

**FULL LENGTH ARTICLE****Prevalence of Depression, Anxiety and Stress among Criminal Detainees: With Reference to Mizan Teferi Criminal Correction Center, South West Ethiopia**Addisalem Taye<sup>1</sup>

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## Abstract

The main objective of this study was to assess the prevalence of depression, anxiety and stress among prisoners in Mizan Teferi criminal correction center. To achieve the stated objectives, mixed research design particularly triangulation approach was used. For this reason, questionnaire, in-depth interview and FGD guides were used to collect quantitative data from a random sample of 372 prisoners, qualitative data from 20 interview and 16 FGD participants. To analyze the quantitative data, percentage, mean, standard deviation, independent t-test and ANOVA were used; whereas the qualitative data were transcribed and interpreted using thematic analysis and direct quotation. The results indicated that the prevalence and severity of depression, anxiety and stress were high among prisoners. Symptoms of depression, anxiety and stress were more prevalent among prisoners who were serving less than one-year period than those who stayed for long period of time. Depression, anxiety and stress were more prevalent among female prisoners than their male counter parts. Isolation from immediate family members, the living situation in the prison center, guilty feeling for committing crime, absence of freedom and isolation from the social gathering were identified as the major common reasons for mental health problem in prison center. Improving the availability and quality of mental health services in prison center and awareness creation programs is recommended to deliver adequate care to this group.

**Key words:** /Anxiety /Causal factors /Depression /Ethiopia /Prisoners /Stress/

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## 1. Introduction

An estimated 450 million people worldwide suffer from mental or behavioral disorders (World Health Organization Report, 2001). These disorders are prevalent especially in prison populations. The disproportionately high rate of mental disorders in prisons is related to several factors. Many of these disorders may exist before admission to prison and further exacerbate by the stress of imprisonment. However, mental disorders may also develop during imprisonment itself as a consequence of prevailing conditions and also possibly due to torture or other human rights violations (Brinded, Simpson, Laidlaw, Fairley & Malcolm, 2001).

Offenders have very high rates of mental ill health with recent estimates suggesting that up to 90% of individuals serving custodial sentences have some form of diagnosable mental health condition. Research has shown that inmates exhibit higher levels of anxiety and depression than the general population, along with lower levels of self-esteem, specifically among certain groups of inmates (Castellano & Soderstrom, 1997).

National studies conducted in New Zealand in (2005), on all female prisoners and male prisoners as well as a cohort of 18 percent of sentenced male prisoners from every prison, showed markedly elevated prevalence rates for major mental disorders in prisoners compared to community samples. Common disorders included substance use disorders, psychotic disorders, major depressive disorder, bipolar mood disorder, obsessive-compulsive disorder and post-traumatic stress disorder. Significantly, the study also showed that a large proportion of those found to be depressed or psychotic were not receiving treatment.

Butler et al. (2005) in New South Wales, Australia, screened both sentenced and reception prisoners and found that 43% of those prisoners screened had at least one of the following mental diagnoses: psychosis, anxiety or affective disorders in the past 12 months. A study in Canada which compared the prevalence of mental disorders in prisoners and the community found a very high rate of Axis 1 disorders (depression, anxiety, posttraumatic stress disorder and substance use disorder) among prisoners. Prisoners had a 91.7% lifetime prevalence of psychiatric disorders while 76.7% showed symptoms in the past six months. This study also found a high rate of co morbidity with substance use disorders.

Factors in prisons that may adversely affect mental health include overcrowding, dirty and depressing environments, inadequate health care, and physical or verbal aggression. Lack of purposeful activity, lack of privacy, lack of opportunities for quiet relaxation and reflection aggravate mental distress. Reactions of guilt or shame, anxiety of being separated from family and friends and worries about the future also compound such mental distress. Timely identification, treatment and rehabilitation are almost non-existent in many prisons, particularly in the developing countries (Birmingham, 2004; Gunter, 2004; Drapalski, Youman, Stuewig, & Tangney, 2009; Lafortune, 2010).

A research conducted at Jimma prison center (Zakir et al., 2018) found that, 41.9% of participants among prisoners had depression and having family history of mental illness, chronic physical illness, history of previous incarceration, lifetime alcohol use, thinking life to be a difficult one after release from prison, having age between 21 and 25 years, and having poor social support had significant association with depression.

Another research conducted in Amhara (Abel et al., 2016) regional state which aims to assess the prevalence of anxiety also revealed that, the prevalence of anxiety was found to be 36.1 % and anxiety was associated with current smoking and having had a dissatisfying life.

