

# Prevalence and Associated Factors of Mental Disorders among Prisoners in Kenya

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## ABSTRACT

Prisons have been consistently reported to have high prevalence of mental disorders compared to the general population. Prisons have initiated a number of reforms not only to help the prisoners become self-reliant upon release but also to alleviate the risk of mental disorder. It is necessary to regularly assess the prevalence of mental disorders to determine the effectiveness of the prison reform programs in mitigating the burden of mental disorders among prisoners. This study sought to determine the prevalence and associated factors of mental disorders among prisoners in Kenya. The research employed a mixed method study design that was cross-sectional in nature. A sample of 364 respondents was obtained using multi-stage sampling technique. Structured screening questionnaire and MINI International Neuropsychiatric Interview were used to screen inmates for common mental disorders. The collected data set was analyzed using SPSS version 22. Inferential statistics such as ANOVA was used to analyze quantitative data while qualitative data obtained was analyzed using Thematic Framework. There is a high prevalence of mental disorders among the prisoners at 63.2%. Gender and marital status were significantly associated with mental disorders among prisoners. Depression, Suicidality, PTSD, Mood Disorder with Psychotic Features and Generalized Anxiety Disorder were significantly associated with gender as shown by the at p-values: 0.045, 0.010, 0.001, 0.026 and 0.013 respectively. Married prisoners have the highest likelihood of having mental disorders ( $p = 0.017$ ). The Kenya Prison Service Management need to conduct regular prison surveys with systematic screening and assessment of prisoners for mental health problems and mental wellbeing.

**Key words:** Prevalence, mental disorders, prisons, Kenya

## INTRODUCTION

A mental disorder is malfunctioning of the mind which affects mood, emotion and the ability to function effectively and appropriately. Mental disorders are one of the common health problems in prisons, with prisoners having been reported to have higher prevalence of mental disorders compared to the general population. It is common knowledge that people with mental disorders are more likely to break the law, hence a high likelihood of incarceration.

Likewise, the harsh prison conditions tend to cause or exacerbate existing mental disorders. These disorders are risk factors for elevated suicide rates, premature mortality on release from prison and increased reoffending rates. Seventy percent (70%) of the prisoners who committed suicide had mental health needs. <sup>[1]</sup> There are 33588 prisoners worldwide with severe mental illness, with established a prevalence of psychosis of 3.6% in male prisoners and 3.9% in female prisoners. The pooled

prevalence of major depression was 10.2% in male prisoners and 14.1% in female prisoners. [2] United States of America has 48% of inmates with mental health problems, with the leading disorders being depression and anxiety. [3] Canada has 73% of prisoners with mental disorders. [4] Taiwan has 11.3% of prisoners with mental disorders with the main disorders being anxiety and dissociative disorder. [5] Nigeria has 56.6% of prisoners with mental disorders with the leading disorders being depression and alcohol abuse. [6] In Uganda, 86% of prisoners have mental disorders with leading disorder being depression. [7] Kenya has 84 % of female remandees and 77% of male remandees with mental disorders; with the most common disorder being mood disorder. [8] Socio-demographic factors thought to influence occurrence of mental disorders. Worldwide, there is a prevalence of psychosis of 3.6% in male prisoners and 3.9% in female prisoners. [2] Prison services worldwide have shifted from punishment to correction with the aim of rehabilitating the prisoners. To this end, prisons have initiated diverse rehabilitation programs to varying degrees. One of the roles of the rehabilitation programs is to keep the prisoners busy so as to reduce negative thinking and stress. The ultimate goal is to prevent stress and associated mental disorders; and promote meaningful source of livelihood after prison.

Kenya has a rapid growing prison population, with a current population of 57,000 prisoners spread over 108 penal institutions in the country. [9] It belongs to the category of developing countries hence is in the bracket expected to have higher prevalence rates of mental disorders. Kenya initiated prison reforms in 2001, bringing on board various partner organizations to diversify the rehabilitation programs. The expected outcome was improvement of the mental wellbeing of the prisoners with reduced cases of mental disorders. A regular assessment of the mental status of prisoners is a tangible indicator of the impact of the prison reforms and provides a guide for

targeted mental health programs. The aim of this study was to establish the prevalence and associated factors of mental disorders among prisoners in maximum prisons in Kenya with a focus on Langata and Nyeri maximum prisons. The consideration of the findings of the study will enable effective planning for funds and staff; and to provide more targeted interventions with better outcomes for individual prisoners.

