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A Review on School Based Interventions for Alcohol, Tobacco and Other Drugs (ATOD) in the United States: Can Developing Countries in Africa Adopt these Preventive Programs Based on ATOD Approaches?

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Abstract

Substance abuse problems have been a major concern of societies all over the world, including the United States, during last five decades. In the United States, the substance abuse epidemic has been changing its characteristics as to the major drugs of abuse and the populations abusing them and the overall magnitude of the problem can be best described as fluctuating only.

Health disparities in drug use are a major public health concern as indicated in the NIDA Health Disparities Initiative. Despite evidence that racial/ethnic minorities are less likely than Whites to use drugs in childhood and adolescence, they are more likely to experience negative health outcomes related to drug use in adulthood, such as HIV/AIDS, intentional and unintentional injuries, overdose, incarceration, and emergency room visits. These changes in health disparities in drug use outcomes over the life course suggest a complex relationship between race/ethnicity and drug use, particularly during the transition from adolescence to adulthood.

Further, it is likely that changing trends in drug over time can affect subgroups of the population differentially. In order to reduce health disparities related to drug use, it is necessary to characterize how they unfold over time, and to shed light on the processes and influences that increase the likelihood of negative health outcomes among minorities and disadvantaged groups. Further understanding of health disparities in drug use and use-related problems can provide clues for preventing negative drug use outcomes as well as estimate the need for services to reduce the public health burden related to drug use. The nature of health disparities is quite complex and varies considerably by type of drug and drug-related outcome, developmental stage, chronological time, community, and geographic region. However, these geographic changes are happening in both developed and developing countries where HIV/AIDS and illicit substance use continue to be on an increase especially in sub-Saharan Africa hence posing great threats of public health concern which calls for immediate effective interventions to be in places.

Keywords: Drug abuse/Substances of abuse; Alcohol; Tobacco; Health disparities; Negative outcomes; United States; Preventive programs; Interventions

Introduction

Substance abuse problems have been a major concern of societies all over the world, including the United States, during last five decades. In the United States, the substance abuse epidemic has been changing its characteristics as to the major drugs of abuse and the populations abusing them and the overall magnitude of the problem can be best described as fluctuating only. Thus, a declining trend in late 1980's was reversed in early 1990's. Currently, for last decade, we do observe a slow declining trend and can only hope to maintain it or accelerate it further. Despite this the prevalence of life time drug use is quite high 21%, 38%, and 50% among 8th, 10th, and 12th grade students according to the Monitoring the Future Survey in 2005 [1].

The approach followed for drug abuse control includes (a) prevention of drug use (b) treatment of drug users, and (c) interdiction of drug supply. Out of these, it is logical to consider prevention of drug use, as the most important and easiest method to control the drug abuse in any society. The underlying assumption is that it is easier to prevent initiation of drug use as compared to stopping drug use once it has developed into an insidious disorder. However, the prevention is not all that simple and easy [2-4]. The debate has not been conclusive as to which kind of programs are more effective; which population groups should be subjected to prevention activities, what techniques/components of the program are more effective, and so on. However, by now this is well accepted that prevention does work. There is growing evidence that the focus of prevention should be on children and adolescents. Initiation for majority of the drug use occurs during childhood and adolescence; the drug use initiation at early age may lead to more complicated drug use problems later in life; and adolescence is the greatest risk period during the life span for indulging in drug use behaviour. Past one month use of illicit drugs among high school students during last decade has been found to vary between 16% - 21% [5-7].

It is logical that the prevention activities have focused mainly around children and adolescents either as school based programs, or family based and media based programs. This paper reviews the school based prevention programs that have been implemented in the United States.

