ORIGINAL ARTICLE

Prevalence and Socio-Demographic Correlates for Mental Illness Among Inmates at Lusaka Central Prison, Zambia

Mweene Tembalami Nseluke[1], S Siziya[2*]

[1] *Clinical Care Department, Chainama Hills College Hospital, Lusaka, Zambia*
[2] *Public Health Unit, Clinical Sciences Department, School of Medicine, The Copperbelt University, Ndola, Zambia*

ABSTRACT

Objectives: To determine the prevalence and socio-demographic correlates for mental illness among inmates at Lusaka Central Prison, Zambia.

Design: Cross sectional study

Main outcome measure*:* Mental illness

Results: Of the 206 inmates in Lusaka, 63.1% had current mental illness. Among the factors considered in the study, only marital status was significantly associated with mental illness. Married participants were 40% (OR=0.60; 95% CI [0.36, 0.98]) less likely to have mental illness compared with participants who were who were separated/divorced.

Conclusions: A high prevalence of mental health problems was observed among inmates at Lusaka Central prison. Marital status should be considered in designing interventions to reduce the high prevalence of mental illness among inmates in Lusaka, Zambia.

INTRODUCTION

*****Corresponding author:**
Prof Seter Siziya
Public Health Unit
Clinical Sciences Department
The Copperbelt University
Ndola, Zambia
Email:ssiziya@gmail.com

The burden of mental illness is a worldwide problem. About one in nine prisoners world-wide suffer from common mental health problems such as depression and anxiety [1]. Studies have shown that mental illness is more common among the prison population than the community [2,3]. Most of the information on the prevalence of mental illnesses is derived from studies conducted in developed countries. In a review of 62 surveys conducted in 12 developed countries (Australia, Canada, Denmark, Finland, Ireland, Netherland, New Zealand, Norway, Spain, Sweden, UK and the USA), Fazel and Danesh [4] reported that 3.7% of men and 4.0% of women prisoners had psychotic illnesses; 10% of men and 12% of women prisoners had major depression; and 65% of men and 42% of women had a personality disorder (including 47% of men and 21% of women with antisocial personality disorder). There are indications that the proportion of inmates with mental illness is increasing [5]. An increase in the use of drugs and alcohol by people with mental illnesses may partly explain this increase in the proportion of inmates with mental illness [6]. In Zambia, Mayeya et al [7] reported that social, demographic, economic, political, environmental, cultural and religious influences affect the mental health of the people. Mayeya et al [7] also reported that the common mental disorders found in Zambia are acute psychotic episodes, schizophrenia, affective disorders, alcohol related problems and organic brain syndromes. There are no statistics on the prevalence and correlates for mental illnesses in Zambian prisons. Hence, a study was conducted in a

Lusaka prison to determine the prevalence and socio-demographic correlates for mental illness among inmates.

METHODS

A cross sectional study was conducted in Lusaka Central Prison. The population included both sentenced and remanded inmates at Lusaka Central Prison. Those serving their sentences outside the prison premises and also those below 18 years of age were not included in the study population.

Sample size and sampling

A sample size of 227 was obtained after using the formula: $n = ((z^2 \times p \times q / d^2)$ and increasing it by 10% to cater for refusals. *In this formula, 'n' was the* required sample size, 'd' was the margin of error set at 5%; 'z' was set at 1.96; 'p' was the postulated prevalence of mental illness in the project area of 16%[8]; and q was 100-p.

The population was sampled using a simple random sampling technique. A sampling frame was constructed by enumerating all the names of the inmates with their corresponding numbers on the register. A Windows excel function was used to generate a list of random numbers which was used to select inmates from the sampling frame.

Questionnaire

A Self Reported Questionnaire (SRQ 20) was used to collect data. The SRQ, consisting of 20 questions, is an instrument developed by the World Health Organization to screen for psychiatric disturbance especially in developing countries. The questionnaire was self-administered to consenting participants and took 15-20 minutes to be administered. Socio-demographic information (age, sex, religion, education, occupation, marital state and admission status) were added to the SRQ20.

