

# OVERVIEW OF THE IMPACT OF SUBSTANCE USE DISORDER ON TRAFFIC CRASHES: A CASE OF BOTSWANA

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## ABSTRACT

Addictions to drug and alcohol, which stem from substance abuse (SA), are universal public health problems and cause a significant burden to individuals and societies resulting in a multitude of physical, social, economic and legal problems including transport crashes. In spite of epidemic levels of substance abuse in society, many individuals do not receive treatment at all let alone adequate treatment. This continues to make substance use disorder a major cause of transport crashes (with the attendant menace) in developing countries. Research suggests that counsellors (and other helping professionals) are disinterested in SA counselling, and have SA training, attitude, and skill deficits. There is a dearth of empirical research particularly in developing countries that addresses counsellors' (or trainee counsellors') knowledge and attitudes in relation to substance use and substance users. This paper therefore reviewed the effect of substance abuse, the overall burden of which could have been reduced, had there been adequate and appropriate exposure to treatment, on highway traffic crashes.

**Keywords:** Substance abuse, knowledge, attitude, training, counsellors, traffic crashes

## 1. INTRODUCTION

Substances refer to alcohol and other drugs (whether illicit or not) that are capable of being misused or abused by their users. Substance Use Disorders (SUD), according to the Diagnostic and Statistical Manual, Fifth Edition (DSM-5) is a cluster of cognitive, behavioral, and physiological symptoms indicating that individual continues using a substance despite significant substance related problems. Alcohol use disorder (AUD) is a problematic pattern of alcohol use leading to clinically significant impairment or distress as manifested by at least two of the diagnostic features indicated in figure 1, occurring within a 12-month period. To be concise, SUD is the recurrent use of alcohol and/or drugs causing clinically significant impairment, including health problems and disability. In addition, Substance Abuse (SA) which is a sine qua non of SUD is the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. Substance Use Disorder is said to be one of the most prevalent mental health disorders in the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-V, 2013).

Drugged driving (driving after recent use of intoxicating drugs) and driving after ingesting alcohol both expose road users to untold risks. According to the National Institute on Drug Abuse (NIDA), "research studies have shown negative effects of marijuana on drivers, including an increase in lane weaving, poor reaction time, and altered attention to the road. Use of alcohol with marijuana makes drivers more impaired, causing even more lane weaving. Some studies report that opioids can cause drowsiness and impair thinking and judgment. Other studies have found that being under the influence opioids while driving can

double your risk of having a crash.” According to NIDA (2020), major effects of commonly misused drugs on driving are as follows:

Marijuana: affects psychomotor skills and cognitive functions critical to driving including vigilance, drowsiness, time and distance perception, reaction time, divided attention, lane tracking, coordination, and balance.

Opioids: can cause drowsiness and can impair cognitive function.

Alcohol: can reduce coordination, concentration, ability to track moving objects and reduce response to emergency driving situations as well as difficulty steering and maintaining lane position. It can also cause drowsiness.

