

**Prevalence and predictors of psychopathological symptoms among inmates in
Dilla correction centre, SNNPR, Ethiopia**

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Abstract

The study examined the prevalence rate of psychopathological symptoms among prison populations, and their link to gender, age, educational status, term of sentence, crime type and district administration. Totally, 420 participants were selected through multi-stage probability sampling techniques followed by student's t-test and logistic regressions were employed for data analysis. It was found that 48% (95%CI = -0.08, 0.05) of inmates had been experiencing psychopathological symptoms, which were not significantly different ($\alpha=0.05$, $p = 0.65$). Furthermore, a set of predictors could reliably distinguish between inmates with and without psychopathological symptoms ($\chi^2 = 145.913$, $p = 0.000$, $df = 5$). Thus, except for gender and age, other variables (i.e., educational status, crime type, length of sentences and district administration) were accurate in terms of predicting psychopathological symptoms. On this basis, inmates need greater assistance to become functioning members of society prior and/or later to incarcerations.

Keywords: Psychopathology, symptoms, predictors, inmates

Background

Mental and behavioural disorders account for a complex network to engage into offensive actions. Be it anxiety, substance abuse, personality disorders (i.e., psychopathic personality), schizophrenia, mood disorders, and/or or co-morbid cases. Several empirical evidences (e.g., Mateyoke-Scri, Webster, Hiller, Staton, & Eukefeld, 2003; Kinner, Dietze, Gouillou, & Alati, 2012) have shown that persons who pledge into crime more likely reported frequent medical history. However, over the past decade, reports have presented through scientific analysis on the presence of offensive actions, and mental illness among inmates, but there are scanty proofs on the growing nature of crimes and the status of psychopathological symptoms among them. Scholars indicate that there are diverse diagnostic estimates of persons with mental illness in jails (Fellner, 2006). For example, the findings showed that in America, 10 - 15 % (Oxelson, 2009), Great Britain over 90%

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(Birmingham, 2003) and South Africa 55.4% (Naidoo, & Mkize, 2012).

Similar finding (e.g., Hammersley, Forsyth, Morrison, & Davis, 1989) disclosed the relationship between substance abuse and offensive actions as to cocaine or opioids addictions are allied to criminal involvement, and risky and heavy drinking (e.g., Kinner *et al.*, 2012) and illegal drug users (e.g., Quinn, & Sneed, 2008; Wunsch, Nakamoto, Goswami, & Schnoll, 2007). These further showed that substance abuse is a deviant behaviour that usually co-occurs with other psychiatric illness or crime tendencies among families (Nagalakshmi, Kasarabada, Anglin, Stark, & Paredes, 2000). Another study showed that offenders with a history of victimization (e.g., criminals who already were victim of sexual assault) were more likely to commit assaultive violence than offenders never victimized (Silver, Felson, & Vaneseltine, 2008). Furthermore, persons charged with a serious offence such as homicide are frequently found to be suffering from severe depressive disorder at the time of breaching violence (Prins, 2005).

As can be understood from the above discussion points, crime, incarceration and mental disorders are directly related. That is, crime fallouts to incarceration, while incarceration effects to behavioural disorders. For example, in South Africa, over 70% of all offenders are currently incarcerated because of violent crimes and possibly they experience psychosocial problems (Loots, & Louw, 2011). The epidemiological evidence drained from other studies show that prisoners have experienced and continue to experience worse health problems than the general population (De Viggiani, 2006; Fazel, & Baillargeon, 2010; Ogloff, Tye, Blaher, & Thomas, 2011; James, & Glaze, 2006; Kinsler, & Saxman, 2007). Moreover, studies show the presence of several associations between psychological symptoms (i.e., anxiety, insomnia and substance abuse) with physical health problems (i.e., skin, respiratory and circulatory) among inmates (Eytan, Haller, Wolff, Cerutti, Sebo, Bertrand, & Niveau, 2010). The experiences of Eldoret correction centre in Kenya help to understand African reality as well; that means, substance abuse was predominant (66.1%) followed by alcohol (65.1%), cigarette (32.7%), cannabis (21%), amphetamines (9.4%), volatile inhalants (9.1%), sedatives (3.8%), tranquillizers (2.3%), cocaine (2.3%), and heroine (1.3%) (Kinyanjui, & Atwoli, 2013). Supplementary evidences (e.g., Houser, Belenko, & Brennan, 2012; Solomon, Campero, Llamas, & Sweetser, 2012; Oxelson, 2009; Kubiak, Boyd, Slayden, & Young, 2005) show that the risk of misconduct was higher for inmates with mental illness shared with a drug dependence disorder than for inmates with particular disorders.