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Methodology of this Review

Various kinds of school based prevention programs are reviewed either from the published individual studies, or from the published meta-analyses and review articles. The information from some of the documents of agencies like NIDA, ONDCP, or information program websites and text book chapters is also included. The majority of the information pertains to those programs which are based only in the schools, though reference to some of the programs that intervened jointly at schools and families/community is also made. Mainly the universal programs have been the focus of review, though some of target/indicated programs are briefly referred. The specific programs aiming at ethnic minorities or specific student subgroups are not included. The paper first describes various programs that have been implemented or tested in the United States and then discusses the effectiveness of these programs. It also provides the information from the literature about the factors influencing the effectiveness of these programs. The paper ends with the implications of school based prevention programs in the substances abuse problems at large [7,8].

Brief Description of Various School Based Programs

Basic approaches underlying prevention programs

Various school based preventive programs are based on one or other of six basic approaches described by Neaigus, Devieux et al. and Cervantes et al. [2-4]. A brief description of these approaches is given below:

Information dissemination: This is based on the assumption that people start using psychoactive substances due to lack of information about the adverse consequences of these substances. The programs based on this approach rely on providing factual information that will presumably help the adolescents (passive recipients) to make rational and logical decisions of not using the substances. These programs were delivered through classroom curricula, guest speakers in assembly and educational films. Some of these programs also disseminated information with a "fear arousal" approach or combined preaching with teaching [4,5,9]. Information dissemination approach was adopted in the initial prevention programs during 1960's and early 1970's.

Affective education: The affective education approach involves activities at increased self-esteem, responsive decision making, interpersonal growth rather than the factual information on drugs. Not many program use this approach as the only approach [4,5].

Alternatives: Besides emphasis on increased self-esteem and self-reliance, this approach involves providing facilities to engage adolescents and youth in certain stimulating but productive activities as alternative to substance use associated activities. Presumption is that the adolescents will be able to engage in healthier alternative activities instead of descriptive drug use activities [4,5].

Psychological inoculation: Proposed by Evans and his colleagues in late 1970's, this approach is based on the principles of persuasive communications and borrows concept of immunization against infectious diseases. Unlike the previously described approaches, this approach focuses on the sociological and psychological influences on the initiation of drug use, especially tobacco smoking. Through films the adolescents are made aware of the drug use promoting situations which they are likely to encounter and the ways to handle those situations. Thus, the prior awareness and preparedness to handle those situations (psychological inoculation) would help these adolescents to avoid the drug use initiation in the event of family or media influences, or peer pressures [10-12].

Resistance skills training: This approach involves teaching school pupils or students specific skills for effectively resisting the peer and media pressures to drug use [8,13]. This is also referred to as "social influence' approach or "refusal skills training' as the central point of the intervention is to teach students to say "No" to the substance use offers or opportunities due to social influences [4,14]. The programs include both identification of high risk situations and avoiding them, in an effective way when cannot avoid [15]. Many of these programs use peer leaders who demonstrate these skills by role playing. Besides following the basic approach, the programs also include correction of misconceptions about drug use norms in adolescent population by providing correct prevalence to demonstrate that drug use is not an "every body's phenomenon". The programs also have a component to enhance adolescent's awareness about the advertising techniques used by tobacco or alcoholic companies to trap the adolescents into drug habit, along with the teaching the counter techniques [16-18].

Personal and social skills training: This approach involves teaching of general personal and social skills like general problem solving skills, decision making skills, general cognitive skills to resist media or interpersonal influences, skills for enhancing self-esteem and self-control, skills for managing tension and stress, general assertive skills and general social skills [19-21]. This approach, though is skill training approach, but differs from resistance skills training approach as it aims at teaching general life skills instead of specific drug use related skills, and thus is likely to have much wider impact than only on drug use. However, many of the currently available programs include a component of specific drug use resistance skills training the general skills training. Many of the programs combine than one approach.

Interactive and non-interactive programs: Based on the program content and delivery mode. Burke & Beegle and Marsiglia et al., all have classified the school based prevention programs into two broad categories-non-interactive where the delivery is mainly through didactic lectures, and interactive where the program is delivered through interactive discussions, feedback, role playing, and other small group techniques [22,23]. Among the approaches mentioned above, the first four approaches are predominantly non-interactive while the last two are interactive.

