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SUBSTANCE-RELATED DISORDERS TREATMENT SERVICE IN A GENERAL HOSPITAL IN ETHIOPIA: EXPERIENCE, CHALLENGES AND OPPORTUNITIES

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ABSTRACT

According to the latest global burden of diseases report, substance related disorders (SRDs) remain important risk factors for disability and premature mortality. The sub-Saharan Africa region has a long history of substance use, but this was mainly limited to alcohol, tobacco, cannabis, and khat. Recently, use of hard drugs such as cocaine and heroin is on the rise. This paper highlights the current status of SRDs in Ethiopia. Alcohol, khat and tobacco are the three substances commonly misused in Ethiopia. Evidence based interventions for SRDs for low and middle-income countries (LMICs) and the challenges of setting up SRD service, and application of these interventions in Ethiopia, a country of more than 100 million people and the second largest in Africa after Nigeria with rising SRDs, is presented. It also highlights the successes, opportunities and innovative approaches undertaken. A descriptive summary of cases seen in the SRD treatment center, and outcomes of detoxification is also presented. Lessons learnt in this process have the potential to inform other similar services in LMICs.

Keywords: Alcohol, Drugs, Ethiopia, Low and Middle Income, Services, Substance, sub-Saharan Africa

INTRODUCTION

Substance related disorders (SRDs) are global problems, affecting virtually human beings living anywhere in the world, though prevalence figures vary. According to global burden of diseases (GBD) report

of 2016, alcohol and drugs accounted for 4.2% and 1.3 of all disability adjusted life years (DALYs) respectively. Alcohol remained the most commonly missed substance with age-standardized prevalence 1320.8 cases per 100 000 people followed by cannabis and opioids with

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age-standardized prevalence 289.7 cases per 100 000 people and age-standardized prevalence 353.0 cases per 100 000 people respectively (GBD 2016 Alcohol and Drug Use Collaborators, 2018). Alcohol misuse alone was found to be the 7th leading risk factor for mortality and DALYs (GBD 2016 Alcohol Collaborators, 2018).

Sub-Saharan Africa region faces the double burden of infectious diseases such as HIV, TB, malaria and non-communicable diseases (NCDs) including MNS disorders (Angkurawaranon et.al., 2016, Misganaw et.al., 2017). These countries are undergoing socioeconomic and cultural transition, with emerging middle class who have disposable income for buying alcohol and recreational substances. Among the four risk factors identified by WHO to predispose individuals to NCDs excessive alcohol use remains the most prevalent factor and widely consumed in Africa (Obot, 2007); alcohol was reported to be the leading risk factor for NCDs in Southern Africa, and among the top ten risk factors in the rest of sub-Saharan Africa region (Obot, 2013). Big multinational alcoholic beverage industries have found a new niche in this region, investing billions of dollars and engaging in aggressive marketing of alcoholic drinks, dubbed neocolonialism by some authors (Willis, 2006). For instance, the largest investment in Ethiopia from Europe was in the brewery industry increasing the production of beer more than 10 fold in a span of less than 20 years (Teferra et. al., 2017).

Most commonly used substances in many African countries include alcohol, tobacco, cannabis and khat (Odejide, 2006). Use of illicit drugs is more common among at risk populations such as street youth (Fekadu, Alem & Hanlon, 2006)

Use of other substances such as opioids is on the rise in Africa. A review of injecting drug use in six African countries, namely Egypt, Kenya, Mauritius, Nigeria, South Africa and Tanzania reported rising trend of injecting drug use despite widespread belief on the contrary; moreover, the practice of IDU was unsafe and posed high risk for HIV infection (Dewing et. al., 2006). Factors contributing to the increasing misuse of drugs and alcohol in Africa include poverty, political instability, social unrest and refugee problems (odejide, 2006). The impact of globalization on the spread of more potent addictive substances such as heroin, cocaine and ecstasy in Africa is also noteworthy (odejide, 2006). Africa has also become a drug trafficking hub for high potent drugs such as cocaine, with Nigeria playing a major role (US DEA, 2001).

