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DEDICATION

I dedicate this work to my lovely parents, siblings, and extended family who are a constant source of support and encouragement, particularly in this journey. Thank you for all that you have done. I honestly do not think that I would have made it without you people.

To my friends in Kenya and Egypt who have checked up on me and encouraged me particularly in times when I felt homesick and doubted whether I was doing the right thing. Thank you for keeping me grounded and reminding me that perseverance is a virtue we should all strive for. Knowing that you all are in my corner gave me the motivation to complete this work.

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To my boyfriend whose patience and belief in me still amazes me. I know I left at a very critical time but you never made me feel like I had abandoned you. Thank you for being so supportive and understanding, and letting me be myself.

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You all have been such a blessing and no words can fully express my gratitude. I love you all.

Finally, I dedicate this work to all those people who believe that the fight against alcohol and drug abuse begins with prevention. I hope that this work is a starting point in advocating for prevention work particularly in Kenya and Sub-Saharan Africa and that it is proof that prevention does work.

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Abstract

Much of the research on alcohol and drug abuse prevention examines general risk and protective factors without considering gender and is conducted primarily in Western cultural contexts. However, gender and culture are important to consider in the design and implementation of alcohol and drug abuse prevention programs because both gender and culture can play a role in the development of risk and protective factors. In order to assess the role that gender and culture might play in alcohol and drug abuse, a literature review was conducted. The literature review focused on the gender differences in reasons for alcohol and drug abuse and analyzed the differences and similarities between Western and African populations. The information gathered was then used to assess existing evidence-based substance abuse prevention programs listed in registries. These programs were examined to determine which risk and protective factors they address, and given gender and cultural differences in alcohol and drug abuse, whether these programs are likely to be effective for men and women across cultures. Finally, the prevention programs identified, using specific criteria, as being most suitable for adaptation in Kenya were selected and a website was created for disseminating culturally appropriate best practices.

Keywords: alcohol, drugs, men, women, substance abuse prevention programs

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Alcohol and illicit drug abuse causes serious problems affecting the psychological and physical health of millions. The United Nations Office on Drugs and Crime [UNODC] (2012) estimates that in 2010, 15.5-38.6 million people worldwide were problem drug users.[1] Around 200,000 people worldwide die each year from drug-related deaths. According to the World Health Organization [WHO] (2011), 320,000 young people between the ages of 15-29 die from alcohol-related causes each year. Overall, harmful alcohol use results in 2.5 million deaths each year that arises from unintentional and intentional injuries.

Harmful alcohol use and harmful drinking refer to a pattern of alcohol use that causes physical or mental damage to health (WHO, 1994). The serious injuries that are alcohol-related tend to occur in the younger age groups. Not only does harmful drinking impair the physical and psychological health of the drinker but it also harms the well-being and health of people exposed to the drinker by putting them at risk of accidents or violent behavior (WHO, 2011).

The abuse of illicit drugs causes significant health and social problems not only for the people who abuse them, but also for other individuals in their families and communities (WHO, 2012). Some examples of the health problems caused by illicit drug abuse include cardiovascular dysfunctions, lung diseases, and kidney function impairments. Drug-related deaths, whether by overdose, drug-induced accident, suicide, or medical conditions associated with or worsened by illicit drug abuse, represent the most severe health consequence of drug abuse, which often affects young people (UNODC, 2012).

[1] Problem drug users are individuals who are diagnosed with substance use disorders (either substance abuse or substance dependence).

Research has found that certain factors existing at the individual, family, school, and community levels put youth[2] at greater risk for alcohol and drug abuse while certain factors at these levels can serve a protective function and reduce their risk of alcohol and drug abuse (National Research Council [NRC] & Institute of Medicine [IOM], 2009). Some important risk factors that contribute to the development of alcohol and drug abuse among youth include rebelliousness, favorable attitudes towards substance use, parents or siblings substance use, poor parental monitoring, availability and accessibility of substances, and associating with drug-using peers (NRC & IOM, 2009). On the other hand, some important protective factors that shield or hinder the development of alcohol and drug abuse among youth include good coping and problems solving skills, academic achievement, parental monitoring, supportive relationships with family members, clear expectations for behavior, and engagement within school and community (NRC & IOM, 2009). Table 1 provides a complete list reviewing the risk and protective factors for alcohol and drug abuse among youth.

[2] The definition of youth used in this study is adopted from the United Nations' definition that describes them as people between the ages of 15 and 24.

Table 1

Risk and Protective Factors for Substance Abuse among Youth

Risk factors	Protective factors
Adolescence	
Individual • Emotional problems in childhood • Conduct disorder • Favorable attitudes towards substance use • Rebelliousness • Early substance use • Antisocial behavior	Individual • Academic achievement/intellectual development • High self-esteem • Emotional self-regulation • Good coping and problem solving skills • Engagement with peers and adults
Family • Parental substance use • Lack of adult supervision • Poor attachment with parents	Family • Parental monitoring • Supportive relationships with family members • Clear expectations for behavior and values
School and community • School failure • Low commitment to school • Not college bound • Aggression towards peers • Associating with drug-using peers • Favorable norms towards substance use • Accessibility and availability of substances	School and community • Presence of mentors and support for development of skills and interests • Opportunities for engagement within school and community • Positive norms • Clear expectations for behavior • Physical and psychological safety
Early adulthood	
Individual • Lack of commitment to conventional adult roles • Antisocial behavior	Individual • Subjective sense of adult status • Identity exploration in love, work, and world view • Future orientation • Achievement motivation
Family • Leaving home	Family • Balance of autonomy and relatedness to family • Behavioral and emotional autonomy
School • Attending college • Substance-using peers	School and community • Opportunities of exploration in work and school • Connectedness to adults outside of family

Note. The information in this table has been adapted from the NRC and IOM (2009).

While this list of risk and protective factors appears comprehensive, it fails to acknowledge that gender and culture may play a moderating role. Researchers (see Brady & Randall, 1999; Lev-Wiesel & Shuval, 2006; Pelissier & Jones, 2005) have found that men and women[3] cite different reasons for alcohol and drug abuse. In addition, most research on alcohol and drug abuse has been conducted on Western populations, which have an individualistic orientation that focuses on separateness and individual attributes while emphasizing standing out from the crowd, independent enterprise, and personal accomplishments. Furthermore, this orientation values individual rights and opportunities, encourages pursuing personal interests, and setting and achieving personal goals (Black, Mrasek, & Ballinger, 2003). Therefore, in Western cultures, an individual encountering alcohol and drug abuse issues may feel obliged to deal with these issues on their own without involvement of others as one is expected to be independent. This research may not necessarily be applicable in cultures that have a collectivist orientation as emphasis is placed on group interdependence and group success. Self-reliance is linked to ideas that advance group goals hence personal goals may be secondary to the interests of the group (Black et al., 2003). Hence, such cultures may not want to admit that alcohol and drug abuse is an issue affecting their society as this will require acknowledging that there are certain aspects of that society that have failed.

In order to understand better the role that gender and culture might play in drug and alcohol abuse and the prevention of such abuse, a literature review was conducted. Thirty-six research articles, which looked at reasons for alcohol and drug abuse among men and women, were examined. About half of these articles described research done in the United States and Canada (17 articles) and about half looked at Sub-Saharan Africa, including Kenya (19 articles).

[3] The terms men and women are used in this study since they describe the biological and physiological characteristics that differentiate the two groups.

For the purpose of this review, the reasons for alcohol and drug abuse across the different cultures are categorized into ecological levels, that is, the individual, family, school, and community factors that put youth at greater risk for alcohol and drug abuse.

In addition, some of the studies did not specify the types of substances that were investigated during the research hence the types of substances range from licit drugs to illicit drugs.[4] The reason for investigating a wide variety of substances might be that women are more likely to abuse licit drugs (in particular prescription drugs) while men are more likely to abuse illicit drugs (Hodgins, el-Guebaly, & Addington, 1997; Kauffman, Silver, & Poulin, 1997; Nelson-Zlupko, 1995).

The studies selected for the review cover a wide range of settings, for example, hospitals, alcohol and drug treatment centers, and schools. These studies include youth and older adults. The reason for this wide range in ages is that many of the factors that influence older adults' substance abuse are operative even before adolescence (Toray, Coughlin, Vuchinich, & Patricelli, 1991). Therefore, one way of decreasing substance abuse in older adults is addressing those risk factors that contribute to substance abuse in prevention interventions and programs targeting youth since many of these factors are active around that period.

Gender Differences in Reasons for Alcohol and Drug Abuse

United States and Canada

The United States and Canada are the two countries that have been chosen to represent Western populations that will be discussed in the review. These two countries were chosen because majority of the articles in this review are based on research conducted in these countries. Using articles based on the two countries also maintains consistency as other Western nations,

[4] Licit drugs included in this study are alcohol and prescription drugs; tobacco and over the counter medications have been excluded. Illicit drugs included in this study are cannabis, cocaine, heroin, and amphetamines.

for instance European countries and Australia, have some cultural differences as compared with the United States and Canada. This section of the review will highlight the reasons cited by both men and women from Western populations (United States and Canada) for alcohol and drug abuse. These reasons have been classified into individual factors, and family, school, and community factors. At the end of this section, there is a table summarizing the reasons provided by men and women for substance abuse.

Individual factors. The individual factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among women in the United States and Canada are having experienced physical, sexual, or emotional abuse and/or trauma, poor coping skills, having a psychological disorder (in particular, depression and post-traumatic stress disorder [PTSD]), and to increase confidence by removing inhibitions. Those factors from the articles reviewed, which have been found to be important in influencing alcohol and drug abuse among men in the United States and Canada, are curiosity, pleasure seeking, and poor coping skills. The factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among both men and women in the United States and Canada are rebelliousness, poor coping skills, boredom, for relaxation, favorable attitudes towards substance use, and sign of maturity.

Trauma, abuse, and other stressors. An article by Hsieh and Hollister (2004) that reviewed records of adolescents, mean age 15.72 for young women and 16.23 for young men, with substance abuse issues who completed a residential treatment program found that young women exhibited more severe psychological difficulties, worse self-image, more family-related problems, and exposure to sexual abuse incidents before admission to treatment than young men. They also found that young women were also more likely than young men to abuse drugs for

emotional escape. Toray et al. (1991) collected data through self-reports from adolescents, mean age 15.61 for young women and 16.08 for young men, in inpatient and outpatient drug and alcohol treatment centers and found that young women's rates of suicide attempts, and incidents of physical and sexual abuse were significantly higher than young men's. Young men on the other hand, were more likely to have school and legal problems, and displayed behavior problems. Interviews conducted with adolescent treatment clients in inpatient, outpatient, and long-term residential programs, mean age 15 for young women and 16 for young men, revealed that more young women than young men reported physical and sexual abuse, though those young men who reported physical abuse did so at a higher rate than young women (Rounds-Bryant, Kristiansen, Fairbank, & Hubbard, 1998).

An article by Weiss, Hsiang-Ching, and Pearson (2003) has pointed out that trauma and victimization could lead to substance abuse in women. These women abuse substances as a coping mechanism that has helped them deal with repeated victimization. Depression and PTSD were found to usually precede active substance abuse in women, while depression usually occurred after substance abuse in men. For example, Brady and Randall (1999) have found that women were more likely than men to attribute their drinking to a traumatic event or psychological disorder (such as depression and anxiety), which was more likely to be a precursor of the drinking. They have postulated that there is a strong relationship between substance use disorders[5] and physical and sexual assault, and childhood victimization. An analysis of self-reported archival data of young men and women, age range between 12 and 19, from a mental health organization found that a combination of physical abuse, sexual abuse, and family violence is positively correlated with substance abuse (Harrier, Lambert, & Ramos, 2001). Pelissier and Jones (2005), who have reviewed 49 articles highlighting the gender differences

[5] Substance use disorder is a term that encompasses both substance abuse and substance dependence.

among substance abusers, support this claim since they have found that men cite pleasure seeking while women state alleviation of physical and emotional pain as the main reasons for alcohol and drug abuse. Women who are abusers have also been found to have experienced higher rates of sexual and physical abuse as compared to men.

Tuchman (2010) has said that women who are substance abusers usually identify relationship problems as the cause of their substance abuse. According to a study conducted by Kauffman et al. (1997), women believed that substance abuse was brought about by relationship problems and stress. An article by Hodgins et al. (1997), has estimated that 28% to 53% of substance-abusing women are incest survivors; and 42% of women in treatment have reported physical abuse as adults. In general, women in treatment are more likely than men to have experienced violence, particularly spousal abuse. They have found that women in treatment linked substance abuse to a particular stress. Many women in treatment abused drugs after a specific traumatic event in their lives; and incest and rape are the frequently cited triggering events for drug abuse among women. Other traumatic events that precipitated drug abuse in women are sudden illness, accidents, and disruption in family life (Nelson-Zlupko, 1995).

Favorable attitudes towards substance use, rebellion, and boredom. A study by Lo and Globetti (2000) on high school youth, age range between 15 and 18, on their beliefs about moderate drinking showed that while both young men and women believed that alcohol lowered inhibitions and caused relaxation, only young women believed that alcohol increased confidence by removing inhibitions and provided an escape from problems. An article by Greydanus and Patel (2005) has found that both young men and women abuse substances to show that they are mature. If they also have favorable attitudes towards substance use, they are more likely to

continuing abusing. They also could be abusing these substances in rebellion against authority, like parents and teachers.