DSM-IV		DSM-5		
Any 1 = ALCOHOL ABUSE	Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to alcohol use; alcohol-related absences, suspensions, or expulsions from school; neglect of children or household).	1	Alcohol is often taken in larger amounts or over a longer period than was intended. (See DSM-IV, criterion 7.)	
	Recurrent alcohol use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by alcohol abuse).	2	There is a persistent desire or unsuccessful efforts to cut down or control alcohol use. (See DSM-IV, criterion 8.)	
	Recurrent alcohol-related legal problems (e.g., arrests for alcohol-related disorderly conduct). <b>**This is not included in DSM-5**</b>	3	A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects. (See DSM-IV, criterion 9.)	
	Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the alcohol (e.g., arguments with spouse about the consequences of intoxication, physical fights).	4	Craving, or a strong desire or urge to use alcohol. <b>**This is new to DSM-5**</b>	
Any 3 = ALCOHOL DEPENDENCE	Tolerance, as defined by either of the following: a) A need for markedly increased amounts of alcohol to achieve intoxication or desired effect b) Markedly diminished effect with continued use of the same amount of alcohol	5	Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home. (See DSM-IV, criterion 1.)	
	Withdrawal, as manifested by either of the following: a) The characteristic withdrawal syndrome for alcohol b) Alcohol is taken to relieve or avoid withdrawal symptoms	6	Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol. (See DSM-IV, criterion 4.)	
	Alcohol is often taken in larger amounts or over a longer period than was intended.	7	Important social, occupational, or recreational activities are given up or reduced because of alcohol use. (See DSM-IV, criterion 10.)	
	There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.	8	Recurrent alcohol use in situations in which it is physically hazardous. (See DSM-IV, criterion 2.)	
	A great deal of time is spent in activities necessary to obtain alcohol (e.g., driving long distances), use alcohol, or recover from its effects.	9	Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol. (See DSM-IV, criterion 11.)	
	Important social, occupational, or recreational activities are given up or reduced because of alcohol use.	10	Tolerance, as defined by either of the following: a) A need for markedly increased amounts of alcohol to achieve intoxication or desired effect b) A markedly diminished effect with continued use of the same amount of alcohol (See DSM-IV, criterion 5.)	
	Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., continued drinking despite recognition that an ulcer was made worse by alcohol consumption).	11	Withdrawal, as manifested by either of the following: a) The characteristic withdrawal syndrome for alcohol (refer to criteria A and B of the criteria set for alcohol withdrawal) b) Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms. (See DSM-IV, criterion 6.)	
				The presence of at least 2 of these symptoms indicates an <b>Alcohol Use Disorder (AUD)</b> .
				The severity of the AUD is defined as: <b>Mild:</b> The presence of 2 to 3 symptoms <b>Moderate:</b> The presence of 4 to 5 symptoms <b>Severe:</b> The presence of 6 or more symptoms

Figure 1. DSM-V Definition. Adapted from NIH Publication No.13-7999, 2013

### 1.1 Magnitude of SUD

Substance (drug) abuse is an enormous and escalating problem in the world, especially among teenagers and young adult. According to the report of the World Health Organization, there were 200 million of drug addicts throughout the world in 2005 (Geramian et al, 2012). Addiction to tobacco, alcohol and illicit drug are universal public health problems and cause significant burden to individuals and societies resulting in a multitude of physical, social, economic and legal problems including HIV/AIDS (Rasool et al, 2006). As a result, it has become a serious problem in social and psychological health issues. In the same vein, substance misuse has been linked with a variety of health problems, including respiratory

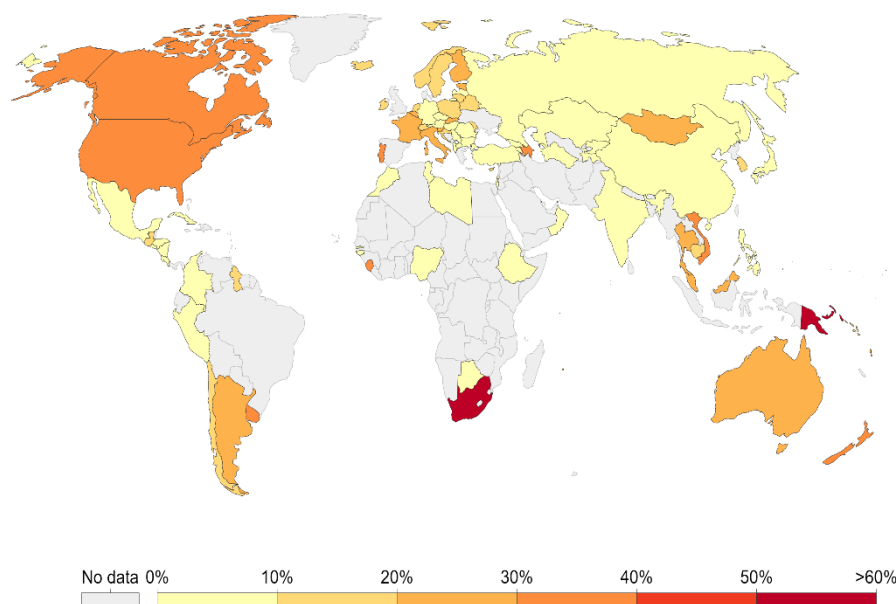
problems, cardiovascular disease, thyroid functioning, cancer, and metabolic syndrome. (Caspers et al., 2009). Tobacco, alcohol and illicit drug use has been shown to account directly and indirectly for about a quarter of annual death rate (McGinnis, and Foege, 1993 in Cape et al., 2006) and is responsible for approximately 9% of the global burden of disease (WHO, 2002). In its 2018 Global Status Report on Alcohol and Health, WHO also stated that 3 million deaths every year result from harmful use of alcohol. This notwithstanding, high levels of alcohol are still being consumed by people across the globe.