Background about Ethiopia

Ethiopia is one of the ancient civilizations in the world situated in what is commonly known as the horn of Africa in the Eastern African region. It is the second most populous country in Africa after Nigeria with a population of more than 100 million, making it home to nearly 10 percent of the African people (www.worldatlas.com/articles/the-10-most-populated-countries-in-Africa.html). Although known to the wider world with images of the devastating famine that occurred in the 1980s, it has shown remarkable economic development in the past two decades resulting in significant reduction in the level of poverty, and improvement in the provision of basic services (www.worldbank.org/en/country/ethiopia/overview).

Ethiopia is one of the five ancient civilizations in the world, and among the first to produce alcoholic beverages in the

world (Fekadu, Alem & Hanlon, 2007). It is also the origin of two stimulants: coffee and khat (Berecha et.al., 2015; Getasetegn, 2016). Being a conservative country, with almost all the citizens subscribing to one or the other major religions in the world, many people think substance misuse is not a problem. In fact, there is evidence that substance misuse is on the rise (Bekele, Gebremedhin, ...& Teferra, 2017). Increasing urbanization, economic boom, high unemployment rate and cultural transition have probably contributed to the rise of substance misuse.

The health system in Ethiopia is organized around primary health care, prevention being its primary focus. Currently the country has about 70 psychiatrists, a few hundred psychiatry nurses and only one addiction psychiatrist. The resources allocated for health, mostly donor fund-

ed, focus mainly on communicable diseases such as malaria, TB and HIV; and maternal and child health (MoH, 2015). Non-communicable diseases are emerging health problems being responsible for 24% of deaths in Addis Ababa (Misganaw et.al., 2014).

Prevalence of substance use in Ethiopia

In Ethiopia, national data exists on three substances that are commonly misused—alcohol, khat and tobacco. According to a recent national representative survey involving close to 10,000 adults, the prevalence of heavy episodic drinking was reported to be 12.4%; the proportion of current khat chewing was 15.8% and the prevalence of tobacco smoking was 4.2%. (Please see table-1 for further details)

Studies on other substances are limited to specific social groups and areas.

Table 1. Alcohol, Khat and Tobacco use among Ethiopians: Findings from the 2015 STEPS Survey*

Results for age 15-69 year olds	Females, n(%)	Males, n(%)	Both sexes, n(%)
Tobacco Use			
Current smokers	0.4(0.3-0.6)	7.3(6.1-8.6)	4.2(3.5-4.9)
Daily tobacco smokers	0.2(0.1-0.4)	6.2(5.0-7.4)	3.5(2.8-4.1)
Among daily smokers			
Average age in years of debut for smoking	22.8(19.1-26.5)	20.9(19.8-22.0)	21.0(19.9-22.0)
Daily smokers using manufactured cigarettes	48.4(26.5-70.3)	91.5(87.4-95.5)	89.4(85.3-93.6)
Average number of cigarettes smoked daily	2.4(1.1-3.7)	7.3(6.2-8.3)	7.1(6.1-8.1)
Alcohol consumption			
Life time alcohol use	2318 (42.7)	2012 (54.9)	4330 (49.3)
Past 12 month drinkers from ever drinkers	2045 (88.2)	1818 (90.4)	3863 (89.6)
Current drinkers (past 30 days)	1793 (89.4)	1709 (93.6)	3502 (92.0)
Heavy episodic drinking (? 6 or more drinks/ occasion in the past 30 days)	2.7%	20.5%	12.4%
Khat chewing			
Current Khat chewers (past 30 days)	9.4 (7.2-11.5)	21.1 (17.6-24.7)	15.8 (13.1-18.5)
Among the chewers during the past 12 months, percentage of respondents who chew Khat daily.	50.4(41.7-59.2)	61.4 (53.9-68.8)	58.4 (51.6-65.2)

* (Defar, Getachew, Teklie, Bekele, Gonfa...Teferra, 2017; Teklie, Gonfa, Getachew, Defar, Bekele...Teferra, 2017; Getachew, Defar, Teklie, Gonfa, Bekele....Teferra, 2017)

According to an old study, the proportion of gasoline sniffing among juvenile delinquents was 17% (Workneh, 1983); a rapid assessment involving street children, commercial sex workers and street vendors in the capital and several other towns in Ethiopia reported 11.2% cannabis use, 0.9% solvent use, 0.2% cocaine and heroin use each (Selassie, 1996). Currently, the use of cannabis is increasing significantly, especially in urban areas.