A longitudinal study carried out by Titus, Godley, and White (2006) on young men and women, age at intake was 16 and was 18 during the follow up, who had received alcohol and drug treatment services revealed the reasons for alcohol and drug abuse to be coping with difficulty (particularly at home), boredom (a means of passing time), and having experienced no negative effects. Abdelrahman, Rodriguez, Ryan, French, and Weinbaum (1999) sent out a survey to young men and women students, age range between 13 and 14, and found that those students who were rebellious were more likely to abuse alcohol and drugs than those who were not.

Family, school, and community factors. The factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among women in the United States and Canada are having a family member and/or spouse that is abusing, family history of substance abuse, history of over responsibility and disruption in the family of origin, environmental influences, and drug availability. Furthermore, the factor from the articles reviewed that has been found to be important in influencing alcohol and drug abuse among men in the United States and Canada is peer influence and acceptance. The factors that have been found to be important in influencing alcohol and drug abuse among men and women in the United States and Canada are availability of substances, peer influence, family influence, family history of substance abuse, media influence, to socialize, permissive drug use in the community, and family hardships.

Influence of peers and media. In an article by Hsieh and Hollister (2004) that reviewed records of adolescents, mean age 15.72 for young women and 16.23 for young men, with

substance abuse issues who completed a residential treatment program found that young men were more likely than young women to be influenced by peers to abuse substances. Young men and women who associated with alcohol-abusing peers were more likely than those young men and women who did not associate with alcohol-abusing peers to start abusing alcohol since their peers encouraged continual abuse (NRC & IOM, 2009).

An article by Greydanus and Patel (2005) has found that young men and women abuse substances since they are readily available, and influence from television shows, movies, and magazines directly encourage them to consume alcohol and other drugs. They could be abusing these substances also due to peer pressure. Young men and women who are exposed to positive images of alcohol abuse from television shows and movies are more likely to abuse alcohol than those young men and women who have not been exposed to these positive images (NRC & IOM, 2009). A longitudinal study carried out by Titus et al. (2006) on young men and women, age at intake was 16 and was 18 during the follow up, who had received alcohol and drug treatment services revealed the reasons for alcohol and drug abuse to be peer influence, family influence, availability of these substances, and to socialize.

Influence of family. In general, women are more likely to attribute the cause of substance abuse to family history or environmental influences (Kauffman et al., 1997; Tuchman, 2010). Toray et al. (1991) collected data through self-reports from adolescents, mean age 15.61 for young women and 16.08 for young men, in inpatient and outpatient drug and alcohol treatment centers and found that more young women than men had a family drug history. Brady and Randall (1999) have stated that women who abuse alcohol are more likely to have role models in their family of origin and spouses who abuse alcohol as compared to men. Pelissier and Jones (2005) have reviewed 49 articles highlighting the gender differences among substance abusers

and have found that women who are abusers are more likely than men to have a spouse and/or other family members who abuse drugs. In the review, men state peer acceptance while women cite drug availability as the main reasons for alcohol and drug abuse.

An article by Hodgins et al. (1997) has reiterated that women in treatment are more likely than men to be living with an active substance-abusing partner. Tuchman (2010) has stated that women who are substance abusers are more likely than men to come from families where one or more members abuse alcohol or other drugs. Such women are more likely than men to be in relationships with drug-abusing spouses or partners. Women who are substance abusers are more likely than men to come from families where substances are used as the main coping strategy and are more likely than men to have substance-abusing spouses or partners (Nelson-Zlupko, 1995). Women who are substance abusers are more likely than men to have a history of over responsibility in their families of origin and have experienced more disruption (Nelson-Zlupko, 1995; Tuchman, 2010).

Abdelrahman et al. (1999) sent out a survey to young men and women students, age range between 13 and 14, and found that those students who were more likely to abuse alcohol and drugs had a history of substance abuse treatment among their family members, their families were experiencing economic deprivation, and there was permissive drug use in their communities. An analysis of self-reported archival data of young men and women, age range between 12 and 19, from a mental health organization found that parental history of alcohol and drug abuse is positively correlated with the youth's substance abuse. A young man or woman whose mother has a history of drug abuse is more likely to engage in drug abuse as compared to a young man or woman whose mother does not abuse drugs (Harrier et al., 2001).

An article by Burrow-Sanchez (2006) on understanding substance abuse among young men and women has highlighted drug availability, having a family member who abuses substances, and associating with drug-abusing peers as reasons for their substance abuse. Young men and women who observe their parents drinking are more likely to become abusers as compared to those young men and women who have not observed their parents drinking. During adolescence, peer influence becomes stronger since peers provide an opportunity to model and encourage alcohol abuse (NRC & IOM, 2009).

Table 2 is a summary of the reasons that contribute to substance abuse among men and women in Western populations. An overview of the articles used to investigate the gender differences in reasons for alcohol and drug abuse from Western populations is outlined in Appendix A.

Table 2

Reasons for Alcohol and Drug Abuse among Men and Women from Western Populations (Youth and Older Adults)

Women	Men	Both women and men
Individual	Individual	Individual
Having experienced physical, sexual, or emotional abuse and/or trauma (substance abuse is a coping mechanism)[1,2,3,5,7,8,10,11]	Curiosity[3,13]	Rebellion[12,14]
	Pleasure seeking[8]	Poor coping skills (deal with difficulty particularly at home)[12,13,15]
Poor coping skills (deal with problems and other stressors)[1,4,6,9,10]	Poor coping skills (deal with physical abuse)[2]	
		Favorable attitudes towards substance use[12,13]
Having a psychological disorder (depression, PTSD)[1,3,5,7,8]		For relaxation[4]
		Boredom[13]
Increase confidence by removing inhibitions[4]		Sign of maturity[12]
Family	School and community	Family
Having a family member and/or spouse that is abusing[7,8,9,10,11]	Peer influence and acceptance[1,3,8]	Family influence[13,16,17]
Family history of substance abuse[3,6,9]		Family history of substance abuse[14,15]
		Family hardships[14]
History of over responsibility and disruption in their family of origin[9,11]		School and community
School and community		Availability of substances[12,13,17]
Environmental influences[6,9]		Peer influence[12,13,14,16,17]
		Media influence[12,16]
Drug availability[8]		To socialize[13]
		Permissive drug use in the community[14]

Sub-Saharan Africa

Sub-Saharan Africa comprises of 54 African Nations excluding Algeria, Egypt, Morocco, Tunisia, and Libya. Countries in Sub-Saharan Africa are classified as developing or low-income countries. Information on alcohol and drug abuse and related problems is scarce for the following reasons: 1) There are limited resources for research and opportunities for publication. 2) The research infrastructure is weak in many Sub-Saharan African countries. 3) Record keeping and documentation is inadequate, particularly in rural areas, which makes information from some sources unreliable. Despite these issues, considerable research on alcohol and drugs, mostly involving small sample sizes, has been carried out intermittently over the last 30 years in Kenya, Nigeria, South Africa, and Zimbabwe (Acuda, Othieno, Obondo, & Crome, 2011).

Khat (catha edulis) is a psychoactive substance that requires special mention because it is a licit drug commonly abused in Kenya. The khat plant is indigenous to East Africa and it is legally cultivated in high altitude areas in Kenya, Ethiopia, Somalia, Madagascar, and Yemen. Its fresh leaves and shoots contain cathinone and cathine, which are mild stimulants. When chewed and the liquid extracts are swallowed, it produces mild euphoria, increase in energy, alertness, and sleeplessness. Traditionally, elderly Muslim men used it in connection with traditional rites (Acuda et al., 2011).

Research on alcohol and drugs in Sub-Saharan Africa, though intermittent, has been ongoing. This section of the review will highlight the reasons cited by both men and women from African populations (Sub-Saharan Africa) for alcohol and drug abuse. These reasons have then been classified into individual factors, and family, school, and community factors. At the end of this section, there is a table summarizing the reasons provided by men and women for substance abuse.

Individual factors. The individual factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among women in Sub-Saharan Africa are poor coping skills and boredom. Furthermore, those factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among men in Sub-Saharan Africa are poor coping skills and boredom. The factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among both men and women in Sub-Saharan Africa are poor coping skills, to stay awake, curiosity, and boredom.

Coping with emotions. A study conducted among high school adolescent students in Seychelles, mean age 14, revealed that young men who experienced suicidal thoughts, sadness, loneliness, (having less than two close friends), insomnia (due to worrying), and felt that their parents did not understand their problems reported abusing cannabis. Young women too, who experienced sadness, felt that their parents did not understand their problems, insomnia (due to worrying) and suicidal thoughts, but who unlike the young men did not see loneliness as a factor, reported abusing alcohol and cannabis (Alwan, Viswanathan, Rousson, Paccaud, & Bovet, 2011).

Madu and Matla (2003) carried out a study among high school adolescent students in South Africa, mean age 17.25, and found that the young men stated anger, stress, and fatigue as reasons for illicit drug abuse (marijuana, glue, cocaine, and benzene) and alcohol. They also found that these young men abused these substances when they were bored and when in a party mood, implying that they enjoyed the effects of these substances. The young women abused these substances when they were angry, stressed, tired, and bored. A study by Pengpid, Peltzer, and Heever (2011) on individuals using outpatient services in an urban hospital in South Africa,

age range 25-34, showed that psychological distress was cited as a reason why men abused alcohol.

Stress, boredom, and curiosity. National Campaign Against Drug Abuse Authority [NACADAA] (2010b) conducted a study on alcohol use in Central Province of Kenya, age range 15-64, and found that men attributed their abuse of alcohol to idleness and as a coping mechanism to deal with work-related stress and unemployment. Both men and women in this study were found to abuse alcohol as a way of passing time. A study on alcohol and drug abuse carried out among urban slum adolescents in Nairobi, Kenya, age range 12-24, revealed that young men abused alcohol and other drugs in order to deal with hardships, for instance, unemployment. The study also revealed that young men were more likely than young women to engage in alcohol and drug abuse as a way of passing time due to idleness (Mugisha, Arinaitwe-Mugisha, & Hagembe, 2003). Another study conducted by NACADAA (2010a) on parents in Nairobi, age range 31-40, showed that one of the factors that influenced substance abuse among young men and women was boredom.

Odejide (2006) has reviewed articles on drug use and abuse in Africa and has found that both men and women attribute drinking alcohol at an early age to personal problems. He has found that the continuing drug abuse among street children is a coping mechanism that helps them deal with the difficult conditions they face on the streets. He also has found that in Mozambique many men and women abuse cannabis to cope with general pressure, while others abuse to dull the impact of the trauma they experienced during the civil war. A study by Mbatia, Jenkins, Singleton, and White (2009) on prevalence of hazardous drinking and drug abuse in urban Tanzania, age range 15-59, revealed that men and women who reported recent stressful life events and lacked social support had higher lifetime rates of alcohol abuse.

A study conducted among men and women primary care clinic patients in South Africa, age range 18-25+, showed that high stress was a factor that contributed to hazardous substance abuse (Ward et al., 2008). A review on illicit drug abuse in South Africa by Karl, Shandir, Bruce, and Nancy (2010) has found that men and women abuse psychoactive substances to cope with and escape from the harsh realities such as social injustices and high unemployment, and conditions of social and/or personal misery. Studies involving high school students in Nairobi (mean age 17) and Western Kenya, college students in Western Kenya (mean age 22.9), and parents in Nairobi (age range 31-40) indicated that young men and women abused alcohol and drugs to cope with stress and problems. Examples of these problems are unemployment, emotional problems, family conflict, and distressing feelings like frustration and hopelessness (Atwoli, Mungla, Ndung'u, Kinoti, & Ogot, 2011; NACADAA, 2010a; Ndetei, Khasakhala, Mutiso, Ongecha-Owuor, & Kokonya, 2009; Otieno & Ofulla, 2009).

Amphetamine abuse is common among young men and women because amphetamines increase their energy and enable them to stay awake for a long period to engage in either studies (students) or long distance driving (professional truck drivers) (Odejide, 2006). A study carried out among men and women undergraduate medical students in Ethiopia, age range 20-24, on substance abuse and its predictors showed that these students cited staying awake to study as a reason for abusing khat (Deressa & Azazh, 2011). A study carried out on young men and women high school students in Central Province of Kenya showed that these students abused drugs because the drugs helped them to stay awake and alert for long hours so that they could study (Kyalo & Mbugua, 2011).

Mwansa et al. (2004) conducted a study on psychoactive substance abuse among young men and women in South Africa, Tanzania, and Zambia, age range 10-21, which revealed that

these young people abused alcohol for enjoyment purposes. The review by Odejide (2006) has found that young men and women from poor communities tend to associate drug abuse (licit or illicit) with fun and enjoyment. A study carried out among men and women undergraduate medical students in Ethiopia, age range 20-24, on substance abuse and its predictors showed that these students cited enjoyment as a reason for abusing khat (Deressa & Azazh, 2011). Studies carried out on high school students and college students in Western Kenya (mean age 22.9), and on parents in Nairobi (age range 31-40) indicated that young men and women abused alcohol and other drugs out of curiosity (Atwoli, et al., 2011; NACADAA, 2010a; Otieno & Ofulla, 2009).

Family, school, and community factors. The factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among women in Sub-Saharan Africa are poor parental monitoring, marital and family problems, and peer influence. Additionally, the factor from the articles reviewed that has been found to be important in influencing alcohol and drug abuse among men in Sub-Saharan Africa is poor parental monitoring. Those factors from the articles reviewed that have been found to be important in influencing alcohol and drug abuse among both men and women in Sub-Saharan Africa are having a family member and/or peers who are abusing, family and peer influence, conducive environment for substance use and drug availability, ability to buy alcohol and drugs, and to socialize.

