The Prevalence of Substance Abuse among Psychiatric Patients at the Moi Teaching and Referral Hospital, Eldoret, Kenya

[1]DR. BENSON GAKINYA, [2]DR. RONGERS SONGOLE,
[3]DR. EMMANUEL LUSIGI AYODI, [4]DR. RACHEAL MOGITI MOINDI,
[5]DR. YONAH OPONDO, [6]DR. HAWA ABDI HASSAN

M.B.Ch.B, M.Med (Psych)[1], B.Sc, M.Sc, PhD[2,] M.B.Ch.B[3], M.B.Ch.B[4], M.B.Ch.B[5], M.B.Ch.B[6]

[1, 2] Department of mental health, Moi University School of medicine, Eldoret Kenya,

[3,4,5,6] Medical officers, Ministry of health, Kenya

Abstract: **Substance abuse refers to the overindulgence in and dependence of a drug or other chemical leading to effects that are detrimental to the individual's physical and mental health or the welfare of the others. The study was to establish the prevalence of substance abuse among psychiatry patients and the common co-morbid psychiatric disorders at the Moi Teaching and Referral Hospital (MTRH) in Eldoret. This was a descriptive cross-sectional study involving in-patients (30) and out -patients (45) who consented to participating in the study using the WHO model core questionnaire to collect information on use of various drugs among psychiatry patients. Most of the respondents who reported abusing any form of substance had begun before the age of 19 years. The most commonly abused substance was alcohol at 56% with more males (thirty one-41.7%) than females (Eleven-14.7%).Others included cigarette 19(25.3%) and cannabis (locally known as bhang) among others. Substance abuse was significantly associated with the diagnosis of schizophrenia (20%) and bipolar mood disorders (13.3%). The prevalence of substance use was high in the study population compared to studies done in similar setting. However, the male gender was associated with a higher prevalence of substance abuse for all the substances reported in the study.**

Keywords: **Alcohol, bipolar disorders, Cigarettes, Psychiatry morbidity, schizophrenia, Substance abuse.**

1. INTRODUCTION

A growing amount of evidence indicates that the co morbidity of mental health disorders and substances abuse is far more extensive than previously believed. The lifetime co occurrence of mental disorders and substance abuse disorders is estimated at 50%. The onset of mental disorders however preceded the initiation of substance abuse in 83.5 % of the cases.[1]

Some of the most commonly abused substances by psychiatric patients include cannabis and amphetamines but many of the American studies report extremely high rates for cocaine use which is currently less available and more expensive in Kenya. In an Australian study looking at self-report of substances abuse, in-patients with schizophrenia indicates: 40% use cannabis, 8% amphetamine, while 20% use more than one substance. [2] A research by the national co morbidity survey in the United States found that mood disorders, anxiety, anti-social personality disorder, schizophrenia and substance abuse disorder were co morbid in a general population sample ages 15-54 years.[3]

Substance abuse can initiate, trigger or exacerbate an existing psychiatric symptom and worsens the disease process. Despite the dangers tied to substances abuse, psychiatric patients continue using them in attempt to self medicate for disturbing psychiatric symptoms such as hallucinations, depression and anxiety. [4] The Kenyan government is trying to help psychiatric patients by providing rehabilitative and preventive programs, but what should be understood is that these patients who indulge in substance abuse will always require professional assistance.[5] Moreover, families who have mentally ill patients who indulge in substance abuse face a lot of challenges, worse still mental health services are not well prepared to deal with both afflictions.[6] It is in line with this observation that the study sought to establish the prevalence of commonly abused substances and the recommended management methods.