Specific School-Based Prevention Programs

Drug abuse resistance education (DARE-project)

DARE is the most widely used school based primary drug prevention program which is used in approximately 60% of the schools in the United States. This program has components on knowledge, affective education and resistance skills training. It is carried out by the specially trained police officers through weekly classroom sessions for the 5th grade and 7th grade pupils [24,25].

Life skills training (LST) program

This program is a comprehensive program that involves teaching general personal and social skills and drug resistance skills, and providing normative education. It is a universal program for students in middle or junior high school and has 15, 10 and 5 sessions during the first, second and the third year [5,13].

Project ALERT

This is a universal program for having 8 sessions in 7th grade with 3 booster sessions in 8th grade comprising of video, role play, discussions and other participatory methods. This is carried out by teachers and older peers and follows the social influence and resistance skills training

approach. It aims to prevent drug use initiation as well as transition to regular use [26].

Project SMART

This includes 12 sessions of social skills and drug resistance curriculum and 12 sessions of affective education curriculum for 7th grade pupils. This is conducted by health educators with peer assistants and involves role play and discussions [4,13].

Besides the programs specifically designed to prevent drug use, there are many school based programs which aim at promoting general emotional health and social competencies and reducing aggression and behavioral problems in general [6,20]. Some of these programs are Promoting Alternative Thinking Strategies (PATHS), Positive Youth Development Program etc.

Prevention Programs Focusing on School and Family/ Community

Project STAR

This is a comprehensive drug abuse prevention program involving schools, parents, communities and media [7,27]. The school component includes a 2 year curriculum based on social influence approach. Parent and community component work to limit the availability of the drug and media plays a role in depicting the positive impact of drug use prevention.

Classroom centered (CC) and family school partnership (FSP) intervention

These are universal multi-component interventions done during the first grade [4,13]. The interventions are aimed to improve academic performance and to reduce violent and aggressive behavior later in the life. The intervention in the class room includes "good behavior game" and "Mystery learning" and involves teachers" behavioral management and instructional skills enhancement. FSP includes parent-teacher communication, parental and children's behavior management at home.

Skills, opportunities and recognition (SOAR)

Also known as Seattle Social Development Program, this is a universal intervention applied on pupils grades one through six includes training of teachers, parents and children to promote children's bonding with school behavior and academic achievements. This aims at reducing childhood delinquency and drug use by enhancing protective factors [20].

Some of the other programs that focus on families and / or communities as well as school are Guiding Good Choices (also known as preparing for the Drug Free Years), "Strengthening Families Program" [6], Project Northland in Minnesota, "Midwestern Prevention Project'.

Selected/Targeted programs

Besides above mentioned universal prevention programs, many of the programs have been used on the selected children/adolescent at high risk. Some of these programs are "Focus on Families" Program aimed to prevent drug use among children of parents receiving methadone, "Strengthening Families" aimed to improved parenting skills of drug abusing parents, Adolescents Training and Learning to Avoid Steroids (ATLAS) aimed to reduce anabolic steroid use among high school athletes [6].

Outcome of School Based Interventions

Majority of the programs have been evaluated for their effectiveness. Majority of the outcome studies evaluated the effectiveness of the program at the end of 1 or 2 years after the intervention. However, many studies evaluated the programs for longer period like 5 years or even up to 15 years after the intervention [2,4]. The majority of the studies evaluated the outcome measures by using self-reported paper and pencil tests with or without confirmation by laboratory testing. Some of the studies, especially long term studies also used telephonic or postal survey techniques. Delay in initiation or reduction in actual drug use has been the commonest outcome measures used in most of the studies. Usually the current use (last one month use) has been inquired, though many studies also investigated past one year or/and life time use. Besides drug use, many of the studies also have looked into changes in knowledge/awareness of drug consequences, changes in attitude towards drugs, or the other mediating measures like improvement in school performance, reduction in problem behavior, development in assertive or drug refusal skills.