Those research works conducted in Ethiopia focused on assessing the prevalence and associated factors of depression or anxiety separately at different part of the country. However, on this research the researcher tried to assess prevalence of depression, anxiety and stress all together in one research. This research also addressed the issue of stress in prison center which was unnoticed by other researchers. Mostly, this paper aimed to answer the following research questions.

- 1) What is the prevalence of depression, anxiety and stress among prisoners?
- 2) Is there statistically significant difference in prevalence of depression, anxiety and stress among prisoners based on time spent in prison?
- 3) Is there significant gender difference in prevalence of depression, anxiety and stress among prisoners?
- 4) What are the risk factors of mental health in prison center?

## 2. Review of Related Literature

This article has summarized findings of different scholarly researched articles across the globe on the issues of mental health of prisoners.

Prison is the place where prisoners especially those who have committed grave crimes such as murder, sexual assaults, robbery have to be there for long time. Jail is not a pleasant place to live in because no matter how well disciplined and managed it alienated prisoners from their families, friends, outer world and society. Alienation from the family and society is the most prominent cause to damage the wellbeing of prisoners (Mackenzie & Mitchell, 2005) it causes stress and other mental health related problems in prisoners (Rutherford & Duggan, 2009).

It has been reported in different studies and review of meta-analysis that criminals are more liable for mental disorder as compared to non-criminal population. The common psychiatric disorder prisoners suffer from includes anxiety, depression, psychoses, personality disorder and substance misuse; and it also elevates suicide risk in criminals (Baillargeon, Binswanger, Penn, Williams & Murray, 2009; Fazel, Cartwright, Norman-Nott &, Hawton, 2008).

Inmates have greater physical and mental health needs compared to the general population (Hammett et al., 2001). The prevalence of mental disorders in prison's is high, but access to services to treat them is often very low (Fazel & Danesh, 2002; Taylor, 2010).

A systematic review by Fazel and Danesh of 62 studies from 12 countries, in 2002, included 22790 inmates. The overall prevalence of psychiatric disorders in prison populations was as follows: 3.7% of men had psychotic illnesses, 10% major depression, 65% a personality disorder; 4.0% of women had psychotic illnesses, 12% major

depression, and 42% a personality disorder (Fazel & Danesh, 2002). The rate of current serious mental illness for male inmates was 14% and for female inmates it was 31% (Steadman et al., 2009).

In an Australian study, the 12-month prevalence of any psychiatric illness in the previous year was 80% in inmates and 31% in the community. Substantially more psychiatric morbidity was detected among inmates than in the community group after accounting for demographic differences, particularly, symptoms of psychosis, substance use disorders and personality disorders (Butler, Allnut, Cain, Owens & Muller, 2005).

Depression, in general, is more common in females; however incarcerated women were 50% more likely to suffer depression than women not imprisoned. After further exploration, the case in which jailed mothers were separated from their children proved to be a major link. Younger women without children seemed to have lower rates of depression than those who were parents. Other influences on depression in the jail setting included how many visits inmates received and if they took advantage of activities hosted by the prison, such as parenting classes or bible clubs (Conklin, 2000).

The episodes of depression are usually related to the experience of sudden or prolonged stressful events (Gunter, 2004; Drapalski et al., 2009). It is common for newly admitted inmates to suffer from depression for certain period of time due to shock or stress of the new environment (Piselli, Elisei, Murgia, Quartesan, & Abram, 2009). In addition, stress and depression among inmates have often be related to the risk of self-harm and suicide in prison (Ireland & York, 2012), which obviously are costly to the prison institutions (Toch, 1992).

In developing countries, the prevalence rates of depression are higher. This may be so because the health systems in developing countries is poorly organized and poorly funded, as compared with the health care system in industrialized countries. Environmental factors that contribute to the genesis of depressive disorders are greater in developing countries. These include high rates of poverty, a lack of social welfare and high rates of endemic infectious diseases, to mention just a few (World Health Organization, 2007).

Inadequate attention to the human rights of persons in prison, including the right to decent living, clean and congenial existence, speedy trial, information and communication and the right to health care, particularly psychiatric health care, further aggravates the situation (Lori Kepford, 1994)

According to Birmingham (2004), Gunter (2004), Drapalski et al. (2009), and Lafortune (2010), stress and depression are very frequently experienced by prison population. Some other problems in prison which deteriorate prisoners psychological wellbeing include overcrowding (Nurse et al., 2003), unhygienic cell environment, delay in legal proceedings (under trial cases), physical and mental suffering by prison officials and group clashes and conflict among prisoners group. Once they get punishment by court, they get stigmatized as offender by society. This stigmatization worries them about their future after release from the prison and leaves most damaging effect on offenders (Schnittker & John, 2007). Prisoners who adapt the circumstances become capable to adjust in prison but those who find themselves unable to adjust with the jail environment start feeling guilty, show aggression, suicidal behavior and develop stress and depression, anxiety and other psychiatric problems (Dye, 2010).