Substance abuse has implications for etiology, diagnosis management and prognosis of the mental disorders. In dealing with co morbidity it is very important to clinically identify the two conditions – substance and mental illnesses. In the case of an initial substance abuse problem, intoxication, withdrawal of chronic effects with or without continued substance abuse can lead to psychiatric complications. Several mental disorders have been identified as commonly occurring with substance abuse. These include: Schizophrenia, mood disorders, stress disorder, and attention deficit hyperactivity disorder among others.[2]

The substances of abuse that are usually abused by schizophrenia patients include nicotine, cannabis and amphetamine: the commonest abused substance being cocaine in the USA. Patients attributed the use of the substances to the perception that the drugs relieved dysphoria, anxiety or enhanced social interaction. They often prefer mind activating drugs – cannabis, amphetamine, hallucinogens or cocaine – as they felt relived of dysphasia and depression and the negative symptoms of they felt relieved of dysphasia and depression and the negative symptoms of schizophrenia despite the fact that they exacerbated some positive symptoms. The patients with Co morbidity are often young males with depressive symptoms.[7]

In a naturalistic 7 year follow up study of 29 schizophrenia patients, 46% still continued with substance abuse at the end of the study. The effects of substances misuse showed higher rates of visual and olfactory hallucinations and decrease treatment responsive ness for auditory and tactile hallucination as.[8]

If a mood disorder has developed before the age of 20 years, there is a four-fold increase in the risk of subsequent substance use.[9] In a largest study done on patients with bipolar disorder, a co morbidity rate of 35% was reported. In this study, three groups were compared namely bipolar disorder only, Bipolar disorder with later onset substance use and initial substance use disorder with later onset of the psychiatric disorder. The findings across these groups included increased family history of substance misuse in those diagnosed with substance use disorder, a female predisposition in those with an exclusive bipolar disorder and a male preponderance in the early onset substance misuse with subsequent bipolar disorder.

The hypothesis forwarded by researchers concerning the co morbidity of substance abuse among patients with ADHD is that ADHD leads to self medication. The drugs frequently used are stimulants.

In a study selecting patients with co morbid substance use, a diagnosis of obsessive compulsive disorder was found to be 11%, at least four times the incidences in the general population.[10] In a 12 months follow study, patients with co-morbidity required treatment for a longer period of time in order to have a reduction in symptoms severity and overall abstinence.

Alcohol use is associated with increased prevalence of stress related disorders. One American study compared initial onset substance abuse disorder and looked for substances specific and diagnostic specific interactions. They found little support for self medication hypotheses but found an increased risk of opiate use in those with initial diagnosis of psychosis. They also found out that there was avoidance of stimulant drugs in those with a primary diagnosis of anxiety disorder. [3]

Generally the subject of Co morbidity of substance abuse and mental illness has been extensively explored across the board. The clinical implications of Co morbidity in some of the mental disorders still remain unexplored[2]. The problem of service delivery to patients with Co morbidity was extensively reviewed by Drake and colleagues in (1996)[12]. They identified key principles of treatment of this group as assertiveness, close monitoring, integration, stable living environment, flexibility in speculation, stages of treatment and optimism.

2.   METHODOLOGY

This is a descriptive cross sectional study was carried out using the WHO model core questionnaire on substance use at the Moi teaching and referral hospital, in Eldoret Kenya. The study population included the psychiatry inpatients and outpatients over a period of 5 months. Proportionate sampling was used in selecting the patients to be included in the study. A total of 45 outpatients 30 inpatients were interviewed. Patients with florid psychotic symptoms were excluded from the study.

Ethical approval to carry out the research was obtained from the joint institutional research and ethics committee of Moi University and Moi teaching hospital. A written accent was got from the director of the hospital. The nature and purpose of the study was explained to the respondents and their next of kin and written informed consent was sought from the guardians with a corresponding assent from the patient. The respondents were not required to give any personal details in the questionnaire to ensure anonymity. Participation was strictly voluntary and no inducements were offered.

In order to minimize bias, standardized questionnaires were used; effort was made to ensure clarity and adaptability of the questionnaires by pretesting them during a pilot study carried out at a different site before the actual study. The instruments were administered by well trained research assistants.

Date analysis was done using SPSS software programme. All variables in the questionnaire are classified into nominal, ordinal and interval levels of measurement.

Data was analyzed using descriptive analysis and inferential analysis. The study sample was however small and this might have affected the overall finding.