In the United States, lifestyle related illnesses account for half the annual mortality rate and alcohol and drugs account for half of it i.e. 25% of annual deaths (McGinnis and Foege, as cited in Au, 2006). In 2019 in the United States, estimates show that almost 44 percent of drivers in fatal car crashes tested positive for drugs (NIDA. 2020). In Europe, 11.8% of all deaths in the age group 15–64 years are attributed to alcohol related causes (World Health Organization, 2012, cited in Van Boekela et al., 2013).

Hughes (2009) also posits that “Many of the accidents and deaths that occur on European roads are caused by drivers whose performance is impaired by a psychoactive substance. Alcohol alone is estimated to account for up to 10 000 road deaths a year in the European Union, one quarter of all road deaths.” In Nigeria, studies have consistently shown that there is considerable prevalence of drugs and substance use; with varying prevalence rates found both for overall and specific drug abuse (Abdulkarim et al., 2005). Additionally, it is reported that approximately 50% of accidents, and its attendant consequences, on Nigerian roads are related to alcohol use (Welcome and Pereverzev, 2010, cited in Makanjuola et al. 2014). It is noteworthy that similar pattern exists across the continent of Africa (Figure 2).

### Share of road traffic deaths attributed to alcohol, 2013

Share of total road traffic deaths (including vehicles, pedestrians and cyclists) attributed to those over the national legal limit for alcohol consumption.



Source: WHO, Global Health Observatory

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**Figure 2.** Share of Road Traffic Deaths Attributed to Alcohol

## 2. A CASE OF BOTSWANA

Alcohol and other substance use prevalence in Botswana have risen in the last decade. It has become increasingly commonplace in terms of the social demography of users, age, location, drugs of choice, and availability of a wide range of drugs. In Botswana, alcohol abuse appears to be at a pandemic stage and everyone in the community seems to be affected one way or the other. The impact of this on the road traffic accidents, annual death toll, community violence and HIV/AIDS spread is overwhelming! According to a data collected for the Botswana Epidemiology Network on Drug Use (BENDU) in 2003 from four treatment centres, alcohol remains the most common primary substance of abuse reported by patients, accounting for 84% of patients ([www.who.int/substance\\_abuse/publications/en/botswana.pdf](http://www.who.int/substance_abuse/publications/en/botswana.pdf) COUNTRY PROFILES AFRICAN REGION Global Status Report on Alcohol 2004 3 © World Health Organization 2004). Furthermore, the 2007 population-based survey indicated that approximately 49% of adults in Botswana drink alcohol regularly with 30% being males and the remainder females. Among the 49% of alcohol consumers, 50% reported binge drinking, which is defined as more than six drinks per day for men and more than four beers on daily basis for women (The Midweek Sun, 2012). This statistics is absolutely alarming.

Similarly, the Botswana Alcohol Aids Project (BAAP, 2004) posits that alcohol is the most heavily used substance in Botswana. Dagga (Pot) is second but the ratio of use is about 95% Alcohol and 4% Pot with other drugs like Ecstasy and Glue at about 1%. Alcohol use in Botswana is clearly linked, by its negative impact on behaviour, to the continued spread of HIV/AIDS. In 2004, the Botswana Aids and Alcohol Project (BAAP) stated that the death rate in Botswana had already exceeded the birth rate, and that without significant nationwide behavioural change (as regards alcohol use), the Country of Botswana was on a long march to extinction (BAAP, 2004). Although the life expectancy in Botswana has since increased from 47.16 in 2004 to 54.06 as at August 2014, because of lesser deaths from HIV-AIDS owing mainly to ARV treatment, Kutil (2014) posits that the Botswana populace is still heavily influenced by health factors resulting from alcohol abuse. According to him, statistics from the Botswana Police Service, collected by the Ministry of Health, show that 50% of reported rape happened when alcohol was involved. Further, when male and females are identified as heavy drinkers, the risk of HIV, due to multiple partners, unprotected sex, and transactional sex (paying or selling sex) increased three-fold. In the same vein, in violent crime acts, the purely anecdotal evidence suggests that alcohol is a prominent factor (von Rudloff, cited by Kutil 2014).

