programmes consulted. These social conditions require culturally sensitive health education, taking into account local perceptions of TB^{14} .

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A psychiatric ward in an African district hospital

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SUMMARY In most African district hospitals there are no separate facilities for psychiatric patients. A former general medical officer describes how a ward for these patients was set up at a rural district hospital in Zimbabwe using the already available resources. The effects on the psychiatric care at the hospital and the district are illustrated by two case reports. It is concluded that psychiatric care integrated in primary healthcare, with due regard for

the cultural aspects and with cooperation of local healers is feasible, provided that it is supported by additional diagnostic and treatment facilities at the district hospital.

Introduction

Although it is now widely acknowledged that psychiatric disorders in Africa are about as common as in the Western countries, the general level of psychiatric care at African district hospitals is profoundly inadequate. Overburdened outpatient departments focus on physical diseases, even though at least 20% of their patients present with psychosocial or psychiatric illnesses. Community care for psychiatric patients is virtually non-existent¹.

At most district hospitals in Africa, psychiatric patients are nursed in the general wards alongside patients with physical disease². Nurses generally find disruptive behaviour difficult to cope with, leading to early discharge, transfer to one of the few overcrowded central psychiatric hospitals, or to police custody. Doctors at the district hospitals are usually general medical officers (GMOs), whose training has been primarily focused on somatic diseases and public health, and their psychiatric skills and interests tend to be rather limited¹.

In many district hospitals nurses with additional training in psychiatry are employed, who can advise their colleagues on psychiatric nursing. If the hospital has a community programme, they may also supervise the rural clinics and follow-up psychiatric patients. However, they are often required to undertake general duties, leaving the psychiatric patients to be attended to by less experienced staff. In 1993, the government of Zimbabwe decided to decentralize its national training programme for state registered nurses. In addition to the central hospitals few rural district hospitals were selected for the training, provided that, among other criteria, a separate ward for the care of psychiatric patients was created.

This paper describes the consequences of the creation of a psychiatric ward at a district hospital on psychiatric care both in and outside the hospital.

The setting

Bonda Mission Hospital, a 200-bed district hospital, provides medical care to the 170 000 inhabitants of Mutasa district, a rural area in Zimbabwe of 6112 km^2 near the border with Mozambique³. The vast majority of the population consist of subsistence farmers who are members of the Shona ethnic group. Most of them are converts to Christianity, but continue to adhere to traditional beliefs⁴. Traditional healers are often consulted before a hospital visit⁵. A hospital team, including a psychiatric nurse, regularly visits the 40 rural clinics in the district in order to supervise the staff and follow-up patients after discharge. Referral facilities consist of the central hospital in Mutare, the provincial capital (80 km), which has a psychiatric ward but no psychiatric specialist available.

In setting up the psychiatric ward, patients, beds, nurses and medication were moved to some rooms that were no longer in use: a consultation room, a room for group activities and two rooms with nine beds were created. The provincial authorities did not allow facilities for seclusion of patients. One of the GMOs volunteered to allocate part of each day to supervising the ward.

Articles

Table 1	DSM-IV axis-I	psychiatric diagnoses	(n=107) to Bonda	Mission Hospital.	psychiatric ward.	Mutasa district.	Zimbabwe, 1994
Iable I		psychiatric ulagrioses	(11-107) to borido	i wilaalon noapital,	payernutric wurd,	mataba abtrict,	Ennoublec, 1994

Delirium		Psychotic disorders (cont'd)	
In the course of malaria	2	Schizoaffective disorder	1
In the course of an asthmatic attack	1	Brief psychotic disorder	9
In the course of senile dementia	3	Delusional disorder	1
		Psychotic disorder in the course of epilepsy	2
Dementia		Psychotic disorder NOS (including one case of 'zvi-nyau dance psychosis')	6
Alzheimer's type, late onset	3		
After HIV encephalitis	1	Mood disorders	
In the course of neurolues	1	Major depressive disorder	10
In the course of severe epilepsy	1	Bipolar I disorder	2
		Manic episode in the course of rheumatic fever	1
Substance related disorders			
Alcohol intoxication	1	Anxiety disorders	
Alcohol dependence	1	Panic disorder	2
Alcohol induced persistent amnestic disorder	1	Post-traumatic stress disorder	1
Cannabis induced psychotic disorder	1		
Intoxication by hallucinogenic mushrooms	4	Somatoform disorders	
Theophylline induced psychotic disorder	1	Conversion disorder	2
		Pain disorder	1
Psychotic disorders			
Schizophrenia, paranoid type	4	Other disorders	
Schizophrenia, disorganized type	14	Factitious disorder	1
Schizophrenia, catatonic type	2	Sleep disorder	1
Schizophrenia, residual type	2	Adjustment disorder	5
Schizophrenia, undifferentiated type	1	Medication induced movement disorder	4
Schizophreniform disorder	3	No psychiatric disorder, V-code	11