Hundreds of the studies on individual programs are available. The results of individual studies are difficult to be interpreted conclusively due to differences in methodologies and wide variability (including contradictions) in their findings. However, there are many meta-analyses and reviews which have tried to synthesize and summarize the findings from a variety of studies about different kinds of the school based prevention programs. Thus, Dent et al. carried out a meta-analysis of 8 studies evaluating DARE program [7]. Deleva et al. published a meta-analysis of 120 studies on universal school based programs [18]. Subsequently, Cuipzers published another meta-analysis by adding 87 studies including fourteen international studies, to the previous meta-analysis. NIDA did a meta-analysis of 90 studies evaluating peer-led social influence programs. Many of these meta-analyses have used effect size statistic to facilitate better comparisons across different programs. Some of them also have tried to look into the relative contribution of different program components to the program effectiveness. There are many reviews authored by Compton et al., Cuipzers and Cervantes et al. [4,11,28]. The overall findings from these meta-analyses and reviews are summarized below.

Drug use related outcomes

Cervantes et al. in their meta-analysis of 207 studies reported that the weighted mean effect size for the drug use prevention was significantly higher for interactive programs as compared to non-interactive programs (0.5 vs 0.5) [4]. They reported the mean effect size of the "knowledge only" programs and "affective education only" programs to be 0.07 and 0.05 respectively which was statistically not different from zero effect size. The DARE program had a mean effect size of 0.05 which statistically came out to be slightly more than zero due to narrower confidence interval. The mean effect size for the "social influence" programs and "comprehensive life skills" programs was 0.12 and 0.17 respectively. They also reported that the programs aiming "system wide changes" that involves comprehensive interventions in school, family and community together, had the maximum impact with a mean effect size of 0.27 [4]. The meta-analysis by McQueen et al. found an effect size of 0.11 for the school based led social influence programs [20].

Cervantes et al. in their review of 25 evaluation studies having follow up ranging from 2 years to 15 years found significant 'reduction in baseline non-users who initiated smoking in experimental versus control conditions ranging from 9-14%" [4]. Similar reductions were 7-12% for weekly alcohol use and 6% for marijuana use [17,18,26].

Cervantes et al. report the results of ALERT program to be modest as reduction in drinking behavior and protection from initiation of

marijuana and tobacco use that decay after 1-2 years of intervention and the cognitive effects that persist longer. This is in contrast what the program website claims - a reduction in marijuana use initiation by 305 decreased smoking by 33-35%, and decreased marijuana use by 60% [17,18,26].

Long term follow up studies on STAR project demonstrated significant reduction in drug use among pupils who participated in the studies as compared to the controls. Results showed that at least 30% reduction in the use of tobacco, alcohol and marijuana was observed at the end of one year follow up. Further at three year follow up the effect on smoking and marijuana use was maintained but on alcohol was not maintained [9,16-18].

DARE, the most widely used school based program has been evaluated by many researchers. Thus, Cervantes et al. while reporting the 5 year follow up results of DARE program in 23 schools reported that "no significant differences were observed between intervention and comparison schools with respect to cigarette, alcohol or marijuana use" either at one year or at 5 years [4]. Earlier, Gosin et al. carried out meta-analysis of 8 methodologically sound short term evaluations of DARE program and found that short term effectiveness of DARE program for reducing or preventing drug use behavior was substantially smaller than that of programs emphasizing social and general competencies and other resistance skills training approaches [13].

Outcomes other than drug use

Cervantes et al. have reported that the programs based on knowledge dissemination approach did affect the awareness regarding drugs, even though they were not effective to prevent or reduce drug use [4]. Similarly, Cuipzers have reported that non-interactive programs may change the awareness level and psychological wellbeing of the students but not the drug use [28].