The tool (SRQ20) with a cut off point of 7/8 has been validated and used in a variety of settings including

Zimbabwe, Swaziland, Kenya, Sudan and South Africa, Zambia and Malawi[9].

Data processing and analysis

Data processing and analysis was conducted using a Statistical Package for Social Sciences (SPSS). Odds ratios and their 95% confidence intervals were calculated to determine associations between socio-demographic factors and mental illness.

Ethical considerations

The research proposal was approved by the Mzuzu University-Faculty of Health Sciences and St John of God College of Health Sciences Committee. Permission to conduct the study was granted by the Permanent Secretary, Ministry of Home Affairs. Three clinical officers (MTN) and one nurse administered the questionnaire. Both verbal and written (a signature or thumb print) were obtained from the participants prior to taking part in the study. Participants were informed that their participation was entirely voluntary and that they were free to decide whether or not to participate and were also at liberty to withdraw at any time from the study without giving reasons for doing so. Participants who had mental health problems were referred to the University Teaching Hospital, Psychiatric Unit for assessment and management. Confidentiality was upheld by use of codes on the questionnaires. Interviews were carried out in privacy. Consent forms and questionnaires were only accessible to the investigator.

RESULTS

The sample consisted of 227 participants of whom 206 (90.7%) gave complete information. Overall, the participants were of age 33.7 (SD 9.6) years. Table 1 shows the distribution of participants by socio-demographic factors. Most of the participants were males (83.0%) and were Christians (85.9%). About half of the participants were married (54.4%) and had attained secondary level of education (48.5%). Altogether, 74.3% of the participants had pre-trial admission status.

Table 1: *Description of the sample of participants in Lusaka Central Prison*

Factor	n (%)
Sex	
Male	171 (83.0)
Female	35 (17.0)
Marital status	
Married	112 (54.4)
Never married	55 (26.7)
Widowed	18 (8.7)
Separated/divorced	21 (10.2)
Education	
None	22 (10.7)
Primary	53 (25.7)
Secondary	100 (48.5)
College/university	31 (15.0)
Religion	
Christian	177 (85.9)
Muslim	19 (9.2)
Other	10 (4.9)
Admission status	
Pre-trial	153 (74.3)
Parole violation	1 (0.5)
Probation violation	4 (1.9)
Sentenced	48 (23.3)

Table 2: Factors associated with mental illness in bivariate analyses among inmates in the Lusaka Central Prison

Factor	Mentally ill n (%)	Not mentally ill n (%)	OR (95% CI)
Age (years) Mean (SD)	33.5 (8.9)	34.2 (10.9)	0.99 (0.96, 1.02)
Sex			
Male	61 (80.3)	110 (84.6)	1.35 (0.65, 2.83)
Females	15 (19.7)	20 (15.4)	1
Marital status			
Married	47 (61.8)	65 (50.0)	0.60 (0.36, 0.98)
Never married	20 (26.3)	35 (26.9)	0.75 (0.42, 1.34)
Widowed	6 (7.9)	12 (9.2)	0.86 (0.38, 1.94)
Separated/divorced	3 (3.9)	18 (13.8)	1
Education			
None	9 (11.8)	13 (10.0)	0.96 (0.48, 1.91)
Primary	15 (19.7)	38 (29.2)	1.68 (0.98, 2.88)
Secondary	34 (44.7)	66 (50.8)	1.29 (0.83, 2.01)
College/university	18 (23.7)	13 (10.0)	1
Occupation			
Labourer	13 (17.1)	15 (11.5)	0.68 (0.32, 1.46)
Clerk	5 (6.6)	4 (3.1)	0.47 (0.15, 1.51)
Skilled worker	17 (22.4)	24 (18.5)	0.83 (0.42, 1.65)
Business	23 (30.3)	61 (46.9)	1.56 (0.85, 2.86)
Student	1 (1.3)	6 (4.6)	3.52 (0.59, 21.10)
Unemployed	17 (22.4)	20 (15.4)	1
Economic status			
Poles and grass	2 (2.6)	6 (4.6)	1.64 (0.47, 5.65)
Un-burnt bricks	16 (21.1)	18 (13.8)	0.61 (0.31, 1.23)
Burnt bricks and mud	6 (7.9)	11 (8.5)	1.00 (0.42, 2.38)
Burnt bricks and cement	52 (68.4)	95 (73.1)	1
Religion			
Christian	67 (88.2)	110 (84.6)	0.73 (0.39, 1.38)
Muslim	7 (9.2)	12 (9.2)	0.77 (0.34, 1.73)
Other	2 (2.6)	8 (6.2)	1
Admission status*			
Pre-trial	53 (71.6)	100 (78.7)	1.21 (0.87, 1.69)
Sentenced	21 (28.4)	27 (21.3)	1

