

Prevalence of minor psychiatric disorders in an adult African rural community in South Africa

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ABSTRACT

Background. This paper reports on a two-stage community-based epidemiological study of selected minor psychiatric disorders conducted on an adult African population in South Africa.

Methods. Using a modified random cluster sampling method, 354 adults were identified as the first-stage sample, with the SRQ-20 being used as a first-stage screen. Clinical interviews based on DSM-IV checklists for generalized anxiety disorder, major depression and dysthymia were administered as the second-stage criterion to 81 subjects from the sample.

Results. The weighted prevalence for generalised anxiety and depressive disorders was 23.9% (95% CI 15.1%–32.7%), comprising: generalized anxiety 3.7%, major depression 4.8%, dysthymia 7.3%, and major depression and dysthymia 8.2%. Statistically significant associations were found between caseness and age, marital status, employment, income and educational level.

Conclusions. The results are discussed in relation to comparative local and international data as well as in the context of the current restructuring of the mental-health care system in South Africa from tertiary curative care to integrated primary mental-health care.

INTRODUCTION

The first few years of post-apartheid South Africa have been characterized by efforts to structurally transform all sectors of society. Mental-health care provision has been no exception, with a shift in emphasis from tertiary curative care to integrated primary mental health care (Ministry of Health, 1997). Epidemiological information on psychiatric morbidity at the community level should play a crucial role in informing this restructuring process. As Parry (1996) notes, 'psychiatric epidemiology can play a useful role in the planning and evaluation of mental health services, in the setting up of effective training programmes for health workers and in the development of strategies to promote mental health and prevent mental illness' (p. 173).

The South African literature unfortunately

reflects a paucity of research into psychiatric morbidity at the community level. If psychiatric epidemiology is to play a key role in the restructuring of mental health services for integrated primary mental health care, it is essential that accurate estimates of psychiatric morbidity in different communities be obtained, especially of the rural African² poor. It is instructive to note that 65% of South Africa's population lives outside of its industrialized economic core, with Africans comprising 93% of this segment of the population (Urban Foundation, 1991). Furthermore, rural areas in South Africa account for 68% of the country's burden of poverty, with 99% of this population being African (McIntyre *et al.* 1995). It is, therefore, particularly disturbing to note that

² Notwithstanding the ideological roots of the legislated use of racial categorical labels like 'African' and 'coloured' by the past apartheid regime in South Africa (Population Registration Act, 1950), these terms retain general descriptive value and are thus considered crucial in informing social redress policies in post-apartheid South Africa. No value judgement should be imputed by the use of racial nomenclature in this study.

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there are to date no two-stage community-based epidemiological studies of psychiatric morbidity on the adult African population. Such South African data as are available on the African population are restricted to either clinic-based studies (e.g. Freeman, 1991; Thom *et al.* 1993) or single-stage community-based screening studies (e.g. Bester *et al.* 1991).

The only two-stage community-based prevalence study of psychiatric morbidity on adult South Africans has been restricted to a coloured population. Rumble *et al.* (1996), using the Self-Reporting Questionnaire (SRQ) as a first-stage instrument and the Present State Examination (PSE-9) as the second-stage instrument, found an overall psychiatric morbidity of 27.1%, with the majority of cases (24%) identified as either depressive or anxiety related disorders. While this prevalence estimate is generally higher than that reported in other community-based studies (e.g. Orley & Wing, 1979; Bebbington *et al.* 1981; Hodiament *et al.* 1987), it is consistent with international studies which indicate that depression and anxiety, but particularly depressive disorders, are the two most common disorders detected at a community level (Hollifield *et al.* 1990; Parry, 1996).

We report here on a two-stage community-based study designed to estimate the prevalence of specified mental disorders in an adult African population residing in a rural area of South Africa. More specifically, the study focused on the prevalence and sociodemographic correlates of generalized anxiety and depressive disorders. The rationale for the focus on these specific minor psychiatric disorders was three-fold. First, a review of psychiatric epidemiology in Africa has shown that there is a higher incidence of neurotic than psychotic disorders, with a large percentage of the neurotic population comprising persons suffering from anxiety and mood disorders, especially depression (Parry, 1996).