SAMHSA reported that the DARE evaluation studies found changes in student's knowledge about drugs, their drug use attitudes, resistance skills and their attitude towards police officers [26]. However, Samaniego and Gonzales earlier have reported that even these changes observed at the end of one year tend to decay by the end of 5 years after the program [19].

Cuipzers while referring to the findings of a meta-analysis by Neaigus, has reported that majority of the programs, irrespective of their effectiveness or non-effectiveness in preventing drug use, tried to increase awareness, correct the beliefs about drug use prevalence, increase self-esteem and provided resistance skills.

Findings of classroom-centered and family–school partnership program show that these interventions in first grade reduce aggressive behavior as compared with control pupils [20]. Aggressive behavior in nearly childhood has been found to be associated with high chances of drug use and violent behavior later in life.

Factors Influencing the Effectiveness of Intervention

Many factors have been considered to be important in influencing the outcome of a program based on the meta-analyses and reviews. Most of these factors pertain to the program characteristics. Thus, it has been found that the programs implemented at larger scales tend to become less effective [4,28], probably due to decrease in program implementation vigor. It has been found that programs targeting only tobacco use have been not effective while program targeting only alcohol use have been least effective within interactive category of programs [4,28]. It has been found that intensity or the number of sessions per se is not important. However, it has been reported that effective programs, can be further improved by increasing the number of sessions [4,28].

Furthermore, the booster sessions add to the effectiveness of interactive programs [4,28], and they enhance the sustenance of the effect [20]. The program effectiveness is also influenced by the personnel delivering the program. Programs delivered or led by the clinicians, especially mental health professionals are found to be the most effective followed by the peer led programs of interactive [4,28]. It has also found that including peers in the program delivery for activities like role –lay and role-modeling enhances the effectiveness [20,28]. McQueen et al. [20], also noticed that initial stronger effect of a program leads to more persistence of the program effectiveness.

Many of the reviewers have found that the programs with multiple components or the programs that include intervention at family and / or community level in addition to school based action are more effective. Labeling such programs as "comprehensive programs aiming at system wide changes" Cervantes et al. and Gosin et al. reported that the effect size of such programs was more than two folds of that of the life skill training programs or other effective programs involving only school based activities [4,13]. Similarly, Cuipzers found that the effect size is likely to increase with addition of program components found to be effective in efficacy studies. He also reported that the effect of school programs can be enhanced by adding community interventions. The similar observations have also been made by Sobell et al.; Malow et al.; Cervantes et al.; Deleva et al. these authors found a relative reduction rate for alcohol initiation was 30% for the intervention combining LST with Strengthening Families Program, while it was 4% for LST only [4,16-18].

Another important factor which has emerged as important component or mediator of the prevention programs is the "focus on a normative approach, including social prevalence knowledge, social acceptability knowledge, normative expectations, and friends" reaction to drug use" [4].

Implications of School-Based Interventions

It may appear difficult to make conclusive inferences from the claims and counterclaims of hundreds of school based prevention programs and studies reporting their outcome. However, with the help of good reviews and meta-analyses some of the broad inferences about the overall implications of school based interventions can be made.

(i) School based prevention programs do work and are useful in prevention or delay in the initiation of psychotropic substances, and reduction in their use by children and adolescents.

(ii) Some researchers have also estimated the cost-benefit ratio of some of the programs, especially programs combining school and family/community interventions. It has been estimated that monetarily for each dollar invested in such programs about $10 are saved.

(iii) Programs that are interactive and are based on social influence approach and general life skills training are effective programs; whereas, non-interactive programs aimed at enhancing awareness or enhancing merely positive psychological qualities like self esteem or general psychological well being are effective; even the programs imparting resistance skills alone are not sufficiently effective.

(iv) Involving peers in the program delivery enhances the effectiveness of the program.

(v) If the program is effective, adding booster sessions is likely to enhance the effectiveness and sustenance of the effect.