Perception and practice regarding prisoners and their socio-emotional status had been crucial point of argument during the medieval period; in fact, it is continuing to clash with controversies even nowadays. Considering chronicles of diverse philosophers, historian and sociologist valuable contributions outlined against the existing statuesque on mental and behavioural health problems, antecedents and consequences. Notably, Ervin Goffman on Asylum, Foucault on Insanity in the Age of Reason, Heaton on Black Skin, White Coats and Fanon on The Wretched of the Earth are worthy mentioned.

Ervin Goffman have been one of the leading medical sociologist contributed remarkable accomplishments for the global society in his seminal works such as "Asylum" and "stigma" (Foucault, 1971; Weinstein, 1982; Stark, 1998). He explicated about the growing use of bureaucratically organized social environment such as prison (Harcourt, 2005) causes stigmatization and labelling which in turn impacts negatively on the wellbeing of inmates. Indeed, Goffman denotes

prison as a form of total institution that operates based on psychiatric perspective which forcibly admits “criminals” to mortify the self through physical and psychological abuse before adjustment and recovery processes (Goffman, 1961; Weinstein, 1982). Admittedly, the condition of labelling and stigmatization becomes more terrifying especially for inmates with psychiatric cases and it is like double jumper (that is, inmate plus psychiatric problem). Thus, labelling, institutionalism and stigmatization can be powerful constituents that show the interface between inmates and the hierarchies of prison administration (Goffman, 1961); yet organizing safe and secured environment that dignifies the inherent nature of human being is required.

Another classical view suggested by French philosopher and historian, Foucault, remarkably discussed about confinement (in this study prison) as hosting niche for persons with mental and behavioural difficulties in his work entitled as ‘‘A History of Insanity in the Age of Reason’’. The argument and critiques of Michel Foucault embeds to the practice of confinement (the operation of prison administration), the way how persons in confinements were perceived and how psychiatric cases were defined (Foucault, 1971). In his critique, confinement mistakenly defined (that is, socially constructed) as a place where for persons with mental and behavioural difficulties were hosted, and that any person who cross the gate of confinement also considered as ‘‘insane’’ (Foucault, 1971; Stark, 1998). Moreover, he reflected the malpractices exercised on persons under legal custody as subject to different kinds of right abuse and treated as animals (Foucault, 1971; Hunton, 2011).

The Western perceptions and practices regarding persons with mental illnesses and the then statuesque have been discussed and elaborated in the above sections. So, the case in Africa also poses intellectual dialogues to find out appropriate environment for persons with mental and behavioural challenges. Mathew Heaton (Jones, 2013) is one of African mental health scholar discussed psychiatry in his classical work entitled as ‘‘Black Skin, White Coats’’. Heaton argues there is a need of decolonizing from foreign driven practices and globalizing African mental health knowledge for the rest of the world (Jones, 2013; Ibrahim & Morrow, 2015). That is the reason Heaton’s strong intellectual critique forwarded to African mental health workers who lost their identity in the understanding and treatment of mental health problems for African people. Because they do have the knowhow that Africa has a lot of transnational medical knowledge (Sorsdahl, Flisher, & Stein, 2010) and that they have to have sharp mentality to use them in the prevention and treatment of mental and behavioural health problems in Africa. The fundamental suggestion Heaton wanted to convey in his essay Africa has its own cross-cultural indigenous knowledge and that to be transformed (Sorsdahl *et al.*, 2010; Jones, 2013; Monteiro & Balogun, 2013; Ude, 2015) to treat mental health challenges across the continent. In line to this view scholars had better to explore, validate, and integrate the traditional knowledge with other forms of treatment options to promote at the international level. Indeed, with this understanding due to multiple factors prison population as special population probably experience different types of mental and behavioural health problems. As a result, African health workers come together using home grown knowledge and practices in the area of social psychiatry; for example, enhancing the communal/supportive and caring traditional assets of Africa (Kebede, Alemayehu, Binyam, & Yunis, 2006) to intervene to the mental health problems among prison population.