Out of 206 participants, 130 (63.1%) had mental illness. Table 2 shows factors associated with mental illness. Of the factors considered in the analysis, only mariatl status was significantly associated with mental illness. Respondents who were married were 40% (OR=0.60, 95% CI [0.36, 0.98]) less likely to suffer from mental illness compared to participants who were separated or divorced.

DISCUSSION

The prevalence rate of mental illness in this study was 63.1%. Married participants were less likely to have mental illness. There is limited data to compare our results within Africa. Our estimate is in the same order of magnitude as those by **Brooke et al [10]** whose prevalence rate was 63% **among unconvicted** prisoners in England and Wales;

Ogloff et al [6] who found that 63% of their sample could be diagnosed as having at least one ICD-10 mental disorder. Our finding is also analogous to those reported by Robertson and Husain [11] who found that 66% to 85% of the juvenile prisoners assessed in the USA had mental illness, and to findings in prevalence studies that found prevalence rates between 53% and 77%, and to a nationally representative survey of prison facilities where 73% of the inmate reported mental health problems during screening in the United States [12].

Furthermore, our finding is also similar to that of James and Glaze [13] who estimated that the prevalence rate of mental illness to be in the range of 45%-64% in the United States. In Iran, Assadi et al [14] reported a prevalence rate of 57.2% of prisoners had a current psychotic disorder. Differences in prevalence rates could partly be explained by differences in sampled populations, and differing classification systems. More recently, Naidoo and Mkize [15] working in a prison population in Durban, South Africa, found a high prevalence of mental disorders with 55.4% of prisoners having an Axis 1 disorder (substance, alcohol, psychotic, bipolar, and depressive and anxiety disorders). Fatoye et al [16] reported a prevalence rate of 87.8% among incarcerated offenders in Nigeria.

Our finding that prisoners who were married were less likely to have mental illness has also been reported elsewhere [16-18]. Marital relationship may offer mental health benefits. Family support may lessen the burden associated with being in a prison.

Fatoye et al [16] reported that significant depressive symptoms were associated with being single, divorced or separated marital status

Limitations

There are a few limitations to the study. Firstly, as a cross sectional study, we are unable to make causal inference on whether being imprisoned causes mental illness since there were no psychiatric screening prior to imprisonment to rule out who may already have mental health problems. Secondly, the SRQ20 does not measure specific mental disorders but symptoms of psychiatric morbidity; hence the prevalence herein does not specify the prevalence of a specific mental disorder. Thirdly, the SRQ does not elicit other causes of mental health problems since its highly structured. However it was used since it is the only validated and convenient tool for estimating mental health problems in Zambia for both the prison and the general population. Lastly, the study sample size of 227 was determined using a prevalence of 16% obtained in the United States [8]. Our sample size may have been inadequate to the extent the prison population differed between those in the United States and our population.