## **METHODOLOGY**

### **Study design**

This study employed mixed method study design method that was cross sectional in nature based on the Creswell model. [10] Both quantitative and qualitative data was collected at the same time from different sources using different methods. The various data was converged for comparison, interrelation and validation of results.

### **Study population**

The study population was the prisoners in maximum prisons in Kenya. There are 5 maximum prisons in Kenya with a total of 11,000 prisoners.

### **Target population**

The target population was the prisoners at Nyeri maximum prison (men) and Langata women's prison. The two prisons have a collective population of 3200 inmates. The quantitative sample size was determined using the Krejcie & Morgan sample size table criteria. [11] The table suggests the optimal sample size - given a specific population size, specific margin of error and a desired confidence interval. With population size of 3200 and using a confidence level of 95% and margin of error of 5%, then the sample size is 346 prisoners. Adding a 5% non-response rate gave a sample size of 364. The respondents are within a regulated environment thus a low non-response rate was anticipated. For the qualitative sample, there were 20 participants for FGDS, with 10 participants per FGD. Four (4) prison staff participated as KII, with two (2) staff per prison. The KII were with the prison Welfare Officer

and head of the prison health facility of each prison.

### **Sampling techniques**

Multi stage sampling method was applied. First, purposive sampling was employed in selecting two (2) out of the five (5) maximum prisons that were used in this study. The two give a representation of male and female main prisons and have minimum confounding factors. The number of respondents from each participating prison was proportionately allocated to each of the two prisons according to the population sizes. Stratified sampling was used to identify short- sentence prisoners and long-sentence prisoners in each prison. An equal number of inmates were purposively picked from each category. The prisoners to be interviewed were selected randomly from the list of names of the prisoners. On the Inclusion criteria, inmates who were fully documented as being confined at Langata women or Nyeri main prisons were included in quantitative data collection. Prison officers working at the two prisons were included as Key Informants (KII) in qualitative data collection using Interview guides. Prisoners who qualified to be interviewed during quantitative data collection but were not interviewed were included in the FGD in qualitative data collection using FGD interview guide. For the Exclusion criteria, Prisoners with documented cases of mental disorder before or after imprisonment were not included to be respondents in quantitative data collection using questionnaires.

### **Research Instruments**

A screening questionnaire and MINI International Neuropsychiatric Interview (MINI) were used to gather data from inmates. Screening questionnaire was used to gather demographic data and historical background of the respondents while MINI was used to assess respondents for common mental disorders.

### **Data collection**

Quantitative data was collected from the prisoners using the questionnaires. Each of the respondents took about 45 minutes to

complete the questionnaire. In-depth interviews were conducted by the principal researcher. The informants were the prison Welfare Officer and head of the health unit within the prison facilities. The information was recorded verbatim. Each of the interviews took about 30-45 minutes. Focus Group Discussions (FGDs) were used to collect qualitative data from the prisoners. The prison welfare officer was used to mobilize the focus group discussants. There was one FGD per prison, each with 10 discussants. To ensure trustworthiness, the note taker was very attentive to the participants, and any key issue relevant to the topic mentioned was repeated for clear written records. Probing was done to get more information where there was significant body language from a discussant. Each FGD took between 45 minutes to one hour.

### **Data Analysis**

The data was analyzed using frequencies, percentages and standard deviation. Cross tabulation was done using Chi square test where 95% confidence intervals was used to show associations and p-value <0.05 was considered a statistically significant level of precision. Comparison between groups was determined using ANOVA. Logistic regression was done to model mental disorders for the entire sample. Prevalence of mental disorders and association between mental disorders and gender, age, level of education and marital status were determined.