Influence of family. Alwan et al. (2011) conducted a study among high school adolescent students in Seychelles, mean age 14, and found that young men whose parents did not know or rarely knew what they were doing reported abusing alcohol and cannabis while young women whose parents did not know or rarely knew what they were doing reported alcohol and

cannabis abuse. A study on alcohol and drug abuse among urban slum adolescents in Nairobi, Kenya, age range 12-24, showed that young women who experienced marriage disruption (separated, divorced, or widowed) were more at risk than young men to abuse alcohol (Mugisha et al., 2003). A study conducted by NACADAA (2010b) on alcohol use in Central Province of Kenya, age range 15-64, found that women cited marital problems and problems with their parents as the main reasons for abusing alcohol. Two studies carried out by NACADAA on parents in Nairobi (age range 31-40) and the general population in Kenya (age range 15-65) showed that having close family members such as parents and/or relatives who abused alcohol and other drugs influenced both young men and women to abuse these substances (NACADAA, 2007; NACADAA, 2010a). Otieno and Ofulla (2009) conducted a study with high school students in Western Kenya and found that having parents, siblings, and extended family who abused alcohol and drugs was a reason why these young men and women started to abuse these substances.

A rapid assessment response study on drug abuse carried out in South Africa, age range 16-51, showed that men and women reported that living with other abusers would influence them to engage in substance abuse (dos Santos, Trautmann, & Kools, 2011). A study by Mwansa et al. (2004) on psychoactive substance abuse among young men and women in South Africa, Tanzania, and Zambia, age range 10-21, found that having family members (particularly fathers), friends, and knowing someone who was not necessarily a friend or close relative who abused alcohol and drugs predisposed these young people to substance abuse. The study also indicated there was a high level of acceptance in licit substance abuse (alcohol) not only among young people but also within their family and peers who actively encouraged their abuse.

Two studies carried out by Mugisha et al. (2003) (age range 12-24), and NACADAA (2010b) (age range 15-64), on alcohol and drug abuse among urban slum adolescents in Nairobi, Kenya and on alcohol abuse in Central Province of Kenya respectively, found that in contrast to research in the United States and Canada, in Sub-Saharan Africa, young women were more prone to peer influence than young men when it came to alcohol and drug abuse. Deressa and Azazh (2011) conducted a study on substance abuse and its predictors between men and women undergraduate medical students in Ethiopia that found students who had reported their father's alcohol abuse were more likely to be consumers of alcohol. A review on the status of drug use and abuse in Africa has found that men and women attribute drinking at an early age to both peer and family influence (Odejide, 2006).

Influence of peers. A study conducted in a high school in Western Kenya revealed that both young men and women indicated influence from friends, family (parents and siblings), and relatives (extended family) to use alcohol and drugs as one of the reasons they started to abuse these substances. Other young men and women in a public rural high school, mean age 16.8, stated that they were introduced to alcohol by their friends (both fellow students and out of school peers). A group of both young men and women high school students in Central Kenya indicated peer influence as a major factor in substance abuse among students (Kyalo & Mbugua, 2011; Ndetei, Khasakhala, Mutiso, Ongecha-Owuor, & Kokonya, 2010; Otieno & Ofulla, 2009).

Other studies carried out involving the general population in Kenya (age range 15-65), college students in Western Kenya (mean age 22.9), and parents in Nairobi (age range 31-40) showed that young men and women cited peer pressure by relatives and friends as a reason to abuse alcohol and other drugs (Atwoli et al., 2011; NACADAA, 2007; NACADAA, 2010a). Deressa and Azazh (2011) conducted a study on substance abuse and its predictors between men

and women undergraduate medical students in Ethiopia that revealed peer influence as an important factor that encouraged substance abuse among these students. Those students who had reported a friend's abuse of khat and alcohol were more likely to be abusers in comparison to those students whose friends were non-abusers.

Community support. Studies conducted on high school students in Central Kenya, parents in Nairobi (age range 31-40), and the general population in Kenya (age range 15-65) cited having a positive perception of drugs by young men and women, easy access to alcohol and drugs, and having one's community "approve" substance abusing behavior as factors that were likely to promote substance abuse (Kyalo & Mbugua, 2011; NACADAA, 2007; NACADAA, 2010a). A review of illicit drug abuse in South Africa revealed that many men and women found themselves in a social environment that was favorable to drug abuse, in other words, there was a fair degree of social support for drug abuse and there was exposure to such abuse (Karl et al., 2010). Research conducted on college students in Western Kenya (mean age 22.9) and the general population in Central Kenya (age range 15-64) stated that young men and women abused alcohol and other drugs while interacting with others socially (Atwoli, et al., 2011; NACADAA, 2010b).

Financial status. A study by Mbatia et al. (2009) on hazardous drinking and drug abuse in urban Tanzania, age range 15-59, found that both men and women who were employed, were household heads, and were between the ages of 25 to 34 reported hazardous drinking since they had greater access to money which enabled them to purchase alcohol. Ward et al. (2008) carried out a study on prevalence of substance abuse between both men and women South African primary care clinic patients, age range 18-25+, which found that being employed was cited as a reason for abuse since it made it possible for individuals to buy alcohol and other drugs.

Table 3 is a summary of the reasons that contribute to substance abuse among men and women in African populations. An overview of the articles used to investigate the gender differences in reasons for alcohol and drug abuse from African populations is outlined in Appendix B.

Table 3

Reasons for Alcohol and Drug Abuse among Men and Women from African Populations (Youth and Older Adults)

Women	Men	Both women and men
Individual	Individual	Individual
Poor coping skills (deal with psychological distress or stress)[1,2]	Poor coping skills (deal with psychological distress or stress)[1,2,3,4,5]	Poor coping skills (deal with problems, stress, or trauma)[6,7,8,9,10,11,12,13]
Boredom[2]	Boredom[2,4,5]	Boredom[4,6,11,14,16]
		Stay awake[6,14,15]
		Curiosity[10,11,13]
Family	Family	Family
Poor parental monitoring[1]	Poor parental monitoring[1]	Having family members who are abusing[11,13,14,16,17,19]
Marital and family problems[4,5]		Family influence[6,10,11,13,19]
School and community		School and community
Peer influence[4,5]		Peer influence[6,10,11,13,14,15,18,19]
		Conducive environment for substance abuse and drug availability[9,11,15,19]
		Having peers who are abusing[16,17]
		Ability to buy alcohol and drugs[7,8]
		To socialize[4,10]

Similarities and Differences in Reasons for Alcohol and Drug Abuse across Gender and Culture

The literature review, conducted on two different cultures, found both similarities and differences in reasons for alcohol and drug abuse indicated by men and women in Western and African populations. The similarities found in individual and family factors respectively that contribute to alcohol and drug abuse among women in both Western and African populations are poor coping skills and family problems. In men, the similarity found in individual factors between these two populations is poor coping skills. In both men and women, the similarities found in individual, family, school, and community factors respectively between these two populations are poor coping skills, boredom, family influence, family history of substance abuse, availability of substances, peer influence, to socialize, and permissive drug use in the community.

There are differences found in the individual, family, school, and community factors that contribute to alcohol and drug abuse among men and women from both Western and African populations. The individual factors that affect women from Western populations are having experienced physical, sexual, or emotional abuse and/or trauma, having a psychological disorder (e.g. depression, PTSD), and to increase confidence by removing inhibitions. Boredom affects women from African populations. The family factor that affects women from Western populations is family history of substance abuse while poor parental monitoring affects women from African populations. The school and community factors that affect women from Western populations are environmental influences and drug availability while peer influence affects women from African populations.

The individual factors that affect men from Western populations are curiosity and pleasure seeking while boredom affects men from African populations. The family factor that affects men from African populations is poor parental monitoring. The school and community factor that affects men from Western populations is peer influence and acceptance. The individual factors that affect both men and women from Western populations are rebellion, favorable attitudes towards substance use, for relaxation, and sign of maturity while those that affect men and women from African populations are to stay awake and curiosity. The family factor that affects both men and women from Western populations is family hardships. The school and community factor that affects men and women from Western populations is media influence while those that affect men and women from African populations are having peers who are abusing and ability to buy alcohol and drugs. Table 4 outlines these gender differences and similarities in reasons for alcohol and drug abuse among men and women from Western and African populations.

Table 4

Similarities and Differences in Reasons for Alcohol and Drug Abuse among Men and Women from Western and African Populations

Women	Men	Both women and men
Similarities		
Individual	Individual	Individual
Poor coping skills	Poor coping skills	Poor coping skills
		Boredom
Family		
Family problems		Family
		Family influence
		Family history of substance abuse
		School and community
		Availability of substances
		Peer influence
		To socialize
		Permissive drug use in the community
Differences		
Individual	Individual	Individual
Western population	Western Population	Western population
Having experienced physical, sexual, or emotional abuse and/or trauma	Curiosity	Rebellion
	Pleasure seeking	Favorable attitudes towards substance use
Having a psychological disorder	African population	
	Boredom	For relaxation
Increase confidence by removing inhibitions	Family	Sign of maturity
	African population	
African population	Poor parental monitoring	African population
Boredom		Stay awake
		Curiosity

Women	Men	Both women and men
Family	School and community	Family
Western population	Western population	Western population
Family history of substance abuse	Peer influence and acceptance	Family hardships
		School and community
African population		Western population
Poor parental monitoring		Media influence
School and community		African population
Western population		Having peers who are abusing
Environmental influences		Ability to buy alcohol and drugs
Drug availability		
African population		
Peer influence		

Note. The information in this table is found in Table 2 and Table 3.

The Present Study

The value of identifying risk and protective factors, which impact alcohol and drug abuse, is that it allows us to develop prevention programs, which either reduce risk factors or strengthen protective factors. However, in order for such programs to be effective, it is vital to take into consideration the impact of gender and culture on risk and protection. A prevention program, which is aimed at young African women, for example, may not be effective if it does not address risk factors such as marital and family problems, and peer influence, which are important in contributing to alcohol and drug abuse among African women.

The Institute of Medicine [IOM] has classified prevention programs into three main categories: 1) Universal prevention programs that target the general population (e.g. school-based programs offered to all children to teach skills on resisting alcohol and other drug use). 2) Selective prevention programs that target those who are at a high-risk for substance abuse (e.g. programs offered to children exposed to risk factors like parental substance abuse). 3) Indicated

prevention programs that are aimed at individuals who may already display signs of substance use or abuse and these programs are designed to prevent the onset of regular or heavy use (e.g. interventions for youth already using alcohol and other drugs) (Schinke, Brounstein, & Gardner, 2002).

It is important to note this classification of prevention programs because some prevention programs have been designed to target specific populations, for example, youth who are already using alcohol and drugs. These programs, therefore, may not be effective if implemented with a different target population, for example, all youth (both users and nonusers). Thus, organizations and institutions interested in prevention work need to know the target population a particular prevention program focuses on before implementing the program in the community. Therefore, the prevention programs featured in the current review have been classified into one or more of these categories.

The purpose of the present study is to conduct a review of evidenced-based substance abuse prevention programs that target youth. These programs will be assessed to see which risk and protective factors they address, and given gender and cultural differences in alcohol and drug abuse, whether these programs are likely to be effective for young women and men across cultures. After doing this, the programs that address the risk factors, which impact alcohol and drug abuse among men and women in Kenya will be highlighted because they are mostly likely to be effective in this society.

All this information will then be used to create a website for use in Kenya that will contain information about prevention and prevention programs that target youth. This website is necessary especially in Kenya because currently the focus is shifting towards alcohol and drug prevention, which unfortunately is lacking as prior focus has been on treatment. NACADAA,

which is a state corporation that was established under an Act of Parliament to coordinate a multisectoral response to substance abuse in Kenya, recommends the establishment of preventive services for substance abuse (NACADAA, 2007). Therefore, the website will be a resource tool available to organizations interested in implementing alcohol and drug prevention programs targeting youth.

Method

Assessing Cultural Fit

In the study, two tables, one of which was developed through the literature review, were used to evaluate existing alcohol and drug prevention programs for their suitability among young men and women in Kenya. First, Table 3, which discussed the reasons for alcohol and drug abuse among men and women from African populations was used because this information was gathered from studies conducted specifically in Sub-Saharan Africa and it gave insight on why men and women in Sub-Saharan Africa start and/or continue abusing alcohol and drugs. The information in this table was then compared to the risk factors that were targeted by the particular prevention program being reviewed to find whether that program could be used with young men only, young women only, or both young men and women in Kenya.

Second, Table 1, which highlighted the risk and protective factors in relation to alcohol and drug abuse among youth was used as these factors, through research, were found to have a significant impact on either exposing or protecting individuals and addressing these factors will likely protect individuals from developing alcohol or drug addiction. The information in this table was then used to identify the risk and protective factors that were minimized or promoted by the various prevention programs.

Assessing the Criteria used in Selecting a Prevention Program

Each program that was evaluated was examined using the checklist below to ensure that the programs selected were evidence-based and appropriate for adaptation in Kenya. This checklist was adapted from the Center of Substance Abuse Prevention [CSAP] (2009):

Evidence-based. According to the Strategic Prevention Framework (CSAP, 2009), evidence-based programs fell into one or more of the following categories: inclusion in a registry of evidence-based programs; reported (with positive effects on targeted outcome) in peer reviewed journals; or documented effectiveness by other sources with consensus judgment of informed experts (prevention researchers, local prevention practitioners, and key community leaders as appropriate).