Current Status of Services for SRDs in low and middle income countries

In general, there is a dearth of evidence for alcohol and drug abuse services in LMICs. Most of the evidence for such services comes from high income countries, which depend on costly care models of treatment and rehabilitation. A recent review on packages of care for mental health services in LMICs, published in a series of articles on *Plos Medicine* focused on evidence based interventions for alcohol use disorders (AUDs). According to this recommendation, AUDs are neglected health problems in LMICs, most problematic drinkers visit primary care and remain untreated, and the small existing services focus mainly on tertiary care for severe dependent patients. The recommendation called for a shift in policy towards cost effective interventions focusing on brief intervention for non dependent users who form the majority of problematic users. It shies away from the effective evidence based psycho-social and pharmacological interventions due to cost and emphasizes possible stepped care model (Benegal, Chand & Obot, 2009). However, a later publication covering the whole range of SRDs took the bold step of presenting comprehensive packages of evidence-based care for LMICs which was

later incorporated in the landmark WHO-mhGAP intervention guide (Please see table-2 for details).

Challenges of SRD Service in Low and Middle Income Countries

Although SRDs are recognized as important public health problems in LMICs that need attention, more than a third of LMIC countries have no policy on alcohol and drugs. The mental health budget of most countries is below 1% of their health budget, and often SRDs get none of this budget allocated due to high level of stigma. Challenges include lack of policies, strategies and legislations, poor financing, poor capacity, and diverse treatment approaches, which may not be evidence-based (Salwan and Katz, 2014).

The Situation SRD service in Ethiopia

In Ethiopia, SRD services are better described as non-existent; the country doesn't have alcohol and drug policy, or strategy. There is a five-year National Drug Master Plan supported by the United Nations Office for Drug and Crime (UNODC), but implementation is only limited to training using Treatnet protocol (<https://www.unodc.org>), and some awareness raising activities, usually undertaken by the drug control authority, Ethiopian Food Medicine and Health Care Administration and Control Authority (EFMHACA). This institution provided some support for setting up detoxification services, one a 10 bed facility in the only mental hospital, Amanuel Mental Specialized hospital, and a 5 bed detoxification facility in a general hospital, both located in the capital city. There is no dedicated budget for the services, or provision of inputs on a regular basis. SRD related activities are not included in the Health

Management Information System (HMIS) reporting. The author, who is an addiction psychiatrist trained at the University of Toronto in Canada, has been providing

SRD services in another general hospital for the past five years and established a 4 bed detoxification service in the same hospital 2 years ago.

Table 2. Evidence-based Recommendations for Management of SRDs in LMICs**

Alcohol use disorders	Detailed description of the interventions
Screening and brief interventions	Routine screening in clinics using validated instruments such as AUDIT-3, AUDIT-C, ASSIST, brief intervention for hazardous and harmful alcohol use
Management of alcohol withdrawal	Supported withdrawal in patients with alcohol dependence, use benzodiazepines first-line medication for the management of alcohol withdrawal. Add antipsychotic medications as adjunct treatment when indicated. Oral thiamine, iv/im when evidence of Wernicke's encephalopathy present or in the presence of severe malnutrition. Inpatient management when indicated.
Preventing relapse in alcohol dependent patients	Offer acamprosate, disulfiram, or naltrexone for preventing relapse in alcohol dependent patients, depending on patient preference.
Psychosocial interventions for management of alcohol dependence	Routine provision of psychosocial support is needed for patients with alcohol addiction, with provision of more structured therapies when possible. Family support should also be provided by non-specialist health care workers.
Role of mutual help groups such as Alcoholics Anonymous (AA)	Refer patients with alcohol addiction to self-help groups, monitor attendance. Encourage family members of patients with alcohol addiction to attend family groups
Drug use disorders	
Brief psychosocial interventions	Individuals using cannabis and psychostimulants should be offered brief intervention, which should comprise a single session of 5–30 minutes in duration, incorporating individualized feedback and advice on reducing or stopping cannabis/psychostimulant consumption, and the offer of follow up. People with ongoing problems related to their cannabis or psychostimulant drug use who do not respond to brief interventions should be considered for referral for specialist assessment.
Management of drug withdrawal	1) Cannabis, cocaine, or amphetamines: is best undertaken in a supportive environment. No specific medication is recommended for the treatment of their withdrawal. Relief of symptoms (e.g., agitation, sleep disturbance) may be achieved with symptomatic medication for the period of the withdrawal syndrome. If depression or psychosis can occur during withdrawal, monitor closely and seek advice from relevant specialists, if available. 2) Benzodiazepines: convert to long acting benzodiazepines, gradually taper dose over 8–12 weeks. Additional psychosocial support should be considered. If severe withdrawal symptoms, seek specialist advice.
Treatment of psychostimulant dependence	Avoid using Dexamphetamine for the treatment of stimulant use disorders.
Psychosocial support for the management of cannabis dependence and abuse and psychostimulant use disorders	Brief motivational interviewing based psychological support; refer non responders for treatment in a specialist setting, when available.
Role of sterile injection equipment and outreach programmes for injecting drug users	Provision of sterile needs in primary care where injecting drug use is common and safe retrieval of used ones. This can be facilitated by community pharmacies or through outreach programmes. Testing for HIV and hepatitis is also necessary and referral to treatment is needed.