NOS=Not otherwise specified

Consequences for psychiatric practice

Although some members of the hospital staff initially expressed fears that a separate ward might result in increased admissions of aggressive patients, in fact they became more cooperative and were discharged or transferred less often because of disruptive behaviour. The new ward gave them relief from the hostile reactions of non-psychiatric patients and continuous care by their own nurses. Continuity of care enabled more consistent observation and diagnostic evaluation, which in turn created the need for a more differentiated diagnostic classification system. Formerly, all psychotic patients had been diagnosed as 'schizophrenic', patients with a depressed mood as 'depressed', old people with memory deficits as 'demented' and patients with unexplained somatic complaints as 'psychosocial'. Eventually, the system described in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) was found to be the most appropriate⁶. An overview of diagnosed psychiatric disorders in 1994 is shown in Table 1.

The increased diagnostic sophistication and continuity of care enhanced the confidence of the team allowing them to deal with patients they would previously have referred to specialist resources (see Case A). Furthermore, the new ward provided time and space for cultureoriented interviews, and exploration of what patient and relatives, from their own sociocultural point of view, perceived to be the cause and nature of the disorder. The explanatory model is time consuming, but may provide new insights as well as therapeutic options (see case B).

Case reports

Patient A

A 33-year-old divorced woman, previously diagnosed schizophrenic, was admitted because of agitation, restlessness, talkativeness and acoustic hallucinations. In 1985 she had been admitted to Bonda hospital because of similar complaints. She absconded after 2 days and was later allegedly cured by a traditional healer who appeased the angered ancestral spirits. In 1986 she was readmitted because of a post-partum depression. She absconded after 2 months. Treatments by several traditional healers did not bring symptomatic improvement and after becoming psychotic, she was readmitted and referred to the provincial hospital where her condition ameliorated. She was subsequently lost to follow-up. In 1990 she had a further episode of restlessness and talkativeness, and was again admitted in the district hopsital after traditional treatment had failed. When she became lethargic and stopped talking or moving (stupor) she was referred to the provincial hospital. She was again lost to follow-up and was treated by various healers. Seven months later, after her family had given up hope, she suddenly started to talk again and her behaviour normalized. In 1992 she became agitated and talkative and visited an Anglican priest, who was well known locally for his healing powers. The priest supposedly exorcised a few demons, but she soon became lethargic and depressed. The priest allowed her to remain near the church to enable her to attend prayer sessions. The depression cleared during the course of 6 months. There was no follow-up. During the current admission, the diagnosis of 'schizophrenia' was changed into bipolar I disorder (formerly known as manic-depressive illness). She was treated with chlorpromazine, the only antipsychotic drug available, and she was educated about her diagnosis and its implications, and recovered within a few weeks. This time, however, she was not lost to follow-up and attended the local clinic regularly. When she later became depressed, she presented at an early stage and was treated as an outpatient with amitriptyline by the clinic staff under supervision of psychiatric nurses.