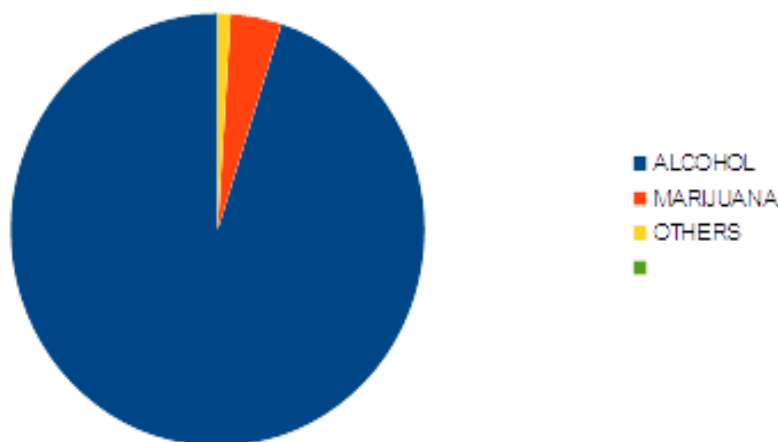
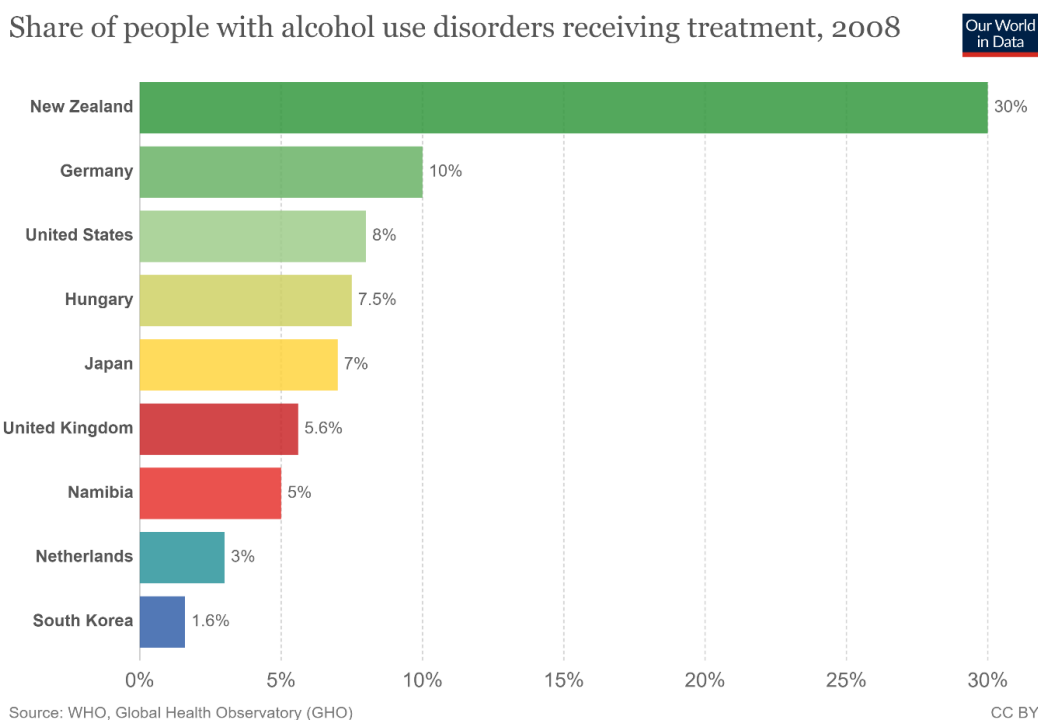


Figure 3. Substances of Abuse in Botswana

Botswana has one of the highest rates of increase in road traffic accidents and fatalities in the world. The World Health Organization (WHO) Global Status report on Road Safety revealed that Botswana has a recorded death rate of 20.1 per 100 000 population against the global death rate of 17.4 per 100 000 population (Thatayamodimo, 2019). However, the overall crash rate declined significantly in June 2009 and June 2010, such that the overall crash rate from June 2010 to December 2011 was 22% lower than the overall crash rate from January 2004 to May 2009 (Sebego et al. 2014). This significant decrease occurred while policies were being aggressively implemented to reduce alcohol consumption. Another great eyeopener to the great impact of alcohol and other substance use disorders on traffic crashes.