Secondly, minor psychiatric disorders, although more widespread than major disorders, and thus constituting the largest proportion of the community mental-health burden, have remained largely undetected in South Africa. This is in part due to the fact that historically, public sector mental health care in South Africa, organized as a vertical service within the health care system, has emphasized tertiary care for severely disordered patients. Furthermore, most

health care personnel at the primary level of care have not been trained in the identification and management of minor psychiatric disorders.

Thirdly, the research focus and design was influenced by resource constraints of this study, reflecting generic limitations on the capacity for conducting two-stage community-based psychiatric epidemiological studies on the African population in South Africa. These include the problems and expense entailed in translating second-stage instruments into the many different indigenous African languages; the paucity of psychiatrists and psychologists who speak the African languages and who can administer these instruments; and the length of the instruments, which makes them time consuming, thereby limiting the sample size and increasing the study costs.

METHOD

Research site

The study was based in the KwaDedangendlale area of KwaZulu Natal, a province on the eastern seaboard of South Africa. At the time of the study, the area comprised five tribal areas and had an estimated overall population of 55000 to 75000 (Stavrou & Luckin, 1992; Pitt, 1994), with the majority being Zulu speaking. The area is predominantly rural, experiencing many of the difficulties that characteristically face rural communities in South Africa. The majority of the population live below the poverty datum line and there are few opportunities for formal employment in the area. Dwelling units are scattered and access to resources, including health and welfare services, is limited. The formal health service, for example, comprises a community health centre with mobile and/or satellite clinics in the five tribal areas. Access to resources in the neighbouring areas is further restricted by the hilly terrain and the poorly developed road and transport infrastructure.

Sampling strategy

The statistical procedures specified by Shrout (1990) were utilized for the purpose of estimating the first- and second-stage sample size. Shrout's technique requires that the most reasonable estimates be made of overall prevalence, of the proportion of positive and negative cases usually identified by the first-stage screen, and of the

cost ratio of the screen to the second-stage criterion. Application of Shrout's equations indicated that a first-stage sample of 339 randomly selected individuals would be optimal in terms of both sampling dispersion and the resource constraints of this study, with the resulting confidence interval for prevalence of 8.8% ($\alpha = 0.05$) being considered satisfactory.

In selecting the first-stage sample, Kok's (1986) modified version of the random cluster sampling method, used by the World Health Organization (WHO) for its Expanded Programme on Immunization (EPI) for dispersed populations (Henderson & Sundaresen, 1982), was adopted. The basic assumption of this approach is that the primary school child is the most randomly and proportionately distributed sampling unit in a given community. Thus, 30 children of a given age are randomly selected from the total school population of that age in the community, and each child's household serves as a starting point for the identification of a cluster of seven households. Given the lack of accurate census data for KwaDedangendlale, the uneven dispersion of households and the lack of an inventory of these households, Kok's modified random cluster sampling method was preferred to the WHO EPI method which has limited application in that it assumes geographically distinct and clearly bounded residential settings.

To ensure a minimum first-stage sample size of 339, a total of 36 clusters were identified. On a visit to the given school, a grade one child was randomly selected from the school register using a table of random numbers. The child led the fieldwork team to his/her household and the team began fieldwork in the next nearest household (to avoid the bias of 'households with school going children') until a cluster of seven households was visited. In each household all adults who were present at the time of the fieldwork were screened. Thus, a total of 252 households (36×7) comprised the sampling frame, with a total of 354 adults comprising the first-stage sample.

All respondents who screened positive on the SRQ-20 ($N = 58$) were selected for second-stage screening. In addition, of the 296 respondents who screened negative, 23 (8%) were selected for second-stage screening, following the approach of De Jong *et al.* (1986).

The second-stage sample thus comprised a total of 81 respondents.

Sample description

Table 1 describes the demographics of the first and second-stage samples. As reflected in the Table, more than 75% of the first-stage sample were below the age of 50 years and of these 42% were under 30 years of age. This indicates that the sample consisted of relatively young adults. The age distribution of those that received second-stage screening showed a similar trend with a slightly higher percentage (41%) in the 30–49 year age category.

The first-stage sample consisted of more females compared to males (3.5:1) and this proportion was also reflected in those that received second-stage screening (4:1). This gender bias was probably due to the fact that the fieldwork for this study was undertaken during the day, a time when most men who are employed are likely to be at work. Seventy per cent of the first-stage sample were single (that is, individuals who were divorced, separated, widowed or not married) and 30% were married or cohabiting. A similar distribution in marital status was evidenced in the second-stage sample.