Included settings in which the programs were to be delivered. These were schools, universities and other institutions of higher education, community settings like non-governmental organizations [NGOs], community-based organizations [CBOs], or religious organizations, homes, work places, and residential childcare facilities.

Identified program consumers. This was done using their ages and whether it targeted young men only, young women only, or both young men and women.

Addressed individual, family, school, and community factors that influenced alcohol and drug abuse. In particular, those factors that influenced alcohol and drug abuse among men and women in Sub-Saharan Africa as described in Table 3 since some of these factors are more important in African populations than Western populations, for instance, poor parental monitoring and the ability to buy alcohol and drugs.

Culturally appropriate. The following African cultural values were considered if the program was to be implemented successfully: First, interdependence among people is highly

valued in most African societies. People care for one another and the bonds go beyond biological affinity. The general premise is that whatever happens to an individual affects the community as a whole hence people are willing to help others for the sake of the development of the community and such reciprocity is expected (Igboin, 2011). Therefore, it is vital to ensure that prevention programs that incorporated community involvement as part of their program assessed the readiness of the community in accepting the program as this would ensure that there was community buy-in, which would increase the chances of the program being implemented successfully.

Second, family is highly valued; the nuclear family functions within the extended family. Children have their obligations to their parents just as the parents are obligated to their children. Generally, individuals are encouraged to discuss freely their problems with others and to look for suggestions and solutions with the help of others (Igboin, 2011). Hence, prevention programs that included family involvement (nuclear, extended, or other caregivers) need to educate parents or other care givers on how to address alcohol and drug issues with youth, while encouraging dialogue between them, as members within a family are interconnected.

Inclusion of program materials (e.g. manuals) that guided implementation. The manuals were either free or were purchased. These manuals generally outlined how to implement the program, have handouts for the program consumers and implementers, and included activities that involved the participation of the program consumers.

Procedure

Identifying prevention programs. In the study, a search on registries of evidence-based programs was used to identify alcohol and drug prevention programs targeting youth. It is important to note that registries were used because they provided summarized descriptions of the

programs; the strength of evidence of the programs was defined according to accepted standards for scientific research; and they presented a variety of practical information concerning the programs (CSAP, 2009).

The registries that were searched were the Substance Abuse and Mental Health Services Administration's [SAMHSA] National Registry of Evidence-based Programs and Practices [NREPP] (2012) and the Office of Juvenile Justice and Delinquency Prevention [OJJDP] Model Programs Guide (2012). The search criteria that was used in SAMHSA's NREPP registry (2012) was as follows: area of interest: substance abuse prevention, outcome categories: alcohol and drugs, and age: adolescent (13-17 years) and young adult (18-25 years). The search criteria used for the OJJDP registry (2012) was as follows: phase: prevention, problem behaviors: alcohol and other drug use, and age: high school/young adult (14-21 years).

Assessing the programs. When assessing whether the substance abuse prevention programs provided by the registries could be adapted into the Kenyan society, the following steps were used: 1) Reading the program description provided in the registry then going to the program's website and getting more information on the program. 2) Noting the risk factors that are minimized and protective factors that are promoted by the program, and using Table 1 to list these factors. 3) Identifying the settings the program was implemented (e.g. schools, home, universities, and other community settings). 4) Classifying the program consumers (e.g. young men and women) and their ages using Table 3 to assess the gender that is best served by the program based on the reasons given for alcohol and drug abuse, and whether they match with the risk factors recorded. 5) Identifying the factors that make the program culturally appropriate and adaptable in Kenya (e.g. involvement of family, school, and/or the community). 6) Identifying the outcomes expected after implementing the program (e.g. positive attachment to peers, family,

and school, attitude change towards alcohol and drug abuse). 7) Noting whether the program materials are available and if training is required while ensuring there is a guide and support for implementation of the program. 8) Identifying the prevention category, as defined by the IOM, which indicated the intended target population for the program (e.g. universal, selective, and/or indicated); making sure that the program is implemented with the intended population (e.g. youth at risk or those already using alcohol and drugs).

Results

Fifty-one prevention programs were found in the SAMHSA's NREPP (2012) and OJJDP (2012) registries. Out of these 51 programs, 21 programs (41%) met the criteria outlined in the methods section. These criteria were: 1) It is evidence-based. 2) It mentioned the settings in which the programs were to be delivered. 3) It identified the consumers of the program. 4) It addressed individual, family, school, and community factors that influenced alcohol and drug abuse. 5) It is culturally appropriate. 6) It has program materials available to guide implementation. The programs that were selected had to meet all of the criteria, particularly the cultural aspect, because doing so meant that these programs were more likely to be successfully adapted and implemented in Kenya. Additionally, having the programs meet all of the criteria supports the fidelity-adaptation balance (Castro, Barrera & Martinez, 2004), that ensures the effectiveness of the programs since they are evidence-based while making these programs appropriate and relevant to the target population or community. Two prevention programs were found to target young women only, while 19 prevention programs were found to target both young men and women; no programs targeted young men only. These prevention programs have been outlined in Appendix C.

Program Characteristics

Table 5 gives a description of the program characteristics of the substance abuse prevention programs that can be adapted in Kenya. These characteristics include age of the program consumers, setting that the program was implemented, risk and protective factors addressed by the program, type of program, and the costs involved. This information was then used to outline the prevention programs that can be adapted in Kenya and in creating a website, which will be a resource tool for organizations and institutions interested in alcohol and drug prevention work targeting youth.

Table 5

Program Characteristics of Substance Abuse Prevention Programs that can be Adapted in Kenya

Program characteristics	Number of programs
Age	
• Program consumers are 15 years	2
• Program consumers are between 15-18 years	16
• Program consumers are between 19-24 years	3
Settings where programs were implemented[6]	
• Schools	16
• Community settings (e.g. NGOs, CBOs, religious organizations)	12
• Homes	3
• Workplace	2
• Universities and other institutions of higher education	1
• Residential childcare facilities	1
Risk and protective factors[7]	
Risk factors addressed	
• Favorable attitudes and norms towards substance use	15
• Early substance use	14
• Stressors and problem situations	11
• Associating with drug-using peers	10
• Poor attachment with parents and poor parental monitoring	7
• Low commitment to school	7
• Availability and accessibility of substances	6
• Parental substance use	4
• Rebelliousness and ineffective communication	3

[6] The prevention programs can be adapted in either urban or rural settings depending on the availability of resources and the nature of the program.
[7] Three programs addressed alcohol only, one program addressed other drugs only, and 17 programs addressed both alcohol and other drugs.

Program characteristics	Number of programs
Protective factors promoted	
• Supportive relationships with family, peers, and other adults	17
• Good coping and problem solving skills	16
• Positive norms and clear values	10
• Engagement with peers and adults	7
• School and community engagement	7
• High self-esteem	6
• Clear expectations for behavior	5
• Academic achievement	4
• Emotional self-regulation and physical and psychological safety	4
Type of program	
• Psycho-educational programs[8]	15
• Media programs[9]	3
• Support group intervention[10]	1
• Community organizing program[11]	1
• Peer education program[12]	1
Costs[13]	
• Free program materials	3
• Program materials cost between $10 – $120	8
• Program materials cost between $130 – $250	5
• Program materials cost from $260 onwards	7

[8] Psycho-educational programs provided information on alcohol and drugs and positive coping strategies on handling stressors to parents/caregivers and youth.
[9] Media programs used real life stories of youth who had become substance abusers and how they dealt with it; the other is a media campaign that addressed misconceptions about alcohol.
[10] Support group intervention is for youth identified as being at high-risk for substance abuse.
[11] Community organizing program aimed at reducing underage youth access to alcohol by changing community policies and practices.
[12] Peer education program discussed sensitive topics through interactive theatre performance and workshops.
[13] For the cost of trainings and technical assistance/support, one needs to contact the program developer. Evaluation and implementation costs are dependent on the organization implementing the prevention program; this is dependent on whether they have individuals in the organization who can implement and evaluate the programs or they need to hire such individuals.

Discussion

The Issue of Gender in Alcohol and Drug Abuse

Many questions remain to be answered about gender differences in patterns of abuse, risk factors, and intervention effects, as well as the causes of such differences. Gender is defined as the characteristics a society assigns to biological sex, social roles, expectations, and appropriate behaviors to men and women. The ways by which a society defines such roles for men and women shapes the way they view themselves and others view them, and the ways that opportunities will be offered or denied based on biological sex (Amaro, Blake, Schwartz, & Flinchbaugh, 2001). As gender plays such a central role in our lives, it is very likely to affect alcohol and drug abuse, yet research from most substance abuse prevention programs has not examined the impact of gender (Amaro et al., 2001; Blake, Amaro, Schwartz, & Flinchbaugh, 2001; Guthrie & Flinchbaugh, 2001; Rohrbach & Milam, 2006). In addition, even when researchers examine the differential effectiveness of programs by gender, they often fail to consider the role gender might have in shaping risk behaviors, and do not incorporate the risk and protective factors unique to men and women in the design of interventions being delivered (Blake et al., 2001).

Need for Gender Appropriate Programs

According to Rohrbach and Milam (2006), men and women may develop patterns of drug abuse at different rates and by different pathways, therefore gender appropriate programs could be designed to place greater emphasis on the risk factors that appear to be more important for each group. Gender appropriate programs are those programs that recognize the importance of including attributes that impact or influence men and women (Guthrie & Flinchbaugh, 2001). While some intervention programs have been implemented with men or women only, few

interventions have been based on gender informed theoretical models. Mixed gender prevention programs that do not incorporate some gender appropriate components may not be as effective as prevention programs that include at least some gender appropriate components (Rohrbach & Milam, 2006).

Although the idea of structuring prevention programs differently for men and women is not new, few researchers and practitioners have experimented with this type of prevention approach (Rohrbach & Milam, 2006). Program designers or interventionists in the 21st century need to make an effort to understand that gender does matter and to include gender as a social construct in substance abuse prevention programs especially for youth (Guthrie & Flinchbaugh, 2001). Substance abuse prevention research should acknowledge that gender has a major defining social factor in shaping risk for both men and women and integrate this into the design of intervention programs (Amaro et al., 2001).

Selecting Programs Based on Gender Appropriateness

Nineteen programs in the current review can be adapted and implemented with both young men and women in Kenya since they address the factors that contribute to alcohol and drug abuse among men and women from African populations. These factors include poor coping skills, boredom, to stay awake, curiosity, having family members and/or peers who are abusing, family and peer influence, drug availability, having the ability to buy alcohol and drugs, and to socialize. The following two programs listed can be adapted and implemented with young women only in Kenya since they appear to address factors specific to women from African populations, that is, marital and family problems: Coping with Work and Family Stress and Curriculum-Based Support Group (CBSG) Program. One other program, namely, Teenage

Health Teaching Modules (THTM), can also be adapted and implemented with young women only in Kenya since it addresses the issues of poor parental monitoring and peer influence.

When it comes to young men, the programs that address the issue of boredom are those programs that encourage young people to be involved in activities either at school and/or in the community. One of the reasons they abuse alcohol and drugs could be that they are idle and have nothing to do in their free time hence engaging them in activities is a positive way of keeping them busy. There were seven programs found to incorporate school and/or community engagement hence they will be suitable in addressing the issue of boredom found among young Kenyan men. These programs include: Challenging College Alcohol Abuse (CCAA), Creating Lasting Family Connections (CLFC), Michigan Model For Health, Reconnecting Youth (RY), Story Telling For Empowerment, Teenage Health Teaching Modules (THTM), and Building Assets – Reducing Risks (BARR).

The Issue of Culture in Alcohol and Drug Abuse

Culture plays an important role in determining risk and protective factors for alcohol and other drug abuse (Amaro et al., 2001). Culturally based programs are programs that use culture, history, and core values as a medium to motivate behavior change. Understanding cultural differences in the predictors and determinants of substance abuse is an essential element in developing culturally sensitive substance abuse prevention interventions. Culturally sensitive prevention programs incorporate surface structure and deep structure in the programs (Resnicow, Soler, Braithwaite, Ahluwalia, & Butler, 2000).

Surface structure involves matching intervention materials and messages to observable social and behavioral characteristics of a target population, for example, using people, places, and language familiar to, and preferred by the target audience (Resnicow et al., 2000). For

instance, the Challenging College Alcohol Abuse (CCAA) intervention is a media campaign that uses engaging photos of university students in a familiar campus location with a message supported by credible data sources on alcohol use by the students in that particular university to address misconceptions students have about alcohol. Deep structure involves integrating cultural, social, historical, and environmental factors that influence the target health behavior in the target population (Resnicow et al., 2000). For example, in the current review, it was found that peer influence and acceptance might exert a greater influence on alcohol and drug abuse among men from Western populations than African populations, while poor parental monitoring may be more important among men from African populations than Western populations.

Need for Culturally Appropriate Programs

In the past, substance abuse prevention programs have given limited or no attention to cultural variables as potential determinants of substance abuse and/or as integral components of those programs (Castro & Alarcón, 2002). The process of developing culturally sensitive substance abuse prevention programs should start with an analysis of substance abuse patterns, risk factors for abuse, and unique predictors of abuse in the target population. Most of this information can be collected from the scientific literature; however, this process will likely require collection of new data, especially, to explain the predictors of substance abuse (Resnicow et al., 2000).

