Prevention of mental and substance use and abuse disorders and co-morbidity in African-Americans

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Unfortunately, as Dr. Satcher's Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General (U.S. Public Health Service, 2001) notes, there is very little research or information about mental health and substance use/abuse in various cultural, racial and ethnic groups. As a result, a Medline literature search on prevention of co-morbid mental illness and substance use/abuse disorders (MISA) and substance use and abuse disorders in African-Americans does not yield any studies focused on African-Americans. Despite this reality, there are a few studies on prevention of mere substance use and abuse in African-Americans. In addition, there are a few studies on prevention of relapse in African-American patients with the co-morbidity of mental and substance use and abuse disorders. These articles form the basis of our proposal for how the goal of prevention of MISA problems in African-Americans should be approached.

The sad reality is that preventing African-American adolescent drug use and abuse is not a major public health priority in the U.S. Unfortunately, there appears to be a greater interest in incarcerating African-American youth who are engaging in substance use/abuse than either treating them or making the illegal drugs they use legal as was done with alcohol and nicotine. Parenthetically, the two drugs that result in the greatest morbidity and mortality in the U.S. – smoking causes 440,000 deaths and more than $75 billion in direct medical costs each

year (Centers for Disease Control and Prevention, 2008) and approximately 79,000 deaths annually are attributable to excessive alcohol use (Centers for Disease Control and Prevention, 2004).

Causes of the relationship between mental disorders and substance use/abuse

Currently, there are three hypotheses regarding the linkage between mental disorders and substance use/abuse (Brook et al., 1998). The first suggests that having a mental disorder leads to the use of drugs by various mechanisms. One possible mechanism that causes persons with mental disorders to use drugs relates to a deterioration of parental and school protective factors that prevent drug use in the first place. Children with psychiatric disorders can interfere with parental monitoring, in connectedness with parents and schools, and prosocial peer relationships - all of which are known to be protective against future drug use in African-American youth (Resnick et al., 1997; Brody et al., 2002; Brody et al., 2004; Brody et al., 2006; Willis et al., 2003). In examining protective factors that prevent mental disorders, we find as we did for substance abuse that parent-child connectedness is protective against mental disorders and problem behaviors. Thus, we learn, compared to their peers who reported feeling that their mother cared “quite a bit” or “very much,” youths who reported feeling as though their mother cared “very little” or “not at all” about them reported particularly high prevalence rates of unhealthy weight control behaviors (63.49% girls, 25.45% boys); suicide attempts (33.51% girls,

21.28% boys); low self-esteem (47.15% girls, 24.56% boys); and depression (63.52% girls, 33.35% boys) (Ackard et al., 2006). It has been noted that internalizing disorders, such as depression, can predict higher levels of later substance use, suggesting that adolescents and young adults use drugs to cope with interpersonal distress (Brook et al., 1998). In addition, externalizing disorders, such as conduct disorder, have been found to increase the risk of drug use in early and later adolescence (Robbins & Price, 1991).

The second hypothesis regarding the relationship between mental disorders and substance use/abuse is the possibility that mental disorders and substance use/abuse disorders share common etiologic causes. For example, adverse parent/child interactions are risk factors for the development of psychiatric disorders and drug use. Felitti et al. (1998) note that persons who experienced 4 or more categories of adverse childhood events (Psychological abuse, Physical abuse, Sexual abuse, Violence against mother, Living with household members who were substance abusers, Living with household members who were mentally ill or suicidal, Living with household members who were ever imprisoned), compared to those who had experienced none, had a 4- to 12-fold increase for alcoholism (7.4), drug abuse (10.3), depression (4.6) and suicide attempts (12.2).

The third hypothesis is that drug use/abuse leads to psychiatric disorders, thus resulting in co-morbidity. Although only 8% of her sample was Nonwhite, predominately African-American, Brook et al.'s (1998) longitudinal study of co-occurring psychiatric disorders and substance use in youth suggest that drug

use/abuse leading to psychiatric disorders is more of a problem than psychiatric disorders leading to drug use/abuse. Her study revealed there was no evidence that depressive, anxiety, or conduct disorders in late adolescence have an influence on later drug use in young adulthood when controlling for earlier drug use. However, she noted "earlier psychopathology (e.g., childhood conduct disorder) may affect later drug use, however, once the adolescent starts to use drugs, depressive, anxiety, and conduct disorders do not have an additional impact on young adult drug use" (Brooks et al., 1998, p. 328). Regarding the second hypothesis Brook's study suggests that whatever common factors contribute to both psychiatric and substance use/abuse disorders may be limited to their effects in childhood and early adolescence. Finally, her research suggests that earlier drug use is linked with later psychiatric disorders. Specifically, drug use (alcohol, tobacco, marijuana, and illicit drugs) was related to later depressive disorders occurring in young adulthood. Brook's suggests that since the use of drugs precedes the onset of psychiatric disorders there must be greater attention focused on the prevention on the use of drugs and not just the abuse of drugs.