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Frantz Fanon another classical scholar linked mental health problems in Africa with the impact of colonialism within his work of "The Wretched of the Earth" (Fanon, 1963; Ehiemua, 2013). In fact, the twentieth century had been remarkable periods for African nations and that many of them were resisting the colonialists for the purpose of long lasting liberation and enlightenment. However, the movements disproportionately accompanied by vast bloodshed and life losses to African side. In addition to Fanon stressed on the impacts of colonial oppressions, revolutions, and violence were eliciting mental and behavioural aches among the natives (Fanon, 1963). Namely, war and terror induced traumatic stress disorders, insomnia, sexual disorders, depression, homicide and other forms of psychiatric disorders were commonly distressing the societies struggling for freedom. The idea is, colonialism is past events, but has long lasting effect disapprovingly shaping the psychology of Africans (that is, through reducing self-concept, self-esteem and self-confidence). Evidently the "self-concept" issue stated under Fanon's his own work "Black skin, White Mask" and Heaton's work "Black skin, White coat" on how African born psychiatrists were behaving differently from their inherent identity (Fanon, 1963).

Fanon was living from 1925-1961 and he knows very well about freedom movements in Africa at that time, yet the world (especially Africa) today is facing another form of colonialism; that is, *colonization by globalization* which is totally obscure for African people to find out its contributions. This can easily be noticed from disproportionate flow of information from Africa to the rest of the world and vice versa. In plain sense, African gates are open for foreign life styles (e.g., individualism), deconstructive behaviours (e.g., homosexuality and drug abuse) and dysfunctional thoughts (e.g., crime prone thoughts) that are quite contrary to African traditions. As a result, the battle is continuing, yet not by pistol, sharp sword and shield rather enlightened and transformed mentality that Africans wisely choose and integrate relevant and productive experiences without self mutilation. In conclusion, if the argument is mental health problems and criminal conducts at certain point are the impacts of colonization and globalization, African nations have to orient and sensitize citizens consistently to decolonize themselves from past colonization trauma and present globalization syndrome.

With the backdrop of the above discussions (that is, the presence of personal, social, systemic, and historic factors that elicit mental and behavioural challenges among inmates) the current study attempts to observe whether the rate of psychopathological symptoms show difference in terms of gender, age, educational status, term of sentence, and the weight and nature of crime. This is because there has been discussed that the impact of long term sentence can be easily observed from the dependence on institutional structure and contingencies, hyper - vigilance, interpersonal distrust and suspicion, emotional over-control, alienation or psychological distancing, incorporating of exploitative norms of prison culture, diminished sense of self-worth and personal value, and post-traumatic stress reactions (Haney,2002). In other studies considering age and educational level, younger and less educated inmates tend to more frequently experience psychopathological symptoms than adult inmates (Silver *et al.*, 2008; Kinyanjui, & Atwoli, 2013; Imai, & Krishna, 2004). From crime weight perspective, offenders with heavy crimes like killing and waiting for death row reported high psychiatric illnesses (Cunningham, & Vigen, 2002). Gender comparison shows that female inmates have been to exhibit remarkable amount of psychopathological disorders than male offenders

(Johanson, & Debrzanska, 2005). Thus, on the basis of the above discussions, the study aimed to achieve the following objectives.

1. To examine the prevalence rate of psychopathological symptoms among inmates in Dilla correction centre, and;
2. To find out whether gender, age, district, educational status, term of sentence and crime type predict psychopathological symptoms.

Method

Participants and sampling techniques

In the study, 420 randomly selected inmates (i.e., 384 males and 36 females) have participated. The study population included people who were sentenced to at least a month period of time to life long. They accounted for 727 (i.e., 667 male and 60 females). The total number of sample size was 422. The figure was computed based on the formula proposed for single population proportion (Hollander, Wolfe, & Chicken, 1999). The value of ‘p’ was taken as 50% due to the absence of previous findings indicating the prevalence rate of psychopathological symptoms. The Z-value of 1.96 was used at 95% Confidence Interval with margin error was 5%. Accordingly, the sample size (n) of the study was calculated as follows,

Figure-1: **Sample**

$$n = \frac{Z^2 p (1-p)}{d^2} = \frac{(1.96)^2 \times 0.50 \times (0.50)}{(0.05)^2} = 384$$

determination

Where ‘n’= sample size, ‘p’=proportion, and ‘d’= margin of error. Also, to manage response set 10% added to the sample size (i.e., 38 inmates); then, the total sample size became 422. Multi-stage sampling (i.e., stratified, systematic and simple random sampling techniques) was employed to randomize the sample selection. The proportion of the sample (p) = n/N where, n = sample size and N = population size, $P = n/N = 422/727 = 0.58$. To refer, 0.58 proportions were included from each stratum, bearing in mind term of sentence as a criterion to owe strata. Further elaboration is denoting population size and the number of proportion drawn from each stratum outlined in the following figure.