According to research conducted in Ethiopia by Zakir, Teshome, Lamessa, Workinesh and Mubarek (2018), to assess the prevalence and associated factors of depression among prisoners in Jimma Town Prison center, the prevalence of depression was found to be 41.9% (three in every seven). These study also revealed that among the total number of participants 13% had mild, 20% had moderate, and 9% had severe depression. This research found out that, being female, being in the age group between 21 and 25 years, previous history of imprisonment, thinking life to be a difficult experience after release from prison, lack of opportunity for job in the prison, type of criminality, presence of family member with mental illness, presence of chronic physical illness, past mental illness, and poor social support were associated with depression.

Another research conducted in Amhara regional state of Ethiopia, which assesses the prevalence of anxiety among prisoners, found that the prevalence of anxiety was 36.1%. The research identified that leading unhappy life before imprisonment, current cigarette smoking, and place of imprisonment had a significant association with anxiety (Abel, Berihun, Teresa, Nigussie, & Telake, 2016).

### **3. Methods**

#### **3.1. Study Area/Research Site**

The study was conducted in South Western region of Ethiopia, Bench Maji Zone Mizan Teferi criminal's correction center, which is found in Mizan Teferi Town. Mizan Teferi criminal's correction center, which was established in 1936, is the second criminal correction center in Benchi- Maji zone administration. When this study was being conducted, the center was administrating 3569 criminal offenders. The correction center had 69 police officers, 14 administrative workers, 23 contract employees and 15 teachers.

According to information from the center, the number of criminals joining the center was increasing at an alarming rate and this outnumbered those who released from the center by completing their sentence period. Large numbers of juveniles between age ranges of 15-18 were also found in Mizan Teferi Prisoner correction center.

The center was not well built and lacks facilities including living rooms, dining area, recreation centers, work shop areas and other basic necessities which help prisoners to engage themselves in meaningful activities. Very large numbers of prisoners were found in small rooms due to lack of living spaces. Some female prisoners were living with their children in a very difficult condition (Bench- Maji zone criminal's correction center, 2018).

#### **3.2. Research Design**

A cross - sectional survey design was employed by using questionnaire, interview and focus group discussion as data gathering instrument. Emphasis was given to quantitative data whereas, qualitative data was used to support the finding obtained through questionnaire. The qualitative approach was used to achieve an intimate and richer understanding of the problems whereas data obtained through quantitative approach was analyzed using quantitative method. Finally, the result of both finding were discussed

### 3.3. Sample Size and Sampling Techniques

Participants of the study were selected through systematic random sampling technique by making use of a table of random numbers. The reason why this method was applied was to give equal chance to all population under study and to avoid selection bias. Participants of this study were selected from a total of 3569 prisoners found in Mizan Teferi criminal correction center.

The sample size of this study was determined using the following assumptions: 95% level of confidence ( $95=z$ ) and a 5% margin of error ( $m= 0.05$ ).  $p= 50\%$  was taken as prevalence of depression, anxiety and stress among prisoners. Based on this assumption, the actual sample size for the study was computed using the formula for single population proportion as indicated below.

$$n = \frac{z^2 \times p(1-p)}{m^2}$$

**Description:**

**n**= required sample size

**z** = confidence level at 95% (standard value of 1.96)

**p** = estimated prevalence of the variable within the research population (50%)

**m** = margin of error at 5% (standard value of 0.05) (Cochran, 1963)

According to the formula, if the study population is above 10,000, the required sample size would be 384. However, in this study, the population was 3569 (less than 10,000), the required sample size was therefore calculated using the Finite Population Correction for Proportions formula (Cochran, 1963, 75)

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where,  $n$  = the desired sample size when population  $< 10,000$

- $n_0$  = the desired sample size when population is  $> 10,000$ .
- $N$  = the estimated study population 3569 in this study.

This gave a sample size of 347

In addition to 347 randomly selected participants, 20 (4 prison police officers, 15 prisoners and the prison administrator) were interviewed and Sixteen (16) prisoners were involved on FGD.

### 3.4. Data collection

Data were collected by using questionnaire, which includes two parts (the socio demographic characteristics and standardized questionnaire which was used to assess depression, anxiety and stress), interview and focus group discussions (FGD). The questionnaire was translated to Amharic language and back translated to English to check its consistency. Finally, it was pretested and used after thorough revision was made.