Prevention of MISA

Thus, one strategy to prevent MISA in African-Americans is to figure out how to prevent African-American children, adolescents and young adults from using drugs in the first place. Although specifically targeted to prevent mental and substance use/abuse disorders, parenting processes and classroom processes have both been hypothesized to contain protective factors that could

prevent African-American youth from using drugs (Brody et al., 2002). Parenting achieves this goal by providing high levels of monitoring of youth behavior (risky and non-risky) and a supportive, involved mother-child relationship. Classroom processes achieves this goal by providing high levels of organization, rule clarity, and student involvement all of which are designed to improve children's self-regulation and adjustment. Both of these processes, parenting and classroom, contribute a child's adjustment by helping the child to improve their self-regulation (Brody et al., 2002; Bell & McBride, 2010). This research supports the contention that classroom processes can cultivate protective factors around youth at risk for using/abusing drugs when African-American parenting processes are compromised, and vice versa (Brody et al, 2002). Wills et al., (2003) tested predictions about pathways to substance use with a community sample of 297 African-American male adolescents aged 13 years old. Structural modeling indicated that poor parent-adolescent communication resulted in a propensity for youth to become substance users; and religiosity had inverse direct effects on substance use. Self-control constructs (e.g. reliability, patience, concentration) had paths to prototypes of abstainers, whereas risk taking had paths to prototypes of drug engagers and direct effects on poor outcomes. Prototypes had paths to outcomes primarily through resistance efficacy and peer affiliations. Thus, contexts that help to develop self-control seem to be critical to help African-American youth prevent drug use (Willis et al., 2003; Bell & McBride, 2010).

Using Family-Based Interventions as a Prevention Strategy

Ackard et al. (2006) proposed that because adolescents' perceptions of low parental caring, difficulty talking to their parents about problems, and valuing their friends' opinions for serious decisions were significantly associated with compromised behavioral and emotional health. Interventions aimed at improving the parent–child relationship may provide an avenue toward preventing health risk behaviors in youth. Specifically targeted to prevent mental and substance use/abuse disorders, Brody et al. (2004; 2006) have convincingly shown that their Strong African-American Families (SAAF) program increases protective factors that should prevent African-American adolescents from using drugs. SAAF is a family-based intervention that posits "regulated, communicative parenting" causes changes in factors protecting youth from early alcohol use and other risky behaviors. Brody et al. (2004) proposed that involvement-vigilance with children and their activities, racial socialization, communication about sex, and clear expectations for alcohol use are parental variables that are protective for youth. Negative attitudes about early alcohol use and sexual activity, negative images of youth drinking, resistance efficacy, a goal-directed future orientation, and acceptance of parental influence are youth variables that protect African-American youth from substance use/abuse. Research on SAAF illustrates intervention on parenting mediated the effect of intervention group influences on changes in protective factors over a 7-month period (Brody et al., 2004). A randomized prevention trial (inclusive of 667 African American 11-year-old students and their caregivers), reports the 332 families, who participated in SAAF, experienced increases in "regulated, communicative parenting" and

targeted parenting behaviors; and low rates of high-risk behavior initiation among youth (Brody et al., 2004, 2006; Murry et al., 2005).

In another study, Willis et al. (2007) tested a theoretical model of how ethnic pride and self-control are related to risk and protective factors. In this study the researchers interviewed a community sample of 670 African-American youth (mean age = 11.2 years) and measured cigarette smoking and alcohol use (lifetime to past month). The results of this study indicated that parenting was related to self-control and self-esteem, and racial socialization was related to ethnic pride. Self-control and self-esteem variables were related to levels of deviance-prone attitudes and to perceptions of engagers in, or abstainers from, substance use. Thus, self-esteem and self-control are related to parenting approaches and have pathways to attitudes and social perceptions that are significant factors for predisposing to, or protecting against, early involvement in substance use.