## **RESULTS**

### **Prevalence of mental disorders**

The prisoners were assessed for specified mental disorders to establish their mental status, and the results are as shown in Table 1 below. The results show that 63.2% (230/364) of the prisoners manifested a mental disorder. A prisoner is more likely to suffer from depression at 34.3% (125/364), suicidality at 22% (80/364) and mood disorder with psychotic features at 17.3% (63/364) than panic disorder (1.9%) or dysthymia (1.9%). The low cases of

Alcohol abuse and psychoactive drug use disorder were attributed to the prohibition of these substances in prison with strong enforcement measures in place. This was supported by all the FGD discussants who were of the view that prisoners are at high risk of getting a mental disorder. In the words of one male discussant, ““Here one can get a mental disorder very easily. The things that cause mental disorders include: stress due to confinement, the shock of being convicted, long prison sentence, long duration in determination of appeal cases, frustration due to failure of appeal terms and bad reports from home such as your family suffering”. There was a decline in the number of cases of mental disorders from the previous year in both prisons. According to one key informant at Nyeri prison the decline was attributed to improved conditions in prison, positive attitude of staff towards prisoners, improved services and good documentation on admission. In Langata prison, the decline was attributed to availability of more customized programs, access to counseling services and psychiatric care.

Psychotic Features and Generalized Anxiety Disorder were significantly associated with gender as shown by the at p-values: 0.045, 0.010, 0.001, 0.026 and 0.013 respectively. Generally, there were more female than male prisoners with all the significant mental disorders except for mood disorder with psychotic features and psychotic disorder where male prisoners (20.1% & 11.3%) were more than the female prisoners (7.5% & 3.8%). Alcohol abuse and dependence, psychoactive drug use disorders, psychotic disorders, and Antisocial Personality Disorder were found to be insignificant. The leading mental disorders among the male prisoners were 32.7% (93/284) depression, 20.1% (55/284) mood disorder with psychotic features and 19.4% (57/284) suicidality. The leading mental disorders among the female prisoners were 40.0% (32/80) depression, 31.3% (25/80) suicidality and 10.0% (8/80) PTSD. Female prisoners (40%) were more likely to suffer depression compared to the male prisoners (32.7%). The number of cases of suicidality in females (31.3%) was almost twice that of the male prisoners (19.4%). The number of female prisoners (10%) with PTSD was five (5) times that of male prisoners (2.1%). Likewise, female prisoners (6.3%) were more than four (4) times more likely to suffer from generalized anxiety than male prisoners (1.4%). However, the number of male prisoners with mood disorder with psychotic features (schizophrenia) is almost three (3) times that of the female prisoners. These findings resonated with the views of the female FGD discussants at Langata prison. They were of the view that women have complicated needs for their personal hygiene, sometime pregnancy and having their small children in prison. When these needs are not met, the women suffer stress and anxiety which affects their mental health. Also, the female prisoners worry a lot about the children that they left behind and the change in attitude of the society towards them. As one discussant opined, “I left my teenage son out there, am really worried how he is doing and what he

**Table 1: Distribution of Mental disorders among the prisoners**

Mental disorder	Total (n )	% (N=364)
Prisoner manifested a mental disorder	230	63.2
Depression	125	34.3
Dysthymia	7	1.9
Suicidality	80	22.0
Manic Episode	25	6.9
Panic disorder	7	1.9
Social Phobia	19	5.2
OCD	15	4.1
PTSD	14	3.8
Alcohol abuse and dependence	11	3.0
Psychoactive drug use disorders	6	1.6
Mood disorder with psychotic features	63	17.3
Psychotic disorders	35	9.6
Generalized Anxiety Disorder	9	2.5
Antisocial Personality Disorder	63	17.3

### Gender and mental disorders

Table 2 below shows the cross tabulation of the mental status of prisoners across their gender with accompanying Chi-square p-values. The distribution of mental disorders is almost equal between male and female prisoners at 62.7% (178/284) and 65.0% (52/80) respectively. Depression, Suicidality, PTSD, Mood Disorder with

thinks of me”. Yet another female FGD discussant observed that, “people really look down upon a woman who has been convicted. They do not want to associate with you. It is easier for men”.