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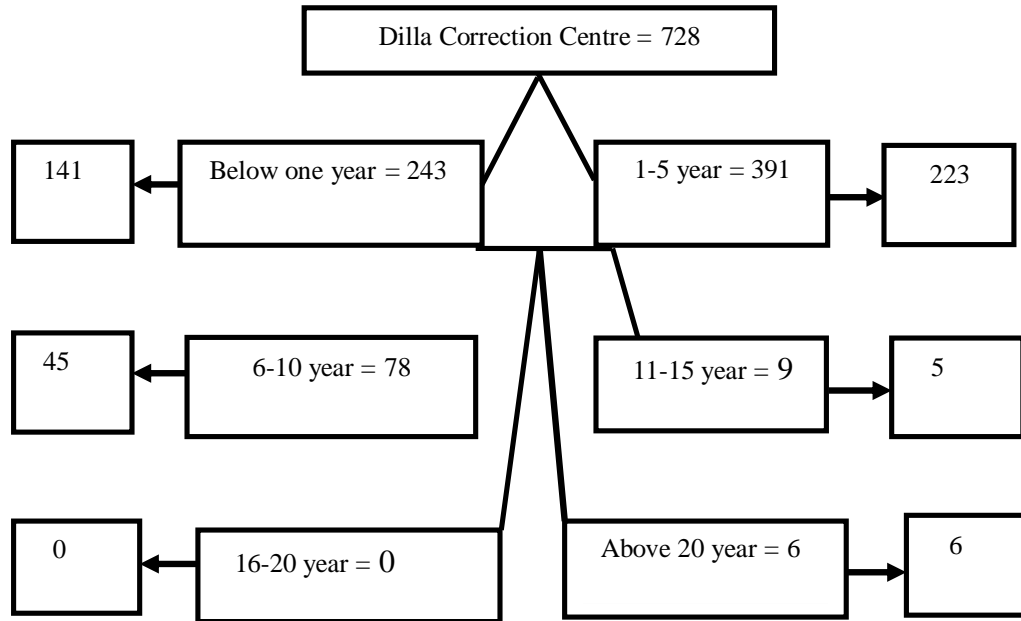


Figure - 2: Sampling frame

Research design and instrumentation

A cross-sectional descriptive survey design has been employed through operating questionnaire as data gathering instrument. CORE-OM psychopathological questionnaire (Barkham, Gilbert, Connell, Marshall, & Twigg, 2005) was modified and utilized because it has been widely used in clinical practice to assess psychological problems. The total number of the items was 29 (modified statements from 34 CORE-OM survey items). These items illicit feelings and behaviours related to mental and behaviour distress. In other words, the respondents were asked to check how often they feel or behave that way over the previous week on a five-point scale (i.e., 1 = never, 2 = twice or once in six month, 3 = twice or once in a month, 4 = twice or once in a week or 5 = daily). Sets of items within the questionnaire relate to overall “subjective wellbeing” (4 items), psychological “problems” (12 items), daily “functioning” (12 items) and “risk” to self and others (6 items).

CORE-OM items have been adapted in order to contextualize the items with the norm group characteristics. Studies show that type, language, format and magnitude of research problems likely vary across social and cultural background of individuals (Harkness, 2010). Similarly, measures of such variables essentially vary either developing new measures or adapting existing instruments, which help to address issues of reliability and validity (Rattray, & Jones, 2007; Tavakol, & Dennick, 2011). Two procedures were performed to generate quality and appropriate items through the initial pilot test with 100 inmates. First, qualitative evaluation (i.e., triangulation) was made between three