Patient B

A 25-year-old woman was referred by a district clinic after rushing one night out of her hut naked, because of

unbearable epigastric pain, shortness of breath, sweating, palpitations and numbness of the hands. She had visited the clinic almost every month for the previous few years. Several diagnoses such as primary infertility, peptic ulcer, hyperthyroidism and tuberculosis, had been suggested by the hospital as well as several private medical practitioners. However, all investigations were normal. Various treatments had been tried without success. On admission it became clear that her initial complaint had been infertility, which had caused considerable tensions with her husband's family. In traditional Shona society, the family of the bridegroom pays a substantial bride price. Children are extremely important, are thought to belong to the family of the husband and if a wife is infertile, her in-laws may feel they have paid for nothing⁷. A traditional healer was consulted and reported that the womb of the patient had been bewitched by a spirit of a female ancestor who had been a witch when still alive. When the patient remained infertile in spite of traditional treatment, she became frightened that the spirit might eventually take hold of her mind. Her fear deepened, particularly at night when witches are thought to be active. On the night that she rushed out of her hut naked, she had become convinced that she had herself turned into a witch. Witches are believed to be naked when they are active⁸.

Panic disorder without agoraphobia was diagnosed. Treatment consisted mainly of allowing the patient to talk about her anxiety and help her to recognize her symptoms and control them via breathing and relaxation exercises. The attacks ceased to occur. The patient left her husband and moved back to her own family. At follow-up she was found to be pregnant.

Discussion

To our knowledge this is the first paper dealing with the setting up of a separate psychiatric ward at a rural district hospital in Africa. The costs involved were minimal, because the new ward was created by redistributing existing personnel and material, and because outpatient care was already integrated into the district outreaching programme. Furthermore, fewer psychiatric patients were transferred, saving considerable transport costs.

Other hospitals with fewer resources and possibilities for reallocation may find that a more substantial financial input may be needed. In our hospital the main long-term problem was not buildings or beds but staff. Psychiatric nurses were regularly required to assist in the general wards. In most district hospitals the greatest challenge to the feasibility and sustainability of a psychiatric ward will probably be staffing, not material resources. Nurses with sufficient experience and interest to care for psychiatric patients are needed and, most importantly, managers must give mental health the priority it needs.

The new ward had substantial, unforeseen, consequences for rural psychiatric practice in terms of patient behaviour, diagnosis and treatment. In the new ward disruptive behaviour occurred less frequently and both patients and relatives expressed greater satisfaction with improved access to higher quality care provided in a therapeutic environment by skilled personnel.

The use of a restricted number of diagnostic labels (i.e. schizophrenia, depression, dementia and psychosocial) is probably representative of psychiatric expertise at the African district level. The implementation of the DSM-IV led to more accurate and less arbitrary diagnostic practice (see Table 1). Previously, the category 'schizophrenia' included a brief psychotic disorder caused by a

stressful event or psychoses during the course of a mood disorder. Patients with multiple physical complaints were always labelled as 'psychosocial', whereas Africans with anxiety disorders or depressive disorders often present with somatic complaints¹⁰. Improved diagnosis not only led to a more rational allocation of treatment facilities (e.g. relaxation exercises instead of antacids and painkillers), but also inspired the team to believe that they were competent to treat and follow-up difficult cases, such as case A. The depressing story of this patient is a typical example of the course of chronic and recurrent psychotic disorders at African district level. Although regular follow-up and medication, preferably by the same team, is of paramount importance¹¹, most patients end up being transferred from one hospital to another. Central hospitals are too distant and expensive for relatives to visit and, the district hospital and local clinic were underused because previous early discharge or referral had installed little trust. A psychiatric ward with a therapeutic climate at the district hospital may change this, and may subsequently form the basis for outreach activities to establish effective follow-up.

For the accurate proper diagnosis and treatment of the African psychiatric patient, attention to both the disease and the illness aspect of psychiatric disorders is of considerable importance. Disease refers to the supposed underlying biological abnormality of a disorder and many of the DSM-IV diagnoses like bipolar disorder and panic disorder as generally considered to be disease categories. Illness refers to the patients' perception, experience, expression and pattern of coping with symptoms and includes the explanatory belief model of the patient and the relatives, i.e. the way they explain the cause and the nature of the disorder, as well as the illness behaviour including patterns of coping and seeking help¹². As regards the illness aspect, it should be noted that before culture-oriented interviews with due attention to these explanatory models were being held in the new ward, traditional models of psychiatric illness were hardly ever discussed, even though most nurses were from the same cultural background as their patients. This phenomenon has previously been reported from a psychiatric hospital at Curaçao, where indigenous staff, who often visit traditional healers, actively discouraged patients to talk about traditional points of view. Presumably, they took care to conform to the (perceived) Western biomedical approach to treatment and avoid the chance of being considered old-fashioned or uneducated¹³. Attention to explanatory models of psychiatric illness may therefore help to change this attitude and increase the quality of nursing care.