Theoretical models suggest that many diverse biopsychosocial factors contribute to the etiology of risky behaviors, such as substance use among youth (Bell et al, 2007; Bell et al, 2002; Flay et al, 2004; Griffin et al, 2000). Griffith et al. (2000) examined whether cumulative psychosocial risk and protection measured in the 7th grade predicted alcohol use in the 9th grade in 775 black and 467 Hispanic inner-city youth and 708 white suburban youth. Interestingly, the prevalence rates for alcohol use and risk/protection varied more widely based on cultural, racial and ethnic group than for gender. As with previous epidemiologic

studies (Kann et al., 1997), Black youth reported the fewest risk factors and lowest levels of alcohol use; white youth reported the most risk factors and highest levels of alcohol use; and Hispanic youth reported the fewest protective factors and intermediate levels of alcohol use. Structural equation modeling indicated that a latent factor consisting of cumulative risk, protection and their interaction significantly predicted later alcohol use for the combined sample as well as for each cultural, racial and ethnic subgroup. Importantly, the proportion of variance explained in alcohol use varied across cultural, racial and ethnic subgroups. Analysis of the moderators suggested different cultural, racial and ethnic subgroups had their risks buffered by different protective factors. The strongest protective effects were observed among black inner-city youth. Thus, similar to more recent studies on risky behaviors (Goldsmith, 2001; U.S. Department of Health and Human Services, 2001; Bell et al., 2007; Bell et al., 2002; Flay et al., 2004), Griffith et al. (2000) suggest that public policy not take a deficit/treatment approach to problems in the African-American community. Rather, public health should take prevention approaches should focus on enhancing protection in addition to reducing risk, particularly among youth with lower levels of psychosocial protection; thus, recognizing and actualizing the adage “risk factors are not predictive due to protective factors.”

Increasing Cultural, Racial, and Ethnic Identity as a Prevention Strategy

Since the publication of Dr. Satcher’s Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General (U.S. Public Health Service, 2001), there has been a growing interest in how cultural,

racial and ethnic variables serve as both risk and protective factors in public health. Toward that end, several studies have emerged exploring the effects of cultural, racial and ethnic variables on prevention of mental disorders and substance abuse. Unfortunately, a literature search did not yield any on the prevention of co-morbid substance use/abuse and mental disorders. Accordingly, the authors are saddled with having to surmise what is potentially feasible in preventing this problem in African-Americans.

Nasim et al. (2007) underscored the consistent observation that, compared to White adolescents, African-American adolescents have lower rates of alcohol consumption. Unfortunately, African-American adolescents suffer disproportionately more adverse social, mental, and physical health outcomes related to their alcohol use. Understanding that: 1) solid evidence illustrating the negative impact of peer influence on African-American adolescent alcohol behaviors, 2) cultural variables have shown moderating effects against other risk factors present in the lives of African-American adolescents (Flay et al., 2004), and 3) previous research has shown that African-Americans who maintain their traditional cultural values and beliefs are less likely to use alcohol than those African-Americans who acculturate to American values (Klonoff & Landrine, 1999); Nasim et al. (2007) studied whether three culturally-relevant variables (Africentric beliefs, religiosity, and ethnic identity) promoted and protected against African-American adolescent alcohol initiation and use within the context of negative peer affiliations. In this study, 144 at-risk African-American adolescents (ages 13 to 20) were given a questionnaire with measures of alcohol

initiation and use, peer risk behaviors, ethnic identity, Africentric beliefs, religiosity, and demographic items. As expected, peer risk behaviors accounted for a significant percentage of the variance in age of alcohol initiation, lifetime use, and current and heavy alcohol use after adjusting for age and gender. Africentric beliefs promoted delayed alcohol initiation and were inversely related to lifetime alcohol use. Africentrism and religiosity moderated the effect of peer risk behaviors on alcohol initiation. In addition, ethnic identity and religiosity protected against heavy alcohol consumption.