(vi) The program's effectiveness can be further enhanced by providing normative information about the prevalence of drug use among pupils and prevailing attitude towards drugs.

(vii) The programs combining school level and community level interventions are likely to be more successful than either of them alone.

(viii) The decision about the implementation of school based programs frequently are based on decisions other than effectiveness, as is evident from the continuation of DARE programs despite evidence of its effectiveness. Solution to such situations may lie in the integration of proven components like life skills training to the DARE program rather than voicing against the continuation of DARE program [26].

Literature Review of Alcohol Consumption and Use of Other Substances in Tanzania as One Example from a Developing Country

Alcohol consumption, harzadous drinking and use of other illicit substances among youths, adolescents and adults is a growing public health problem in Tanzania [29,30]. It has been reported that in a sample aged between 15-59 years, 17% and 9% consumed alcohol and used tobacco respectively [30]. It was further reported that living in a less affluent area was associated with higher life time rates of tobacco and alcohol use [30].

In general use of drugs has a long history since time immemorial. Drug use is becoming a major issue globally following introduction of heroin, and other illicit substances. Almost on daily basis you can not miss news on drug abuse and drug trafficking or some people having been caught in some kind of dubious illegal drug business both at local/community, national and international levels [31,32].

Use of illicit/psychoactive substances has been reported to have various negative consequences in most developing countries such as contracting and fuelling HIV/AIDS [33], absenteesm from school, poor school performance, destructive and other deviant behaviors [21,22,34-39]. Furthermore, most adolescent drug abusers end of in prison because of using these illicit substances or selling them or indulging themselves in unlawful activities such as violence, raping, vandalism [40] and death as final outcome.

Definition of a drug

A drug is defined as a substance (and often an illegal substance) that causes addiction, habituation on a marked range in consciousness. This definition includes drugs such as heroin, cocaine, and other cocaine products (e.g. baxuco), opium, cannabis and psycho-tropic substances as described in Mbatia [41].

Drugs can further be defined as simply chemicals that can change something in the body's chemistry or internal makeup. We use drugs in foods like vitamins. But these are both necessary and beneficial. We use drugs as prescribed by doctors. Drugs are harmful or even fatal if they are used for purposes not intended, or in the wrong way [32].

Many people use the terms 'drug use' 'substance abuse' and 'drug abuse' interchangeably. However, the term 'drug' is mainly used to refer to 'medicine', while substance abuse may include chemicals other than drugs, i.e. gasoline, cleaning fluids, glue, and other chemicals [32,42]. There is a common misconception that drug abuse has to do primarily with illegal drugs such as cocaine, marijuana, and heroin; or with illicit use of prescriptions and medication. There are many types of drugs that may be abused. For example, chloroquine and aspirin are drugs which are commonly used for treatment of malaria, reducing fevers/raised body temperature and they can be obtained as over the counter (OTC) medications with or without prescription [43,44]. These drugs especially chloroquine was the most used and abused drug at times as it was often used for self-medication in households. This drug was phased or removed from use/ from the market in Tanzania July, 2001 because of development of resistance and was replaced by sulfadoxine-pyrimethamine (SP). Thus, chloroquine was a fatal drug if misused/used irrationally such as some school girls used chloroquine at times for inducing abortion [43,44]. Similarly, aspirin is contraindicated in children between the aged 0-12 years as it carries a risk of causing what is known as Reyes' Syndrome [44].

Some people are said to combine aspirin and alcohol for a stronger drink. Also youths abuse substances such as gasoline, cleaning fluids, glue and other chemicals. Therefore not all abused chemicals are drugs. Drug abuse is defined as the use of a mood-altering drug to change the way one feels. Drugs may be abused by inhaling, sniffing, swallowing, or injecting into oneself. The drug may be legal or illegal; all the same it may be used for legitimate or medical reasons [32].

