Prevalence of psychological distress and associated factors in urban hospital outpatients in South Africa

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Objective. The aim of this study was to assess the prevalence of psychological distress and associated factors among outpatients in an urban hospital in South Africa.

Method. A sample of 1 532 consecutively selected patients (56.4% men and 43.6% women) from various hospital outpatient departments were interviewed with a structured questionnaire.

Results. Based on assessment with the Kessler Psychological Distress Scale, a measure of psychological distress, 17.1% of the patients (15.5% of men and 19.4% of women) had severe psychological distress. Logistic multiple regression identified no income, poor health status, migraine headache and tuberculosis as significant factors associated with severe psychological stress for men. For women the factors identified were lower education, no income, having been diagnosed with a sexually transmitted disease, stomach ulcer and migraine headache.

Conclusion. The study found a high prevalence of psychological distress among hospital outpatients in South Africa. Brief psychological therapies for adult patients with anxiety, depression or mixed common mental health problems treated in hospital outpatient departments are indicated. Accurate diagnosis of co-morbid depressive and anxiety disorders in patients with chronic medical illness is essential in understanding the cause and optimising the management of somatic symptom burden.

Common mental disorders such as depressive and anxiety disorders are classified in the International *Statistical Classification of Diseases and Related Health Problems*, 10th revision (ICD-10),[1] as 'neurotic, stress-related and somatoform disorders' and 'mood disorders'. Common mental disorders (CMDs), which include depression, anxiety and somatoform disorders, make a significant contribution to the burden of disease and disability in low- and middle-income countries (LMICs).[2,3] These conditions are responsible for up to 10% of the total global disease burden.[4] Based on recent findings from World Health Organization World Mental Health surveys on the global burden of mental disorders, the inter-quartile range (IQR: 25th - 75th percentiles) of lifetime *Diagnostic and Statistical Manual of Mental Disorders,* 4th edition, text revision (DSM-IV) disorder prevalence estimates (combining anxiety, mood, externalising and substance use disorders) was 18.1 - 36.1%.[5] At least one-third of all patients seen in primary care in LMICs present with CMDs. The majority of these are not recognised or are ineffectively treated.[4] Although depressive and anxiety disorders are classified as separate diagnostic categories in the ICD-10,[1] the concept of CMDs is valid for public health interventions owing to the high degree of co-morbidity between these disorders in primary care and the similarity in epidemiological profiles and treatment responsiveness.[6]

Various studies have identified high prevalence rates of CMDs among primary healthcare patients in LMICs, e.g. 23% probable cases in Nicaragua,[7] 21.3% psychiatric disorders in Nigeria,[8] 23% major depression, 24% panic disorder and 29% generalised anxiety disorder in Lesotho,[9] and a prevalence of generalised anxiety and depressive disorders of 23.9% in a community-based sample in South Africa.[10]

Factors associated with CMDs of primary care patients in LMICs include older age,[8,10] female gender,[8] being widowed, separated or divorced[8,10] or unemployed,[10,11] low socio-economic status,[10,12,13] low social capital,[13] substance use such as smoking[14] and alcohol problems,[15] and chronic medical illness[16] such as type 2 diabetes mellitus,[17] hypertension,[18] peptic ulcer,[19] lower back pain[20] and communicable illnesses such as tuberculosis.[21]

Increasing emphasis has been placed on the detection and treatment of CMDs, particularly among patients seen in primary care settings.[4] Hospital settings are a particularly valuable point of contact for the delivery of brief interventions, because large numbers of patients attend these facilities each year. The fact that little information exists about CMDs or psychological distress among hospital outpatients in South Africa prompted the study.

Aim of the study
The aim of this study was to assess the prevalence of psychological distress and associated factors among outpatients in an urban hospital in South Africa.

Methods
Sample and procedure
The sample included 1 532 subjects (56.4% men and 43.6% women) consecutively selected from different hospital outpatient departments. Universal screening of all presenting outpatients was utilised, whereby all consecutive clients visiting outpatient

departments were interviewed. The study protocol was approved by the Research Ethics Committee of the University of Limpopo (Medunsa Campus). Informed consent was obtained from the patients who participated.

Measures

Demographic characteristics. A researcher-designed questionnaire was used to record demographic information on participants' age, gender, educational level, marital status, income and place of residence (urban or rural).