Corneille et al. (2007) also explored the issue of ethnic identity and neighborhood risk on drug attitudes and refusal efficacy in 175 early adolescent urban African American females. Similar to Nasim et al.'s work (2007), these authors found direct relationship of higher ethnic identity and higher disapproval of drug use with lowered intentions to use drugs. Neighborhood risk was directly related to lower disapproval of drug use. There was a small moderating effect of ethnic identity on neighborhood risk for intention to use drugs. Brook et al. (2007) interviewed 475 inner city African-American and Puerto Rican young adults (mean age = 26.1 years). Using structural equation models, they revealed family conflicts, parental tobacco use, and weak ethnic identity were associated with vulnerable personality attributes and drug use, which in turn were related to nicotine dependence. Contrary to the notion that a strong ethnic identity is related to lower drug use, James et al. (2000) measured ethnic identity as a function of affirmation and belongingness, ethnic identity achievement, ethnic behavior, and other group orientation, and drug use as measured by misuse,

abuse, and chemical dependency diagnoses. Despite the significant limitations of the study (e.g. it was exploratory in nature and used a small sample in addition to clustering African-Americans with other ethnic groups), the study illustrated white adolescents scored lower in ethnic identity than did members of the four ethnic minority groups and the mixed racial group and that in the ethnic minority sample high levels of cultural identity were associated with heavy drug use.

Building Social Capital as a Prevention Strategy

Building social capital has also been proposed as an element of health behavior change (Bell et al., 2002; Bell et al., 2008), which may be a useful strategy in preventing co-morbid mental and substance use/abuse disorders. Bartkowski and Xu (2007) looked at levels of teen drug use (high school seniors' use of alcohol, marijuana, and other illicit drugs during the year prior to the survey) for three different components of faith-based social capital – a) exposure to and internalization of religious norms, b) integration within religious networks, and c) trust in religious phenomena. These authors also compared faith-based and secular forms of civic engagement among teens (e.g., participation in religious youth groups verses secular organizations such as sports and school clubs, and theistic trust verses secular trust). This investigation revealed both elements of religious and secular social capital are associated with lower reported drug use.

Multiple Intervention Points as a Prevention Strategy

As mentioned above, various theoretical models suggest that many diverse biopsychosocial factors contribute to the etiology of risky behaviors, such as substance use among youth (Bell et al., 2008; Bell et al., 2007; Bell et al., 2002; Flay et al., 2009; Flay et al., 2004). Because of increasingly sophisticated methodological, design and statistical technology, instead of focusing on developing one protective factor against substance use/abuse, some investigators have focused on multiple intervention points as a prevention strategy. Aban Aya used a multiple intervention point strategy, i.e. it focused on individual, family, and social contexts as targets of intervention. As can be seen in Table 1, Aban Aya is a multifaceted program that targets various facets of risky and protective behaviors through multiple modes.

- Insert Table 1 here -

This study provided evidence that a prevention program that teaches skills and is theoretically derived, developmentally appropriate, and culturally sensitive can have concurrent effects on multiple risk behaviors for inner-city African American boys in grades 5 through 8. This process demonstrated that comprehensive programs that address multiple behaviors, such as the Social Development Curriculum, and involve families and the community, such as the School/Community Intervention, are generally more effective than programs that address single behaviors or do not involve families or community. Both programs significantly reduced the rate of increase of multiple risk behaviors for boys. The effect sizes for violence (0.31 and 0.41) and substance use (0.42 and 0.45) are substantially better than those reported in meta-analyses for interactive

school-based violence (0.16), drug (0.24), sex (0.05), and other problem behavior (0.16) prevention programs that address only one behavioral domain. The significantly larger effect found for School/Community Intervention in the combined behaviors analysis suggests that the School/Community Intervention may be even more effective than the Social Development Curriculum alone in reducing drug use.

Preventing Acquired Biological Causes of Substance Use/Abuse

Finally, in keeping with the proposal that the prevention of co-morbid mental and substance use/abuse disorders can be approached from multiple domains, we would be remiss if we did not include biological approached to prevention of this problem. Understanding that poor inhibitory control increases the risk of substance use disorders (Tarter et al., 2003), Chapman et al. (2007) explored the influence of parental substance use disorder and mother's alcohol consumption during pregnancy on neurobehavior disinhibition children who were 10- to 12-years-old. The relationship between inhibitory dysregulation and substance use disorders have been proposed to be due to genetic factors (associated with ADHD, Conduct Disorder, and Antisocial Personality). Further, exposure to alcohol in utero is associated with failure to optimally self-regulate emotions and behavior (Gantz & Chambers, 2006). The second phenomena is a form of fetal alcohol syndrome (Sokol et al., 2003) and is know as alcohol-related neurodevelopmental disorder which is characterized by over-activity, impulsivity, and sensation seeking (Committee on Substance Abuse and Committee on Children with Disabilities, 2000). Research on neurobehavioral disinhibition is a

