectancy approach to attitudes, Ajzen and Fishbein (1980) posited that substance-specific attitudes are a mathematical function of both the personal consequences (i.e. costs and benefits) that adolescents expect from substance use and the affective value they place on those consequences (Bukstein, 1995:14.) Presumably youths hold positive attitudes toward substance use if the expected benefits of substances are valued more than the expected costs. Secondly, the theory of reasoned action claims that decisions are affected by an adolescent's beliefs about the social norms surrounding substance use (Petraitis *et al.*, 1995:69). According to this theory, social normative beliefs are based on an adolescent's perception that others want him or her to use substances and on the adolescent's affective motivation to comply with (or desire to please) the substance-specific wishes of those people. Presumably youths will feel strong pressure to use substances if they believe, rightly or wrongly, that important friends and family members endorse substance use. They might also feel strong pressure to use substances if they over-estimate the prevalence of substance use among peers and adults in general (Petraitis *et al.*, 1995:69). The roots of substance use are thus found in adolescents' beliefs about substances.

The key to preventing use/abuse can thus be through persuasive messages that directly target substance-specific beliefs. Four beliefs are particularly important. First, persuasive messages should increase adolescents' expectations regarding the adverse consequences of substance use (e.g. health dangers) and decrease their expectations regarding the potential benefits of substance use (e.g. social approval or coping with stress). Second, messages should alter adolescents' evaluations of the apparent costs and benefits of substance use, somehow giving more potent evaluations of the costs and less potent evaluations of the benefits. For instance, messages could present the health risks of substance use as 'more costly' and evaluate them more strongly by graphically depicting substance-specific risks. Third, messages should challenge adolescents' perceptions concerning the normative nature of substance use, perhaps challenging any inflated estimates of the prevalence of substance use among peers. Finally, messages should provide adolescents with information and skills that directly promote feelings of refusal self-efficacy, and as a result indirectly prevent substance use/abuse (Boyd *et al.*, 1995:201).

Cognitive-behavioural theory of adolescent chemical dependency

According to Ross' (1994:7) cognitive-behavioural theory, substance use, abuse and dependency among adolescents occur when a distinct set of *a priori* beliefs (i.e. beliefs around a perception of the environment that helps people make sense of their external experience) results in a multitude of self-defeating emotional responses. These responses activate a distinct set of *a posteriori* beliefs (i.e. beliefs around autonomically mediated responses, or emotions that helps people to make sense out of their internal experiences) that, in turn, activate a distinct set of self-defeating behavioural responses (Pagliaro & Pagliaro, 1996:94.)

Hence critical factors in the adolescent's environment (e.g. family, peer culture, media and ready availability of substances of abuse) influence his *a priori* beliefs. These beliefs and subsequent feelings create a distinct mindset conducive to substance use, abuse and, when left unchallenged, habitual substance usage (Pagliaro & Pagliaro, 1996:95). Over time, the behaviour of substance use reinforces a set of *a posteriori* beliefs. According to these beliefs, substance use is a way to seek stimulation, gain self- and peer acceptance and avoid/escape responsibility (Ross, 1994:7). With repeated substance use, the adolescent eventually develops an erroneous obsessive thinking pattern (what was once 'a way' eventually becomes 'the only way' to seek stimulation, gain self- and peer acceptance and avoid/escape responsibility). As use continues, the adolescent also finds that he or she is faced with such behavioural consequences as the violation of well-learned ethical, value and legal standards; deterioration of cognitive, affective and behavioural functioning; and the emergence of more pronounced psychological defences (Ross, 1994:7). As the addictive personality develops, an added set of *priori* beliefs emerges that concern the fear of discovery and possible punishment. This additional internal dialogue significantly increases the adolescent's anxiety level and creates an increased demand for emotional relief. The obsession becomes greater as the temporary emotional relief provided by substance use reinforces the erroneous, *a posteriori* belief that the only way to find relief from unpleasant feelings is to get high (Pagliaro & Pagliaro, 1996:95). As this addictive process continues to repeat itself, a distinct personality pattern and cognitive structure emerge. The latter ultimately maintains a cauldron of emotional pain and self-defeating behaviour patterns that culminate in physical deterioration of the body, emotional instability and spiritual bankruptcy (Pagliaro & Pagliaro, 1996:95; Ross, 1994:8.)