### 3.5. Instruments

Data was collected using the following basic instruments:

#### a. Depression Anxiety and Stress Scale (DASS)

The DASS is a measure of mental health focusing on the three traits of depression, anxiety and stress. The DASS was designed by Syd Lovibond and Peter Lovibond at the University of New South Wales in 1995. The DASS-21 consists of three self-reported scales designed to measure clinical levels of depression, anxiety, and stress. Seven questions were asked in each category about symptoms experienced over the past week and were scored on a four-point scale (Did not apply to me at all=0, Applied to me to some degree, or some of the time=1, Applied to me to a considerable degree, or a good part of the time=2, Applied to me very much, or most of the time=3). The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, and lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious effect. The Stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. The reliability scores of the scales in terms of Cronbach's alpha indicate that scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items. The original reliability of the instrument shows that Cronbach alpha score rate for Depression was 0.91, for the Anxiety scale 0.84 and for the Stress scale is 0.90 in the normative sample.

#### b. Interview

Since participants are not similar in terms of educational qualification, age and experience, the researcher designed appropriate tools suite the target group. Thus, both structured and unstructured types of interview were used. Moreover, unstructured interview was employed for an in depth interview. On the other hand, the structured interview was designed to collect information from illiterate participants and relatively younger adolescents. Accordingly, interviews were carried out with 4 prison polices officers, 15 prisoners and a prison administrator; a total of 20 peoples participated in the interview.

#### c. Focus Group Discussion

Focus group discussions were done to triangulate, supplement, and enrich the results of the finding that obtained through interview and questionnaire. Key questions were prepared and two different focus group discussions consisting combination of male and female prisoners were conducted consisting 8 individuals in each group. Sixteen (16) prisoners were involved in FGD and the two FGD sessions was run by the researcher.

### **3.6. Data Collection Procedure**

Ethical clearance was obtained from Research and Community Support Office of Mizan Tepi University. Written permission was obtained from the Prison Administration. Data collection process was carried out by the researcher together with four other trained data collectors (3 of them selected from the prisoners and 1 nurse from the correction center). First hand data was collected from prisoners speaking the local language using research assistant who speak the local language, via close supervision of the researcher. This is due to the fact that the researcher cannot speak the local language of the indigenous people.

#### **a. Pilot study**

All questionnaires and interview questions were translated to Amharic language after they have been prepared and checked for their appropriateness. The lecturers, from English Department of Mizan Tepi University, did the Amharic version translation. Finally, after correcting minor mismatches in forwarding and back warding translation, the items were pre-tested on 40 consenting inmates, who met the inclusion criteria but were not included in the final study. The purpose of the pilot testing was to help the researcher to determine recruitment rates, retention rates, and eligibility criteria, clarity in determining who meets and who does not meet the eligibility requirements, and to check whether the translated instruments measure their intended construct and their internal consistency. Accordingly, the reliability of the instrument after pre-test shows that Cronbach alpha score rate for Depression was 0.87, for the Anxiety 0.88, and for the Stress scales 0.79.

### **3.7. Methods of Data Analysis**

The data entry and analysis was done using Statistical Package for Social Sciences (SPSS) version 20. After completing and cross checking the data, they were organized in line with the objectives and research questions of the study and analyzed quantitatively employing descriptive and inferential statistics. Prevalence and risk factor of depression, anxiety and stress was analyzed using frequency distributions. T-test was used to see if there was gender difference in prevalence of depression, anxiety and stress. ANOVA was carried out to answer difference on the level of depression, anxiety and stress across year spent in prison center. Furthermore, data collected through the qualitative tools were organized and presented in a narrative form after transcribe for and triangulated with the quantitative data.

#### 4. Results

This section deals with the findings of data gathered from the research participants in the prison center. Analysis was made based on data collected from 372 participants. The findings include the following major areas of concerns: prevalence of depression, anxiety and stress in prison center, differences in prevalence of depression, anxiety and stress based on time spent in prison, gender difference in depression, anxiety and stress, causes of mental health problem in prison center.

##### a. Socio- demographic Characteristics of Participants

The total sample size of prisoners involved in the study was 347. Out of this, 336 properly responded and returned the questionnaire producing an overall 96.8% valid return rate. Among the remaining (eleven), five of them did not return the questionnaire and the others were dropped due to incomplete responses that might affect the study adversely.