3.   RESULTS

SOCIO-DEMOGRAPHIC:

Among the respondents, 56% were males with their ages ranging from eighteen to sixty six years. A total of 46.7% were married, 14.7% divorced with 36% of the having never been married. Of the 75 respondents, thirty three (44%) live in the rural area with 93.3% of them being out of any form of formal educational institutions. Most of the respondents (82.7%) were not on any form of employment at the time of the study and depended on friends and family.

Table 1: Education - years of formal education.

Years	Frequency	Percentage
0-8	38	50.6
9-12	25	33.3
13-17	12	16.0
>.17	0	0.0

A higher percentage of the respondents (50.6%) had acquired basic formal education with the lowest percentage of the respondents (16.0%) having been to tertiary institutions.

SUBSTANCE ABUSE:

Any substance abuse:

Out of the 75 respondents interviewed 43 (57.3%) of them had a history of substance abuse. These substances included cigarettes, alcohol, chewing tobacco, injectable drugs, tobacco, cannabis and valium. Of those with a history of substance

abuse, 31 were male while 12 were female. Of all those who had a prior history of substance abuse, 15 were suffering from schizophrenia, 12 had bipolar disorder, 7 were on management for an acute psychotic episode and, 4 had depression. Patients on management for psychosis, post-ictal psychosis, drug induced psychosis and puerperal psychosis had 1 respondent each who had a history of any substance abuse. Of all the different diagnoses of the respondents interviewed, only one bipolar patient did not have any history of substance abuse.

Table 2: Substance abuse against gender

	Any substance abuse		Total
	no	yes	
Male	11	31	42
Female	21	12	33
Total	32	43	75

Table 3: Substance abuse against patients' diagnosis

Any Substance Abuse	APE	bipolar	depression	Drug induced psychosis	Peuperal psychosis	epilepsy	schizophrenia	Total
NO	8	2	3	0	3	0	16	32
X	10.7%	2.7%	4.0%	0.0%	4.0%	0.0%	21.3%	42.7%
YES	8	13	4	1	1	1	15	43
X	10.7%	17.3%	5.3%	1.3%	1.3%	1.3%	20.0%	57.3%
Total	16	15	7	1	4	1	31	75
X	21.3%	20.0%	9,3%	1.3%	5.3%	1.3%	41.0%	100.0%

KEY:

X-percent of total

ALCOHOL:

In this study, alcohol was the most commonly abused substance with its prevalence cutting across all ages, gender and diagnoses. Of all the participants, (56%) had at one point used alcohol while 33(44%) of the respondents did not use alcohol.

Table 4: Age at first alcohol use

Age at first use of alcohol	frequency	Percentage
0-10	3	7.1
11-20	25	59.5
21-30	14	33
TOTAL	42	100

Out of the 42 respondents who used alcohol majority of them 25(59.5%) started to use alcohol between the ages of 11 and 20. The mean age for the onset of alcohol use was 18.9 years. Of the 42 patients who use alcohol most of them 31(73.8%) were males with most of them (78.6%) being unemployed. of the patients who consumed alcohol54.8% lived in urban areas showing no significance difference with their rural counterpart.

Table 5: Alcohol use against patient's diagnosis

Alcohol use	APE	bipolar	depression	Drug induced psychosis	Puerperal psychosis	epilepsy	Schizophrenia	total
No	9	2	3	0	3	0	16	33
X	27.3%	6.1%	9.1%	0.0%	9.1%	0.0%	48.5%	100%
Y	12.0%	2.7%	4.0%	0.0%	4.0%	0.0%	21.3%	44.0%
Yes	7	12	4	2	1	1	15	42
Z	16.7%	28.6%	9.5%	4.8%	2.4%	2.4%	35.7%	100%
Y	9.3%	16.0%	5.3%	2.7%	1.3%	1.3%	20.0%	56.0%
Total	16	14	7	2	4	1	31	75

KEY:

X-percentage of total who don't use

Z-percentage of those who use

Y-percentage of the total number interviewed patients

Schizophrenia is the commonest condition (35.7%) among the patients who abused alcohol.