A drug or substance is considered abused if it is deliberately used to induce physiological or psychological effects (or both), and for a purpose other than for therapeutic purposes. The drug used should contribute to health risks, disruption of psychological functioning, adverse social consequences, or some combinations of these [42,45].

Effects of drug abuse on cognitive and social berhaviour [46]

Drug abuse and trafficking in Tanzania, drug abuse has become a national concern in Tanzania. Newspaper reports indicate drug abuse among youths. It is feared that in some primary and secondary schools in the country, up to 5% of the youth are said to have used bhang [29]. Also, problems like the use of hard drugs such as cocaine and heroin are increasingly surfacing among youths. There are several cases associated with drug trafficking which may imply drug abuse.

Sources and availability of drugs in Tanzania

Although the magnitude of the drug problem in Tanzania has not yet been well estimated by a comprehensive scientific study, it is clear that there are a significant number of Tanzanian youths who use drugs, and are being used as couriers in the international drug traffic [30]. There is a puzzle, however, over the availability of drugs in Tanzania. The majority of Tanzanians do not know the origin of drugs or their accessibility. The drug business is so secretive that when one is not in the 'loop' of the business, s/he may not know that it exists, and that there are drug-related problems.

However, it is evident from the media in Tanzania that Dar es Salaam, Zanzibar, and Tanga have had more cases of drug trafficking than others, possibly because of their access to sea transportation. This issue of drug trafficking in the regions needs further research. Youths from Tanzania-and even allover the world-have stowed away, most of them with fake passports in attempts to ferry drugs to countries other than those of their origin. Some youths end up either coming back to their home countries with money, and some valuable items; and unfortunately some are at times killed in the process.

Drugs commonly reported in Tanzania

According to Msambichaka et al. [45], drugs commonly reported in Tanzania include; hashish, raw opium, bhang, marijuana, mandrax, and heroin. These drugs are given slang terms such as 'ice' for crack-cocaine; *'unga'* (a Kiswahili word denoting flour) for heroin, *'msokoto' 'ganji', 'sigara kubwa'*, and *'mneli'* for the ones smoked like Cigars. Other

drugs reported to be used include aerosol or gaseous fumes other than smoke which make people 'escape' from realities.

Cocaine: This drug is grown in Bolivia and Peru. Today cocaine is taken in the form of either crystal or powder (crack). Cocaine can be smoked, sniffed, or injected into the body. Cannabis (in herbal form) and other psycho-tropic substances originate from many sources all over the world [17,18]. The media in Tanzania has showed frequent interceptions of the drug on its way to other countries. The drug is said to be brought in the country from other places [47].

Bhang: This drug is grown in some places in Tanzania, such as Mbeya, and Iringa, where it is believed to be' consumed as a vegetable or relish during meals. In Shinyanga and Tabora regions, bhang is grown and used as a stimulant to enable a person work longer hours in the farm [48].

Theories and reasons for using drugs

Drugs can act as hallucinogen [45]. Youths want to become 'high', or be in a state of euphoria and feel "cool". The users attribute the use of drugs to forgetting their social-economic problems, and other social distress. This justification may be dangerous due to the fact that with the current economic and social problems, more youths may abuse drugs which may lead to creating a 'drug culture', and the problems associated with drugs.

Drugs are said to increase performance and endurance as in cases of athletes. Several athletes have been caught and found guilty of using drugs to facilitate their performance. One such incidence was that of a soccer player Diego Maradona who used drugs in soccer, and was banned from the world cup soccer games in 1994. It has been theorized that individuals may use heroin or other opiates to relieve anxiety, to drop out of society, or to fulfill self-destructive wishes. Thus, personality theory is opposed to interactional theory.

General effects of drugs in a society

What are the effects of drugs on cognitive and social behaviour, the common symptoms of drugs, possible behaviors of drug abusers, and their physical emotional consequences?