significant childhood predictor of substance use disorder (Tarter et al., 2003). This study which included 57 African-American boys (20% of a sample of 284 boys) in a longitudinal study found that paternal substance use disorder and the interaction between maternal substance use disorder and alcohol consumption during pregnancy predicted the child's neurobehavioral disinhibition score at 10 to 12 years old. This score was a significant predictor of substance use disorder when the children reached age 19. Thus, clearly one strategy to prevent substance use disorder, along with the possibility of preventing co-morbid mental and substance use/abuse disorder, is to gather routine information of maternal and paternal substance use disorder history and maternal alcohol consumption during pregnancy. This information can be used to ensure the family and child are provided with some of the protective factors mentioned earlier.

Prevention of Relapse in Patients with Co-occurring Disorders

Finally, the prevention of relapse with those who suffer from co-occurring disorders is equally essential as the prevention of the initial onset of MISA. Drake et al. (2005) described various factors that are conducive to substance use/abuse relapse with patients with severe mental illness. These variables include: 1) exacerbations of mental illness, 2) social pressures within drug-using networks, 3) lack of meaningful activities and social supports for recovery, 4) independent housing in high-risk neighborhoods, and 5) a lack of integrated substance abuse or dual diagnosis treatments. Accordingly, there are essentials in preventing relapse, including: 1) providing healthy and protective environments

that provide support of recovery, 2) helping people formulate life makeovers, e.g. obtaining satisfying employment, having friends who are not using drugs, developing support networks of others in recovery, and finding a sense of meaning and purpose, and 3) providing specific and individualized, integrated treatments for mental illnesses, substance use disorders, and other co-occurring problems. McGovern et al. (2005) also suggested key ingredients for substance use/abuse relapse prevention, including 1) reducing exposure to substances, 2) fostering motivation for abstinence, 2) self-monitoring, recognizing and coping with cravings and negative affect, 3) identifying thought processes with relapse potential, and 4) deploying, if necessary, a crisis plan. These authors also propose relapse prevention approaches may be best suited for persons in the action of maintenance stages of treatment or recovery.

Qualitative studies in majority African-American patients with mental and substance use/abuse disorders (Davis & O'Neille, 2005, Rollins et al., 2005), inform us that relapse prevention among persons with dual diagnoses suggests a) older patients who maintain stable housing, b) rely on positive social support, c) avoid toxic people, places and things, e) engage in prayer or rely on a higher power, f) participate in a meaningful activity, like holding a job, and g) think differently about life by understanding their personal dynamics are less likely to relapse. These studies also tell us that good nutrition, sleep hygiene, and looking presentable are also important.

While African-Americans patiently wait until the research community starts studying issues that affect all people including African-Americans, and starts studying prevention of mental disorders and substance use/abuse in African-Americans, we will have to be content with the scant literature that provides some insight into prevention of relapse of African-American patients with co-morbid mental and substance use/abuse disorders.

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Table 1

Aban Aya program structure and contents

Mode of delivery	*Program component*	*Program focus*
Social Development Curriculum delivered in classrooms	Skill development with students	anger management communication negotiation and conflict resolution social networking decision making problem solving goal setting refusal skills stress management
	Building a sense of self and purpose	empathy career planning feelings personal strengths cultural pride mentors communalism
	Teaching culture, values, and history	the influence of racism and stereotypes on self and community African American

		heritage ethnic values—Nguzo Saba normative beliefs environmental influences role models
School/Community	teacher and staff in-service training	reviewing and modeling curriculum skills learning how to integrate prosocial skills into the school environment, providing examples of school activities to reinforce curriculum skills modeling proactive classroom management skills promoting interactive and cultural teaching methods
	developing local school task forces	proposing school policy conducting school-wide fairs providing annual field

		trips for program parents and youth writing grants for local monies soliciting monies and supplies from local businesses
	parent training workshops	reinforcing skills taught in the social development curriculum improving child supervision and methods of discipline enhancing anger and stress management enhancing parent-child communication promoting parent/teacher communication