The implication of the cognitive-behavioural theory of adolescent chemical dependency for prevention can be cognitive 'reprogramming' (Boyd *et al.*, 1995:201), so that the beliefs that constitute a self-defeating personality and cognitive structure are changed and alternative methods are provided to achieve valued states.

Problem behaviour theory

Jessor and Jessor's (1977) problem behaviour theory is classified as an eclectic theory integrating psychological (personality/learning/social psychology) and sociological (anomie) orientations (Pagliaro & Pagliaro, 1996:54). According to Petraitis *et al.* (1995:76), this theory not only addresses the causes of substance use, but also addresses the causes of the myriad behaviours that are considered especially problematic for adolescents, including sexual activity, political protest, alcohol use, illicit drug use and criminal behaviour (Pagliaro & Pagliaro, 1996:54.) Because many of these behaviour are accepted among adults but forbidden among adolescents, they might "...appeal to many adolescents as a rite of passage that constitutes a symbolic assertion of maturity" (McGuire, 1991:181). Problem behaviour theory asserts that adolescents who are prone to one problem behaviour (e.g. delinquency) are also prone to other problem behaviours (e.g. cannabis use) (Schinke, Botvin & Orlandi, 1991:15).

This theory starts with the assumption that susceptibility to problem behaviour results from the interaction of the person and the social environment (Bukstein, 1995:14). The social environment is divided into proximal and distal structures. Within the *distal structure of perceived social environment*, the variables that indicate whether a youth is parent oriented or peer oriented are the most significant (Pagliaro & Pagliaro, 1996:56). Problem behaviour theory contends that adolescents are at risk of substance use if they are unattached to their parents, are close to their peers and are more influenced by their peers than their parents (Petraitis *et al.*, 1995:76). In the *proximal structure of perceived social environment*, the variables referring to peer models and support for problem behaviour are most important (Jessor & Jessor, 1977:237; Pagliaro &

Pagliaro, 1996:56; Petraitis *et al.*, 1995:76). Together they suggest the character of a problem-prone environment; adolescents who are likely to engage in problem behaviour perceive less compatibility between the expectations that their parents and their friends hold for them; they acknowledge greater influence of friends relative to parents; they perceive greater support for problem behaviour among their friends; and they have more friends who provide models for engaging in problem behaviour (Jessor & Jessor, 1977:237; Pagliaro & Pagliaro, 1996:56). Problem behaviour theory thus asserts that adolescents are at risk of substance use if they have friends who use substances or they believe their friends and parents approve of substance use.

Problem behaviour theory then divides the *characteristics of the person* into distal, intermediate, and proximal categories.

- The most *distal* characteristics are grouped in the personal belief structure, a structure which contends that adolescents will be at risk of substance use if they: a) are socially critically and culturally alienated (i.e. committed to conventional values), (b) have low self-esteem and feel they have little to risk through deviant behaviour, and (c) have an external locus of control, believing that their conventional behaviour is not socially rewarded and their deviant behaviour is not socially punished;
- More *intermediate* causes of substance use are grouped in the motivational instigation structure and concern the direction of adolescents' dominant goals, expectations and personal values. Through this structure, problem behaviour theory contends that adolescents will be at risk of substance use if they: (d) highly value their involvement with peers, seek independence from parents, and devalue academic achievement, or (e) have low expectations of academic achievement (Pagliaro & Pagliaro, 1996:56; Petraitis *et al.*, 1995:77);
- Finally the most *proximal* of the intrapersonal causes of substance use fall into the personal control structure. This structure focuses on attitudes toward deviant behaviour and proposes that adolescents will be at risk of substance use if they are generally tolerant of any deviant behaviour or believe that the benefits of substance use outweigh the costs (Petraitis *et al.*, 1995:77).

Hence, in relation to the personality system as a whole, the adolescent who is less likely to engage in problem behaviour is one who values academic achievement and expects to do well academically, who is not concerned much with independence, who treats society as unproblematic rather than as deserving of criticism and reshaping, who maintains a religious involvement and is more uncompromising about transgression, and who finds little that is positive in problem behaviour relative to the negative consequences of engaging in it (Jessor & Jessor, 1977:237; Pagliaro & Pagliaro, 1996:56.) The adolescent who is more likely to engage in problem behaviour shows an opposite personality pattern – a concern with personal autonomy, a relative lack of interest in the goals of conventional institutions (such as school and church), has a jaundiced view of the larger society and a more tolerant attitude to transgression (Pagliaro & Pagliaro, 1996:56).