CIGARETTES:

Among the respondents interviewed, 25.3% admitted to using cigarettes. The age when respondents first started smoking was between 7-31 years with the majority beginning at the age of 18 years and the mean age of first smoking cigarette being (18%). The working diagnosis among those who used cigarette includes bipolar (31.6%) and schizophrenia (26%).

The table below compares ever smoked cigarettes with other variables.

Table 6: Ever smoked cigarettes

		YES	NO	TOTAL
GENDER	**Male**	15	27	42
	Female	4	29	33
RESIDENT TYPE	**Town**	10	32	42
	Rural	9	24	33
EMPLOYMENT	**Working**	5	8	13
	Not working	14	48	62

The results in this study demonstrate that more males (78.9%) than females (21.1%) have ever smoked cigarettes. Out of those who smoked, 52.6% lived in the town while 47.4% lived in the rural area. Concerning employment, a majority of those who smoked were unemployed (73.7%) as compared to those who had employment (26.3%).Among the respondents smoking cigarettes, 1.3% smoked less than 1cigarette per day while 9.3% smoked 1-5cigarette per day. 4% smoked 6-15 cigarettes and 1.3% smoked up to 25 cigarettes per day.

Table 7: Number of cigarettes per day

	Frequency	Percentage
none at al	63	84.0
less than I cigarette a day	1	1.3
1-5 cigarettes a day	7	9.3
6-15 cigarettes a day	3	4.0
16-25 cigarettes a day	1	1.3
Total	75	100.0

CANNABIS USE:

Of all the respondents interviewed six had a history of using cannabis. Half of the respondents who had a history of using cannabis were on management for schizophrenia with the others had diagnosis of drug induced psychosis, acute psychotic episode and puerperal psychosis. Only the patient with puerperal psychosis was of the female gender. The respondents who had a history of cannabis abuse had their first experience smoking cannabis between the ages of 12 and 21years and most of them were 17 years of age. Only two of the cannabis users were on any form of employment.

There was only one patient who had a history of abusing diazepam, a long acting benzodiazepine. He was male, aged 23 and he suffered from an acute psychotic episode. He was having a part time employment.

4.   DISCUSSION

SOCIO-DEMOGRAPHIC:

This study was conducted in a hospital setting and is therefore comparable to other studies done in similar settings. The gender and age distribution of the participants was similarly comparable to other studies. [2,3,12] The prevalence of substance abuse in this study at 57.3% was significantly high than general population studies which report on average 41% rate found among high school students in Kenya as well as The lifetime co occurrence of mental disorders and substance abuse disorders is estimated at 50%.[1,13]. Male respondents (72.1%) had a higher rate of substance abuse compared to female (27.9%) a finding that is replicated in most other studies[14]. This has implication in that there is need to focus

acutely on all patients with mental illness and males in particular to mitigate the effect of substance abuse which is known to negatively affect the outcome of mental illnesses.

Schizophrenia was the most frequent diagnosis with co morbidity of substance abuse (34.9%), followed by bipolar disorder (23.26%) and other depressive states. These findings are comparable to studies conducted at Mathari Hospital in Kenya and elsewhere in the world which have reported that 34% of patients with a substance abuse disorder were also diagnosed with schizophrenia.[1,2,13.] Among patients with schizophrenia nearly half (48%) had a positive history of substance abuse prior to and during illness and the course of treatment. This was significantly lower compared to the findings of an Australian study which found out that over 80% of schizophrenic patients had a co morbid substance abuse disorder The high prevalence of substance use among schizophrenia patients could be attributed to the patients effort to reduce symptoms of the disease and promote a sense of well being. Alcohol was the most commonly abused substance in this study[17].