**Table 2: Distribution of mental disorders by gender**

Mental disorder	Male (N=284)	Female (N=80)	Total (N=364)	P-value
Prisoner manifested a mental disorder	178(62.7)	52(65.0)	230(63.2)	0.703
Depression	93(32.7)	32(40.0)	125(34.3)	0.045
Dysthymia	5(1.8)	2(2.5)	7(1.9)	0.334
Suicidality	55(19.4)	25(31.3)	80(22.0)	0.01
Manic Episode	18(6.3)	7(8.8)	25(6.9)	0.234
Panic disorder	5(1.8)	2(2.5)	7(1.9)	0.334
Social Phobia	14(4.9)	5(6.3)	19(5.2)	0.308
OCD	14(4.9)	1(1.3)	15(4.1)	0.168
PTSD	6(2.1)	8(10.0)	14(3.8)	0.001
Alcohol abuse and dependence	11(3.9)	0(0.0)	11(3.0)	0.101
Psychoactive drug use disorders	6(2.1)	0(0.0)	6(1.6)	0.189
Mood disorder with psychotic features	57(20.1)	6(7.5)	63(17.3)	0.026
Psychotic disorders	32(11.3)	3(3.8)	35(9.6)	0.081
Generalized Anxiety Disorder	4(1.4)	5(6.3)	9(2.5)	0.013
Antisocial Personality Disorder	48(16.9)	15(18.8)	63(17.3)	0.277

### Age and mental disorders

Table 3 below shows there is an association between age and mental disorders among prisoners. The results show that young adults aged 49 years and below are the most likely to suffer from mental disorders than the older prisoners. The age group 30-49 years had the highest prevalence of all the mental disorders except dysthymia, OCD and alcohol dependence; which occurred in higher numbers among those aged 29 years and below. Prisoners with 70years and above had very few cases of mental disorder. This was supported by

the female FGD discussants who observed that the younger inmates were restless and was not keen on taking rehabilitation programs with denial of their confinement. They felt that they had time to pursue activities of their choice upon release from prison. One female FGD discussant opined that, “The older people are more serious with the programs here. The young ones and newly sentenced prisoners have a problem accepting that they are here to stay. They think they still have a chance to go out there and do what they are interested in”.

**Table 3: Distribution of mental disorders with respect to Age**

Mental Disorders	Age Frequencies and Row Percentages					
	<=29	30 to 49	50 to 69	70 to 89	>= 90	Total(N=364)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Depression	36(28.8)	65(52.0)	17(13.6)	5(4.0)	0(0.0)	125(34.3)
Dysthymia	3(42.9)	2(28.6)	2(28.6)	0(0.0)	0(0.0)	7(2.0)
Suicidality	25(31.3)	43(53.8)	11(13.8)	1(1.3)	0(0.0)	80(22.0)
Manic Episode	11(44.0)	12(48.0)	1(4.0)	1(4.0)	0(0.0)	25(7.0)
Panic Disorder	2(28.6)	3(42.9)	2(28.6)	0(0.0)	0(0.0)	7(1.9)
Social Phobia	7(36.8)	6(31.6)	5(26.3)	1(5.3)	0(0.0)	19(5.2)
OCD	7(46.7)	5(33.3)	1(6.7)	2(13.3)	0(0.0)	15(4.1)
PTSD	6(42.9)	7(50.0)	1(7.1)	0(0.0)	0(0.0)	14(3.8)
Alcohol use and dependence	7(63.6)	3(27.3)	1(9.1)	0(0.0)	0(0.0)	11(3.0)
Mood disorder with psychotic features	17(27.0)	38(60.3)	7(11.1)	1(1.6)	0(0.0)	63(17.6)
Psychotic disorders	6(17.1)	17(48.6)	8(22.9)	2(5.7)	0(0.0)	35(9.6)
Generalized Anxiety Disorder	1(11.1)	5(55.6)	1(11.1)	2(22.2)	0(0.0)	9(2.5)
Antisocial Personality Disorder	19(30.2)	37(58.7)	6(9.5)	1(1.6)	0(0.0)	63(17.6)

ANOVA was used to test the null hypothesis that occurrence of mental disorder does not vary significantly across the different age categories and the results are shown in Table 4 below.

**Table 4: ANOVA test showing Mental disorders across Age**

Variable	Source	Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	264.020	4	66.005	0.589	0.671
	Within Groups	39545.815	353	112.028		
	Total	39809.835	357			

Dependent Variable: Mental disorder  
 Predictors / Independent variables : Constant, Age categories: >=29years, 30-49 years, 50-69years, 70-89years, >=90

The results in Table 4 show that the age does not statistically significantly predict the occurrence of a mental disorder (p=0.671). This demonstrates that there is no significant difference in the prevalence of mental disorders in the different age groups, and we fail to reject the null hypothesis at 95% confidence limits.