Problem behaviour theory sharply focuses on how environmental and intrapersonal, i.e. personality traits, affect adolescent substance use. One way to deter substance use/abuse can entail the following:

- Promotion of conventional behaviour and perceptions that substance use is unacceptable and unsupported by significant others;
- Family enrichment;
- Evaluation of the costs and benefits of substance use; and

- Development of self-efficacy.

Economic theory of alcohol use

According to Boyd *et al.* (1995:201), the economic theory of alcohol use states that individuals make rational decisions to consume products in which they find utility. Consumers do not consume an infinite amount of alcohol, but rather they make decisions on whether to consume a drink on the basis of a balance of the expected utility from consuming it and the costs of doing so (Grossman, Chaloupka, Safer & Laixuthai, 1994:340). Thus, consumption of alcohol is tied to (a) a decision to drink, and (b) the costs of the product in relation to the amount of disposable income available.

Adolescents take many things into account in making the decision to drink alcohol and many of those considerations are related to social expectations and influences concerning substance use, not just direct economic costs and benefits (Boyd *et al.*, 1995:202). According to Fischhoff and Quadrel (1994:229), adolescents frequently make decisions that do not appear rational to an outside observer. They do not know all the alternatives available to them, do not fully understand the expected consequences of each alternative and do not always choose the action that optimises their gain at minimum cost (Boyd *et al.*, 1995:202). Yet, for the most part, adolescent behaviour is functional and not arbitrary or capricious.

However, alcohol consumption is price elastic and young people are the most responsive to an increase in price by reducing consumption (Grossman *et al.*, 1994:347). According to Boyd *et al.* (1995:229), a fundamental principle of this theory is that of the downward sloping demand curve, i.e. as the price of any goods rises, consumption of those goods falls. Some economists have argued that the consumption of potentially addictive goods, such as alcohol, might be an exception to that rule. Numerous studies confirm, however, that this principle does apply to the demand for alcoholic beverages (Manning, Blumberg & Moulton, 1992.)

The studies just mentioned focus on the consumption of alcoholic beverages by adults or by all segments of the population. Yet there are reasons to believe that alcohol consumption by young people may be more sensitive to price than alcohol consumption by adults (Boyd *et al.*, 1995:229). One factor is that the fraction of disposable income that a youthful drinker spends on alcohol probably exceeds the corresponding fraction of an adult drinker's income. A second factor is that bandwagon or peer effects are much more important in the case of youth drinking than in the case of adult drinking. Thus, a rise in price would curtail youth consumption directly and indirectly through its impact on peer consumption. Finally, youths are more likely to discount the future consequences of their current actions than adults are (Grossman *et al.*, 1994:341). Youths are thus the most responsive to an increase in price by reducing their consumption.

Prevention efforts based on such an economic or decision-making model must recognise the functionality of substance use/abuse from an adolescent's perspective and encourage a broader awareness of the negative consequences of use/abuse and of normative expectations that not using/abusing substances has positive outcomes (Boyd *et al.*, 1995:202). Finally, an important way to reduce youth alcohol use may be to increase its direct cost through increased taxes and prices as well as to increase its indirect cost by reducing its accessibility to youth (Grossman *et al.*, 1994:345).

Social cognitive/learning theory of substance use

As with cognitive-affective theories, Bandura's (1986) social cognitive/learning theory (in Petraitis *et al.*, 1995:70) assumes that substance-specific cognitions are the strongest predictors of

adolescent substance use. However, the social cognitive/learning theory does not assume that the roots of substance use originate in an adolescent's own substance-specific cognitions. Rather, social cognitive/learning theory assumes that substance use originates in the substance-specific attitudes and behaviour of people who serve as an adolescent's role models, especially close friends and parents who use substances (Botvin, Schinke & Orlandi, 1995:179).

Specifically, social cognitive/learning theory asserts that an adolescent's involvement with substance-using role models is likely to have three sequential effects, beginning with the observation and imitation of substance-specific behaviour, continuing with social reinforcement (i.e. encouragement and support) to substance use, and culminating in an adolescent's expectation of positive social and physiological consequences from future substance use (Bukstein, 1995:13; Petraitis *et al.*, 1995:70.) Thus, observing parents use alcohol to relax or observing peers smoke cannabis to smooth social interaction will shape adolescents' beliefs about the consequences of, and their attitude toward, their substance use (Lewis, Dana & Blevins, 1994:173).