The **Kessler Psychological Distress Scale** (K-10) was used to measure global psychological distress, including significant pathology that does not meet formal criteria for a psychiatric illness.[22,23] This scale measures symptoms over the preceding 30 days by asking: 'In the past 30 days, how often did you feel: nervous; so nervous that nothing could calm you down; hopeless; restless or fidgety; so restless that you could not sit still; depressed; that everything was an effort; so sad that nothing could cheer you up; worthless; tired out for no good reason?' The frequency with which each of these items was experienced was recorded using a 5-point Likert scale ranging from 'none of the time' to 'all the time'. This score was then summed, with increasing scores reflecting an increasing degree of psychological distress. The K-10 has been shown to capture variability related to nonspecific depression, anxiety and substance abuse, but does not measure suicidality or psychoses.[24] This scale serves to identify individuals who are likely to meet formal definitions for anxiety and/or depressive disorders, as well as to identify individuals with sub-clinical illness who may not meet formal definitions for a specific disorder.[22] It is increasingly used in population mental health research and has been validated in multiple settings[25] including among pregnant women[26] and HIV-positive individuals in South Africa.[27] We examined the K-10 scale using ordinal categories for low, moderate, high and very high psychological distress (scores of 10 - 19, 20 - 24, 25 - 29 and ≥30, respectively) and as a binary variable comparing scores of 0 - 29 versus ≥30. The internal reliability coefficient for the K-10 in this study was Cronbach alpha = 0.89.

Alcohol consumption. The 10-item Alcohol Disorder Identification Test (AUDIT)[28] assesses alcohol consumption level (3 items), symptoms of alcohol dependence (3 items), and problems associated with alcohol use (4 items). In South Africa a standard drink is 12 g alcohol. Because the AUDIT is reported to be less sensitive at identifying risky drinking in women than in men,[29] the cut-off point of binge drinking for women (4 units) was reduced by one unit compared with men (5 units), as recommended by Freeborn *et al.*[29] Responses to items on the AUDIT are rated on a 4-point Likert scale from 0 to 4, for a maximum score of 40 points. Higher AUDIT scores indicate more severe levels of risk; scores of 8 or more indicate a tendency to problem drinking. Cronbach alpha for the AUDIT in this sample was 0.88, indicating excellent reliability.

Tobacco use. Two questions were asked about the use of tobacco products: (*i*) 'Do you currently use one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)?' (response options were 'yes' or 'no'); and (*ii*) 'In the past month, how often have you used one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)?' (response options were once or twice, weekly, almost daily and daily).

Perceived general health. Participants were asked: 'In general, would you say your health is: excellent, very good, good, fair or poor?' This measure was categorised based on participant response (very good = excellent/very good, good = good, and poor = fair/poor).

Patients were also given a list of chronic and communicable illnesses such as hypertension, diabetes and sexually transmitted diseases (STDs), and asked to indicate which of them they had been diagnosed with.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) for Windows software application programme version 17.0. Frequencies, means and standard deviations (SDs) were calculated to describe the sample. Predictors of severe psychological distress were identified using logistic regression analyses. Following each univariate regression, multivariable regression models were constructed. Independent variables from the univariate analyses were entered into the multivariable model if significant at a level of $p<0.05$. Logistic regression was conducted for men and for women separately. Cases with missing data were excluded from the multivariable models. For each model, the R^2 are presented to describe the amount of variance explained by the multivariable model. Probability below 0.05 was regarded as statistically significant.

Results
Sample characteristics
Of the 1 713 hospital outpatients approached, 1 532 agreed to participate (89.4% response rate). The final sample included 1 532 (56.4% men and 43.6% women) consecutively selected from different hospital outpatient departments. Their mean age was 36.1 years (SD 11.6, range 18 - 77 years). Almost two-thirds (63.8%) of the participants had never been married, almost half (48%) had grade 12 or higher education, 32.6% had a formal salary as main household income, and 80.1% lived in an urban area. Forty per cent of the hospital outpatients had chronic conditions and 60% were general hospital outpatients, 57.8% rated their health as excellent or very good, 24.2% used tobacco products daily or almost daily, and 34.9% scored 8 or more on the AUDIT indicating hazardous or harmful alcohol use. With regard to previously diagnosed conditions, 30.2% reported migraine headaches, 26.1% lower back pain, 19.3% hypertension, 17.3% arthritis, 17.3% stomach ulcer, 8.3% diabetes, 7.6% STD, 7.3% tuberculosis and 7.3% depression (Table 1).