**Level of Education and mental disorder**

Table 5 presents the distribution of mental disorders with level of education. The results reveal that prisoners with secondary school level of education have the highest likelihood of having a mental disorder followed by those with primary school level of education. Prisoners with secondary school level of education had the highest prevalence rates in 9 out of the 14 assessed mental disorders, that is: dysthymia 71.4% (5/7), panic disorder 42.9% (3/7), OCD 40.0% (6/15), antisocial personality 39.7% (25/63), psychotic disorders 34.3% (12/35), psychoactive drug use 33.3% (2/6), manic episode 32.0% (8/25), social phobia 31.6% (6/19) and alcohol abuse 27.3% (3/11). Prisoners with primary school level of education had the highest prevalence

rates in 3 types of mental disorders in the following order, depression 56.8% (71/125), mood disorder with psychotic features 54.0% (34/63) and suicidality 52.5% (42/80). Prisoners with college level of education were likely to have PTSD and generalized anxiety disorder at 35.7%(5/14) and 33.3%(3/9) respectively. Generally, prisoners with university education, school dropouts and those without any formal education had low prevalence of mental disorders. This finding was in contrast to the views of the discussants at Langata women prison who were of the view that any prisoner was likely to get a mental disorder irrespective of their level of education. However, it was supported by the view of Nyeri prison discussants who observed that prisoners with higher level of education were more likely to suffer from mental disorders. According to one male discussant, *“Having education here is a challenge. You are jeered by your fellow inmates as they ask you what an educated person is doing in prison with them. You get very stressed and if you are not careful you can easily get mad”*.

**Table 5: Distribution of Mental disorders with respect to Education Level**

Mental Disorders	Education Level Frequencies and Row Percentages						
	University	College	Secondary	Primary	Dropped	None	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Depression	1(0.8)	14(11.2)	30(24.0)	71(56.8)	4(3.2)	5(4.0)	125(34.3)
Dysthymia	0(0.0)	0(0.0)	5(71.4)	2(28.6)	0(0.0)	0(0.0)	7(1.9)
Suicidality	0(0.0)	4(5.0)	28(35.0)	42(52.5)	3(3.8)	3(3.8)	80(22.0)
Manic Episode	3(12.0)	4(16.0)	8(32.0)	6(24.0)	0(0.0)	4(16.0)	25(6.9)
Panic Disorder	0(0.0)	0(0.0)	3(42.9)	2(28.6)	1(14.3)	1(14.3)	7(1.9)
Social Phobia	0(0.0)	3(15.8)	6(31.6)	4(21.1)	2(10.5)	4(21.1)	19(5.2)
OCD	0(0.0)	1(6.7)	6(40.0)	4(26.7)	0(0.0)	4(26.7)	15(4.1)
PTSD	2(14.3)	5(35.7)	3(21.4)	2(14.3)	1(7.1)	1(7.1)	14(3.8)
Alcohol use and dependence	3(27.3)	2(18.2)	3(27.3)	1(9.1)	0(0.0)	2(18.2)	11(3.0)
Psychoactive drug use	1(16.7)	1(16.7)	2(33.3)	1(16.7)	0(0.0)	1(16.7)	6(1.6)
Mood disorder	1(1.6)	6(9.5)	16(25.4)	34(54.0)	2(3.2)	4(6.3)	63(17.3)
Psychotic disorders	0(0.0)	2(5.7)	12(34.3)	13(37.1)	5(14.3)	3(8.6)	35(9.6)
Generalized Anxiety Disorder	0(0.0)	3(33.3)	3(33.3)	1(11.1)	0(0.0)	2(22.2)	9(2.5)
Antisocial Personality Disorder	2(3.2)	7(11.1)	25(39.7)	20(31.7)	7(11.1)	2(3.2)	63(17.3)

To establish whether the difference in occurrence of mental disorders with level of education was significant, ANOVA was conducted and the results are shown in Table 6 below.