This theory incorporates the concept of self-efficacy. Bandura (as quoted by Petraitis *et al.*, 1995:71) has posited that role models can shape both use self-efficacy and refusal self-efficacy. For instance, observing peers buy and inhale cannabis cigarettes can provide adolescents with the necessary knowledge and skills to obtain and use cannabis. Conversely, observing a close friend resist the pressures to use alcohol can boost an adolescent's refusal skills and self-efficacy by displaying the necessary skills to avoid using alcohol (Boyd *et al.*, 1995:202).

Moreover, adolescents probably do not have to observe substance use among influential role models for substance use to be socially modelled and reinforced. In fact, simply hearing influential role models speak favourably about substance use and people who use substances might promote the onset of substance use. Therefore the causes of substance use might be found in (a) substance use by parents, close friends and other role models, and (b) favourable statements or attitudes towards substance use by such role models, especially close friends and admired peers who endorse substance use (Bukstein, 1995:13; Petraitis *et al.*, 1995:70.)

The social cognitive/learning theory thus assumes that substance-specific beliefs are the most immediate and direct causes of adolescent substance use and that expectations about the personal consequences of substance use are critical beliefs. However, unlike the cognitive-affective theories, which suggest that the key to prevention is to alter adolescents' substance-specific beliefs, the social cognitive/learning theory suggests that a key to prevention lies in (a) making substance-using role models less salient and substance-abstaining role models more salient, (b) focusing on social skills training, and (c) emphasising the negative social consequences of substance use (Boyd *et al.*, 1995:203).

Symbolic interactionism theory of substance use/abuse

This theory posits that people respond to events and objects in terms of the meanings they attribute to them (Pagliaro & Pagliaro, 1996:66). Socialisation (both childhood and lifelong) is the process of learning the socially shared sets of meanings attached to events, objects and language. Humans have the capacity for role taking – for imagining the attitudes and perceptions of others and being able to anticipate how they will respond to specific actions. One's behaviour is directly affected by such anticipated actions on the part of others (Boyd *et al.*, 1995:204). The meanings attached to specific behaviour are acquired from society as a whole (i.e. the generalised other) as well as specific reference to others or reference groups. Social norms affecting substance use/abuse are derived from interaction with individuals and groups in society, as well as from role models for appropriate behaviour in specific settings (Bukstein, 1995:13). Role models and other dimensions

of the social environment that define norms around substance use/abuse are not only reflected in interactions between individuals, they are also reflected in a wide range of community and societal structures and practices related to substance use (Boyd *et al.*, 1995:203; Bukstein, 1995:13.) The presence and active marketing of legal substances (i.e. alcohol, tobacco) throughout the social environment experienced by youths through family, friends, advertising and media programming therefore help define socially shared meanings that substance use is an expected behaviour (Boyd *et al.*, 1995:204).

This theory suggests that efforts to reduce substance use/abuse must involve multiple social structures, including those of the youths themselves, that are both proximal and distal to the adolescent, including the family, local community, mass media, marketing practices and institutional and public policies related to specific substances (Hawkins, Catalano & Miller, 1992:87).

Social control theory of substance use among adolescents

Like social learning theories, Elliott's (1985) social control theory (in Petraitis *et al.*, 1995:71) assumes that emotional attachments to peers who use substances are a primary cause of adolescent substance use. However, unlike social learning theories, this theory focuses on the causes of those attachments, specifically targeting weak conventional bonds to society and institutions, and individuals who encourage deviant behaviour, including substance use (Boyd *et al.*, 1995:204.)

This theory is based in large part on classic sociological theories of control, which argue that the deviant impulses that all people presumably share are often held in check or controlled by strong bonds to conventional society, families, schools and religions (Pagliaro & Pagliaro, 1996:50). However, for some adolescents, such controlling influences are missing. Consequently, adolescents who have weak conventional bonds will not feel controlled by or compelled to adhere to conventional standards of behaviour (Boyd *et al.*, 1995:204).

The social control theory focuses on three possible causes of weak commitment to conventional society and weak attachment to conventional role models (Hawkins *et al.*, 1992:87). One of those causes is strain, which is defined as the discrepancy between adolescents' aspirations (e.g. academic or occupational goals) and their perceptions of the opportunities to achieve those aspirations (Petraitis *et al.*, 1995:72). Social control theory asserts that adolescents who feel that their academic or career aspirations are being frustrated by their educational and occupational options will feel uncommitted to conventional society and, consequently, will become more attached to deviant peers who use substances and encourage substance use (Hawkins *et al.*, 1992:87). Furthermore, some adolescents might feel strain at home because they want but are not receiving closer relationships with their parents. According to this theory, strain at home will (a) weaken attachments with parents who generally oppose substance use, and (b) encourage attachments with peers who more frequently encourage substance use (Petraitis *et al.*, 1995:72). Thus, social control theory includes school strain, occupational strain and home strain as among the first causes of weak commitment to conventional society.

