



Research Article

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Co-Morbid Physical Illness among Depressed Prisoners in a Nigerian Prison Population



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Abstract

Objective: Physical illness and depressive symptoms frequently co-occur, with a complex relationship between the two. The aim of this study is to determine the prevalence and association of depression with physical illness in prisoners (awaiting trial and convicted) at a maximum security prison.

Materials and Method: A total of 655 participants both awaiting trial and those already convicted for their offences at the Jos maximum security prison in Plateau state Nigeria were assessed for Depression and physical illness based on the World Health Organization International Classification of Diseases - 10 diagnostic criteria. Pulses profile was used to evaluate physical and functional disabilities for participants with evidence of physical comorbidity.

Results: One hundred and twenty (18.3%) of the participants studied had depression. Thirty six (30%) of the depressed participants had a comorbid physical illness with a statistically significant association found between depression and comorbid physical illness in the participants ($p = 0.001$) (OR=3.16).

Conclusion: Moderate rate of depression was found among participants with a statistically significant relationship between comorbid physical illness and depressive disorder. This is a cause of concern because this can affect their adherence to medication and increase morbidity and mortality in this group of individuals.

Keywords: Comorbid physical illness; Depression; Prison inmates; Relationship; Prevalence

Introduction

Depression frequently co-occurs with physical illness such as cardiovascular illness, infectious diseases or cancer which leads to disproportionately increased disability especially among prisoners [1]. The two conditions have separate but additive effects on well-being of sufferers as they may cause poor adherence to treatment. For instance depression and cardiovascular disorders in combination can result in twice the reduction of social interaction than either of the conditions alone. According to Goldberg, chronic physical illness and depression have a reciprocal relationship. Goldberg reported that many chronic physical illnesses not only cause elevated rates of depression, but depression has been reported to antedate chronic physical illnesses [2]. Hence, depression among physically ill individuals is more likely to be missed by professionals than if it occurs alone [2].

Several studies around the world have reported the co-occurrence of psychiatric disorders generally and co-morbid physical illnesses in the prison population. A study of 557 adult prisoners found affective disorder to be positively related to respiratory, gastrointestinal and musculoskeletal system disorder [3]. In the United Kingdom a study among geriatric inmates found depression among half of the studied subjects with physical illness common among them [4]. A similar study among geriatric inmates found a strong relationship between unmet physical health needs and clinical symptoms of depression in the sample studied [5]. In Nigeria Agbahowe studied convicted inmates and found depression in 4% with gastrointestinal system disorder the commonest physical illness [6]. Studies in Calabar and Jos Nigeria among prisoners reported significant relationships between psychiatric morbidity and

comorbid physical illness [7,8]. However, these studies were not specific to depression. A study also in Nigeria showed that untreated depression among prisoners is increasingly becoming a public health problem and therefore intervention is necessary even though the study did not relate depression to physical comorbidity [9].

This study aimed at determining the relationship between depression and comorbid physical illness which to the knowledge of the authors is the first of such studies from a Nigerian prison population.

Materials and Method

Participants

The study was part of a comprehensive prospective cross-sectional study conducted at the Jos maximum security prison, Plateau state Nigeria from June 2015 to November 2015. Six hundred and fifty five adult male inmates (awaiting trial and convicted) were involved in the study. The study was approved by the Jos University Teaching Hospital (JUTH) Human and Research Ethics Committee and is consistent with the Declaration of Helsinki (JUTH/DCS/ADM/127/XIX/2758). All participants provided informed signed or thumb printed consent before participating in the study. Data were collected by the researchers who are fluent in the two major languages spoken by the participants (English, Hausa or both languages). Participants who were literate enough filled out their questionnaires. The questionnaires were translated for participants who were unable to speak English. This was done on every working day until all the eligible inmates were interviewed. A total of 655 participants were interviewed and had their complete demographics, clinical and forensic data entered for analysis. The data was collected in two stages as follows:

Sociodemographic, Forensic Data and Screening for Depression

In the first stage, each consecutive participant was administered the socio-demographic (for data such as age, educational status etc.), forensic data questionnaire (prison status, type of offence among others) and the General Health Questionnaire-28 (GHQ-28) screening instrument. The GHQ-28 is a self-administered screening instrument which was given to all the participants. It was designed to cover four identifiable areas of distress: depression, anxiety, social impairment and hypochondrias is. It is used as a screening instrument for mental disorders following which the diagnosis is confirmed with a more specific instrument.

Diagnosis of Depression

In the second stage, participants with GHQ-28 score of four (4) and above were administered the Depressive module of Composite International Diagnostic Interview (CIDI) which took the form of a clinical interview. Thus, all participants with GHQ-28 score of at least 4 were therefore administered the CIDI to

assess for depression. Those who fulfilled the ICD-10 diagnostic criteria were assigned a diagnosis of depressive disorder.