The occupational status of the first and second-stage samples was similar, with approximately 80% of respondents in both groups being unemployed. The monthly household income profiles of both samples compared favourably. The findings suggest that a majority of the sample were unemployed and lived in households that had an income of less than R1000 per month. The education level of the samples indicates that the majority of respondents in both groups had little or no formal education. In general, the demographic profile of the second-stage sample closely matched that of the first-stage sample, with no statistically significant differences being detected on any of the variables under investigation (χ^2 ; $P > 0.05$).

Instruments

The 'neurotic' items of the Self Reporting Questionnaire, commonly referred to as the SRQ-20, were selected as the first-stage screen. The SRQ was specifically developed by the World Health Organization to screen for psychiatric disturbance in primary health care

Table 1. Comparison of first- and second-stage samples against selected sociodemographic variables

Demographic variables	First-stage sample (N = 354)		Second-stage sample (N = 81)	
	N	%	N	%
Age (years)				
18–29	150	42.37	26	32.10
30–49	119	33.62	33	40.74
≥ 50	85	24.01	22	27.16
Gender				
Male	79	22.32	16	19.75
Female	275	77.68	65	80.25
Marital status				
Single*	247	69.77	54	66.67
Married†	107	30.23	27	33.33
Employment				
Employed	70	19.77	13	16.05
Unemployed	284	80.23	68	83.95
Household income per month				
< R500	181	51.13	48	59.26
R501–R1000	98	27.68	20	24.69
≥ R1001	75	21.19	13	16.05
Education				
No formal education	74	20.90	21	25.93
Grade 1–Grade 7	142	40.11	38	46.91
≥ Grade 8	138	38.99	22	27.16

* 'Single' category includes separated, divorced or widowed persons.

† 'Married' category includes persons who are cohabiting.

settings in developing countries (Harding *et al.* 1980). It has been found to detect probable cases of anxiety, depressive and somatoform disorders with reasonable accuracy (Beusenberg & Orley, 1994) and has been successfully used in a range of community-based studies undertaken in developing countries (e.g. Penayo *et al.* 1990; Tafari *et al.* 1991).

Several studies, which examined the validity of the SRQ-20 using validation against psychiatric diagnosis, found sensitivity and specificity in the range of 80% (Reeler & Todd, 1994). The validity of the SRQ-20 is, however, dependent on the establishment of a cut-off score on the population that is being studied or on previous studies on similar populations (Beusenberg & Orley, 1994). A cut-off score of 8 was used in this study as it has been shown to be a valid cut-off in an African South African population (Thom *et al.* 1993). In addition, a number of studies (Harding *et al.* 1980; Mari & Williams, 1985; Rumble *et al.* 1996) indicate 7/8 to be a fairly stable threshold.

Given that this study was concerned with

assessing the prevalence of specific disorders viz. major depression, dysthymia and generalized anxiety, clinical interviews based on DSM-IV checklists (American Psychiatric Association, 1994) were utilized for second-stage case finding. DSM-III checklists have been used in a number of studies for this purpose and have been found to be a reliable indicator of psychiatric disorders (Grayson *et al.* 1987; Rahim & Cederblad, 1989; Van den Brink *et al.* 1989; Kortmann, 1990; Janca *et al.* 1992).

All screening instruments were translated into Zulu and back-translated into English. In addition, the content validity of the SRQ-20 questions for the Zulu population was assessed through a clinic-based pilot study where patients were asked to explain their 'yes' answers following Kortmann & Ten Horn's (1988) concept validity study.

Procedure

The fieldwork was conducted by four groups of field workers, each group being divided into two teams (viz. A and B). The field workers in Team

A consisted of two people who were field researchers in a research organization and/or psychology graduate students. Team B consisted of two Zulu speaking specialist psychiatric nurses, selected on the basis of their competence in the use of the DSM-IV classification system.

Team A field workers were trained by the principal investigators in the administration of the SRQ-20 and in the cluster sampling technique that was used in this study. The field workers also practised how to record the information in the data cards that were to be used. The Team B field workers were trained in both the Team A skills as well as in the use of structured interviews based on the DSM-IV checklists. Prior to commencement of the fieldwork a comprehensive pilot study was undertaken by all four fieldwork groups covering a total of 28 households. Based on this pilot study inter-rater reliability was established and minor adjustments to the procedure and logistics were made.