A second cause is social disorganisation, which represents 'the weakness or breakdown of established institutions', or the inability of "...local institutions to control the behaviour of the residents" (Farrington, Loeber, Elliott, Hawkins, Kandel, Klein, McCord, Rowe & Tremblay, 1990:310). As such, social control theory implies that adolescents feel uncommitted to conventional society if they come from disorganised neighbourhoods where crime and unemployment are common, where schools are ineffective and where failed social institutions offer adolescents little hope for the future. They might also feel less attachment to parents if they

come from disorganised families where, for instance, only one parent is present or the parents have divorced (Hawkins *et al.*, 1992:87; Pagliaro & Pagliaro, 1996:50.)

Finally, social control theory asserts that conventional commitments and attachments to conventional role models are the result of effective socialisation into conventional society. Even if adolescents (a) do not feel strain because of frustrated interpersonal, educational and occupational opportunities, and (b) do not come from disorganised neighbourhoods and families, they might still become attached to substance-using peers if they have not been socialised (presumably by parents) to adopt conventional standards (Boyd *et al.*, 1995:204; Hawkins *et al.*, 1992:87; Petraitis *et al.*, 1995:72.)

Attachment to substance-using peers (and by implication substance use) is thus caused by (a) frustrated academic and occupational expectations, (b) inadequate social and academic skills, (c) weak attachment to and inadequate reinforcement from parents and other conventional role models, (d) disorganised neighbourhoods and families, and (e) improper socialisation.

Consequently all of these factors can be potential aspects of adolescent substance use/abuse prevention programmes. For instance, programmes might deter adolescent substance use by teaching parents how to empower and socialise their children.

Availability theory of substance use

The availability theory of substance use focuses on how the availability of addictive substances contributes to substance use (and by implication abuse) (Velleman, 1992:13). This theory contends that adolescents are at risk of substance use/abuse because drugs are available (Ghodse & Maxwell, 1990:26; Schaffer, 1994:3), directly affecting their opportunities to use them. Accordingly, Boyd *et al.* (1995:205) state that the amount and pattern of substance use is affected by the degree to which substances are accessible to people. Rocha-Silva (1998:3) supports this view and states that the level of availability of and demand for (particular) drugs in a community tends to correlate positively with the general level of drug use in that community. Consequently availability may vary and is usually associated with substance use.

Boyd *et al.* (1995:205) divide substance availability into three categories: physical availability, economic availability and legal availability. Physical availability is described as the amount, diversity and proximity of substances in the environment. Economic availability is defined as the degree to which acquisition and consumption of substances requires the expenditure of resources in relation to resources available (e.g. the cost/price of substances in relation to disposable income). Legal availability is set forth as the degree to which the purchase and consumption of substances is limited by law (Hawkins *et al.*, 1992:81; Schaffer, 1994:3). Through this division, availability theory suggest that adolescents will be at risk of substance use/abuse if (a) substances are physical available in the youth's social-environment, (b) substances are affordable, and (c) laws and social norms express tolerance of substance use.

The availability theory thus assumes that substance availability is the strongest predictor of substance use, where availability is seen as (a) a direct cause of substance use, and (b) an indirect cause of substance use as availability creates substance-specific perceptions.

The implication of this theory for prevention can be the need to create barriers to young people's substance use by reducing access and availability through public policies, excise taxes and physical restraints.