Physical illness

History and detailed physical examination was carried out on inmates. Inmates with evidence of physical co-morbid illnesses were classified under the broad categories of which ICD 10. Assessment was carried out by the researchers three of which are consultant psychiatrist.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS) version 20.0 software package was used to analyse the data. Non-parametric statistic test was Used to analyse the data because it was categorical. Simple descriptive analysis was use to summarize sociodemographic variable using frequency count and percentage. The chi-square test was used to investigate the relationship between depression and comorbid physical illness and the value of $p < 0.05$ was considered statistically significant.

Results

All the subjects studied were male, with 52% within the age group of 25-34years and a mean age of 32.1 ± 10.6 years. Two hundred and three (55.5%) were single, 33.9% married while 0.5% were widowed. Almost half of the studied subjects (46%) had some form of secondary with 23% having no formal education in Table 1. More than half (56.8%) of the studied subjects were unemployed before incarceration, while 16.4% were students in Table 1. Depression was found in 120 (18.3%) of the participants in Table 2. Thirty-six (30%) of the depressed participants had comorbid physical illness with cardiovascular disease as the commonest physical comorbidity found in 9 (25%) of the participants in Table 3. A statistically significant relationship was established between depression and physical comorbidity in the studies ($p = 0.001$) ($OR = 3.16$) participants in Table 4.

Table 1: Demographic characteristics of participants.

Demographic characteristics	Frequency	Percentage (%)
Gender		
Male	655	100.0
Female	-	-
Employment status		
Unemployed	304	56.8
Employed	158	24.3
Student	114	16.4
Retiree	2	0.3
Apprentice	71	10.9
Educational level		
Non-formal	115	23.0
Primary	147	22.4
Secondary	305	46.0

Tertiary	88	13.4
Religion		
Christianity	424	64.7
Islam	231	35.3
Marital status		
Married	220	33.9
Separated	89	13.6
Never marry	346	52.8
Age group		
15-24	142	21.7
25-34	314	47.9
35-44	123	18.8
45-54	39	6.0
≥55	37	5.6

Table 2: Prevalence of depressive disorder among participants

Status of depression	Number	Percentage (%)
Yes	120	18.3
No	535	81.7
Total	655	100.0

Prevalence of depression was found among 120 (18.3%) participants.

Table 3: Prevalence of co-morbid physical illness among depressed participants.

Co-morbid physical illness	Frequency	Percentage (%)
Musculoskeletal system	3	8.3
Respiratory system	7	19.4
Cardiovascular system	9	25.0
Respiratory/Cardiovascular systems	1*	2.8
Infectious diseases	5	13.9
Diseases of the eye	4	11.1
Disease of the ear & Mastoid process	4	11.1
Endocrine system	3	8.3
Total	36	100

*One subject had both respiratory and cardiovascular system disorders

Table 4: Relationship between physical comorbidity and depression in participants.

Co-morbidity	Depression N (%)		χ ²	df	P	OR (95% C.I.)
	Yes	No				
Yes	36(30.0)	63(11.8)	25.373	1	0.001	3.16 (1.82-5.49)
No	84(70.0)	472(88.2)				
Total	120(18.3)	535(81.7)				

Key: N = Number and (%) = percentage

Physical comorbidity was statistically significantly associated with depression (P<0.001) (OR=3.16)

Discussion

In this study depression was found in less than a quarter (18.3%) of the participants studied. This is slightly above the values gotten in most studies done in prisons (4 - 17.9%) [10-13]. The variation might be because of the different types of questionnaires used in the studies. Also rates seem to be underestimated if interview is administered by lay investigators. Most of the subjects were either unemployed, retired or apprentice before incarceration and poverty has been found as a major risk factor for depression [14].

Findings from recent studies indicate that the prevalence of mental illness is generally higher in prisons than in the community and comorbidity is common [15]. The study found 18.3% of the depressed prisoners had comorbid physical illnesses with strong association found between depression and comorbid physical illnesses (p <0.001) (OR=3.16) Patients with physical illnesses especially chronic ones have a high prevalence of depression due to the decreased ability to function as seen in many chronic illnesses [16]. Pain is a symptom seen in many chronic illnesses. Pain and depression have been found to share common biological and neurotransmitter pathways hence the strong association [17]. About 50-54% of patients with chronic pain have depression [18]. Depression reduces pain threshold, increases pain ratings, leading to significant autonomic hyperactivity, increased muscle tension, insomnia and anxiety [18]. The presence of pain however negatively affects the recognition and treatment of depression [17]. It is therefore important that individuals with chronic medical conditions in the prisons are regularly assessed for depression because the presence of this comorbidity has been found to be linked with 50% increase in medical expenses for chronic medical illness, and worse treatment outcomes have also been found in these individuals [16,17].