Table 1: Respondents' Socio-demographic Characteristics

Variable	Labels	Frequency	Percentage %
Sex	Female	87	25.9
	Male	249	74.1
	Total	336	100.0
Age	15-20	63	18.8
	21-30	141	42.0
	31-40	89	26.5
	41-50	26	7.7
	Above 50	17	5.1
	Total	336	100.0
Year served in prison	less than a year	130	38.7
	2-5years	122	36.3
	above 5 years	84	11
	Total	336	100.0

Regarding sex, about 87(25.9%) were female prisoners while the rest 249 (74.1%) are male. Concerning age of participants, their age ranged from 15 to 63 years with  $M=27$  and  $SD=5.2$ . Of the participants, 26.5% were between 31 to 40 years, whereas 63 (18.8%) of them were between 15 to 20 years. Majority of respondents 141 (42%) were between 21-30 years. In terms of year of stay in prison center, 130 (38.7 %) of them served less than a year while 122 (36.3%) of them stayed for about 2 to 5 years. The remaining 84 (11%) were in prison for more than 5 years.

##### b. Prevalence of Depression, Anxiety and Stress among Prisoners

The study was aimed to assess the prevalence of depression, anxiety and stress among prisoners who are in prison at Mizan Teferi criminal correction center. The

prevalence of depression, anxiety and stress level was measured by 21-item DAS scale and data obtained from the survey conducted was presented in Table 2.

Table 2: Prevalence of Depression, Anxiety and Stress

Variables	Levels of symptoms	Frequency	Percentage %
Depression	Normal/ 0-9/	77	22.9
	Mild /10-13/	91	27.1
	Moderate /14-20/	80	23.8
	Severe /21-27/	61	18.2
	Profound above 28	27	8.0
	Total	336	100.0
Anxiety	Normal /0-14/	157	46.7
	Mild /15-18/	73	21.7
	Moderate /19-25/	49	14.6
	Severe /26-33/	33	9.8
	Profound /above 34	24	7.1
	Total	336	100.0
Stress	Normal /0-7/	136	40.5
	Mild /8-9/	54	16.1
	Moderate /10-14/	51	15.2
	Severe /15-19/	49	14.6
	Profound / above 20	46	13.7
	Total	336	100.0

According to data obtained from the center, and presented on table-2 above, 27.1% of prisoners had mild depression whereas 23.1% and 18.2% of prisoners reported to have moderate and severe depression respectively. Moreover, 8% of respondents had profound depression.

With respect to level of anxiety, 21.7 % of prisoners had mild anxiety whereas 14.6% and 9.8% of prisoners reported to have moderate and severe anxiety respectively. Regarding the prevalence of stress, 16.1% of prisoners had mild stress whereas 15.2% and 14.6% of prisoners reported to have moderate and severe stress respectively. The remaining 13.7% of respondents reported profound stress level.

Finding from FGD conducted and interview carried out at the center, majority of prisoners are suffering from depression, anxiety and stress. Discussants indicated that symptoms like being sleeplessness, loneliness, pessimism, inability to concentrate, and restlessness, crying a lot of time, fearfulness and change in appetite are majorly found among prisoners. Majority of interviewed prisoners and police officers also share the same idea with FGD participants. The following statement was taken from an interview of 42 years old prisoner.

*I feel like a man without hope and future bright. I always worry about my age at which I become free of prison. I will get older and there is nothing that I contribute to my family and my community. I lost my energy and strength and these makes me think negative which makes me feel hopeless, non- interactive and lose interest in every activities.*

### c. Year of Stay in Prison and Level of Depression, Anxiety and Stress

Levels and severity of psychological problems are thought to be varied across time spent in prison center. This research also assessed the severity and levels of depression, anxiety and stress in comparing with time spent in the prison center. Year of stay/time spent/ in prison center was categorized in to three different sections and analysis of variance was carried out to see the significant difference between the groups.

Table 3: Time Spent in Prison and Level of Depression, Anxiety and Stress

Variables	Categories	N	Mean	Std. Deviation	Df	F	P-Value
Depression	less than a year	130	20.35	8.045	333	11.452	.000
	2-5years	122	16.06	8.186			
	above 5 years	84	15.57	9.211			
Anxiety	less than a year	130	13.03	6.620	333	8.327	.000
	2-5years	122	10.01	6.732			
	above 5 years	84	9.98	6.540			
Stress	less than a year	130	22.13	9.901	333	7.881	.000
	2-5years	122	18.43	9.583			
	above 5 years	84	17.17	9.709			

\*. The mean difference is significant at 0.05 level.