INTEGRATION OF THEORIES

The preceding review discussed nine theories purporting to explain adolescent substance use. These were:

(a) Dynamic lifetime interplay theory, which links genetic and social environmental effects to the development of substance abuse;

(b) Cognitive-affective theory; which describes how decision-making processes contribute to adolescent substance use;

(c) Cognitive behavioural theory, which details how beliefs that constitute a self-defeating personality and cognitive structure affect substance use;

(d) Problem behaviour theory, which focuses on environmental and personality traits that affect adolescent substance use;

(e) Economic theory, which ties substance use to (i) a decision to use the substance, and (ii) the costs of the product in relation to the amount of disposable income available;

(f) Social cognitive/learning theory, which emphasises the effects of substance-using role models;

(g) Symbolic interactionism theory, which searches for the roots of substance use in the adolescent's interaction with multiple social structures;

(h) Social control theory, which details how various factors promote withdrawal from conventional society, detachment from parents and attachment to substance-using peers; and

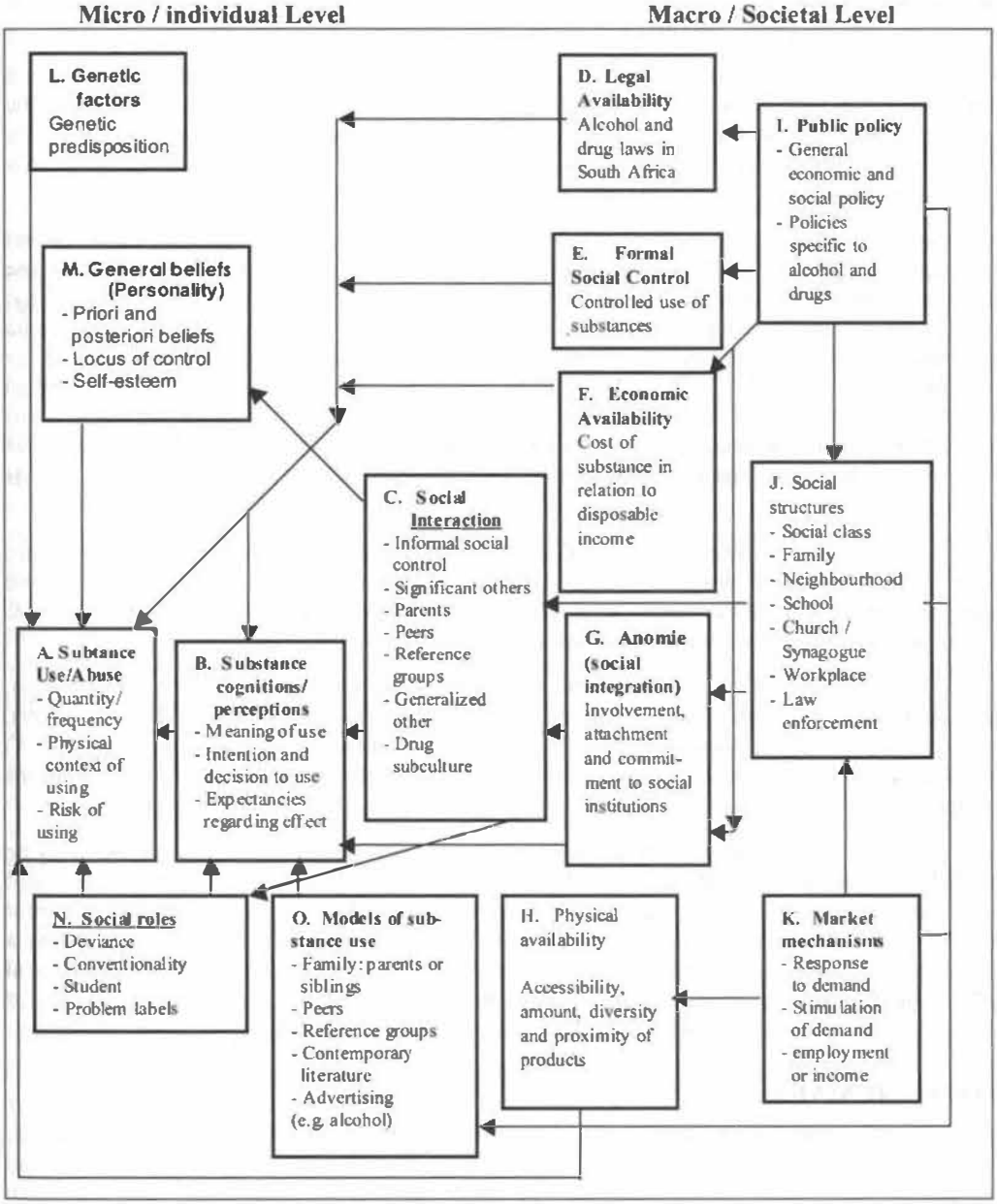
(i) The availability theory, which links adolescent substance use to substance availability (physical, economic and legal).