psychologists assessing the contents, organizations and languages. Second, quantitative analysis was made through, (1) reliability analysis to ensure how far a group of items measures the construct properly or to know about the extent to which the group of items did have internal consistency (2) item analysis to find out how far each item was qualified to measure the construct in similar way to the rest of the items (Rattray, & Jones, 2007). Reliability analysis was ensured through Chronbach alpha (Tavakol, & Dennick, 2011), while item analysis was computed through item-to-total analysis. From the reliability analysis Chronbach alpha $\alpha = 0.76$. From item analysis, the items with correlation coefficient $r = 0.4$ and above were accepted automatically; however, items with correlation coefficient between $r = 0.2$ and 0.4 were improved qualitatively. The remaining items, five items, with correlation coefficient $r \leq 0.2$ were excluded from the collection of CORE-OM questionnaire. Finally, through these procedures 29 items were generated and included in the final survey. A high score labelled as the presence of behavioural distress: an individual who scored greater or equal to the average considered as “unwell”, while below the average “well”.

Method of data analysis

Single sample independent student's t-test helped to compare the two means (i.e., proportions). The first proportion was theoretically set level of mental and behavioural distresses, while the other one was the observed proportion of psychopathological symptoms among the prisoners. Moreover, logistic Regression Model was used to test the dependent variable (psychopathological symptoms) against five independent categorical variables (i.e., gender, age, educational level, district, crime type and term of sentence). Moreover, another continuous variable (i.e., age) was involved to set inmates with psychopathological symptoms. Age has been reflected to validate, if psychopathological symptoms vary across the maturity level of prisoners, while sex was instrumented to cross – check the level of psychopathological symptoms among male and female prisoners. The other variable, educational level, similar to the age of the participant, has been painstaking to underpin the level of psychopathological symptoms with changing age variable. Complementing, districts were taken into account because it was supposed that those variables might affect the prisoner's access and availability of information in the prison to fight against psychosocial distresses. Also, it has supported to check whether the level of psychopathological symptoms differ across geographic and social contexts. Logistic regression was preferred since it was inherently appropriate for the reason that the dependent variable has a dichotomy (i.e., two categories) and suited for epidemiological studies. Further assumptions that, for example, suited for the non-linear relationship between the dependent and independent variables were also considered.

Ethical issue

Ethical issue had been addressed through the consent ensured from the research participants through a deal stimulated by a psychologist working in that correction centre. Thus, all of the participants were volunteers who were informed fully of the requirements of the study.

Results

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Participants' background

As stated earlier, four demographic variables (i.e., age, gender, educational status and district or the area where prisoners came from) have been used to gather the relevant data. Below, participants' background was described.

Table-1: Participants' background

Age	N	%	Gender	N	%	Educational status	N	%	District	N	%
15-20	133	31.67	Male	384	91.43	Illiterate	27	6.43	Gedeo	296	70.48
21-30	187	44.52				Grade 1-6	194	46.19	Sidama	18	4.29
31-40	61	14.52				Grade 7 - 8	32	7.63	Segen	83	19.76
41-59	34	8.10				Grade 9 -10	109	25.95	Oromiya	14	3.33
> 60	5	1.19				Grade 11-12	29	6.90	Wolaita	9	2.14
						> grade 12	29	6.90			
Total	420	100		420	100		420	100		420	100

As indicated in the above table, the majority of inmates are under 21-30 (i.e., 44.52%), followed by 15-20 (i.e., 31.67). The finding shows that the majority of offenders are under the age of adolescent, early adulthood and middle adulthood stage. This has a huge implication for rehabilitation workers, counsellors, policy makers and parents to be conscious about this age group whether to conduct prevention and intervention programs of crime as well as supporting rehabilitation schemes within prison environment. Furthermore, it entails, identifying ‘‘crime age’’ which becomes wise decision to embed holistic approach to the development of inmates' career life. Obviously, the gender proportion showed that males (384, 91.43%) surpass female offenders. Furthermore, 194 (i.e., 46.19%), were from grade 1-6 (i.e., primary school) followed by grade 9

and 10 (i.e., high school). The rest of inmates fairly came from grade 7 and 8, grade 11 and 12, above grade 12 and the non-educated. It has more implication to consider inmates with low educational background in the psychiatric services. In terms of prisoners' district, the majority of them were from Gedeo Zone (i.e., Kochre woreda, Yirga Chefe, Bule and so forth) which constituted, 296 (i.e., 70.48%) followed by Segen area people (i.e., Amaro, Burji, Konso and Derashe) owing 83 (i.e., 19.76%). It would be better still to focus on crime prone areas for better crime prevention, community resilience and organization of safe environment.