Bipolar disorder patients in this study had the highest substance use co morbidity rates at 90.9%. This finding was significantly higher compared to similar studies elsewhere reported 35% co morbidity with substance abuse. This could be an indication that most of the bipolar patients have a higher disposition to develop maladaptive behaviors. This had been alluded to in a similar study, where it was found out that substance abuse in patients with bipolar was mainly associated with family history of undiagnosed substance abuse disorder and male preponderance caused by early onset of substance misuse. [10]

Alcohol was the most commonly abused drug in this study with a high prevalence cutting along all the ages, gender and diagnoses with 56% of the participants admitting to having used alcohol and one point in time. This compares with the finding of Ndetei et al who found that alcohol abuse was the most commonly recorded substance in Mathari Kenya hospital, Kenya[15]. This could be attributable to a number of reasons including easy accessibility, relatively low cost of illicit alcohol and perceived strong calming effect of alcohol other factors.

Out of the participants who used alcohol,(59.5%) had started at the ages of 11-20 years. This is an indicator that most of the patients used alcohol in their teenage years that are associated with a general surge in substance use. The mean age for the onset of alcohol use was 18.9years. This can be attributed to the perception that they have attained adult hood and they can indulge in what they want. At this age, humans are also likely to engage in socialized antisocial behaviors usually in groups. The relatively young age at onset indicate that a specific intervention has to be made on the younger parson considering that alcohol has effects on both physical and mental health and a direct effect on the outcome of disease.

The study found that more men 31 (73.8%) abuse alcohol which was about three times the number of women who abused alcohol 11 (26.2%). The proportion of males was higher in this study than a similar study carried out at Mathari hospital Kenya [14]which found out that alcohol abuse among males was slightly higher than in females with no statistical difference between the two genders. Schizophrenia was the most common mental disorder among the patients who abused alcohol at 48.5%. This was 21.3% of the total number of patients interviewed. These finding could be an indication than the general population in the catchment area has a higher prevalence of alcohol use than the population catchment in the Mathari study. Females are also not expected to engage in alcohol use in the environment.

The prevalence of smoking cigarettes was higher among males at 78.9% than females. The total number of sticks smoked in a day was however very few in study with only 9.3% smoking more than five sticks in a day. This prevalence was higher compared to that of 32% prevalence rate among patients attending general outpatients' clinic in The Mathari study.[16] The real reason for this higher prevalence but small amount of sticks per person may not be clear but could be due to the fact that majority of respondents were not working and were therefore idle and that they got money from relatives which they used to buy cigarettes. The mean age of first smoking cigarette was 18year in this study which compares with similar studies. Overall cigarette smoking was high in patients with bipolar followed by schizophrenia. It is important that measures be put in place to reduce smoking in order to reduce the risk to other disease associated with smoking. Preventing early substance-related problems will reduce the risk of these problems in later adulthood when the magnitude of life stresses is greater.

Cannabis use in this study was quite low at 8% compared to the use of other substances like alcohol and cigarettes with male using more than female. While this finding compares well with finding in other local studies, it contrasts with

studies done in Europe and North America.[4]. Among the Cannabis users 50% of them suffered from schizophrenia which was higher than other local studies but lower than studies done in Europe and North America at 16.1% and 70% respectively. This higher percentage could be because of the effectiveness of cannabis in relieving the symptoms of schizophrenia. The same reason is also attributed by another study.[12]

The only other drug use reported in this study was diazepam, a prescription only sedative. Its use at 1.33% was comparable to other studies done. The fact that this is a prescription medication may be a hindrance to its acquisition and hence the low prevalence of use. .

5. CONCLUSION

This study has demonstrated that the prevalence of substance abuse among psychiatric patients in the Moi Teaching and referral is high at 57.3% with more Male users compared to the female. Majority of the respondents started abusing substances at the tender age of 19 years, with a range of 12-31 years. The most commonly abused substance was alcohol with a total of 56% followed by cigarette at 25.3%.

The study has demonstrated a high rate of co morbidity between substance use and mental illnesses in particular disorder schizophrenia and Bipolar mood disorders. The risk of substance dependence occurring along with mental disorders is therefore very high in this population, and targeted interventions are recommended to deal with this issue expeditiously. Due to the early age of onset of substance use found in this study, it is recommended that these interventions must target people as young as 10-12 years, and involvement of peers and role models would have a high probability of success.