Fieldwork

Each day the field workers visited a cluster of seven households. The SRQ-20 was administered to each adult in the identified household. Team A scored the responses and noted on the data card which respondent in the household met the criterion for second-stage screening. In addition, a random sample of 23 respondents who did not meet the criterion for second-stage screening were referred for second-stage screening to control for false negatives.

Team B tracked Team A immediately and enquired about the data card that identified those adults who required second-stage screening. They administered a structured interview to these respondents, based on the DSM-IV checklists for generalized anxiety disorder, major depressive episode and dysthymia. These checklists were scored by Team B upon completion of the day's fieldwork.

Data analysis

Unweighted validity coefficients (sensitivity, specificity, positive predictive value, negative predictive value and overall misclassification rate) were calculated for the SRQ-20 for each disorder (generalized anxiety, major depression and dysthymia), and for selected co-morbid conditions. The sensitivity and specificity indices

for each of these categories were weighted for the population.

Unweighted and weighted prevalence rates were computed for each of the above conditions following procedures specified by Tenenbein (1970). Tenenbein's statistical approach in calculating weighted prevalence yields an index that assesses the outcomes on the second-stage instrument against performance on the first-stage screen in a manner that takes the frequency of both true and false positives as well as negatives into account. Furthermore, weighted prevalence rates were calculated for each condition of the six sociodemographic variables under investigation (viz. age, gender, marital status, occupation, income and education). Chi-squared tests of independence and appropriate *post hoc* analyses were computed on each of these variables to test for significant differences.

RESULTS

The validity of the SRQ-20 as a first-stage screen for generalized anxiety and depressive disorders

The unweighted sensitivity of the SRQ-20 for generalized anxiety and depressive disorders (major depression and dysthymia) combined was estimated to be 93.9%; this is high when compared with a review of a number of studies by the World Health Organization who found sensitivity figures to range from 63% to 90% (Beusenberg & Orley, 1994). Unweighted specificity for the SRQ-20 for anxiety and depressive disorders combined was estimated to be 62.5% and falls within the range found by the WHO viz. 44% to 95% (Beusenberg & Orley, 1994).

When weighted for the population, sensitivity dropped to 54.4% while specificity rose to 95.6%, which is understandable given the fairly high negative predictive value (87%) and the relatively low positive predictive value (79%) returned in this study. This is a well documented trend for community-based studies (e.g. Harding *et al.* 1980; Rumble *et al.* 1996), given that community samples generally have a lower proportion of cases to non-cases. This results in more screen negatives to screen positives and a concomitant drop in sensitivity and increase in specificity, as sensitivity and specificity are dependent upon the ratio of screen high to

screen low scores in a sample. Following Robins (1985), the moderate sensitivity of the SRQ-20 in this study together with the fairly high specificity suggest a valid first-stage estimate of the true community prevalence of anxiety and depressive disorders.

Finally, the fairly high false positive rate of 21% together with the relatively low false negative rate of 13% combine to yield an overall misclassification rate of 18%, which suggests that the SRQ-20 is a relatively cost-effective screen for generalized anxiety and depressive disorders in this community when DSM-IV checklists are used as the gold standard.

Weighted prevalence of generalized anxiety and depressive disorders

This study found a weighted prevalence of 23.9% (CI 95% 15.1–32.7%) for generalized anxiety and depressive disorders, which is relatively higher than findings from a number of other community-based studies into minor psychiatric morbidity in industrialized Western societies (e.g. Henderson *et al.* 1979; Bebbington *et al.* 1981; Hodiament *et al.* 1987; Vázquez-Barquero *et al.* 1987). This community-based prevalence rate also appears to be significantly higher than the estimated point prevalence rate for minor psychiatric conditions extrapolated from earlier studies in developing countries, based on either clinic-based findings (e.g. Harding *et al.* 1980; De Jong *et al.* 1986; Thom *et al.* 1993) or on unweighted community-based prevalence rates (e.g., Orley & Wing, 1979; Rahim & Cederblad, 1989).

At least two possible explanatory factors for this discrepancy need to be considered. First, all but one of the above studies used the PSE as the second-stage criterion, while the present study used arguably more clinically subjective interviews based on DSM-IV checklists as the criterion. Secondly, while the overwhelming majority of the above studies utilized trained psychiatrists to administer the second-stage criterion, the present study utilized specialist psychiatric nurses. It is, therefore, possible that an interaction of instrumentation and interviewer effects could have produced lower thresholds for the diagnosis of psychiatric morbidity in this study, compared with the studies referred to above.