**Table 6: ANOVA test for Occurrence of Mental disorders across Level of Education**

Variable	Source	Sum of Squares	Df	Mean Square	F	Sig.
Level of education	Between Groups	756.760	5	151.352	1.376	0.233
	Within Groups	39374.679	358	109.985		
	Total	40131.440	363			

Dependent Variable: Mental disorder  
 Predictors / Independent variables : Constant, Level of Education: University, Mid-level college, Secondary school level of Education, Primary school level of Education, Dropped out f School, Never went to school

From the results in Table 6, Level of Education does not statistically significantly predict the occurrence of a mental disorder (p=0.233). There is no statistically significant difference in the prevalence of mental disorders in the prisoners of different levels of education, and we fail to reject the null hypothesis at 95% confidence limits.

**Marital status and mental disorder**

Table 7 shows the distribution of mental disorders with marital status. The results show that married prisoners are the most likely to have mental disorders. Married prisoners have the highest prevalence of mental disorders followed by the single prisoners while cohabiting and widowed prisoners have the lowest

prevalence of mental disorders. Married prisoners have the highest likelihood of having psychotic disorders at 86.6% (24/35), panic disorder at 85.7% (6/7), dysthymia at 71.4% (5/7), mood disorder with psychotic features at 65.1% (41/63), antisocial personality disorder at 58.7% (37/63), depression at 58.4% (73/125), OCD at 53.3% (8/15), suicidality at 51.3% (41/80) and PTSD at 50.0% (7/14). Single prisoners are likely to have psychoactive drug abuse at 83.3% (5/6), generalized anxiety at 66.7% (6/9), manic episode at 56.0% (14/25) and social phobia at 47.4% (9/19). The Separated, divorced and widowed had very low prevalence of mental disorder.

**Table 7: Distribution of Mental disorders with respect to marital status**

Mental Disorders	Marital Status Frequencies and Row Percentages					
	Single	Married	Cohabiting	Separated	Widowed	Total N=364
	n (%)	n(%)	n (%)	n (%)	n (%)	n(%)
Depression	39(31.2)	73(58.4)	2(1.6)	11(8.8)	0(0.0)	125(34.0)
Dysthymia	1(14.3)	5(71.4)	0(0.0)	1(14.3)	0(0.0)	7(1.9)
Suicidality	31(38.8)	41(51.3)	0(0.0)	8(10.0)	0(0.0)	80(22.0)
Manic Episode	14(56.0)	11(44.0)	0(0.0)	0(0.0)	0(0.0)	25(6.9)
Panic Disorder	1(14.3)	6(85.7)	0(0.0)	0(0.0)	0(0.0)	7(1.9)
Social Phobia	9(47.4)	8(42.1)	1(5.3)	1(5.3)	0(0.0)	19(5.2)
OCD	6(40.0)	8(53.3)	1(6.7)	0(0.0)	0(0.0)	15(4.1)
PTSD	6(42.9)	7(50.0)	0(0.0)	1(7.1)	0(0.0)	14(3.8)
Alcohol use and dependence	5(45.5)	5(45.5)	0(0.0)	1(9.1)	0(0.0)	11(97.0)
Psychoactive drug use	5(83.3)	1(16.7)	0(0.0)	0(0.0)	0(0.0)	6(1.6)
Mood disorder	16(25.4)	41(65.1)	0(0.0)	6(9.5)	0(0.0)	63(17.3)
Psychotic disorders	9(25.7)	24(86.6)	0(0.0)	2(5.7)	0(0.0)	35(9.6)
Generalized Anxiety Disorder	6(66.7)	3(33.3)	0(0.0)	0(0.0)	0(0.0)	9(2.5)
Antisocial Personality Disorder	21(33.3)	37(58.7)	1(1.6)	4(6.3)	0(0.0)	63(17.3)

To establish the significance of this finding, ANOVA test was employed and the results are as shown in Table 8.

**Table 8: ANOVA test showing mental disorder across marital status**

Variable	Source	Sum of Squares	Df	Mean Square	F	Sig.
Marital status	Between Groups	1114.405	3	371.468	3.427	0.017
	Within Groups	39017.035	360	108.381		
	Total	40131.440	363			

Dependent Variable: Mental disorder  
 Predictors / Independent variables : Constant, Marital status: Single, Married, Cohabiting, Separated, Widowed

Results in Table 8 show that marital status significantly influences the occurrence of

mental disorders (p=0.017). We reject the null hypothesis and conclude that the

occurrence of mental disorders significantly varies with the marital status of the prisoners.