** (Dua, Barbui, Clark, Fleischmann, Poznyak, Ommeren et al. 2011, mhGAP-IG, 2017)

METHODS

Setting

The SRD service was established in Zewditu Memorial Hospital, a general hospital located at the heart of Addis Ababa, named after Empress Zewditu, the cousin and predecessor on the throne of Emperor Haile Selassie. The Hospital is under the Addis Ababa Health Bureau. It provides health care to residents of Addis Ababa in different specialty and general medical services, including mental health. The SRDs treatment center is found in the basement floor of the hospital's main building. It has a total of 4 inpatient beds, nurses and doctor's offices, and space for group therapy. The outpatient service has been running since 2013, but the inpatient service was opened on February fifteen 2016. Detoxification, individual psychotherapy, and group therapy services are provided in the center, both on outpatient and inpatient basis. It also provides outpatient based individual counseling and weekly group therapy. This facility was established with limited financial support from WHO-Ethiopia country office, and the Federal Ministry of Health.

Data Analysis

The current report is based on the cases admitted to the detoxification service in the first year of opening, March 2016-April 2017, led by the author. Data was collected from the registry logbook and analyzed using SPSS Version 24. Descriptive statistics is presented to provide some baseline data. Narrative summary of the experience of setting up the SRD service including the challenges and opportunities is presented.

RESULTS

The majority of patients admitted were males (95.3%), aged \geq 30 years (69.8%), single (62.8%), had secondary education and above (86.1), and were living with their family (67.4%). Alcohol was the major substance for admission (93%). Nearly half (48.8%) had used substance for \geq 10 years. (Please see table-3 for details).

Challenges faced when setting up the detoxification service

Experience of setting up the detoxification service

- The process of starting the detoxification center started after the author returned from Canada in April 2012, completing a fellowship in addiction psychiatry. Although there was outpatient based psychiatry service in the hospital, there was no service for SRDs. The author had to set up a designated outpatient service once a week in the afternoon in the same clinic where other general adult psychiatry patients were seen in the morning. There was no nurse or other auxiliary personnel trained in the evaluation and management of SRDs. It was literally a 'one man show', plus psychiatry residents in training. The outpatient service was mainly based on individual therapy using motivational interviewing (MI) and CBT, and MI based group therapy. There were cases who had severe dependence who needed admission. So, the process of setting up the inpatient detoxification service was started. It took three years to set up a 4 bed detoxification service at the basement of the main hospital- two years to secure the place and one year to get it ready

for the service. The author had to look for resources to renovate and partition the empty hall into a usable place. Some small funding was provided by the WHO country office and another

small funding from the Federal Ministry of Health.