These theories all imply a long and diverse list of causal and contributory factors that theoretically lead to adolescent substance use and abuse. However, the diversity of theories and causes is not surprising given that substance use/abuse has a complex etiology. In fact, the more research findings allow us to understand about the nature of adolescent substance use/abuse, the more complex the factors underlying its development appear to be. Schinke *et al.* (1991:14) concur with this by stating that "...there is a multitude of interrelated causes for substance abuse with no single factor both a necessary and sufficient condition for the initiation of substance use or abuse." Moreover Petraitis *et al.* (1995:79) argue that a thorough understanding of any behaviour must be based on a comprehensive and integrative analysis of: (a) the broad social environment surrounding the behaviour, (b) the more immediate social situation or context in which the behaviour occurs, (c) the characteristics of the person performing the behaviour, (d) the behaviour itself and closely related behaviour, and (e) the interaction among all of these.

In partial alignment with this argument, Wagenaar and Perry's (1994:319-345) integrated theory of drinking behaviour was adapted and changed by the researchers in an effort to explain the etiology of youth substance use and abuse. The resulting model is the researchers' superimpositions on Wagenaar and Perry's (1994:319-345) material; the model proposes that substance use/abuse is the result of reciprocal effects among the individual person and the person's environment by focusing on the centrality of social interaction.

Figure 1 illustrates the proposed model.

FIGURE 1
AN INTEGRATED MODEL OF ADOLESCENT SUBSTANCE USE/ABUSE



Road map to Figure 1: An integrated model of adolescent substance use/abuse

In this integrated model substance abuse is directly affected by the adolescent's personal cognitions and perceptions regarding substances (path B-A in Figure 1). This is in line with cognitive-affective and social learning theories, which all assume that the roots of adolescent

substance abuse are found in the adolescent's beliefs and expectations about substances – suggesting that adolescents will abuse substances if they expect the substance to have reinforcing positive effects, high in relation to costs. These perceptions about substances are a direct result of social interactions with significant others in the youth's environment (path C-B), observation of environmental models (path O-B) and formal social controls (path E-B).

Furthermore, factors affecting substance use/abuse do not all operate through the mediating influence of cognitive/perceptual variables; they have direct effects as well. In accordance with the availability theory, it is stated that legal availability (path D-A and D-B), economic availability (path F-A and F-B) and physical availability (path H-A and H-B) of substances therefore directly affect substance use/abuse and also operate indirectly by creating perceptions.

Social structures – modified by the degree to which the adolescent are integrated into them – affect social interaction patterns (paths J-C and J-G-C) and affect exposure to models of substance use (path J-O). In addition, however, exposure to substance-using models is importantly affected by: (a) public policy concerning media advertising and depiction of substance use/abuse in media programming (path I-O) and (b) market mechanisms that respond to and stimulate demand for substances (path K-O). Public policy also directly affects formal social controls (I-E), as well as the legal, economic and physical availability of substances (paths I-D, I-F, I-H, respectively), all of which in turn affect substance use/abuse directly (paths D-A, E-A, F-A and H-A) as well as through their influence on the meanings and perceptions of substance use (paths D-B, E-B, F-B and H-B).

Genetic factors also play a direct role (path L-A) on substance use/abuse, although such effects are minor for the majority of substance users. Substance use/abuse is contingent on the dynamic interplay among genetic and environmental factors, i.e. low drug availability (paths D-A, F-A & H-A), cultural sanctions and strong social support (E-A).

In addition, social interaction influences the adolescent's social roles (path C-N). Social roles, such as deviance or problem labels, as well as other widespread social roles (e.g. that of student), affect substance use/abuse directly by offering more opportunities to use substances (path N-A) and they affect substance use indirectly by occupying such roles on substance-related cognitions and perceptions (path N-B-A).

General beliefs (*a priori* and *a posteriori* beliefs) and eventually personality characteristics may be correlated with substance use/abuse (path M-A). These beliefs are primarily the cumulative result of past and current socialisation (path C-M); in other words, they result from past and current experience in social interactions (e.g. family and peer culture), which are in turn influenced by a variety of social and institutional structures (paths J-C-M; I-J-C-M and K-J-C-M). Hence critical factors in the youth's environment (e.g. family, peer culture, media and ready availability of substances of abuse) influence his or her beliefs and they (the beliefs) affect substance use/abuse.

CLOSING REMARK

This article underscored the multifaceted and complex nature of adolescent drug use and abuse. Different theories attempting to explain the causes of substance abuse were discussed, with an integration of the different causes to provide a model to explain the etiology of youth substance abuse.