Program developers should acknowledge the essential role of cultural variables in the development of substance abuse and insist that cultural considerations be incorporated into all aspects of the programs and activities. This can be done by promoting collaborations between researchers and community members, which will increase acceptability of evidence-based approaches, increase the community's knowledge, appreciation, and acceptance of substance

abuse theory, research and methodology, and educate the community on the need for knowledge development and transfer (Castro & Alarcón, 2002). Involving the local community in program development and implementation not only assures community buy-in and participation in the substance abuse prevention programs but it also increases the effectiveness of these prevention programs as these programs will be research-based while also addressing the practical concerns of the community. One way of ensuring research conducted in a particular community is beneficial to that community is to have researchers and community stakeholders work together.

Selecting Programs Based on Cultural Appropriateness

All the 21 programs appear to be culturally appropriate for Kenya as they all require and encourage, family, school, and/or community involvement in order to be successful. These programs therefore promote interdependence among youth, their parents and family members, and other older adults in the community, which is a significant value in Kenya. In addition, these programs have been designed in a way that makes them easily adaptable in different communities as some of the program components can be modified to suit the needs of the local community. However, if these programs are to be effective and appropriate in Kenya, they need to be adapted to the particular community or setting in which they are going to be implemented. Cultural adaptations consider the important values within a community that can be defined by geographical location (e.g. rural or urban), educational achievements, socioeconomic status, language, and an individual's own interpretation and identity with his or her culture (Kumpfer, Alvarado, Smith & Bellamy, 2002).

According to Castro et al. (2004), the main aim in cultural adaptation is to generate a similar model of a particular prevention program that is culturally relevant. Program adaptation is the modification of program content in order to accommodate the needs of the program

consumers, for instance, incorporating a component into a program that involves parents or caregivers in cultures that value family involvement. Fidelity of program implementation is the delivery of the defined components of a prevention intervention program as set by the program developer, for instance, using discussions, lectures, or videos in illustrating program content as recommended by the program developer (Castro et al., 2004).

Program developers and researchers worry that changes in a science-based program will reduce its effectiveness, while community leaders and prevention practitioners are concerned that a prevention program may not necessarily fit a community (Backer, 2001). Therefore, the fidelity-adaptation tension asks the following question: how does one develop prevention programs, implement them with fidelity, and yet design these programs in a manner that they respond to the cultural needs of a community (Castro et al., 2004)?

Backer (2001) states that despite significant adaptation, many science-based prevention programs have been found to produce positive results. In addition, cultural adaptations can significantly improve engagement and acceptability by communities leading to better recruitment and retention of program consumers (Kumpfer et al., 2002). Castro et al. (2004) state that major sources of program mismatch involve characteristics of the program consumers (e.g. language, socioeconomic status), program delivery staff (e.g. have limited awareness or are insensitive to cultural issues), and administration/community factors (e.g. lack of community “buy in” to the program, lack of infrastructure to tackle alcohol and drug abuse issues in the community). However, the greatest impact from these programs result when there is program fidelity with respect to certain crucial elements (Backer, 2001). This means guaranteeing the key components of the program are implemented without modifications in order to ensure program effectiveness.

In order to ensure that prevention programs are culturally appropriate while still maintaining fidelity, Backer (2001) has developed guidelines that help maintain the fidelity-adaptation balance. These guidelines provide a solution to the fidelity-adaptation tension. First, program implementers should go to the list of programs and select a program that addresses the risk and protective factors important in the settings they intend to implement the program. Next, they should identify and understand the theory behind the selected program. This information can be found either from published literature or from the program developer. The theory and/or logic model of a program can help identify the core components. The core components are the elements of a program that define it and most likely account for its main effects (Backer, 2001). Identifying the core values of a program can also help convince community stakeholders of the program's fit concerning their settings.

After selecting an appropriate program, implementers need to carry out a core components analysis of the program. The purpose for this is to give them an idea of what components are necessary (that is, those that should not be modified) and which ones can be altered accordingly. For example, the core component of the Families in Action program is conducting classes for both parents and their teens together. This is necessary in order for the program to be effective. Any other components of this program can be modified to suit the needs of the community and will not affect the effectiveness of this program.

Program implementers should then identify characteristics of the implementation site that may affect the fidelity-adaptation balance, for example, program consumers, community environment, whether funding is available or limited. In doing so, they will establish what core components are key and what adaptations may be necessary given these characteristics. They should then contact the program developer (as needed) and discuss what they have covered thus

far. The program developer can also either offer technical assistance or give referrals to other organizations that have implemented the program in similar settings.

Program implementers also need to talk to the community and/or the organization in which implementation will take place. This process allows concerns to be raised and addressed appropriately, builds support for the program, and provides input on how to implement the program successfully. Finally, implementers need to develop an overall implementation plan based on information gathered from previous steps that includes how to measure the fidelity-adaptation balance for the program at the initial implementation and over time.

An example of program adaptation is the Pares Unidos program (Borbely, 2005), which has been adapted from the Parent Project curriculum, and is culturally appropriate for Spanish-speaking families of high-risk middle and high school students. The Pares Unidos program provides alcohol, drugs, violence prevention education, and parenting support. The focus of the program is to strengthen relationships between parents, youth, school, and law enforcement, and to enhance community and school-based efforts to provide prevention services. The core Parent Project components included in the Pares Unidos program are: 1) One of two facilitators is required to complete the 40 hour per week training. 2) Ten of sixteen workshops/classes need to be covered. 3) The workshops/classes should be covered as designed. 4) The use of a 6-goal/action framework.

The key adaptations incorporated into the Pares Unidos program include the following: 1) Intensive referral and recruitment process that involves direct personal outreach. 2) An intake process that builds relationships between facilitators and parents before the meetings begin. 3) A parent support group integrated into the Parent Project curriculum sessions. 4) A Family Advocate who provides one-on-one support to both parents and youth. 5) Provision of resources

for participation and retention e.g. conveniently located meeting place, transportation, childcare, nutritious food at the sessions, rewards and incentives for participation. 6) Family-oriented approach where young children are supervised in childcare, school age children (including teens) participate in study sessions, and parents attend classes. All this happens at the same time and place. 8) An alumni program that includes parent and youth support from participating families, and a quarterly newsletter.

It is important to note that both fidelity and adaptation are needed for successful implementation of evidence-based substance abuse prevention programs. Furthermore, giving feedback to program developers on the modifications made to their programs and the overall impact of those modifications on the programs will help them refine these programs thus enhancing their effectiveness.

Development of a Prevention Website for Use in Kenya

The consensus by NACADAA is that prevention is a necessary component in matters pertaining to alcohol and drug abuse in Kenya. The website created is a starting point in providing organizations and institutions that are interested in carrying out prevention work a place where they can search for evidence-based programs that can be adapted in communities. It also provides information on how to manage the fidelity-adaptation balance in the prevention programs they select to implement. The link to and snapshots of the website are found in Appendix D.

Other websites that are similar to this website are SAMHSA's NREPP (2012), which is an online registry of interventions that support mental health promotion, substance abuse prevention, mental health, and substance abuse treatment, and OJJDP (2012), which is an online database of evidence-based programs that address a range of issues including substance abuse,

mental health, and education programs. For this project, the website that is created is different from SAMHSA's NREPP and OJJDP in that it features substance abuse prevention programs that can particularly be adapted in Kenya, it has included a document with guidelines on implementing a substance abuse prevention program that maintains fidelity while still being culturally appropriate, and it focuses on prevention exclusively.

Limitations of Research

Few articles in the review, from both the West (United States and Canada) and Sub-Saharan Africa have adequately addressed the issue of gender differences in reasons for alcohol and drug abuse among youth. Therefore, this has resulted in relying on information gathered from older adults in relation to factors that influence alcohol and drug abuse. While it is important to note that these factors that influence alcohol and drug abuse in older adults usually come into play before adolescence (Toray et al., 1991), more research needs to be conducted on factors that influence alcohol and drug abuse among youth if prevention programs are to be more effective and relevant to this group of people.

In the review, the risk and protective factors that were looked at in relation to substance abuse (NRC & IOM, 2009) assume that these factors have the same influence among men and women and across cultures. It would be beneficial to conduct further research on these risk and protective factors to find out if there are some of these factors more important for either men or women across the different cultures hence using this information in designing more gender and culturally appropriate prevention programs.

The review has focused on a wide variety of substances (both licit and illicit) that are abused by men and women. Research has shown that women are more likely to abuse licit drugs (in particular prescription drugs) while men are more likely to abuse illicit drugs (Hodgins et al.,

1997; Kauffman et al., 1997; Nelson-Zlupko, 1995). Further investigation should be conducted to find out if reasons for abusing licit drugs are similar to or different from reasons for abusing illicit drugs as the reasons cited in the current review are irrespective of whether the substances are licit or illicit. This information can then be used in designing prevention programs that target specific substances.

Recommendations

It is important to conduct a needs and assets assessment before implementing a prevention program. This is because one needs to find out if alcohol and drug abuse is an issue in the community, and if the community has the resources to support implementation of a prevention program. It is also essential to carry out a readiness assessment of the community as this indicates whether the community is willing to accept and implement prevention programs effectively (community buy-in). It is important to implement evidence-based programs in order for substance abuse prevention to be effective. Finally, it is vital to pick a program that seems to address the risk and protective factors in the community one is working with and make sure to incorporate the fidelity-adaptation balance (Backer, 2001).

It is necessary to develop culturally appropriate substance abuse prevention programs as culture has been found to play an important role in determining the risk and protective factors for alcohol and other drugs (Amaro et al., 2001). In doing so, we will have programs that effectively address the various cultural factors that contribute to alcohol and drug abuse among youth. It is also necessary to promote collaborations between prevention researchers and community members during the design and development of prevention programs because not only will this increase the acceptance and participation of community members in these evidence-based

programs, but it will also ensure that the programs adapted are culturally relevant to the community (Castro & Alarcón, 2002).

In Kenya, it is vital to establish prevention services that address substance abuse issues particularly targeting youth in primary and high schools (Atwoli et al., 2011; NACADAA, 2007; NACADAA, 2010a; Ndetei et al., 2010; Otieno & Ofulla, 2009). This is because these programs equip youth with social skills that enable them to resist peer and family influences to start abusing alcohol and drugs and also problem solving and good coping skills that help them deal with issues in a positive manner. Therefore, the website created is relevant as it provides a list of evidence-based programs that encourage the use of these skills.

The prevention programs to be adapted in Kenya also need to ensure that parents and other community members are involved (Atwoli et al., 2011; NACADAA, 2010a; Ndetei et al., 2009; Otieno & Ofulla, 2009). This is important because interdependence and interconnectedness among family members and the larger community is valued in this culture (Igboin, 2011). Doing so will not only engage youth in prevention activities, but also their parents and other community members.

Institutions and organizations that are interested in doing prevention work need to involve the community they intend to work with in their prevention efforts and also have a plan of action. Robertson, David and Rao (2003) suggest that this plan should have the following components: 1) Identify alcohol and drug issues in the community through assessment of substance abuse in the community and the contributing risk factors. In addition, assess community readiness for prevention, determine the gaps in addressing community needs, and identify resources that can help in addressing these gaps. 2) Build on existing resources, for instance, ongoing prevention efforts in the community. 3) Develop short-term goals relevant to the implementation of these

evidence-based programs. 4) Develop long-term goals so that plans and resources are available for the future. 5) Incorporate ongoing assessments to evaluate the effectiveness of the prevention programs. Doing so will ensure that prevention researchers and practitioners use financial resources on what is relevant while involving the community in their prevention efforts.

Further Research

Further research into the effectiveness of gender and culturally appropriate programs is needed because research has shown that gender and culture play an important role in the development of substance abuse (Amaro et al., 2001; Blake et al., 2001). Conducting studies on prevention programs that have been adapted into the various cultures among young men and women will emphasize the need for prevention researchers and practitioners to incorporate gender and cultural variables in the design and implementation of prevention programs, therefore ensuring that these programs are relevant to their target populations. Further research into the effectiveness of single gender versus mixed gender prevention programs is needed because the current project has shown that there are gender differences in reasons for alcohol and drug abuse. Therefore, an investigation of whether these programs put that into account will help in advocating for adoption of either single or mixed gender prevention programs with regards to effectiveness.

Further research into the fidelity-adaptation balance is necessary because this guarantees that prevention programs are not only evidence-based but also culturally appropriate for the intended populations. The development and inclusion of a checklist that indicates the core components necessary to ensure that this balance is maintained can be included in the evaluation tools of the various prevention programs. The website created is a work in progress and in the hope that prevention science and practice grows in Kenya and Sub-Saharan Africa, more

resources will be added to the site such as case studies of successful program adaptation and evidence-based programs designed by Kenyans and Africans.

This research set out to explore the gender and cultural differences in reasons for alcohol and drug abuse among youth. It was found that few prevention programs considered these factors in their design and implementation. In addition, the research explored existing evidence-based substance abuse prevention programs and their adaptability in Kenya. This raised the importance of the fidelity-adaptation balance as this averts diluting the effectiveness of a prevention program or making it irrelevant because of not being culturally appropriate. It is important for prevention researchers and practitioners to ensure that the programs they adapt to implement in the community are culturally appropriate and relevant to the community members. Therefore, the website is a good starting point in the journey of substance abuse prevention in Kenya as it provides organizations and institutions with a list of evidence-based programs that can be adapted in Kenya, in the hope that the prevention programs used are both research-based and appropriate to the community at hand.