CONCLUSIONS

The prevalence of mental illness was high in the Lusaka central prison. Marital status should be considered in designing interventions to curtail the prevalence of mental illness.

ACKNOWLEDGEMENT

REFERENCES

1. World Health Organization. Background Paper for Trencín Statement on Prisons and Mental Health. **Slovakia:** WHO Publication, 2008.

2. Bland, R.C., Newman, S.C., Thompson, A.H. and Dyck, R.J. Psychiatric disorders in the population and in prisoners. *International Journal of Law and Psychiatry* 1998;21: 273-279.

3. Brinded, P.M.J., Simpson, A.I.F., Laidlaw, T.M., Fairley, N. and Malcolm ,F. Prevalence of psychiatric disorders in New Zealand prisons: a national study. *Australia and New Zealand Journal of Psychiatry* 2001;35: 166-173.

4. *Fazel, S. and Danesh, J.* Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. *Lancet* 2002;359: 545-550.

5. Teplin, L. A. The criminalization of the mentally ill. Speculation in search of data. *Psychological Bulletin 1983;94*: 54-67.

6. Ogloff, J. R. P., Davis, M. R., Rivers, G. and Ross, S. Criminology Research Council Consultancy: The Identification of Mental Disorders in the Criminal Justice System. Melbourne: University press, 2006.

7. Chazulwa, R., Ntambo-Mayeya, P., Mbewe, E., Mwape-Magolo, L., Kasisi, F.. and Chishimba-Bowa, A. Zambia mental health country profile. International Review of Psychiatry 2004;16: 63-72.

8. Ditton, P.M. Mental health and treatment of inmates and probationers. Washington, D.C.: Bureau of Justice Statistics Special Report, 1999.

9. Harpham, T., Reichenheim, M., Oser, R., Thomas, E., Hamid, N., Jaswal, S., Ludermir, A. and Aidoo, M. Health Policy and Planning: Measuring Mental Health in a Cost-Effective Manner. London: Oxford University Press, 2003.

10. Brooke, D., Taylor, C., Gunn, J. and Maden, A. Point prevalence of mental disorder in unconvicted male prisoners in England and Wales', *British Medical Journal* 1996;313: 1524-1527.

11. Robertson, A. and Husain J. Report: Prevalence of Mental illness and Substance Abuse Disorders among incarcerated Juvenile Offenders. Mississippi: Mississippi State University publication, 2001.

12. Abt Associates, Inc. Conditions of Confinement: Juvenile Detention and Corrections facilities. Washington, D.C.: Office of Juvenile Justice and Delinquency Prevention., 1994.

13. James, D. J. and Glaze L. E. Mental Health Problems of Prison and Jail Inmates. Washington: Bureau of Justice Statistics, US Department of Justice, 2006.

14. Assadi, S.M., Noorzian, M., Pakravannejad, M., Yahyazadeh, O., Aghayan, S., Shariat, S.V. and Fazel, S. Psychiatric morbidity among sentenced prisoners: prevalence study in Iran. *British Journal of Psychiatry* 2006;188: 159-164.

15. Naidoo, S. and Mkize, D.L. Prevalence of mental disorders in a prison population in Durban, South Africa. *African Journal of Psychiatry* 2012;15: 30-35.

16. Fatoye, F.O., Fatoye, G.K., Oyebanji, A.O. and Oqunro, A.S. Psychological characteristics as correlates of emotional burden in incarcerated offenders in Nigeria. *East African Medical Journal* 2006;83: 545-552.

17. de Vaus, D. Marriage and mental health. *Family Matters* no. 62 Winter 2002: 26-32

18. Williams, D.R., Herman, A., Stein, D.J., Heeringa, S.G., Jackson, P.B., Moomal, H. and Kessler, R.C. Twelve-month mental disorders in South Africa: prevalence, service use and demographic correlates in the population-based South African Stress and Health Study. Psychological Medicine 2008;38: 211-220.