Table 1. Sample characteristics

Sample characteristics	Men (*N*=864, 56.4%)		Women (*N*=668, 43.6%)		Total (*N*=1 532)	
	N	%	*N*	%	*N*	%
Age (yrs)						
18 – 24	138	16.0	120	18.1	258	16.9
25 – 34	280	32.6	248	37.3	528	34.6
35 – 44	200	23.3	169	25.5	369	24.2
45 – 54	153	17.8	94	14.2	247	16.2
≥55	89	10.3	33	5.0	122	8.0
Marital status						
Never married	520	61.8	435	66.2	955	63.8
Married/cohabitating	289	34.3	183	27.8	472	30.5
Separated/divorced/widowed	32	3.8	29	5.9	58	5.7
Education						
≤ Grade 7	125	14.6	82	12.4	207	13.6
Grade 8 – 11	335	39.0	249	37.6	584	38.4
≥ Grade 12	399	46.4	332	50.1	731	48.0
Main household income						
Formal salary	325	37.8	172	25.9	497	32.6
Family member contributions	235	27.4	250	37.7	485	31.8
Social grants	68	7.9	76	11.4	144	9.5
Other	128	14.9	63	9.5	191	12.5
No income	103	12.0	103	15.5	206	15.5
Urban residence	693	80.8	523	79.1	1218	80.1
Rural residence	165	19.2	138	20.9	303	19.9
Chronic hospital outpatient	304	35.3	311	46.8	615	40.3
General hospital outpatient	556	64.7	354	53.2	910	59.7
Very good v. poor health status	498	58.0	383	57.6	882	57.8
Daily or almost daily tobacco use	288	33.4	82	12.3	370	24.2
Hazardous or harmful alcohol use	401	46.6	131	19.7	532	34.9
Illness conditions (ever diagnosed)						
Hypertension	148	17.2	145	21.9	293	19.3
High cholesterol	21	2.5	23	3.5	44	2.9
Diabetes	74	8.6	52	7.9	126	8.3
Cancer	17	2.0	31	4.7	48	3.2
Depression	57	6.7	50	7.6	107	7.0
Migraine headache	201	23.5	258	39.2	459	30.2
Stomach ulcer	125	14.6	138	21.0	263	17.3
Asthma	29	3.4	40	6.1	69	4.6
Arthritis	125	14.6	136	20.6	262	17.3
Tuberculosis	74	8.6	37	5.6	111	7.3
Lower back pain	207	24.4	187	28.4	394	26.1
STD	70	8.2	45	6.8	115	7.6

Table 2. Levels of psychological distress of male and female participants

	K-10 score	Total (*N*=1 532) (%)	Men (*N*=864) (%)	Women (*N*=668) (%)
No significant distress	10 - 19	50.3	53.5	46.0
Mild distress	20 - 24	18.6	17.8	19.6
Moderate distress	25 - 29	14.0	13.2	15.0
Severe distress	30 - 50	17.1	15.5	19.4
Total K-10 score (mean (SD))		21.5 (8.9)	20.9 (8.7)	22.4 (9.2)*

*t=-3.14; p<0.001.

Table 3. Predictors of severe psychological distress

	Men		Women	
Predictors	Crude OR (95% CI)[†]	Adjusted OR (95% CI)[†,‡]	Crude OR (95% CI)[†]	Adjusted OR (95% CI)[†,§]
Age	1.01 (0.99 - 1.02)	-	1.03 (1.01 - 1.05)**	0.99 (0.96 - 1.02)
Married/cohabitating v. Not	0.97 (0.64 - 1.47)	-	1.11 (0.70 - 1.75)	-
≤ Grade 7 or less	1.00	1.00	1.00	1.00
Grade 8 - 11	0.57 (0.34 - 0.97)*	0.85 (0.47 - 1.55)	0.29 (0.16 - 0.52)***	0.54 (0.26 - 1.13)
≥ Grade 12	0.40 (0.23 - 0.68)***	0.79 (0.42 - 1.47)	0.22 (0.12 - 0.40)***	0.34 (0.16 - 0.74)**
		1.00		
No income	1.00	0.57 (0.33 - 0.99)*	1.00	1.00
Formal salary	0.42 (0.26 - 0.69)***	1.08 (0.62 - 1.88)	0.34 (0.19 - 0.58)***	0.53 (0.28 - 0.98)*
Family contributions	0.64 (0.39 - 1.05)	0.69 (0.28 - 1.69)	0.16 (0.09 - 0.27)***	0.25 (0.13 - 0.48)***
Social grants	0.63 (0.28 - 1.45)		0.28 (0.12 - 0.64)**	0.32 (0.12 - 0.83)*
Chronic v. general outpatient	1.14 (0.76 - 1.71)	-	1.55 (1.02 - 2.37)*	0.91 (0.55 - 1.49)
Very good v. poor health status	0.38 (0.26 - 0.58)***	0.51 (0.32 - 0.80)**	0.35 (0.23 - 0.54)***	0.60 (0.36 - 1.02)
Daily or almost daily tobacco use	1.79 (1.20 - 2.67)**	1.81 (1.17 - 2.80)**	1.69 (0.97 - 2.97)	-
Hazardous or harmful drinking	1.27 (0.86 - 1.89)	-	0.67 (0.38 - 1.18)	-
Hypertension	1.50 (0.92 - 2.45)	-	1.81 (1.13 - 2.90)*	1.04 (0.55 - 1.96)
Sexually transmitted disease	1.56 (0.84 - 2.93)	-	2.93 (1.50 - 5.70)**	3.97 (1.79 - 8.78)***
Stomach ulcer	2.26 (1.39 - 3.67)***	1.29 (0.69 - 2.43)	3.46 (2.20 - 5.42)***	1.80 (1.05 - 3.10)*
Migraine headache	3.86 (2.55 - 5.87)***	3.38 (2.08 - 5.48)***	3.57 (2.30 - 5.52)***	2.24 (1.33 - 3.76)**
Lower back pain	2.29 (1.50 - 3.49)***	1.32 (0.81 - 2.17)	3.00 (1.94 - 4.62)***	1.66 (0.97 - 2.83)
Asthma	1.98 (0.82 - 4.80)	-	2.00 (0.95 - 4.21)	-
High cholesterol	2.83 (1.04 - 7.66)*	1.83 (0.57 - 5.90)	3.97 (1.57 - 10.01)**	1.58 (0.46 - 5.44)
Diabetes	1.35 (0.71 - 2.57)	-	2.23 (1.16 - 4.31)*	2.00 (0.86 - 4.68)
Arthritis	2.16 (1.33 - 3.50)**	1.46 (0.84 - 2.53)	1.40 (0.86 - 2.28)	- -
Tuberculosis	2.37 (1.36 - 4.15)**	0.56 (0.32 - 0.80)**	2.87 (1.42 - 5.81)**	2.13 (0.92 - 4.95)
Cancer	1.84 (0.58 - 5.81)	-	0.94 (0.35 - 2.53)	-