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Appendix A

Overview of Articles used to Investigate Gender Differences in Reasons for Alcohol and Drug Abuse from Western Populations

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[1]Hsieh and Hollister (2004)	2317 adolescents; 1462 young men, mean age 16.23; 855 young women, mean age 15.72 Age range 12-19	Residential treatment program	Gender differences in adolescent substance abuse behavior, treatment effectiveness and associated differences with variables (e.g. psychological problems, family problems, sexual abuse experience, substance abuse, school and legal problems)	6 and 12 months post treatment (1992-1994)	Data from records T-test analysis; compare gender differences in variables and treatment outcome at 6 month follow up
[2]Rounds-Bryant et al. (1998)	3382 adolescents; 2497 young men, mean age 16; 885 young women, mean age 15	Short-term inpatient, outpatient, long-term residential programs	Gender comparison in alcohol and drug abuse (marijuana, cocaine, amphetamines, heroin), illegal activity, physical and sexual abuse, and mental health problems	1993-1995	Self-report interview
[3]Toray et al. (1991)	930 adolescents; 577 young men, mean age 16.08; 353 young women, mean age 15.61	Inpatient, outpatient alcohol and drug treatment center	Differences between young men and women substance abusers	1981-1988	Self-report intake interview
[4]Lo and Globetti (2000)	122 youth; 57 young men, 65 young women Age range 15-18	Public high school in rural setting	Evaluate how young men and women express alcohol-related beliefs differently	November – December 1995	Interviews Chi squares; gender differences in beliefs

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[5]Weiss et al. (2003)	Not indicated	n/a	Some unique aspects of substance abuse comorbid mental health problems for women	n/a	n/a
[6]Kauffman et al. (1997)	1019 older adults; 519 men, 500 women Majority of sample between the ages 30-49 (47%)	Community	Gender related differences in beliefs about the causes of abuse of alcohol and other drugs (marijuana, cocaine, valium, other prescription drugs)	November – December 1991	Phone interviews Regression analyses; associations among gender, control variables (education, income, age, employment, and marital status), AOD measures (cause, program effectiveness, power, abuse)
[7]Brady and Randall (1999)	Not indicated	n/a	Findings in key areas related to development, diagnosis and national trends in substance use disorders	n/a	n/a
[8]Pelissier and Jones (2005)	Adult substance abusers (age not indicated)	Inpatient, outpatient, methadone maintenance, other treatment programs, prison/jail, community-based therapeutic communities	Gender differences among substance abusers	Articles in English language journals published after 1985	Searches in PsychInfo, Medline, Annual Reviews, Gender Watch, Academic Search Elite, LexNexis Government Periodicals Index, Contemporary Women's Issues

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[9]Tuchman (2010)	Not indicated	n/a	Gender differences in epidemiology of substance use disorders, biological responses, progression to dependence, health consequences and factors related to treatment entry, retention and completion	n/a	n/a
[10]Hodgins et al. (1997)	Not indicated	n/a	Appropriateness of single-gender treatment programs	n/a	n/a
[11]Nelson-Zlupko (1995)	Not indicated	n/a	Unique characteristics and treatment needs of chemically dependent women and how they differ from chemically dependent men	n/a	n/a
[12]Greydanus and Patel (2005)	Not indicated	n/a	Issues of drug use and abuse among adolescents: etiology, symptoms, stages of drug use, specific drugs of abuse (alcohol, marijuana, cocaine, opiates, amphetamines, hallucinogens, inhalants, stimulants, steroids)	n/a	n/a
[13]Titus et al. (2006)	284 adolescents for starting; 277 for continuing (age at intake 16; 18 at follow-up)	Outpatient or residential treatment program	Reasons for starting and continuing alcohol and drugs	30 months post treatment (December 2000 – June 2002)	Longitudinal treatment outcome study (qualitative data)

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[14]Abdelrahman et al. (1999)	2849 students; approximately 50% young men, 50% young women Age range 13-14	Public and nonpublic schools (private or parochial)	Correlates of substance abuse to risk	May – June 2005	Survey Logistic regressions; current abuse of alcohol, marijuana, cocaine, crack to risk
[15]Harrier et al. (2001)	1867 adolescents Age range 12-19	Archival data from mental health organization	Variables (e.g. physical and sexual abuse, history of familial drug abuse, family violence) used to differentiate between substance abusers and non-abusers	January 1995 – September 1997	Logistic regression
[16]NRC and IOM (2009)	Not indicated	n/a	Targeting interventions for prevention and promotion (underage drinking)	n/a	n/a
[17]Burrow-Sanchez (2006)	Not indicated	n/a	Adolescent substance abuse: prevalence and risk factors	n/a	n/a

Note. AOD = alcohol and other drugs. n/a = not applicable.

Appendix B

Overview of Articles used to Investigate Gender Differences in Reasons for Alcohol and Drug Abuse from African Populations

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[1]Alwan et al. (2011)	1417 high school students; 677 young men, 740 young women Mean age 14	Public and private high schools in Seychelles	Association between substance abuse (alcohol, cannabis) and psychosocial characteristics at individual and family levels	2007	Survey Chi square test; differences in prevalence of baseline characteristics between young men and women Logistic regression; association between the risk behaviors, separate for young men and women
[2]Madu and Matla (2003)	435 high school students; 192 young men, 243 young women Mean age 17.25	Urban, rural, semi urban high schools in South Africa (Northern Province)	Prevalence of alcohol, illicit drug abuse (marijuana, glue, cocaine, benzene) among young people	2002	Survey Frequencies, Chi square, Pearson's correlation
[3]Pengpid et al. (2011)	1532 hospital out-patients; 864 men, 668 women Majority of sample between the ages 25-34 (35%)	Urban hospital in South Africa	Prevalence of alcohol abuse and associated factors	2010 (3 months)	Cross-sectional study Logistic regression; hazardous or harmful alcohol abuse
[4]NACADAA (2010b)	3259 people Age range 15-64	Urban, rural districts in Central Kenya	Magnitude of alcohol abuse and underlying causative factors and effects	2009	Face-to-face interviews Cross-sectional household survey, frequencies

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[5]Mugisha et al. (2003)	3596 people; 1674 young men, 1922 young women Age range 12-24	Informal settlements in Nairobi	Alcohol and substance abuse among young people	January 1999	Household surveys, interviews Logistic regression; alcohol and substance abuse, NUD*IST; software package to analyze qualitative data
[6]Odejide (2006)	Not indicated	n/a	Historical background of substance use/abuse and current drug abuse situation	n/a	n/a
[7]Mbatia et al. (2009)	899 people; 418 people in low income area 44% men, 56% women; 481 people in middle income area 43% men, 57% women Age range 15-59	Two urban sites in Tanzania	Prevalence of alcohol, cannabis abuse	September – October 2003	Survey Cross-sectional study Chi square; perceived social support and recent life events
[8]Ward et al. (2008)	2618 people; 1128 men, 1490 women Age range 18-24 (1072 people); 25+ (1546 people)	Clinics in Cape Town, South Africa	Prevalence and correlates of hazardous abuse of alcohol and other drugs	December 2003-2004	Interviews Cross-sectional study
[9]Karl et al. (2010)	Not indicated	Published and unpublished material (reports, articles, presentations)	Description of political, economic, and social changes linked to illicit drug abuse and treatment in South Africa	n/a	Searches in EBSCO, Medline, Science Direct, Google Star; agencies with information on drugs

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[10]Atwoli et al. (2011)	500 students; 261 men, 239 women Mean age 22.9	Colleges and university campus in Western Kenya	Prevalence and factors associated with drug abuse among students	May – September 2009	Cross-sectional survey Chi square; association between various factors and substance abuse measures T-test; compare means
[11]NACADAA (2010a)	605 people; 209 men, 396 women Majority of sample between the ages of 31-40 (37%)	Residential area in Nairobi	Knowledge and practice gaps among parents that may undermine their ability to help their children lessen alcohol and drug abuse	2009	Household survey; interviews
[12]Ndetei et al. (2009)	1296 students; 63% young men, 37% young women Mean age 17	High schools in Nairobi	Association between substance abuse and socio-demographic characteristics of students	June 2004	Cross-sectional survey Correlations between students' demographics and substance abuse
[13]Otieno and Ofulla (2009)	458 students; 243 young men, 215 young women (age not indicated)	High schools in Western Kenya	Factors associated with drug abuse (alcohol, cannabis, inhalants, khat) among high school students	2008	Cross-sectional study Chi square; association between variables
[14]Deressa and Azazh (2011)	622 students; 426 men, 196 women Majority of sample between the ages of 20-24 (62%)	University in Ethiopia	Prevalence of substance abuse and factors that influence the behavior among undergraduate students (alcohol, khat)	June 2009	Survey Cross-sectional study Chi square Logistic regression; associations between substance abuse; sociodemographic and behavior correlates

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[15]Kyalo and Mbugua (2011)	379 students (age not indicated)	High schools in Central Kenya	Perception of drug abuse (alcohol, khat) by high school students and how it influences their behavior	2010	T-test; gender differences on perception of drug abuse
[16]Mwansa et al. (2004)	South Africa; rural 109 people (41% young men, 59% young women); urban 193 people (51% young men, 49% young women) Tanzania; urban 299 people (53% young men, 37% young women); urban 303 people (61% young men, 39% young women) Zambia; urban 398 people (50% young men, 50% young women) Age range 10-21 years	Urban and rural communities in South Africa, Tanzania, Zambia	Status of substance abuse (alcohol, cannabis) and prevention resources	December 2000 – September 2001	Descriptive analyses
[17]dos Santos et al. (2011)	Users participants 63 people; 49 men, 14 women; Service providers 21 people; 8 men, 13 women Age range 16-51	Community in Pretoria, South Africa	Explore emerging problem of drug-related HIV transmission and stimulate development of adequate health services for drug abusers	May – July 2010	Thematic content analysis (qualitative data analysis)

Author & year	Sample	Settings	Outcomes	Year of study	Methods
[18]Ndetei et al. (2010)	343 students; 220 young men, 123 young women Mean age 16.8	Rural high school in Kenya	Prevalence and knowledge of drug abuse (alcohol, khat, cannabis) and its effects on students	2009	Descriptive cross-sectional study
[19]NACADAA (2007)	3356 men and women (15-65 years)	Urban and rural communities in Kenya	Extent of abuse of various substances (alcohol, khat)	April – May 2007	Household survey

Note. NUD*IST = Non-numerical Unstructured Data Indexing, Searching and Theorizing. n/a = not applicable.

Appendix C

Substance Abuse Prevention Programs that can be Adapted in Kenya

Program	Minimize risk factors	Promote protective factors	Settings	Programs consumers	Program outcomes	Materials	IOM prevention category
Alcohol: True Stories **http://www.wordscanwork.com/products/product.html?prod=002** Twenty-minute video that tells the stories of four adolescents' experiences with alcohol	▪ Parental substance use ▪ Early substance use ▪ Favorable attitudes towards substance use	▪ Good coping and problem solving skills ▪ Supportive relationships with family members ▪ Good peer relationships	School, other community settings (urban)	Young men and women (15-18 years) Family involvement	▪ Attitude change towards alcohol abuse	DVD = $100 each Discussion guide available for free on the website	Universal
Challenging College Alcohol Abuse (CCAA) **http://www.socialnorms.campushealth.net** Media campaign that addresses misconceptions about alcohol and creates an environment less conducive for drinking	▪ Substance-using peers ▪ Favorable attitudes towards substance use ▪ Early substance use	▪ Positive norms ▪ School and community engagement	University, other higher education settings	Men and women (19-24 years) Community involvement and peer interaction	▪ Attitude change towards heavy and frequent drinking ▪ Knowledge on alcohol abuse	Free guide	Universal

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Communities Mobilizing for Change on Alcohol (CMCA) **http://www.epi.umn.edu/alcohol/cmca/index.shtm** **http://www.epi.umn.edu/alcohol/policy/index.shtm** Community organizing program that seeks to reduce underage youth access to alcohol by changing community policies and practices	▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Availability and accessibility of substances	▪ Physical and psychological safety ▪ Positive norms ▪ Clear expectations for behavior	Community settings (urban, rural)	Young men and women (15-17 years) Community and family involvement	▪ Minimize youth access to alcohol through outlets	Resources and materials are free Training required, contact program developer	Universal
Drugs: True Stories **http://www.wordscanwork.com/products/product.html?prod=017** Thirty-minute video that includes two vignettes of teenagers telling their personal stories in relation to drug abuse	▪ Parental substance use ▪ Emotional problems in childhood ▪ Substance-using peers	▪ Parental monitoring ▪ Good coping and problem solving skills ▪ Good peer relationships ▪ Emotional self-regulation ▪ Supportive relationships with family members and other adults	School, other community settings (urban)	Young men and women (15-18 years) Family involvement	▪ Behavior change towards illicit drug abuse	DVD = $100 each Discussion guide available for free on the website	Universal

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Coping with Work and Family Stress **http://www.theconsultationcenter.org/index.php?/coping-with-work-a-family-stress.html** Workplace intervention to teach employees how to deal with stressors at work and home	▪ Stressors and problem situations ▪ Ineffective communication methods ▪ Low self-esteem	▪ Good coping and problem solving skills ▪ Supportive relationships ▪ High self-esteem	Workplace	Women (19-24 years) Peer interaction and family involvement	▪ Ability to identify stressors ▪ Use coping strategies ▪ Have social support network ▪ Behavior change towards substance abuse	Curriculum set = $120 each Training required, contact program developer	Universal
Families in Action **http://www.activeparenting.com** Family systems approach to prevent or reduce alcohol and other drug abuse among teens	▪ Poor attachment with parents ▪ Rebelliousness	▪ Engagement with peers and adults ▪ Clear expectations for behavior ▪ Supportive relationships with family members	Home, school, other community settings (urban, rural)	Young men and women (15-18 years) Family involvement	▪ Positive attachment to peers, family, and school ▪ Attitude change towards substance abuse ▪ High self-esteem	Program kit = $490 each	Universal