## DISCUSSION

The descriptive statistics indicate that there is a high prevalence of mental disorders among prisoners, at 63.2%. There is a decrease in mental disorders compared to studies done in Canada and Uganda [4,7] which recorded higher prevalence of mental disorders among prisoners. However, the prevalence rate is still high compared to that of studies in USA [3] and Taiwan [5] which recorded lower prevalence rates. The decline in the number of cases of mental disorders in both prisons is attributed to improved prison services, positive attitude of staff towards prisoners, improved services, availability of customized programs and good documentation on admission. The leading mental disorders are depression, suicidality and mood disorder with psychotic features. This is similar to the studies done in USA, Uganda and Nigeria [3, 7, 6] which showed that depression was the leading mental disorder among prisoners. However, the results vary from those of studies done in Brazil [12] and Taiwan [5] which reported the leading disorder as anxiety. Likewise, they vary from the studies in South Africa [13] and Kenya [8] which reported leading disorders as substance abuse and mood disorder respectively. The discussants cited the common causes of mental disorders as: shock of being convicted, long period of imprisonment, confinement, denial, long duration in determination of appeal cases, frustration on the loss of an appeal, neglect by relatives, stress due to overthinking, feelings of shame and worthlessness, change in attitude from relatives and friends, fear of life after prison and lack of counselling services. However, it was noted that the female prisoners had more cases of mental disorders than the male prisoners despite having access to counsellors and a psychiatrist. This indicates that the availability of a counsellor does not

influence the occurrence of mental disorders but probably assists in their management. The long duration for determination of an appeal placed one in limbo for a long time and the anxiety associated with it caused mental stress. From the FGD discussants, it was evident that most of the inmates never imagined themselves in prison; hence the shock of being convicted was unbearable to many. With the shock of conviction and long prison terms as major contributing factors in occurrence of mental disorders, it can be hypothesized that increased utilization of non-custodial alternatives to imprisonment will avert occurrence of mental disorders among offenders. It emerged that confinement was the leading prison-related cause of mental disorders, due to the associated loss of control over one's life. This is compounded further by the prison environment of rules and orders which was stressful to many of the inmates leading to mental disturbances. It was evident that the prisoners had a general lack of trust towards the prison staff which compounds the challenge of mental wellbeing of the prisoners. The study established that positive attitude of the prison staff with more acceptance of prisoners by the staff, improved prison services, better documentation on admission, variety of customized programs and counselling were influential in averting mental disorders in prisoners. A positive attitude towards the prisoners plays a key role in giving them some peace of mind. Fast tracking of appeal cases, fair prison terms and improved comprehensive prison services are seen to be key in enhancing acceptance of conviction among the prisoners. Enhancement of the family visits to boost the mental wellbeing of the prisoners would help reduce stress.

Gender is associated with the occurrence of mental disorders with female prisoners being at higher risk of mental disorders than male prisoners. Depression, Suicidality, PTSD, Mood Disorder with Psychotic Features and Generalized Anxiety Disorder were significantly associated with



gender as shown by the at p-values: 0.045, 0.010, 0.001, 0.026 and 0.013 respectively. Generally, there were more female than male prisoners with all the significant mental disorders except for mood disorder with psychotic features and psychotic disorder where male prisoners were more than the female prisoners. This result is similar to the studies done in Brazil [12] and Taiwan [5] which noted higher prevalence of mental disorders in female than male prisoners. This observation can be associated with the more complex needs of females, including sometimes being incarcerated with small children or when pregnant. Furthermore, female prisoners worry about the children they left behind more compared to the male prisoners. Also, the society is harsher on female convicts than male convicts. This finding resonates with the observation of Kamoyo [14] that female prisoners are more prone to psychological and social harm due to incarceration. However, these findings are in disagreement with the study of Fazel and Seewald which showed that there are no significant differences in depression and psychosis rates between men and women prisoners. [2]