On the other hand, the weighted prevalence of

23.9% for anxiety and depressive disorders returned in this study compares very favourably indeed to more recent and methodologically sophisticated community-based studies of minor psychiatric disorder in developing countries. For instance, Cheng (1988) found a weighted prevalence of 24% for minor psychiatric morbidity in Taiwan, while Rumble *et al.* (1996) reported a point prevalence of 24% for anxiety and depressive disorders in the only other reported two stage community-based study of psychiatric morbidity in South Africa. More recently, Abas & Broadhead (1997), in a study on depression and anxiety among women in an informal urban settlement in Zimbabwe, reported an unweighted prevalence of 31% for these disorders. It is instructive to note that the Cheng study utilized the CIS as the second-stage criterion, administered by a psychiatrist, while both Rumble *et al.* and Abas & Broadhead utilized the PSE, administered by psychologists and psychiatrists respectively. It is apparent, therefore, that a high level of concordance exists across all four studies on the prevalence of anxiety and depressive disorders, notwithstanding marked differences in the choice of second-stage instruments (CIS, PSE and DSM-IV checklists) and interviewers (psychiatrists, psychologists and psychiatric nurses). These findings, therefore, collectively suggest a much higher community prevalence rate for depression and anxiety disorders in developing countries than reported in earlier studies (e.g. Harding *et al.* 1980) and also confirms more recent findings which suggest that this prevalence rate appears to be higher than that reported for industrialized countries (e.g. Hollifield *et al.* 1990).

These findings would appear to vindicate the decision to utilize relatively inexpensive interviews based on DSM-IV checklists as the second-stage criterion for this study, given the physical and human resource constraints characteristic of developing country contexts. Further comparative research investigating differential instrumentation and interviewer effects on the prevalence of minor psychiatric morbidity, especially with regard to the use of DSM-IV checklists as a gold standard, is strongly indicated.

Weighted prevalence of generalized anxiety, major depression and dysthymia: a comparative view

The weighted prevalence of the specific diagnostic categories were as follows: generalized anxiety 3.7%, major depression 4.8%, dysthymia 7.3%, and major depression and dysthymia 8.2%. While these findings are generally within the range for these disorders reported in other community-based studies in developing countries (e.g. Cheng, 1988; Hollifield *et al.* 1990; Rumble *et al.* 1996), it should be noted that intelligible comparisons of these prevalence rates for specific disorders across different studies in the literature are unfortunately compromised by a wide variance in, *inter alia*, study designs, populations studied, sampling methods, case definition, instruments used and statistical treatment of data, a phenomenon that has been appropriately described by Dohrenwend & Dohrenwend (1982) as 'a Pandora's box of problems with regard to case definition and measurement'.

A comparison of the weighted prevalence of the diagnostic categories of generalized anxiety and depressive disorders revealed a higher prevalence of overall depressive disorders (20.2%) than generalized anxiety disorder (3.7%), a ratio of 5.5:1 respectively. This trend is widely supported by other studies reporting community-based prevalence rates for minor psychiatric conditions in developing countries (e.g. Orley & Wing, 1979; Rumble *et al.* 1996; Abas & Broadhead, 1997). Thus, further to the well established finding that neurotic conditions comprise the overwhelming majority of disorders detected at a primary care level, this study confirms the consistent finding that minor psychiatric distress presents most frequently as depressive disorders at a community level (e.g. Parry, 1996).

Finally, while 16.3% of all cases of depressive disorder were also diagnosed with generalized anxiety in this study, a substantial 89.6% of generalized anxiety disorders were concurrently diagnosed with major depression or dysthymia. These results therefore indicate that depressive disorders frequently occur without anxiety symptoms at a community level but that anxiety is almost always associated with depressive symptoms. This confirms the findings of Abas &

Broadhead (1997) and is supportive of an illness form in which symptoms of both depressive disorders and generalized anxiety are present. The presence of anxiety and depressive disorders as a mixed syndrome in primary health care settings is supported by a review of studies conducted by Angst (1990).

Association between caseness and demographic variables

The results of chi-squared analyses on the weighted prevalence of mental disorder for selected demographic variables are contained in Table 2. The following findings are of interest.