*p=0.05; **p =0.01; ***p =0.001.
[†]Using forward logistic regression selection of variables.
[‡]For men Hosmer and Lemeshow chi-square = 10.77, p=0.215; Cox and Snell R^2=0.11; Nagelkerke R^2=0.19.
[§]For women Hosmer and Lemeshow chi-square = 17.16, p=0.029; Cox and Snell R^2=0.19; Nagelkerke R^2=0.31.
OR = odds ratio; CI = confidence interval.

Psychological distress

Overall 17.1% of the patients had scores on the K-10 indicating severe distress; this figure was significantly higher in women (19.4%) compared with men (15.5%). Moderate distress was reported by 14%, mild distress by 18.6% and no significant distress by 50.3% (Table 2).

Predictors of psychological distress

Univariate analyses showed that among men, lower education, no income, poor self-rated health status, daily or almost daily tobacco use, and having been diagnosed with a stomach ulcer, migraine headache, lower back pain, high cholesterol, arthritis or tuberculosis were associated with severe psychological distress; and among women, severe psychological distress was associated with older age, lower education, no income, being a chronic disease hospital outpatient, poor self-rated health status, and having been diagnosed with hypertension, a sexually transmitted disease, migraine headache, lower back pain, high cholesterol, diabetes or tuberculosis. Multivariable analysis showed that among men no income, poor self-rated health status, daily or almost daily tobacco use, and having been diagnosed with migraine headache or tuberculosis remained significantly associated with severe psychological distress, and that for women lower education, no income, and having been diagnosed with a sexually transmitted disease, stomach ulcer or migraine headache remained significantly associated with severe psychological distress (Table 3).

Discussion

A high prevalence of severe (17.1%) and moderate (14.0%) psychological distress was identified in this study of a large sample of hospital outpatients in South Africa. This finding is comparable with prevalence rates of psychological distress or CMDs in other LMICs (Nicaragua 23%,[7] Nigeria 21.3%,[8] Lesotho major depression 23%, panic disorder 24%, and generalised anxiety disorder 29%).[9]

In concurrence with other studies this study found an association between severe psychological distress and female gender.[8] low socio-economic status (lower education, no income),[10,11,13] daily or almost daily tobacco use,[14,30] and having been diagnosed with chronic diseases including stomach ulcer,[19] migraine headache,[19] lower back pain,[20] hypertension,[18] and communicable diseases including tuberculosis[21] and STDs.[31] In a large Canadian community study, sexually transmitted infections (STIs) among women also increased the risk of depression.[32] The diagnosis of an STI may contribute to the development of depression.[32]

Study limitations

Caution should be taken when interpreting the results of this study because of certain limitations. As this was a cross-sectional study, causality between the compared variables cannot be concluded. A further limitation was that all variables were assessed by self-report and desirable responses may have been given.

Conclusion

The study found a high prevalence of psychological distress among hospital outpatients in South Africa. Brief psychological therapies for adult patients with anxiety, depression or mixed common mental health problems treated in hospital outpatient departments are indicated.[33] Accurate diagnosis of co-morbid depressive and anxiety disorders in patients with chronic medical illness is essential in understanding the cause and optimising the management of somatic symptom burden.[34]

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