Programs	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Fourth R: Skills for Youth Relationships **http://www.youthrelationships.org** Comprehensive school-based program designed to include students, teachers, parents, and the community in reducing violence and risk behaviors	▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Associating with drug-using peers	▪ Clear values ▪ High self-esteem ▪ Good coping and problem solving skills ▪ Supportive relationships with peers	School (urban, rural)	Young men and women (15 years) School, family and community involvement	▪ Behavior change towards substance abuse and violence	Curriculum kit Grade 9 = $275	Universal
Michigan Model For Health **http://www.emc.cmich.edu/mm** Comprehensive health education curriculum to help students maintain healthy behaviors and lifestyles	▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Associating with drug-using peers ▪ Availability and accessibility of substances	▪ Engagement with peers and adults ▪ Community engagement	School, home (urban, rural)	Young men and women (15-18 years) School and family involvement	▪ Behavior change towards substance abuse ▪ Knowledge on healthy behaviors	Teacher manuals = $45-$55 each Prevention module = $32 each	Universal
Too Good For Drugs **http://www.mendezfoundation.org** Program designed to reduce students' intentions to abuse alcohol and other drugs	▪ Antisocial behavior ▪ Emotional problems in childhood	▪ Good coping and problem solving skills ▪ Emotional self-regulation ▪ Good peer relationships	School (urban, rural)	Young men and women (15-18 years) School and family involvement	▪ Knowledge on risk and protective factors ▪ Attitude change towards abuse	Kits and teacher manuals range from $74.95-$295.95	Universal

Programs	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Teenage Health Teaching Modules (THTM) **http://www.thtm.org** Health curriculum that provides adolescents with knowledge and skills that enhance their immediate and long term health	▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Associating with drug-using peers ▪ Poor parental monitoring ▪ Poor attachment with parents ▪ Low commitment to school ▪ Availability and accessibility of substances	▪ Clear values ▪ High self-esteem ▪ Good coping and problem solving skills ▪ Supportive relationships with family members and peers ▪ School engagement	School (urban, rural)	Young men and women (15-18 years) School involvement	▪ Behavior change towards substance abuse	Protecting One Self and Others (15-18 years) = $80 each Teacher's guide (15-18 years) = $80 each	Universal
Theatre Troupe/Peer Education Project **http://www.cornerhealth.org/theater.php** Prevention program that promotes discussion on sensitive topics through interactive theatre performance, reality, and skill building workshops	▪ Favorable attitudes towards substance use ▪ Favorable norms towards substance use	▪ Good coping and problem solving skills ▪ Positive norms ▪ Clear expectations for behavior	School, other community settings (urban, rural)	Young men and women (15-18 years) Peer interaction	▪ Knowledge on social norms and substance abuse ▪ Communication and resistance skills	Implementation guide = $5 each Training manual = $ 5 each	Universal

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Story Telling For Empowerment **http://www.wheelcouncil.org** School-based intervention for at-risk teenagers aimed at decreasing alcohol and other drug abuse	▪ Favorable attitudes towards substance use ▪ Parental substance use ▪ Low commitment to school ▪ Associating with drug-using peers ▪ Availability and accessibility of substances	▪ Academic achievement ▪ Good coping and problem solving skills ▪ Supportive relationships with family members and peers ▪ School and community engagement ▪ Positive norms	School, other community settings (urban)	Young men and women (15-18 years) School and community involvement	▪ Knowledge on substance abuse ▪ Behavior change towards substance abuse ▪ Resistance skills	Storytelling PowerBook = $15.95 each Facilitator's guide = $65.95 each Training may be required, contact program developer	Selective
All Stars Senior **http://www.allstarspreventionn.com** School curriculum that prevents or delays onset of drug abuse by changing attitude and behavior	▪ Early substance use ▪ Antisocial behavior ▪ Favorable attitudes towards substance use	▪ Good coping and problem solving skills ▪ Supportive relationships with peers and family ▪ Positive norms	School, other community settings (urban, rural)	Young men and women (15-18 years) School involvement	▪ Positive attachment to school ▪ Attitude and behavior change towards substance abuse	Curriculum guides for alcohol and other drugs = $35	Universal, selective

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Building Assets – Reducing Risks (BARR) **http://www.search-institute.org/BARR** Strength-based approach to helping students manage transition to high school by reducing academic failures, alcohol and other drug abuse, and disciplinary incidents	▪ Favorable attitudes towards substance use ▪ Rebelliousness ▪ Early substance use ▪ School failure ▪ Low commitment to school	▪ Academic achievement ▪ Good coping and problem solving skills ▪ Engagement with peers and adults ▪ Clear expectations for behavior ▪ Positive norms ▪ School engagement	School, other community settings (urban)	Young men and women (15 years) School, family and community involvement	▪ Positive attachment to school ▪ Minimize school failure	BARR implementation manual = $395 each BARR I-Time curriculum = $49.95 each Training required, contact program developer	Universal, selective
Curriculum-Based Support Group (CBSG) Program **http://www.rdikids.org** Support group intervention for youth identified as being at elevated risk for substance abuse	▪ Poor attachment with parents ▪ Emotional problems in childhood ▪ Associating with drug-using peers	▪ Engagement with peers ▪ High self-esteem ▪ Positive norms ▪ Academic achievement	School, other community settings (urban, rural)	Young women (15-18 years) Peer and adult interaction	▪ Attitude and behavior change towards substance abuse	Training required, contact program developer (materials included)	Selective, indicated

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Residential Student Assistance Program (RSAP) **http://www.sascorp.org/RSAP.html** Program that provides substance abuse prevention and early intervention services to high risk youth in residential child care facilities	▪ Antisocial behavior ▪ Early substance use ▪ Favorable attitudes towards substance use ▪ Poor attachment with parents ▪ Low commitment to school	▪ Engagement with peers and adults ▪ Good coping and problem solving skills ▪ Supportive relationships with adults	Residential, other community settings (urban, rural)	Young men and women (15-18 years) Peer and adult interaction	▪ Behavior change towards substance abuse	Implementation manual = $150 each	Selective, indicated
Reconnecting Youth (RY) **http://www.reconnectingyouth.com** Program that helps youth at risk of dropping out by helping them increase school performance, reduce drug involvement, and emotional distress	▪ Low commitment to school ▪ Associating with drug-using peers ▪ Favorable norms towards substance use ▪ Early substance use ▪ Conduct disorder ▪ Poor attachment with parents	▪ High self-esteem ▪ Good coping and problem solving skills ▪ Supportive relationships with family members ▪ School and peer engagement ▪ Academic achievement ▪ Clear expectations for behavior	School (urban)	Young men and women (15-18 years) School and family involvement	▪ Improved school performance ▪ Behavior change towards substance abuse ▪ Knowledge on mental health risk and protective factors	RY curriculum = $318 each RY student workbooks = $26.50 each Training required, contact program developer	Selective, indicated

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Creating Lasting Family Connections (CLFC) **http://www.copes.org** **http://www.myresilientfuturesnetwork.com** Program designed to be implemented through a community system that aims at reducing the frequency of alcohol and drug abuse among youth	▪ Antisocial behavior ▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Poor parental monitoring ▪ Low commitment to school ▪ Availability and accessibility of substances	▪ Family and peer support ▪ Good coping and problem solving skills ▪ School and community engagement ▪ Presence of mentors and support for development of skills and interests	Home, school, other community settings (urban, rural)	Young men and women (15-18 years) Family involvement, interaction with other adults	▪ Use of community services ▪ Increase parents' knowledge on substance abuse ▪ Behavior change towards substance abuse	Six manuals at $50 each	Universal, selective, indicated
Project SUCCESS (Schools Using Coordinated Community Efforts to Strengthen Students) **http://www.sascorp.org** Program that prevents and reduces adolescent substance use and abuse by providing prevention and early intervention services	▪ Early substance use ▪ Parental substance use ▪ Associating with drug-using peers	▪ Good coping and problem solving skills ▪ Emotional self-regulation ▪ Supportive relationships with family members and peers	School, other community settings (urban, rural)	Young men and women (15-18 years) School and family involvement	▪ Behavior change towards substance abuse ▪ Knowledge on risk and protective factors	Implementation manual = $175 Training required, contact program developer	Universal, selective, indicated

Program	Minimize risk factors	Promote protective factors	Settings	Program consumers	Program outcomes	Materials	IOM prevention category
Project Towards No Drug Abuse **http://tnd.usc.edu** Interactive classroom-based prevention program delivered through group discussions, games, role playing exercises, and videos	▪ Favorable attitudes towards substance use ▪ Early substance use ▪ Drug-using peers ▪ Availability and accessibility of substances	▪ High self-esteem ▪ Good coping and problem solving skills ▪ Clear values	School (urban, rural)	Young men and women (15-18 years) School involvement	▪ Behavior change towards substance abuse	Teacher's manual = $90 Student workbooks (set of 5) = $60 Training is recommended, contact program developer	Universal, selective, indicated
Team Awareness **http://www.ibr.tcu.edu/pubs/trtmanual/manuals.html#organizational** **http://www.organizationalwellness.com** Workplace training program that addresses behavioral risks associated with substance abuse among employees and their co-workers	▪ Stressors and problem situations ▪ Early substance use	▪ Good coping and problem solving skills ▪ Connectedness to peers	Workplace	Men and women (19-24 years) Peer interaction	▪ Knowledge on substance use policies and EAP ▪ Behavior and attitude change towards substance abuse ▪ Knowledge on health and well-being	Program materials are free For facilitator certification, training is required. Contact program developer	Universal, selective, indicated

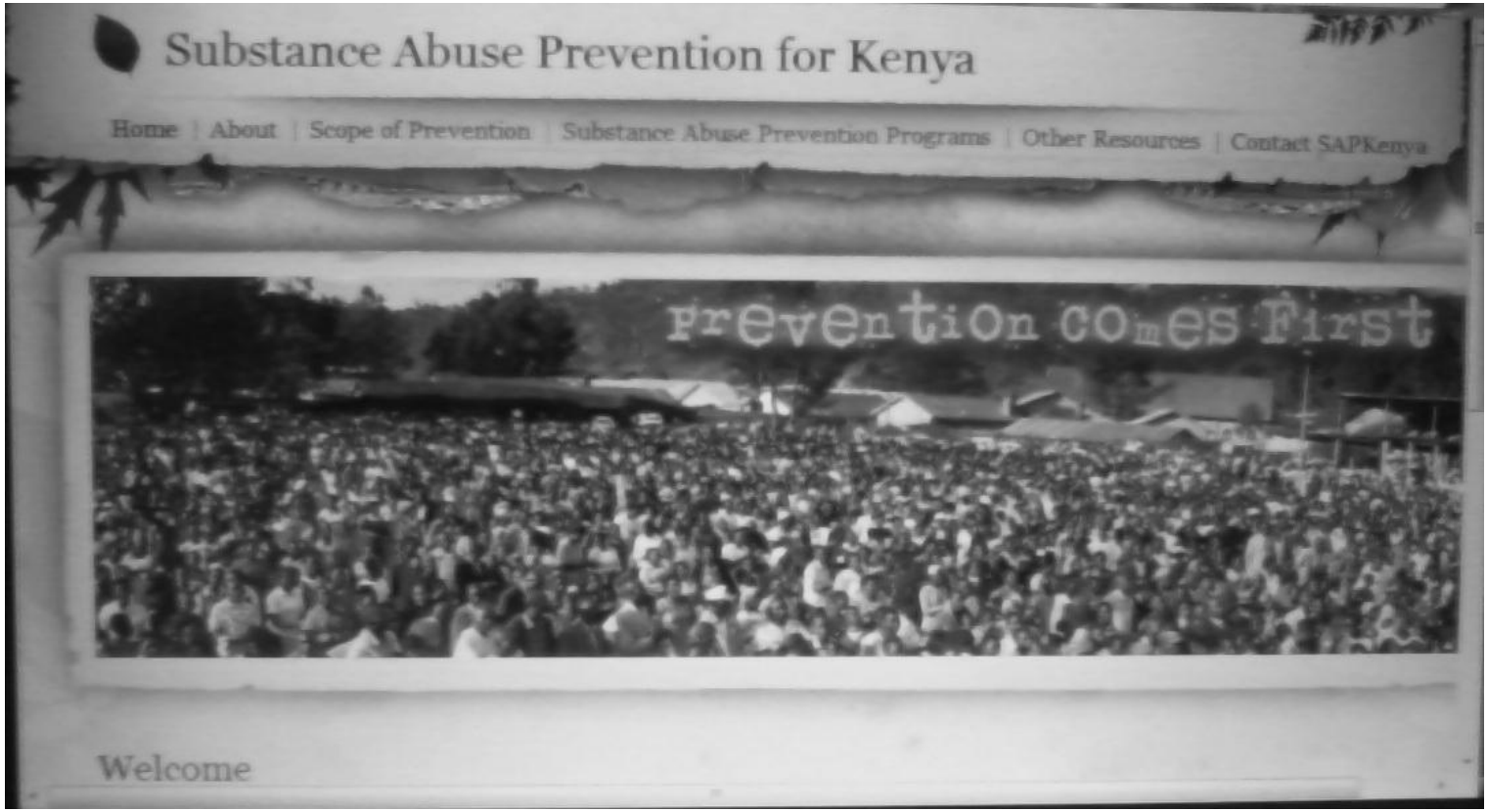
Note. The information in the program column has been adapted from SAMHSA's NREPP (2012) and OJJDP's Model Programs Guide (2012). The information on risk and protective factors has been adapted from NRC and IOM (2009). The information on