Prevalence of psychopathological symptoms

As indicated in the introduction section, one of the objectives of this study is to examine the prevalence of psychopathological symptoms of the inmates; and to that end, relevant data were collected. Data dichotomization helped to ensure separating inmates with psychopathological symptoms from the non- symptomatic inmates. Coding '1' for the presence, while '0' for the absence generated the ultimate result, and helped make to comparison with the theoretical value.

Table-2: Prevalence rate of psychopathology

N	mean	D	SE	Test Value = 0.50						
420		0.50	0.033						95% CI	
				t	f	g.	mean (-)	Lower	Upper	
				-0.458	419	0.65	-0.015	-0.08	0.05	

In table-2, the proportion of the prisoners who experienced psychopathological symptoms has sample mean 0.48 on the p-value for the test 0.65. As can be seen from the table, the p-value 0.65, was greater than the significance level, $\alpha = 0.05$. Hence, there was no evidence to conclude as statistically significant difference between the theoretical point of psychopathological symptoms and the observed value at 5% significance level; therefore, the null hypothesis was accepted, $p = 0.50$. In plain understanding, there was evidence to conclude as the rate of psychopathological symptoms was 48%, 95%CI (-0.08, 0.05).

Predictors of psychopathological symptoms

Six variables were considered to predict the effect on the psychopathological symptoms among the participants. Logistic regression helped to scrutinize the effect of these variables.

Table-3: Omnibus Tests of Model Coefficients

Chi-square	df	Sig.
145.913	5	.000
145.913	5	.000

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145.913 5 000

Table-3 shows that chi-square model was statistically significant with $p < 0.001$. In other words, all the variables had significant effect on the level of psychopathological symptoms.

Table-4: Variables in the Equation

	<i>B</i>	<i>Wald</i>	<i>p</i>	<i>Odds Ratio</i>	<i>95% C.I.</i>	
					<i>Lower</i>	<i>Upper</i>
<i>Gender</i>	.063	.271	.603	.939	.741	1.190
<i>Age</i>	.02	.04	.478	1.002	.96	1.009
Duration						
1-6	.615	0.133	.001***	1.849	1.266	2.699
7-8	.715	4.575	.000***	2.044	1.416	2.951
9-10	.166	1.210	.271	1.180	.879	1.585
11-12	.115	.551	.458	.891	.657	1.208
13-15	.816	6.138	.000***	.442	.297	.658
16-18	.214	1.241	.265	.808	.554	1.176
Attack type						
Physical	1.274	8.091	.000***	.280	.211	.371
Sexual & robbery	.456	4.586	.000***	.634	.501	.801
Verbal attack	1.002	0.253	.000***	.367	.278	.484
Physical assault	.248	3.050	.081	.780	.591	1.031
Emotional attack	.305	1.003	.045*	.737	.547	.994
Time to sentence						
1-3 years	.546	1.296	.255	1.726	.675	4.413
4-6 years	.782	2.703	.100	2.186	.860	5.553
7-9 years	.318	.430	.512	1.375	.531	3.558
10-12 years						
13-15 years	.305	.796	.372	1.356	.695	2.647
Ethnicity						
Afar	.882	5.778	.016*	2.416	1.177	4.960
Sidama	.749	1.663	.031*	2.115	1.072	4.175
Oromiya	.748	3.813	.051	2.112	.997	4.474
Wolaita	.227	.249	.618	.797	.326	1.946

* $p < 0.05$, *** $p \leq 0.0001$

Table – 4 describes the amount of each variable contributing to the success of the model (Wald), the significance level and the odd ratio. It was found that all of the variables impacted changes in

the psychopathological level of inmates except gender and age. That means, educational status: illiterate with odds (OR = 1.849, 95%CI = 1.266, 2.699), grade 1-6 (OR = 2.044, 95%CI = 1.416, 2.951), and grade 11-12 (OR = 0.442, 95%CI = 0.297, 0.658). Concerning crime type, almost all kinds of crime conveyed psychopathological symptoms. In description, murder with odds (OR = 0.280, 95%CI = 0.211, 0.371), theft and robbery (OR = 0.634, 95%CI = 0.501, 0.801), physical attack (OR = 0.367, 95%CI = 0.278, 0.484) and emotional attack (OR = 0.737, 95%CI = 0.547, 0.994). Regarding term of sentence, prisoners who have been sentenced to more than 10 years have reported with relatively high psychopathological symptoms with odds (OR = 9.261, 95%CI = 3.031, 28,300). In terms of district administration as predictor variable, inmates from Sidama area tend to be more likely experience psychopathological symptoms (OR = 2.416, 95%CI = 1.177, 4.960), and from Segen area (OR = 2.115, 95%CI = 1.072, 4.175).