Statistically significant difference was observed in depression, anxiety and stress between prisoners who served in jail for more than one year and less than one-year. This implies that the severity and level of depression, anxiety and stress score was influenced by time spent in prison center. Close investigation of post-hoc ANOVA analysis was needed to identify which mean group contribute more relative to others. Post-hoc comparison using the Tukey HSD test also computed and the result indicates that there is statistically significant difference in depression, anxiety and stress among prisoners who stay in prison for less than one year and above one year. Accordingly, prisoners who stayed in prison for less than a year showed greater symptom of depression ( $F(333) = 11.452$   $P < 0.001$ ), anxiety ( $F(333) = 8.327$   $P < 0.001$ ) and stress ( $F(333) = 7.881$   $P < 0.001$ ) than those who served the prison life for about 2-5 years and above 5 years. However, the post hoc comparison using the Tukey HSD test did not indicate significant difference in depression, anxiety and stress among prisoners who served prison life for about 2-5 years and above 5 years.

Interview and FGD participant also revealed that majority of mental health problems majorly occur on first time admitted prisoners and prisoners who were waiting for trial. According to the information obtained from the participants, the first one month in prison is the hardest period to cope feeling of anxiety, depression and stress. Discussant prisoners revealed that prisoners who were waiting for trial think about the upcoming trial and become stressful when they think of what will happen during trial.

The following extract was taken from police officer who worked in the center for more than ten years.

*The situation of first time admitted prisoners is very dangerous. They feel being in prison is like an end of life. They show disturbed emotions for at least four or five months. Prisoners start to get relaxed and adjust themselves to the situation when they start to be mentored by other senior prisoners. This situation is highly persistent on prisoners with high criminal profiles. When prisoners stay in prison they start to form friends and social circles, which will help them to overcome those emotions.*

#### d. Gender and the Severity of Depression, Anxiety and Stress

Another focus of this research is to find out which group of prisoner is majorly affected by mental health problem in prison center. Accordingly, level of depression, anxiety and stress was assessed between male and female (Table4).

Table 4: Depression, Anxiety and Stress across Gender

Variables	Sex				t-test value	df	P-Value
		N	Mean	SD.			
Depression	Female	87	21.32	7.91	2.915	334	.000
	Male	249	18.14	9.22			
Anxiety	Female	87	10.46	5.82	2.762	334	.006
	Male	249	8.47	5.77			
Stress	Female	87	18.46	9.39	2.914	334	.004
	Male	249	14.76	10.46			

\*P<0.05

Statistically significant difference in depression, anxiety and stress was observed among male and females prisoners. The mean score of male in depression (M= 18.14, SD = 9.224) is lower than that of female prisoner (M=21.32, SD = 7.91), (t=2.915 p=< 0.01). This implies that female prisoners showed more depressive symptom than their male counter parts.

A Significant difference in level of anxiety was also observed among male (M=8.47, SD=5.77) and females prisoners (M=10.46, SD= 5.82), (t=2.762 p=< 0.01) which imply that female prisoner showed higher level of anxiety symptom than their male counter parts. Accordingly, the mean of stress score among female prisoners (M=18.46, SD=9.39), (t=2.914p=< 0.01) is higher than males (M=14.76, SD= 10.46) which shows higher level of stress among females.

Discussants of FGD and interviewed participants of the study also highlighted that the psychological burden of being in prison is highly prevalent among females than male prisoners. Among listed causes of psychological burdens, according to them, are being head of households, feeling of guilty for crime committed, worrying about family members, thinking about little children who are living in the center together with mothers make the situation worse for female prisoners. The following extracts were taken from

35 years old female interviewed prisoner depicting the presence and severity of psychological problem.

*I have been here for the last two years. I blame myself for committing crime. I lost everything including my friends, children, and relatives. My little son was living with me here in the prison center. I feel disturbed when I think about my future life. I become hopeless and it seems like my life will be ended up here in the prison center.*

#### e. Risk factors of Mental Health Problem among Prisoners

Assessing causes of mental health problem will help to take corrective action and minimize the burden of mental health issue in prison center. Therefore, this research also attempted to assess major risk factors (causes) of mental health issue. Accordingly, the following basic data was obtained.

Table 5: Risk Factors of Mental Health Problem among Prisoners

Variables	Frequency	Percentage	Rank
Being isolated from immediate family members	105	31.25	1
The living situation in the prison center	84	25	2
Guilty feeling for crime committed	71	21.13	3
Absence of freedom	45	13.4	4
Isolation from the social gathering	31	9.22	5
Total	336	100	

To further explore issues related to causes of depression anxiety and stress in prison center, prisoners were asked to rank different reasons thought to be causal factors of psychological health problems in prison centers. Accordingly, the most common causal factor of psychological burden of prison center is identified. Based on the result obtained, isolation from immediate family members (31.25%), living situation in the prison center (25%), feeling of guilty for crime committed (21.13%), absence of freedom (13.4%) and isolation from the social gathering (9.22%) are identified as the most common reasons for mental health problem in prison center.