REFERENCES

BOYD, G.M.; HOWARD, J. & ZUCKER, R.A. 1995. **Alcohol problems among adolescents: Current directions in Prevention research**. Hillsdale: Lawrence Erlbaum Associates Publishers.

BOTVIN, G.J.; SCHINKE, S. & ORLANDI, M.A. 1995. **Drug abuse prevention with multi-ethnic youth.** London: SAGE Publications.

BUKSTEIN, O.G. 1995. **Adolescent substance abuse: assessment, prevention, and treatment.** New York: John Wiley & Sons, Inc.

DALEY, D.C. & RASKIN, M.S. 1991. **Treating the chemically dependent and their families.** Newbury Park: Sage Publications.

FARRINGTON, D.P.; LOEBER, R.; ELLIOTT, D.S.; HAWKINS, D.; KANDEL, D.B.; KLEIN, M.W.; McCORD, J.; ROWE, D.C. & TREMBLAY, R.E. 1990. Advancing knowledge about the onset of delinquency and crime. **Advances in Clinical Child Psychology**, 13:283-342.

FISCHHOFF, B. & QUADREL, M.J. 1994. Adolescent Alcohol Decisions. **Journal of Research on Adolescence**, 4(2):229-247.

GHODSE, H. & MAXWELL, D. 1990. **Substance abuse and dependence: An introduction for the caring professions.** London: Macmillan Press.

GROSSMAN, M.; CHALOUPKA, F.J.; SAFER, J. & LAIXUTHAI, A. 1994. Effects of alcohol price policy on youth: a summary of economic research. **Journal of Research on Adolescence**, 4(2):319-345.

HAWKINS, J.D.; CATALANO, R.F. & MILLER, J.Y. 1992. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. **Psychological Bulletin**, 112(1):64-105.

JESSOR, R. & JESSOR, S. 1977. **Problem behaviour and psychosocial development: a longitudinal study of youth.** New York: Academic.

LEWIS, J.A.; DANA, R.Q. & BLEVINS, G.A. 1994. **Substance abuse counselling: an individualised approach.** California Brooks/Cole Publishing Company.

MANNING, W.G.; BLUMBERG, L. & MOULTON, L.H. 1992. **The demand for alcohol: the differential response to price.** Paper presented at the Third Annual Health Economics Workshop at Johns Hopkins University, Baltimore, MD.

McGUIRE, W.J. 1991. Using guiding-idea theories of the person to develop educational campaigns against drug abuse and other health-threatening behaviour. **Health Education Research**, 6:173-184.

PAGLIARO, A.M. & PAGLIARO, L.A. 1996. **Substance use: among children and adolescents.** New York: John Wiley & Sons, Inc.

PETRAITIS, J.; FLAY, B.R. & MILLER, T.Q. 1995. Reviewing theories of adolescent substance use: Organizing pieces in the puzzle. **Psychological Bulletin**, 117(1):67-86.

ROSS, G.R. 1994. **Treating adolescent substance abuse: Understanding the fundamental elements.** Needham Heights: Allyn and Bacon.

ROCHA-SILVA, L. 1998. **Alcohol, tobacco and other drug use: Young South Africans (10-24 years).** Pretoria: Centre for Alcohol/Drug-related Research.

ROPER, I. & BARTLETT, G. 1994. **The drug wise manual: The pharmacist's guide to substance abuse.** Johannesburg: TPS Drug Information Centre.

SCHAFFER, C. 1994. **Technologies for understanding and preventing substance abuse and addiction.** USA Government Office of Technology Assessment.

SCHINKE, S.P.; BOTVIN, G.J. & ORLANDI, M.A. 1991. **Substance abuse in children and adolescents: Evaluation and intervention.** Newbury Park, CA: Sage.

TARTER, R.E. & MEZZICH, A.C. 1992. Ontogeny of substance abuse: Perspectives and findings. **Vulnerability of drug abuse**, 149-177. Washington, DC: American Psychological Association.

VELLEMAN, R. 1992. **Counselling for alcohol problems**. London: SAGE Publications.

WAGENAAR, A.C. & PERRY, C.L. 1994. Community strategies for the reduction of youth drinking: Theory and application. **Journal of Research on Adolescence**, 4(2):319-345.

WINGER, G.; HOFMANN, F.G. & WOODS, J.H. 1992. **A handbook on drug and alcohol abuse: The biomedical aspects**. New York: Oxford University Press.

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