Competing interests:

The authors declare that they have no competing interests.

Author contributions:

BN was involved in the conceptualization of the study idea, development of the study design and instruments, supervision of data collection and analysis, and preparation of the final manuscript. RA, LA, RM, YO and HH were involved in conceptualization of the study idea, design of the study, data collection and analysis. All authors were involved in the approval of the final manuscript.

REFERENCES

[1] Gil AG, Wagner EF, Tubman JG: Associations between early-adolescent substance use and subsequent young-adult substance use disorders and psychiatric disorders among a multiethnic male sample in South Florida. Am J Public Health 2004, 94:1603-1609

[2] Eve.C.Johnston, D.G. CunninghamS.M.Lawrie, M.Sharpe, C.P.L.Freeman et al 2004 companion to psychiatric studies: Misuse of and dependence on alcohol and other drugs; Churchill Livingstone, London.

[3] Goldenberg I.M, T. Fierman et al 1995. Specificity of substance Abuse in anxiety disorder subjects. Comprehensive Psychiatry 36(5)319-328.

[4] Jabbar Heydari Fard, Mohammad Ali Heidari Gorji, et al. Substance dependence and mental health in northern Iran Annals of African Medicine Vol. 13, No. 3; 2014

[5] Grant BF, Dawson DA: Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. J Substance Abuse 1997, 9:103-110

[6] R. Songole, Gakinya, B.N., Atwoli, B. L. Challenges faced by usual/regular caregivers of mentally ill. International Journal of biological Sciences, Volume 3 , Number 3, 2011

[7] Beignet M, Holme G, R.J 1995. Self reports on the interaction Between substance abuse and schizophrenia. Australian and NewZealand journal of psychiatry.

[8] Sokolsky K.N, Cummings J.L Abrahams B, et al 1994: Effects of Substance abuse on hallucinogens rates and treatment response in Chronic patients. Journal of clinical psychiatry. 55(9):380

[9] Burks J.D Jr, Burke K.C, Rae D.S 1994. Increased rates of drug abuse and dependence after onset of mood or anxiety disorders in Adolescence. Hospital and c community psychiatry 45(5)451-455.

[10] Susan C. Sonne, Kathleen T. Brady. Substance abuse and bipolar comorbidity. Psychiatry clinics of north America Vol.22 Issue 3 pg 609-627.Sep 1999.

[11] Fals Stewart, W.Schafer. J 1992: Treatment of substance abuser diagnosed with obsessive compulsive disorder, an outcome study. Journal of substance abuse treatment 9(4)365-370.

[12] Drake R, Muesser K, Clark R, et al 1996. The cause treatment and outcome of substances disorders in patients with severe mental illness.American journal of orthopsychiatry 66:42-51

[13] Gil AG, Wagner EF, Tubman JG: Associations between early-adolescent substance use and subsequent young-adult substance use disorders and psychiatric disorders among a multiethnic male sample in South Florida.

[14] Othieno CJ, Gakinya B, Omar A, Ndetei DM. The relationship between substance abuse, nicotine use and positive and negative symptoms in schizophrenic patients at Mathari hospital, Nairobi, Kenya. Africa Journal of Drug and Alcohol Studies .2007: Vol. 6 no. 1, 54-63.

[15] David M. Ndetei, ,Lincoln Khasakhala, Hitesh Maru, Matteo Pizzo, Victoria Mutiso Francesca A. Ongecha-Owuor, Donald A. Kokonya Clinical epidemiology in patients admitted at Mathari Psychiatric Hospital, Nairobi, Kenya

[16] Othieno CJ, Kathuku DM, Ndetei DM: Substance abuse in outpatients attending rural and urban health centres in Kenya. East Afr Med J 2000, 77:592-5

[17] Hall W. Farell M.1997. Co morbidity of mental disorder with substance Misuse: British journal of psychiatry 171:425