- As stated in the table, the number of cases admitted in the first year weren't that many, but the impact

Table 3. Socio-demographic and Clinical Characteristics of Patients with SRDs Admitted to Zewditu Memorial Hospital Detoxification Unit, March 2016-April 2017

Characteristics		Number	%
Sex	Male	41	95.3
	Female	2	4.7
Age group (years)	<20	1	2.3
	20-29	12	27.9
	30-39	23	53.5
	40-49	7	16.3
	50+	2	4.7
Marital Status	Single	27	62.8
	Married	11	25.6
	Divorced/Widowed/Separated	5	11.6
Education	Primary	3	7.0
	Secondary	18	41.9
	College	19	44.2
	Unspecified	3	7.0
Address	Addis Ababa	38	88.4
	Other	8	18.6
Living arrangement	With family	29	67.4
	Alone	12	27.9
	Unspecified	2	4.7
Type of Substance Used	Alcohol	27	62.7
	Alcohol + Tobacco	5	11.6
	Alcohol+ Tobacco+ Khat	6	13.9
	Opioids (pethidine= 2, codeine=1)	3	7.0
	Alcohol + Cannabis	2	4.7
Duration of Substance Use	< 10 years	9	20.9
	10-19 years	17	39.5
	20+ years	4	9.3
	Unspecified	13	30.2
Presence of comorbid psychiatric diagnosis	Yes	7	16.3
	No	36	83.7
Length of stay in hospital	Up to 14 days	12	27.9
	15-28 days	20	46.5
	>28 days	11	25.6
Outcome of detoxification	Successful	41	95.3
	Not successful***	2	4.7

***left the center before completing detoxification

was powerful. The author engaged in continuous campaign using different media to advocate for attention to be given to the problem. Patient flow has been increasing since then.

- **Low priority given by the government:** no alcohol and drug policy, and low attention given to the problem. There was mention of alcohol as one of priority conditions in the recently expired five-year national mental health strategy, but it was never implemented. There is also a 'National Drug Master Plan' written every five years with the support of UNODC but poorly implemented. Treatment of alcohol and drug use disorders is not covered in the ongoing national health insurance scheme.
- **Lack of awareness:** In general, addiction to alcohol and drugs is considered a moral failure and personal weakness and not as a health problem. Consequently, there is low treatment seeking behavior both by patients themselves as well as their caregivers.
- **Lack of resources:** there is no training program in substance abuse counseling and treatment in the country except courses given to psychiatry nurses and residents which tend to be brief and inadequate to run a proper addiction treatment service. Currently, there is only one addiction psychiatrist trained abroad and two general psychiatrists who have been providing the service after receiving short courses. Besides the hospitals with a total capacity of about 20 beds, based in the capital city, there is one rehabilitation center dedicated for addiction service, a 25 bed facility in the Northern Ethiopia regional state of Tigray which has a population of about 5 million. There are no drugs for detoxification of opioids such as

methadone, buprenorphine, clonidine, naloxone or naltrexone, even thiamine. There are no medications for nicotine addiction such as nicotine replacement therapies (NRTs) or Bupropion. No relapse prevention medications for alcohol such as disulfiram, naltrexone or acamprosate. In our detoxification service, we have been using tramadol protocol for detoxification from opioids which had comparable efficacy with buprenorphine, methadone or clonidine for managing opioid withdrawal (Threlkeld, Parran, Adelman, Grey, 2006; Sobey, Parran, Grey, Adelman, Yu, 2008; Zarghami, Masoum, Shiran, 2012). For detoxification for alcohol, we have used diazepam protocol using standing dose and PRN administration according to the CIWA Ar score, and B vitamins preparations since thiamine was not available in the country. Unfortunately, this low attention continues as evidenced by the complete exclusion of medications used to manage addictions from the national drugs and supplies procurement list by the Pharmaceuticals Fund and Supply Agency of Ethiopia (PFSA, 2018).

- **Lack of self-help groups:** in Ethiopia there are no self-help groups to refer patients for continued peer support. Repeated attempts to establish Alcoholic Anonymous (AA) didn't materialize. Only small groups run by expatriate recovering alcoholics exist in the country.
- **Lack of evidence base for effectiveness of interventions in Ethiopia:** no studies have been conducted in Ethiopia on effectiveness of evidence-based interventions for LMICs. The problem is more pronounced in some substances which are endemic to the country like

khat which lack empirically tested interventions even in other parts of the world, although the diagnostic criteria Stimulant Use Disorders, from the DSM, 5th edition, has been validated for diagnosing Khat Use Disorder (Duesso et al., 2016).