In an unpublished study, 110 psychiatric outpatients and their relatives in Mutasa district were asked about their opinion on the cause of their illness. The most frequently cited answer (27%) was witchcraft (Ngadziore M, 1994, unpublished). Patient B is a notable example of the importance of the illness aspect. Without any knowledge of the explanatory model of this patient, a proper understanding of the relationship between behaviour, emotions, physical complaints and cognitive interpretation would be impossible. Besides being associated with the much feared infertility¹⁴, the suspicion that witchcraft is being practised may give rise to considerable anxiety and psychiatric disorder¹⁵. Discussing the explanatory model also made it possible for the patient to appreciate the significance of her isolated position among her in-laws, which may have been crucial to recovery.

Discussing explanatory models may also create opportunities for understanding and cooperating with local healers. After patient A had related her visit to the priest, the psychiatric team visited one of his prayer sessions. Since then, the priest has referred patients who he felt needed additional biomedical treatment and also kept the team informed on the considerable number of previous inpatients who had visited him, markedly increasing the effectiveness of follow-up.

Finally, appropriate attention to explanatory models provides physicians trained in Western countries with a unique opportunity to gain insight into the social and personal dynamics of rural life in Africa, and to narrow the cultural gap between themselves and the community, so that the practice of psychiatry in Africa also becomes a personally rewarding experience.

In conclusion, this paper shows that it is feasible to have district psychiatric care integrated in primary healthcare in Africa, but it should be supported by additional diagnostic and treatment facilities in district hospitals.

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Shortfalls in the use of adenosine deaminase in tuberculous meningitis

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In 1986 Ribera et al. concluded that measuring adenosine deaminase (ADA) in cerebrospinal fluid (CSF) is a simple and reliable technique for the early diagnosis and follow up of tuberculous meningitis (TBM)¹. These data have been confirmed by others managing adults with TB^2 . Ribera et al. included only three patients with cryptococcal meningitis in their diverse patient population; the ADA levels were low in all three (mean: 1.5, range 0-8 U/L), but HIV status was not considered¹. The paediatric experience has been less favourable. Chalwa et al. reported a statistically significant increase in the level of ADA in children with bacterial and TBM, but no definite demarcation in the levels between the two types³. Patients with HIV may be another group in whom ADA levels may be unreliable. In Africa, the incidence of cryptococcal meningitis in HIV infected patients is estimated to be as high as 30%⁴. The burden of TB and HIV in resource poor countries underscores the need for simple and affordable tests, such as ADA for the accurate diagnosis of TBM.

 Table 1 Cerebrospinal fluid/adenosine deaminase (CSF/ADA) in cryptococcal meningitis and tuberculous meningitis

	No. of patients with ADA > 6 [IU/L (%)]	Mean ADA	Range	P value
TBM (15)	5 (33)	20.5	8.9 40.9	0.05
C. neoformans (76)	46 (60)	19.2	0.3-97.9	
TBM+C. neoformans ((2) 0	3.95	2.8–5.1	

We therefore evaluated the significance of ADA in the diagnosis of TBM in an area with a high incidence of both cryptococcal meningitis and TBM. To our knowledge this is the largest study to date.

One hundred AIDS patients with cryptococcal meningitis were evaluated over a 2-year period. ADA levels were available for 78 patients. Fifteen patients with culture proven TBM were included as a control group. CSF/ADA measurements were performed using the colorimetric method of Guisti⁵. A cut-off value of 6 IU/L was considered indicative of TBM in our environment⁶. The correlation between CSF ADA, protein and lymphocyte count was also examined. Statistical significance was taken as < 0.01%.

Table 1 shows that the difference between ADA levels in TBM and cryptococcal meningitis is not statistically significant (P=0.05).

There is no statistically significant difference between protein levels or lymphocyte counts in the two groups as defined by the cut-off value of 6 UI/L (Table 2). We found that only 33% of culture proven cases of TBM have ADA