Age

Post-hoc analyses revealed that there was a higher overall prevalence of generalized anxiety and depressive disorders in the 30–49 year age category, as well as in the over 50 year age bracket, when compared to the 18–29 year age category ($P < 0.01$).

With regard to the specific disorders, *post hoc* analyses showed that: (i) generalized anxiety was highest in the 30–49 year age category ($P < 0.05$); (ii) major depression increased with age, there being significant differences between each age category ($P < 0.01$); and (iii) dysthymia was more prevalent in both the 30–49 year age bracket and the over 50 age group, when compared to the 18–29 year age category ($P < 0.01$).

These findings, therefore, indicate that in this population, the 30–49 year age group appears to be most at risk for minor psychiatric disorder, with the risk of depressive symptoms continuing through life. Given that the 30–49 year age group constitutes the majority of the economically active population, this finding is understandable within the context of high rates of unemployment which were found in the sample (see Table 1). These results also corroborate the findings of previous research. Cheng (1988) and Finlay-Jones & Burville (1978) found that disorder is highest among the 30–40 year age group while Dube (1970) found the highest rate of psychoneurotic disorders in the 35–55 year age group.

Gender

Table 2 reveals no significant difference in the overall prevalence rates between males and

Table 2. Significant differences in the weighted prevalence of mental disorder for selected sociodemographic variables (%)

Variables	Overall prevalence	Generalized anxiety	Depression	Dysthymia
Age (years)	**	*	**	**
18–29	8.00	4.67	6.67	4.00
30–49	34.62	14.79	15.63	21.51
≥ 50	36.18	4.71	27.94	30.29
Gender		**	*	*
Male	28.61	21.01	6.33	26.08
Female	23.39	5.82	16.85	13.33
Marital status		*		*
Single	26.19	12.08	14.92	20.93
Married	22.43	4.67	13.08	10.28
Employment			**	
Employed	34.64	4.29	27.50	10.00
Unemployed	22.44	9.99	12.10	17.16
Income per month	**		**	**
< R500	35.74	11.73	22.35	23.46
R501–R1000	8.16	4.08	5.10	5.10
≥ R1001	12.00	6.67	4.00	8.00
Education	**	**		**
No formal education	40.73	19.69	16.99	32.63
Grade 1–Grade 7	19.72	6.34	11.97	14.79
≥ Grade 8	13.44	2.90	11.99	2.17

* $P < 0.05$; ** $P < 0.01$.

females, although analysis of gender differences with regard to specific disorders indicates that major depression was higher in women than in men ($P < 0.05$) but that generalized anxiety ($P < 0.01$) and dysthymia ($P < 0.05$) were significantly higher in males than in females. In line with the findings of most other studies (e.g. Eaton & Ritter, 1988), the weighted prevalence of major depression was higher in women (16.8%) than men (6.3%), yielding a ratio of 2.66:1. This ratio compares favourably with Hirschfeld & Cross (1982) who found a 2:1 ratio of female to male prevalence rates for depression and the 1.5:1 female to male ratio reported by Orley & Wing (1979). Given the gender bias of the sample in favour of women however, these results need to be interpreted with caution, and perhaps warrant further investigation.

Marital status

Post hoc analyses revealed that the weighted prevalence rates for generalized anxiety and dysthymia were significantly higher for single people (including those who were separated, divorced or widowed) than for those who were married (or cohabiting) ($P < 0.05$). The effects of marital status on major depression was not

significant. These findings are to some extent consistent with the literature. For example, Johnson & Buszewicz (1996) report that, regardless of gender, people who are separated, divorced or widowed tend to have a greater likelihood of depressive symptoms than either single or married groups. Similarly, Abas & Broadhead (1997) found that women who were divorced, separated or widowed were significantly more likely to have been severely depressed over a longer period of time. These findings highlight the mediating role of spouses or partners, and possibly that of social support in general, in the rate of psychological distress.

Employment status

An unexpected finding was that the rate of depression was significantly higher among those who indicated that they were employed than among the unemployed ($P < 0.01$). This contrasts with the findings of most previous research, which has suggested higher rates of depression among the unemployed (e.g. Hodiament *et al.* 1987). A closer examination of the group that made up the employed in our sample could provide an explanation for this finding. The majority of those who indicated

that they were employed earned less than R500.00 a month (i.e. below the poverty datum line), and were thus probably employed in the informal sector without a steady and secure income. So while they might have described themselves as 'employed', the term must be understood differently from the way it may be in a more affluent community. Although the present study did not distinguish between formal and informal employment, there is evidence to suggest that a lack of formal employment (which includes both informal employment and unemployment) contributes to higher rates of depression and anxiety (Abas & Broadhead, 1997). It is argued, therefore, that income and education (discussed below) offer more accurate indices of 'socio-economic class' than employment status as measured in this study.