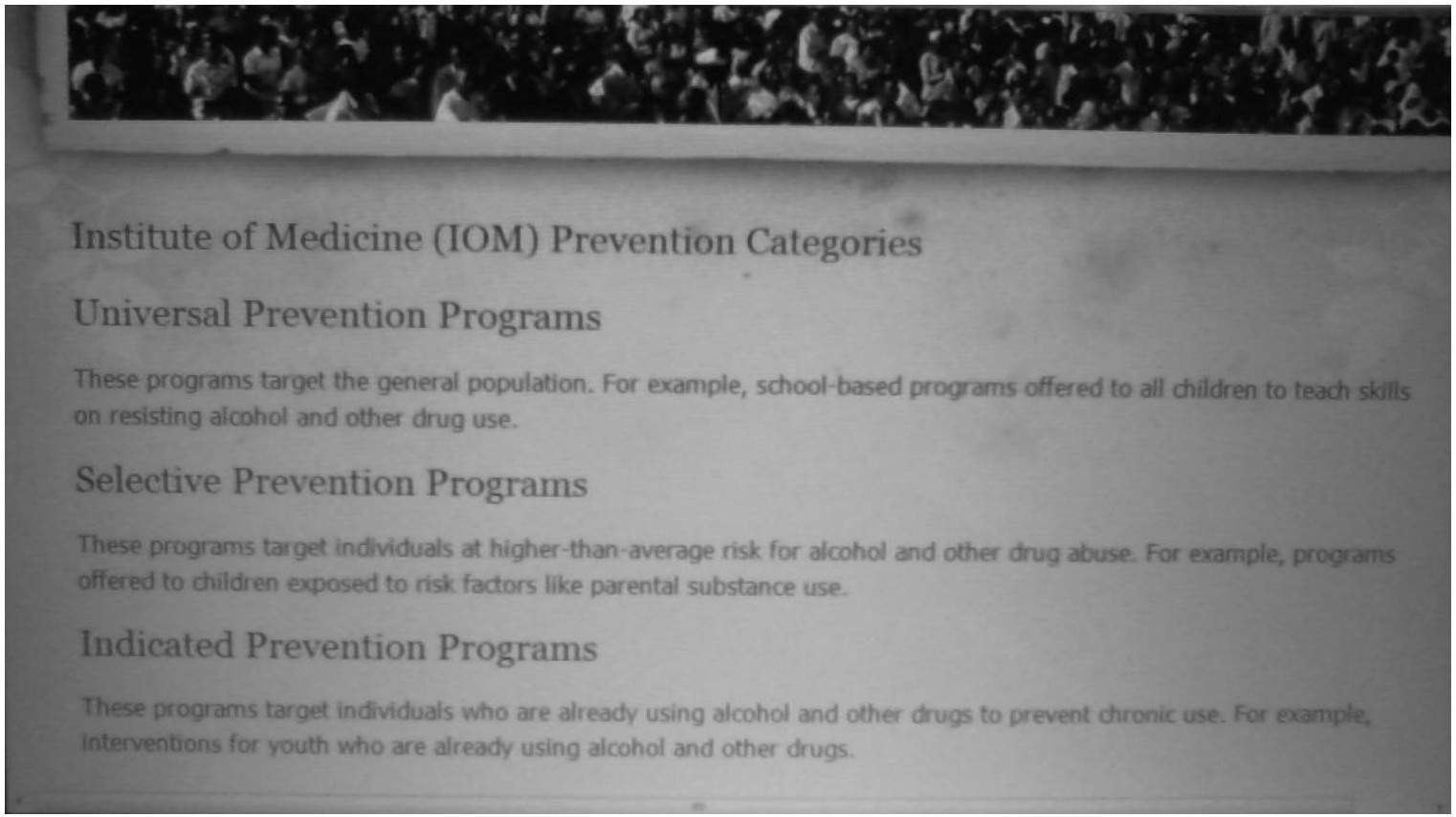
program outcomes, materials, and prevention categories has been adapted from SAMHSA's NREPP (2012). IOM = Institute of Medicine. EAP = Employee Assistance Program

Appendix D

Snapshots of the Website

These are sample pictures of what the website looks like. Link to the website: **http://sapkenya.weebly.com**





Institute of Medicine (IOM) Prevention Categories

Universal Prevention Programs

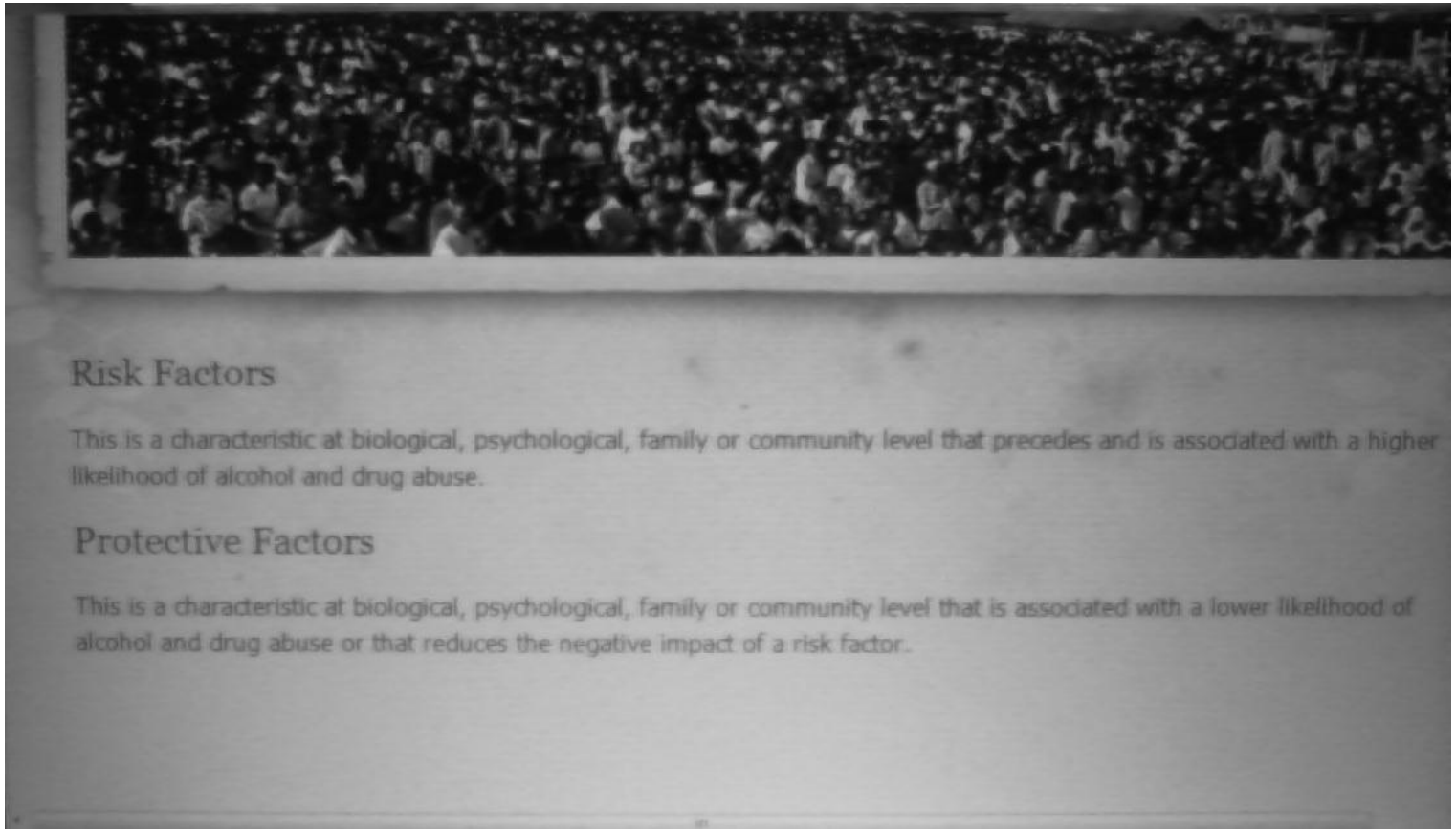
These programs target the general population. For example, school-based programs offered to all children to teach skills on resisting alcohol and other drug use.

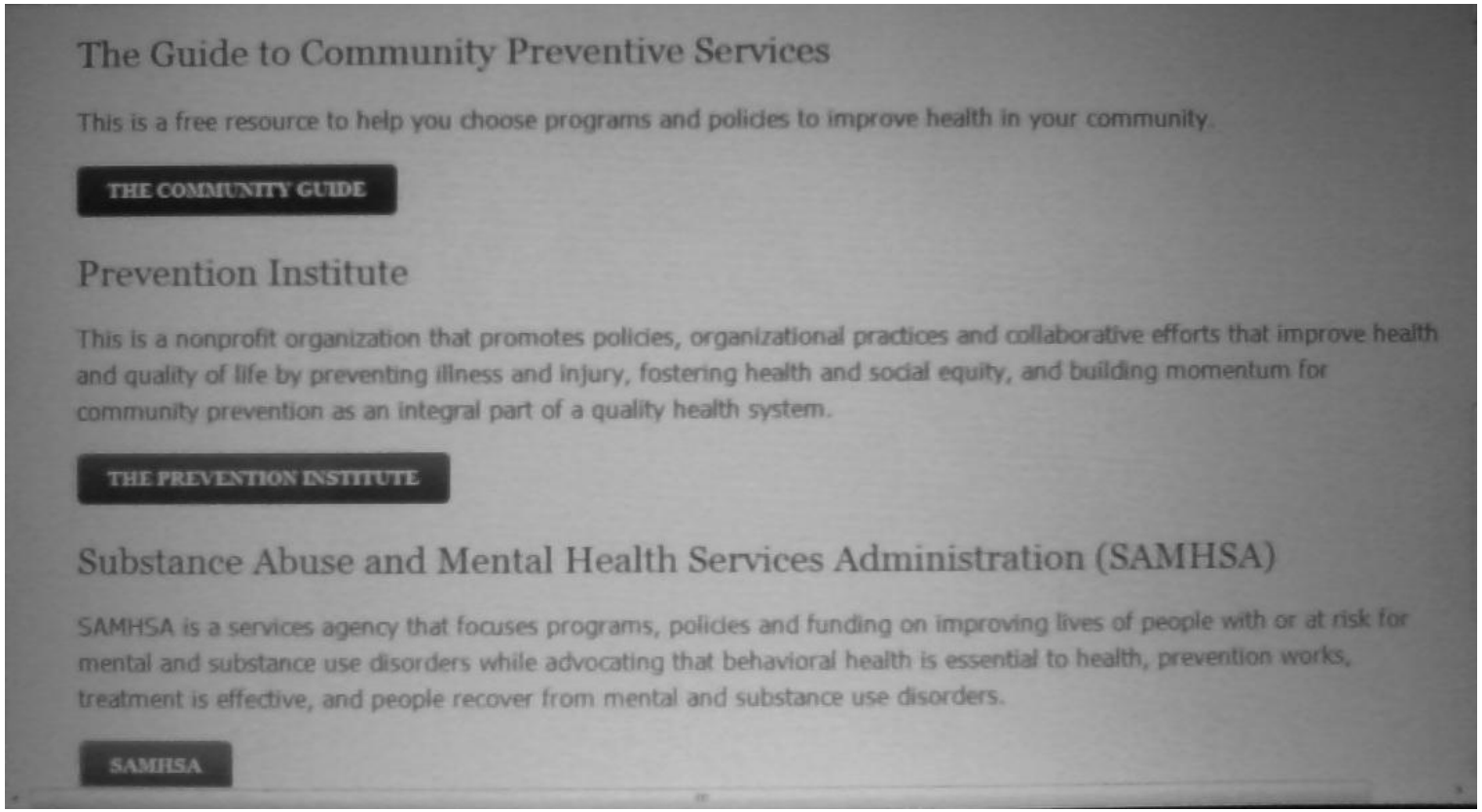
Selective Prevention Programs

These programs target individuals at higher-than-average risk for alcohol and other drug abuse. For example, programs offered to children exposed to risk factors like parental substance use.

Indicated Prevention Programs

These programs target individuals who are already using alcohol and other drugs to prevent chronic use. For example, interventions for youth who are already using alcohol and other drugs.


Risk Factors
This is a characteristic at biological, psychological, family or community level that precedes and is associated with a higher likelihood of alcohol and drug abuse.
Protective Factors
This is a characteristic at biological, psychological, family or community level that is associated with a lower likelihood of alcohol and drug abuse or that reduces the negative impact of a risk factor.


The Guide to Community Preventive Services
This is a free resource to help you choose programs and policies to improve health in your community.
THE COMMUNITY GUIDE
Prevention Institute
This is a nonprofit organization that promotes policies, organizational practices and collaborative efforts that improve health and quality of life by preventing illness and injury, fostering health and social equity, and building momentum for community prevention as an integral part of a quality health system.
THE PREVENTION INSTITUTE
Substance Abuse and Mental Health Services Administration (SAMHSA)
SAMHSA is a services agency that focuses programs, policies and funding on improving lives of people with or at risk for mental and substance use disorders while advocating that behavioral health is essential to health, prevention works, treatment is effective, and people recover from mental and substance use disorders.
SAMHSA