At the local or village levels, a community with drug abusers faces problems of insecurity as drug abusers are prone to crimes. Because drugs alter feelings, the abusers may be involved in fighting. Further, they may steal so as to get money for purchasing drugs. Also, except for the few drug dealers, a community with drug abusers will always be in low social economic status because the youth, who form the majority of drug traffickers and abusers, will not be able to do any constructive work. As a result there will be low production, poor education and poor social services.

Other disadvantages are that for communities with many drug abusers may end up with people under health risks such as mental il1ness and HIV risks [36]. There may also be a lot of accidents such as motor accidents or even home accidents such as houses catching fire, etc. For example at the local community level, a nation with a lot of drug abusers will be all the poor for it. It is estimated that world-wide a total of $ 1 trillion in profit of drug trafficking is laundered in various banks all over the world. Politically, drug trafficking and abuse could have negative effects to the country. Countries involved in drugs especially developing ones are blacklisted by other nations which may have negative implication on trade and other business relations [47].

Individuals and how drugs exert their effects

All drugs affect the brain. That is why they are called psychoactive drugs since they alter feelings (mood altering), and work primarily in the areas of brain called the limbic system, the part where the person's feelings are altered. It is estimated that there are 30 million drug addicts world-wide, with heavy concentration among the youths, and that drug addiction has spread through the populations, especially the youth [30]. The exact number of drug abusers and traffickers in Tanzania is not fully established.

The addicts are affected in different ways depending on the type of drug used/abused. Marijuana causes relaxation intensified perception of stimuli, increased self-confidence, a sense of enhanced awareness and creativity, impaired motor coordination, reduced short-term memory, and distorted judgments [49]. From its effects, it is apparent that students or youths using marijuana may have their brain impaired, lack creative minds, and the ability to think properly [50]. In an experiment involving two groups, where one group was provided; with a placebo and the other marijuana, it was found out that the group which smoked marijuana could not recall words from a list of words they were given for recall [51]. Such students may not be able to remember things taught in class [50]. Furthermore, it has been reported that the use of marijuana results into distorted judgments [51], youths using marijuana may not be able to think objectively 'and critically. This can have adverse effects on the school population [50]. Santrock [51], argues that when marijuana is used daily in heavy amounts, it may impair the reproductive systems.

Cocaine is a stimulant which provides increased feelings of stamina, enhances mental capabilities, excitability, and occasional hallucinations. One of its side effects is depression. For sure, a depressed student may diverse be actively responding in class, consequently his/her performance in the classroom may be low, and in the final analysis the student may not be able to perform well academically [50]. Crack cocaine addicts have overt aggression and extreme withdrawal characteristics. Such behaviors may also increase drop-outs from school, or poor academic performances [50].

Cocaine intoxication occurs within one hour of using it, and includes at least two of the following symptoms: euphoria, grandiosity, excessive wordiness, excessive vigilance, and psychomotor agitation. It also induces at least two of the following physiological conditions: dilated pupils, elevated blood pressure, nausea and vomiting, chills or respiration, and also symptoms of antisocial behaviour [52].

Conclusion Based On "ATOD" Review for Approaches Used In the Us

The school based prevention programs are effective in preventing the drug use among the youth and hence can contribute to the control of drug abuse problems in a society / nation like the United States. However, careful decisions are required to select the appropriate programs that are of proven effectiveness, culturally relevant, sensitive and logistically feasible. These programs should be integrated with other family and community based preventive interventions to achieve the goals of a drug-free-society. These 4 qualities and others for choosing appropriate drug use prevention programs is highly relevant for developing countries in Africa if they can adopt the ATOD preventive measures in order to apply them to our young adolescents who are increasingly indulging in illicit substance abuse in Africa. Both developed and Developing countries are losing a significant number of this work force as they are at an increased risk of contracting and spreading HIV/AIDS, dying and getting other psychiatric disorders. As

it well known that, treatment costs for drug abusers are expensive for governments in developing countries to afford.

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