Among depressed patients in the study, the most frequent comorbid physical illness was due to diseases of the cardiovascular system, respiratory system, infectious diseases, and endocrine system. This is not surprising as this fact has been established in previous studies. For example depression has been found to be a strong independent risk factor for myocardial infarction, fatal and non-fatal cardiac events and treatment of depression has been found to improve compliance with cardiac regimens and improved global functioning in such patients [19]. Also the odd of developing depression is two times greater in diabetics than non-diabetic patients [20]. Patients with depression and diabetes have a higher rate of insulin resistance, obesity, sexual dysfunction and peripheral neuropathy and treatment of depression is associated with improved glycaemic control [19-20].

Recommendation

The liaison with the forensic psychiatry team should be strengthened for continuous provision of expert services to the

prison inmates for early detection and treatment of psychiatric disorders especially depression among physically ill inmates to enhance well-being of affected prisoners. Training and retraining of prison clinical staff for early detection of depression and other psychiatric disorders among prisoner should be fostered.

Conclusion

In conclusion, our study found depression to be positively associated with physical illness in adult male inmates. The findings in this study support the fact that depression is found as a comorbidity with other physical illnesses in the prison. Since the presence of depression can affect the course and outcome of physical illness, it is therefore important that the condition be recognized and managed so as to improve overall functioning and general health of the patients. Because recognition of depression in patients with physical health problems might be difficult it is important that the prison services work in close association with psychiatrists. This will in the long run be more cost effective in managing the overall health of the inmates thus improving their functioning and quality of life.

References

1. Sartorius N (2009) Comorbidity of mental and physical illness: a major challenge. Retrieved from: mental health 25(2): 68-69.
2. Goldberg D (2010) The detection and treatment of depression in the physically ill. World Psychiatry 9(1): 16-20.
3. Butler T, Andrews G, Allnutt S, Sakashita C, Smith NE, et al. (2006) Mental disorders in Australian prisoners: A comparison with a community sample. Australian/New Zealand Journal of psychiatry 40(3): 272-276.
4. O'Hara K, Forsyth K, Shaw J (2016) Links between depressive symptoms and unmet health and social care needs among older prisoners. Age and Ageing 45(1): 158-163.
5. Kingston P, Le Mesurier N, Yorston G, Wardle S, Health L (2011) Psychiatric morbidity in older prisoners: unrecognized and undertreated. International Psycho geriatric 23(8):1354-1360.
6. Agbahowe S A (1996) Psychiatric morbidity in a Nigerian prison community, unpublished fellowship thesis submitted to the West Africa College of Physicians.
7. Agboola A (2006) A study of psychiatric and co-morbid physical illness among inmates in Calabar prison. An unpublished fellowship thesis submitted to the We Africa College of Physicians.
8. Armia'u AY, Audu MD, Obembe A, Adole O, Umar MU (2013) A study of psychiatric morbidity and comorbid physical illness among convicted and awaiting trial inmates in Jos prison. Journal of Forensic and Legal Medicine 20(8): 1048-1051.
9. Nwaopara U, Stanley P (2015) Prevalence of Depression in Port Harcourt Prison. J Psychiatry 18: 340.
10. Fazel S (2002) Serious mental disorders in 23,000 prisoners; A systematic review. The Lancet 359(9306): 545-550.
11. Falissard B, Loze JY, Gasquet I, Duburc A, Beaurepaire C, et al. (2006) Prevalence of mental disorders in a French prison for men. BMC Psychology 6: 33.
12. Fazel S, Seewald k (2012) Severe mental illness in 33,588 prisoners worldwide; a systematic review and meta regression analysis. British Journal of Psychiatry 200 (5): 364-373.
13. Kessler RC, Berglund P, Demler O, Jin R, Koretz O, et al. (2003) The epidemiology of major depressive disorder. Result from the national comorbidity survey replication. JAMA 289(23): 3095-3105.
14. Riolo AS, Nguyen TA, Greden JF, King CA (2005) Prevalence of depression by race/ ethnicity; findings from the national health and nutrition examination survey III. American Journal of Public Health 95(6): 998-1000.
15. Diamond PM, Wang EW, Holzer III CE, Thomas C, Cruser A (2001) The prevalence of mental illness in prison. Administration and policy in mental health services 29(1): 21-40.
16. Kanston JW (2003) Clinical and health services relationship between major depression, depressive symptoms and general medical illness. Biological psychiatry 54(3): 216-226.
17. Blair J, Robinson RL, Katon W, Kroenke K (2003) Depression and pain comorbidity. A literature review. Archives of Internal Medicine 163(20): 2433-2445.
18. Koike AK, Unutzer J, Wells KB (2002) Improving medical care for depression in patients with comorbid medical illness. American Journal of Psychiatry 159(10): 1738-1745.
19. Proctor EK, Morrow-Howell NL, Rubin EH, Thompson S, Hong L (2003) Comorbid medical conditions among depressed elderly patients discharged home after acute psychiatric care. Am J Geriatr Psychiatry 11: 329-338.
20. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ (2001) Prevalence of comorbid depression in adults with diabetes mellitus; a meta-analysis. Diabetes care 24(6): 1069-1078.



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