Income

Post hoc analyses revealed that with the exception of generalized anxiety, overall prevalence as well as prevalence for the depressive disorders was significantly higher among those in the lowest income category, that is, those with a monthly household income of less than R500.00, when compared to the other income categories ($P < 0.01$). These results are consistent with other studies which have also demonstrated an association between low income and depressive and anxiety disorders (Eaton & Ritter, 1988; Abas & Broadhead, 1997).

Education

As demonstrated in other community-based studies (Vázquez-Barquero *et al.* 1987; Abas & Broadhead, 1997), this study confirms the finding that poor educational achievement or the lack thereof is associated with higher rates of minor psychiatric morbidity. More specifically, *post hoc* analyses showed that the prevalence rates of overall psychiatric disorder, dysthymia and generalized anxiety were significantly higher among those with no formal education than among those with some primary or high school education ($P < 0.01$).

These findings should be understood in a context of endemic unemployment. Those without any formal education have little prospect of finding employment and improving their socio-economic status and are thus at greater risk for minor psychiatric disorder than those with even

a primary level of education. Thus, as in previous findings (Hirschfeld & Cross, 1982; Hodiament *et al.* 1987), the rates of psychiatric disorders were highest among those in the lowest socio-economic group.

DISCUSSION

This study found a high weighted prevalence of generalized anxiety and depressive disorders in the KwaDedangendlale community when compared to prevalence rates of these disorders in industrialized countries. This finding is in line with more recent community-based epidemiological studies of minor psychiatric disorders in developing countries, and substantiates Hollifield *et al.*'s (1990) claim that the prevalence of minor psychiatric disorders is higher in developing than in industrialized countries.

An extension of this claim is that a person's social environment, in particular poverty and the lack of support or access to resources, increases susceptibility to mental illness (Desjarlais *et al.* 1995). Analyses of the association between caseness and demographic variables in this study lends support to this argument, with the overall prevalence of generalized anxiety and depressive disorders being found to be highest among those at the lowest socio-economic levels. Furthermore, the prevalence of generalized anxiety and dysthymia was also found to be higher among single persons, emphasizing the importance of the mediating role played by partners in the development of these disorders.

As has been found to be the case in Zimbabwe (Abas & Broadhead, 1997) this study revealed that depressive disorders were more prevalent than generalized anxiety. These findings concur with the claim made by Desjarlais *et al.* (1995) that depressive disorders are the most prevalent of the neuropsychiatric disorders, being rated the fifth health burden to women and the seventh to men. The finding that generalized anxiety presented mainly as a mixed syndrome with depressive features is also not surprising, given reported findings of this mixed syndrome in other developing countries (e.g., Kleinman & Good, 1985).

This study showed the SRQ-20 to be a relatively valid and cost effective screen for generalized anxiety and depressive disorders

when clinical interviews based on DSM-IV checklists were used as the gold standard. Further research utilizing DSM-IV checklists as a second-stage criterion in two stage community-based studies is strongly indicated.

With regard to the planning of mental health services in South Africa specifically, the high prevalence rate of generalized anxiety and depressive disorders reinforces the need for integrated primary mental health care. The somatic presentation of these disorders in primary health-care settings is well documented (Desjarlais *et al.* 1995; Kleinman, 1996) as is the fact that, due to the dominant biomedical approach to health care, primary health care providers generally only identify and treat the presenting physical complaints (Helman, 1994; Kleinman, 1996). In order to ensure that minor psychiatric disorders are correctly identified and treated by primary health care personnel, a broad vision of health care in which primary health care personnel are orientated towards the bio-psycho-social model would thus need to be adopted. Furthermore, given the association of minor psychiatric disorders with low socio-economic levels, mental health care provision can only be adequately delivered within a developmental view of health care provision such as that espoused by primary health care philosophy. This demands a restructuring of the mental health system at the community level, including the appropriate use of local human resources (e.g. community health workers, teachers, traditional healers, religious leaders and the police) within a broad multi-sectoral development framework.

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