Interview and FGD participants were also asked to discuss causes of different psychological health problems in prison population. Accordingly, FGD discussants pointed out limited access to freedom, overcrowdings in the prison center, difficulty to cope up behaviors of different prisoners, feeling of guilty for ones crime as causes of mental health problem in prison center. A 45 years old prisoner who participated on the FGD tells:

*The situation that you face when you come to prison center is very different from the outside world. I myself suffered too much when I first came to the center. It took me years to have stabled emotion here in the center. The living situation, overcrowdings, absence of personal freedom leaves you in trouble unless you adjust yourself well.*

## 5. Discussions

The objective of the study was to assess the prevalence of depression, anxiety and stress among criminal detainees. In the above section, the major findings were presented and interpreted in line with the stated objectives of this research and this section discusses the result of the study in line with the literature reviewed.

### a. Prevalence of Depression, Anxiety and Stress among Prisoners

The result of this study revealed that prisoners are suffering from mild, moderate and severe depression, anxiety and stress. Feeling of hopelessness, fearfulness, absence of concentration, loneliness, pessimism, restlessness and loss of appetite are among the major symptoms of depression, anxiety and stress identified. The presence of these symptoms indicates how much anxiety, depression and stress are prevalent in the prison center.

This idea is consistent with a study conducted by Zakir et al (2018), which assess the prevalence and associated factors of depression among prisoners in Jimma Town Prison Center, which revealed that the prevalence of depression was found to be 41.9%. The study indicated that among the total number of participants 13% had mild, 20% had moderate, and 9% had severe level of depression.

Another study conducted by Abel et al. (2016), in Amhara regional state of Ethiopia, also share the same idea that the prevalence of anxiety among prisoners was 36.1 % which indicated more than one third of the prisoners have an anxiety disorder.

Study conducted in Port Harcourt Prison, by Nwaopara and Stanley in 2015, to assess prevalence of depression using Beck depression inventory scale also identified that 14.8% of mild, 14.2% of moderate and 6.2% of severe depression.

### b. Year of Stay in Prison and Level of Depression, Anxiety and Stress

This study revealed that the episodes of depression, anxiety and stress in prison center is associated with time spent in prison and experience of sudden or prolonged stressful events. The study indicated that prisoners who stayed in prison for less than a year showed greater symptom of depression, anxiety and stress than those who stayed for longer period. It is common that prisoners who join the center for the first time suffer from depression, anxiety and stress when compared to those who stayed in prison for long period of time. Tearfulness, dizziness, fearfulness and pessimism are among the feelings that are encountered most of the time by newly admitted prisoners and those waiting for trial.

This idea is consistent with a study conducted by Gunter (2004) and Drapalski et' al. (2009), which states that the most stressful period, is when the inmate first encounters prison life. First-time offenders are particularly vulnerable due to the loss of liberty and separation from friends and family. This stage is often characterized by feelings of denial followed by anxiety and depression, although other emotions such as shock, fear, isolation, grief, and anger are also reported frequently. The adjustment period typically lasts for the first 4–6 weeks of confinement. It is at this stage that many suicide attempts are made.

Another study conducted in Brazil by Constantino et al. (2016), which aimed to assess the mental health status of inmates and people in custody, revealed that lengths of time spent in prison have its own effect on prisoner's mental health status. According to this study, prisoners who had been in prison for between one and nine years are 0.55 times less likely to experience stress symptoms than those who had been in prison for less than a year.

### **c. Gender and the Severity of Depression, Anxiety and Stress**

This study also identified that mental health problems like depression, anxiety and stress are highly prevalent among female prisoners when compared to the male counterparts. Being a parent, particularly a mother, is indeed a stressful condition for the inmates; thus their imprisonment became an additional burden to the existing parenting. These included restricted contact with child (or children), loss control over parental role, and many other issues that could arise for being imprisoned mother. In addition, women are more likely than men to experience childhood trauma and sexual assaults. The living condition in an over-crowded prison center is not comfortable for female prisoners than male prisoners in different aspects. The condition is very difficult for females to keep their own personal hygiene; some female prisoners come to prison centers having small children to be taken care off. Living in prison center with small children makes their life more depressed, anxious and stressful than ever.

This finding agrees with a study conducted by Gunter, (2004), Hammen, (2005), Fountoulakis, (2006), and Reed et al., (2009), which indicated that women often have more sources of stress such as socioeconomic problems, family affairs, and educational restraints. These circumstances are even more significant among inmates who are being imprisoned and restricted from accessing freedom and achieving something like those outside the prison wall. When married women's are jailed most of the time they had a family and most probably with a child or children. The burden of being separated from their child (or children) especially a young one(s) could become a major source of stress among them (Houck & Loper, 2002; Gunter, 2004).