Discussion

The finding of this study generated statistically not different result between theoretically estimated values and the observed value which ensures that the prisoners' experiences psychopathological symptoms. This might be due to the factors that ingrained into the personality of the prisoners; for example, the social stigma and discrimination that the prisoners gripped and likely to experience anguish, the guilt feeling for the offensive actions, lack of social support, and failing to adapt prison environment (i.e., rules and regulations, the guards' behaviours, the excessive number of crowed in a room). Although this study indicates the gross magnitude of the problem, within the CORE-OM measure diverse category of psychiatric disorders have been addressed. Thus, the findings are consistently related to other previous studies (e.g., Oxelson, 2009; Birmingham, 2003; De Viggiani, 2006; Fazel, & Baillargeon, 2010; Ogloff *et al.*, 2011; Kinsler, & Saxman, 2007; Kinyanjui, & Atwoli, 2013; Solomon, 2013; Kubiak, 2005).

The relationship between the educational status of the prisoners and the level of psychopathological symptoms showed a remarkable result. That is to say that prisoner who were illiterate, grade 1-6 and grade 11-12 demonstrated more psychopathological symptoms than grade 7-8, grade 9-10 and above grade 12. Probably illiterate and prisoners from the lower educational level tended to possess less coping skills, perceive life as black or white, and not as much of socially interactive. Moreover, the illiterates and prisoners with low academic background are prone to expose themselves to substance abuse and acquire new foreign behaviours from the fellow prisoners. This might be due to the difference in cognitive skills to judge desirable behaviours from non-desirable behaviours (e.g., Silver *et al.*, 2008; Kinyanjui, & Atwoli, 2013; Imai, & Krishna, 2004). This study generated quite differing findings from a study conducted by other scholars; for example, (Kinyanjui, & Atwoli, 2013) and argued psychopathological symptoms more likely prevalent among educated inmates than the non-educated.

Crimes such as killing, theft and robbery, physical and emotional attacks predicted psychopathological symptoms. Although the reason criminals who committed such kind of offenses are vulnerable to psychopathological symptoms remains open for further studies, the basic idea lies behind to the trauma load inducing power of the offenses. Crimes such as killing and theft

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were more probably induced to severe psychological shock than the rest; induce more guilt feeling than the rest and result more social stigma and discrimination than the rest (Cunningham, & Vigen, 2002). District as predictor variable, inmates from Sidama and Segen areas reported relatively high level of psychopathological symptoms. This finding shows the status of mental and behavioural disorders even subject to individuals' geographic and social differences. In other words, in some societies committing a crime and being jailed for the dues that the person committed of its own is seen as curse and a means of disgrace from the society. This, in turn, breeds guilt feeling, self-hatred, and stress born physical complaints. Moreover, the social values more likely allow to outcast such persons and the prisoners likely imagine and foresee the coming post-prison life, with whom and how they can live through overcoming the stigmatic and discriminatory treatments. With regard to term sentence as predictor variable, inmates who have been sentenced to more than 10 years conveyed significant psychopathological symptoms. This indicates that the more the prisoners stay in prison the more the probability of developing mental and behavioural illness which is not marginal. This might be attributed to prisoners' tendency to more likely feel that they are totally detached from the external social and physical world and observe themselves as born to be imprisoned. The other reason likely to be, as many scholars stated, prison environment across the world has poor quality in terms of crowd and shabby physical setting, ridged and despotic rules and regulations, and the broken and closed interpersonal relationships possibly to escalate the vulnerability to experience psychopathological symptoms.

Conclusion

According to the evidence gained from this study, as 48% of prisoners' experience the symptoms of psychopathology offer inputs to counsellors, social workers, health professionals, psychiatrists, legal protectors and other authorities who are determined to reduce crime through improving mental and behavioural wellbeing of prisoners. The existing inadequate scholarly activities with very few motivated researchers attempting to disclose the presence of psychological disorders further requires to be strengthened. Besides, prevention and intervention programs essentially to be evidence based and consider the gender, term of sentences, age, crime type, district administration, and educational status of prisoners.

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