Regrettably, despite the epidemic levels of substance abuse in society, many individuals do not receive treatment at all let alone adequate treatment. This continues to make substance use disorder a major cause of transport crashes (with the attendant menace) in developing countries, Botswana inclusive. Various factors are responsible for this. Among them are reluctance to seek help by the populace, inadequate facilities and insufficient and/or under-trained care givers. The Global Health Observatory (2018) showed only very few people with alcohol use disorders got any form of treatment at all. See Figure 3.



**Figure 4.** People with AUD receiving treatment

The medical and other helping professions practitioners both globally and locally are the human resources for managing and treating victims of substance misuse as well as educate them on preventive measures regarding this menace. However, a growing body of literature globally documents the deficient/inadequate education of medical, paramedical, and other helping professions (counselling, social work, psychology) about addiction. (See for example, as reflected by Senreich and Straussner, 2012; Galvani and Hughes, 2008; Cape et al, 2006; Rasool et al, 2006; Abed and Neira-Munoz, 1990 in Landy et al., 2005). Senreich and Straussner (2012), for instance, posits that the National Association of Social Workers



(NASW) Standards for Social Work Practice with Clients with Substance Use Disorders (SUDs; NASW, 2005), indicate: "Social workers shall screen clients for SUDs and, when appropriate, complete a comprehensive assessment toward the development of a service plan for recommended placement into an appropriate treatment program". Yet very few schools of social work require that students take a course on assessment and treatment of substance abusing clients.

In like manner, Rasool et al (2006) concurred that "an extensive review of drug and alcohol content within nursing curricula at both undergraduate and postgraduate levels in the United Kingdom (Rasool and Oyefeso 1993; Rasool 2000), United States of America (Murphy 1991; Hagemaster et al. 1993), Australia (Pols et al. 1993; Crespigny 1999) and Brazil (Villar-Luis 2001; Pillon et al. 2004; Rasool and Villar-Luis 2004) reveal that content related to substance use and misuse education in nursing curricula is inadequate".

Apart from paucity of educational exposure and possible inadequate knowledge, another important area of concern is the negative attitudes towards victims of substance abuse (Pabian, 2013; Gerace et al. 1995 in Rasool, 2006). According to Au (2006), substance abuse and substance abusers stir up complex responses in society. Stigma, rejection and punitive responses to "addicts" and "alcoholics" are common. Service providers are likely to be exposed to biased and uninformed beliefs and attitudes regarding substance abuse. Professionals may be unaware of the biases and attitudes they have assimilated from the larger society. In fact, many graduating students in mental health fields simply do not want to work with substance abusers. (For example, one study found that 70% of graduates did not find addiction work satisfying). Once in practice, they are slow to respond to the addiction field's demand for their services. It is possible to be a licensed psychologist (and of course, a practicing counsellor) having only very limited knowledge of substance use disorders. Critics have concluded that the lack of adequate addiction training can only be described as institutional denial or minimization of the significance of addictive disorders (Pabian, 2013).

However, given the escalating evidence about the social harms and great negative impact on traffic crashes of alcohol in particular, and other substances abuse in general, as well as the anecdotal evidence from mental health workers who are struggling to come to terms with these issues, as well as the limited counselling and human services literature on the knowledge and attitudes of trainee counsellors towards substance abuse in Botswana cum, concerted efforts must be made from all quarters to fight the monster of SUD.

### 3. CONCLUSION

The overview shows substance use disorder as a great hazard not only to the drivers, but all highway users both globally and locally in African countries. In all its ramifications, it causes a significant burden, resulting in not only in high incidence of traffic crashes, but also other imbroglio like health, social, economic, and legal problems,

Evidently much higher risks of traffic crashes are faced by drivers as well as pedestrians who have been on psychoactive substances including alcohol and illicit drugs than others who have not. Some of the effects of ingesting/misusing substances include, but not limited to drowsiness, poor concentration and reaction time, impaired cognitive function, lane tracking, altered psychomotor skills and reduced coordination.

Interestingly, implementation of aggressive policies to reduce alcohol (and by extension, other substances) consumption was shown to have a direct relationship to traffic crashes reduction in some countries especially when accompanied by promotion and/or enforcement of road safety rules. However, on a sad note, treatment for substance abuse appears to be far from adequate. While people with substance use disorder need more motivations to seek help, many health care (and other helping) professionals, especially in Africa need more trainings and re-orientation of their mindset to be able to adequately treat substance users. Curricular review might also be needed in institutions of training to that effect.

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