This study is also consistent with research conducted in Brazil by the year 2016, which aimed to assess the mental health status of inmates and people in custody in the state of Rio de Janeiro using the Beck Depression Inventory and the Lipp Stress Symptom Inventory for Adults which revealed that 39.6 % women showed symptoms of severe depression, as opposed to 24.8 % of men. Whereas, the results of the Lipp Stress Symptom Inventory for adults showed that 35% of men and 57% of women suffered from depression accordingly (Constantino et al, 2016).

### **d. Risk Factors of Mental Health Problem among Prisoners**

This study revealed that mental health problems in prison centers are caused due to different factors. Alienation from the family and society, delay in legal proceedings, isolation from immediate family members, the living situation in the prison center, guilt feelings, inability to cope up behaviors of other prisoners are among the most common reasons identified as risk factors of mental health problem in prison center.

This finding also goes in line with study conducted by Birmingham, (2004); Gunter, (2004); Drapalski et.al., (2009); and Lafortune, (2010), which state that alienation from the family and society, problem of overcrowding, unhygienic cell environment, delay in legal proceedings (under trial cases), physical and mental suffering by prison officials and group clashes and conflict among prisoners exaggerate the mental health problems of prisoners.

Another study, which agrees with the current finding, conducted by Schnittker and John in (2007), identified those prisoners who find themselves unable to adjust with the jail environment start feelings of guilt, show suicidal behavior and aggression, and develop stress and depression, anxiety and other psychiatric problems.

## **6. Conclusions**

The results of the study provided that the prevalence of depression, anxiety and stress were higher in prison center. The nature of the prison center and absence of basic facilities contribute to the presence of mental health problems in prison center. Similar to the results of the survey in the general population, females in prison centers are also prone to higher mental health problems when compared to their male counterparts. The finding of this research also shows higher level of depression, anxiety and stress among prisoners who stay in a prison for less than one year period of time than those who stayed more than two years. Many risk factors have been raised to exacerbate and initiate mental health problems in mental health setting including isolation, crowdedness and feeling of guilty. Generally, this study has found out and contributed the following conclusions for the existing research literature.

- Majority of prisoners had mild, moderate and severe depression, anxiety and stress.
- Symptoms of depression, anxiety and stress was highly prevalent among prisoners who are serving less than one year period than those who stayed for long period of time.
- According to the survey-conducted depression, anxiety and stress were more prevalent among female's prisoners than their male counter parts.
- Isolation from immediate family members, the living situation in the prison center, feeling of guilty for committing the crime, absence of freedom and isolation from the social gathering were identified as the most common reasons for mental health problem in prison center.

## **7. Recommendations**

The following recommendations are suggested based on the findings of the study:

- Mental health problem, which is prevalent in prison center, needs to be addressed by collaboration of concerned bodies like ministry of health, federal prison administration and others. Prison center needs to have mental health professionals who deal with the issue of mental health. Therefore, the center needs to give due emphasis in recruiting and offering counseling services for prisoners.

- The situation of prisoners who came to prison center for the first time and waiting for sentence is critical when it comes to mental health issue. Those prisoners lack experience to adjust themselves with the situation and this makes them stressed. Therefore, mental health screening and treatment needs to be given for new entry prisoners before they suffer from mental health problems.
- The study revealed that females are more prone to depression, anxiety and stress than their male counterparts. This can be due to the factor that females are living in the center with their children in a difficult condition. Therefore, better care is needed for female prisoners who live with their little children in the center.
- Awareness creation trainings including life skill and conflict resolution are also needed concerning the issue of mental health. Therefore, prison administrators have to collaborate with mental health professionals to combat the issue.
- The center has lack of sanitation, living rooms, recreation areas, vocational trainings, health facilities and the like. The cumulative effect of these needs may results in depression or stress. Therefore, the administration has to think on fulfilling such issues to help prisoners to stay mentally health.
- Training on mental health issues should be provided to all people involved in prisons including prison administrators, prison guards and health workers. Training should enhance staff understanding of mental disorders, raise awareness on human rights, challenge stigmatizing attitudes and encourage mental health promotion for both staff and prisoner.
- Future research is also needed to make clear to what extent the high psychiatric morbidity are causes, consequences or both of imprisonment. Further, research detailing the mental health care services currently available for prisoners should be undertaken and any disparity between mental health care needs and services should be investigated.

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