Age influences occurrence of mental disorders although the relationship is statistically insignificant. Prisoners of age 30 – 49 years have the highest likelihood of having mental disorders followed by those who are 29 years and below. Age 30 – 49 have the highest prevalence of all mental disorders except dysthymia, OCD and alcohol dependence. This can be due to the fact that 30-49 years constitute the early middle years where individuals are likely to experience destabilizing life events such as job loss and divorce, which are risks for both criminal activity and mental disorder. Further, majority of them face denial of their incarceration and suffer the mental anguish of being separated from their young families which made them prone to stress. Prisoners aged 29 years and below have highest risk of alcohol abuse. Age 29 years and below are in transitional adulthood with

postponed adult responsibilities, hence are prone to alcohol abuse. The lower prevalence of mental disorders among older prisoners can be attributed to acceptance of their situation, development of coping mechanisms over time and more participation in rehabilitation programs compared to young adults. Given their young energetic age, it can be hypothesized that the negative effects of confinement have greater impact on the young adults. This is in line with the observation of Parekh who reiterated that 50% of mental illness begins by age 14, and 75% begins by age 24. [15] As such, manifestation of mental disorders is expected to peak in young adulthood. Likewise, the findings agree with the observation of Cooley that the early middle age group is the most susceptible to severe life jolts. [16] This finding is in contrast to the study in India which showed that there is no relationship between mental wellbeing and age of female prisoners. [17]

Level of education was found to influence occurrence of mental disorders, however, the relationship was statistically insignificant. Prisoners with secondary school level of education were the most likely to have mental disorders. The prisoners with the least likelihood of having a mental disorder were those with university level of education and those who either dropped out of school or never went to school. Prisoners with primary school level of education have the highest risks of depression, mood disorder with psychotic features and suicidality. Prisoners with college level of education are at risk of PTSD and generalized anxiety disorder. This observation can be attributed to denial and jeering of fairly learned prisoners by fellow inmates. However, the lower prevalence of mental disorders among those with college and university education can be attributed to better social and coping skills. They have the mental strength to withstand confinement. The low levels of mental disorders among prisoners who dropped out or never went to school can be attributed to easy acceptance of their fate due to limited

choices in life. Such inmates may have faced a tougher life out of prison due to joblessness; as such prison was a reprieve to them in terms of shelter and food. Secondary school level provides the springboard for one to chart the future life, thus disruption of this progression by a criminal conviction or lack of support for pursuing college training has psychological burden on this group of people. This finding is similar to that of a study in Chile which showed that there is a strong, inverse and independent association between education and common mental disorders. [18] However, it is in contrast to a previous study in USA which showed that there was no relationship between level of education and mental health. [19]

The study established that there is a significant relationship between marital status and mental disorders among prisoners. Married prisoners were the most prone to mental disorders while the least prone were the separated, divorced and cohabiting prisoners. The high risk of married prisoners can be attributed to disagreement with spouse or having harmed the spouse and fear of rejection by family and marriage breakdown. This is augmented by the current societal trend of weaker marriage ties and partners harming one another. Single prisoners had only themselves to worry about. This finding is contrary to the belief that marriage offered psychological stability to the spouses hence less mental disorders. The result is in contradiction to the studies in Sweden [20] and Nigeria [21] which showed that single people have the highest risk of mental disorder. A similar study in Tennessee reported mental disorders affected marital status and not vice versa. [22]

## CONCLUSION AND RECOMMENDATION

There is high prevalence of mental disorders among prisoners at 65%. Though the level has declined, it is still high. The leading common disorders are depression, suicidality and mood disorder with

psychotic features. The causes of mental disorders are : shock of being convicted, long period of imprisonment, confinement, denial, long duration in determination of appeal cases, frustration on the loss of an appeal, neglect by relatives, stress due to overthinking, feelings of shame and worthlessness, change in attitude from relatives and friends, fear of life after prison and lack of counselling services. Mental disorders can be reduced by participation in rehabilitation programs, counselling, positive attitude of prison staff, increased remote parenting and social activities. Gender and marital status are significantly associated with mental disorders among prisoners. Female prisoners and married prisoners have the highest risk of mental disorders. The leading mental disorders among female prisoners are depression, suicidality and PTSD. The leading mental disorders among married prisoners are psychotic disorders, panic disorder, dysthymia and mood disorder with psychotic features.

## ACKNOWLEDGEMENT

The authors acknowledge the research participants, research assistants and officers for their cooperation in the study.

**Conflict of Interest:** None

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- How to cite this article: Museve JL, Angira CHO, Aloka PJ. Prevalence and associated factors of mental disorders among prisoners in Kenya. *Int J Health Sci Res.* 2020; 10(7):261-271.

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