Opportunities

- Although there were several challenges affecting SRD service in Ethiopia, there are also opportunities to be harnessed innovatively, namely, the inclusion of mental health in primary care, the attention being given by the government on NCDs, and the recent media attention the issue has gained which created an opportunity for advocacy. Although limited, there are some NGOs working on SRDs, and these need to be strengthened.

DISCUSSION

The findings from this report are consistent with the rest of the world, alcohol being the number one substance responsible for admission to detoxification center. As it was reported by Willis (Willis, 2006), traditional alcoholic beverages have been used in Africa for a long time, but recent massive investment from multinational breweries has changed the drinking culture, with a shift into manufactured alcoholic drinks such as beer and liquors; Ethiopia has been witnessing this transition (Teferra, et al., 2017).

The other substance most commonly misused in Ethiopia is khat, an amphetamine-like shrub, chewed for its stimulant effect (Teferra, et al. 2011). This substance is often used in combination with tobacco and alcohol. People drink alcohol

to counter the stimulating effect of khat, which is locally known as 'chebsi', meaning 'breaking' the effect of khat. Although not that alarming, prescription opioids such as pethidine are also misused in Ethiopia. The presence of the problem in itself warrants care when providing prescription for these drugs to manage pain. Recent trends show the need for strict control of these drugs, and introduction of measures on pharmacies which sell these drugs without special prescription.

The majority of patients admitted to the center were males. This is typical finding in SUDs; males tend to have preponderance for using addictive substances and getting admitted to detoxification facilities more than females. A similar study from Nigeria reported that 96.5% of patients admitted to the drug de-addiction center were males (Unaogu, et al., 2017). Another report from Uganda showed a male to female ratio of 10 to 1 for utilization of services for alcohol use disorders (Kalema et al., 2017). Substance use among women is taboo and highly stigmatized in African countries (Myers, 2011, Kalema et al., 2017).

As it is typical with alcohol use disorders, most patients had long history of drinking before they presented with severe signs of physical dependence which warranted inpatient detoxification (Hingson, Heeran & Winter, 2006). Routine administration of Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar) was very useful and feasible in determining severe cases which needed admission. It was also useful for following progress and administering diazepam on as needed basis when withdrawal symptoms were not controlled by the standing dose of benzodiazepines (Sullivan et al, 1989; Reoux & Miller, 2000).

Although detoxification was relatively easy to set up and very successful, the main challenge was after care as there were no rehabilitation facilities or self-help groups to refer patients. In this setting, patients were retained in the service for as long as possible, emphasis was given to attendance to group therapy at least once a week, and a one-on-one session with a clinician for any psychological symptoms that needed attention. Patients were provided the group therapy, mainly using motivational interviewing based five-session, groups developed by Ann Fields (Fields, 2005). Patients were encouraged to come to the group sessions even after completing the five sessions in order to retain them in the care to prevent relapse, since retention in care is necessary to prevent relapse (Murthy et al., 2009). Many challenges with SRD services were reported in other African countries such as Uganda. Challenges reported from Uganda included lack of resources, services, the treatment philosophy of available services, and the lack of evidence on cultural appropriateness of treatment services for the African setting (Kalema et al., 2017).

Limitations of this study include lack of detailed review of policy documents and exploration of perspectives of policy makers, clinicians, service users on SRD services in Ethiopia. Restriction of the report to inpatients and small sample size is another limitation.

CONCLUSION

This report has demonstrated that alcohol remains the most common substance misused in the community followed by khat and tobacco, and a similar pattern was seen in the inpatient setting;

hard drugs such as methamphetamine, cocaine and heroin were rare. It was possible to set up treatment services for alcohol and drugs, but due to limitations in the availability of resources, it was not possible to fully implement the evidence-based treatment recommendations for LMICs fully. Innovative and pragmatic approaches are necessary. Evaluating the effectiveness of these interventions and their appropriateness in the cultural context through research is recommended. Linking SRD services to government priorities such as NCDs will probably help to draw their attention. Lessons learnt in this process have the potential to inform other similar services in LMIC countries.

Declaration of Conflict of Interest

The author has no conflict of interest to declare

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