

I. Relationship Between the Neuroses and Brief Reactive Psychosis: Descriptive Case Studies in Africa

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Predominant psychopathology in a selected population group – adolescents and young adults at school – in a developing country, is described. The highly selective referral to services was supplemented by active case finding in the community over three years. There were 54 cases of somaticised anxiety (brain fag); 22 cases of depressive neurosis characterised by hypochondriasis, cognitive complaints, and culturally determined paranoid ideation; 23 cases of 'hysteria' in the form of dissociative states, pseudoseizures and fugues; and 39 cases of brief reactive psychosis which differed from the dissociative states more in duration and intensity than in form. There was a temporal relationship between transient psychosis and the school calendar. Anxiety or depression often predated the florid psychotic reaction which served as a form of help-seeking behaviour or defence in intolerable stress.

There are diagnostic difficulties in the detection of depression in developing countries when criteria derived from industrialised cultures are used. The early colonial psychiatrists declared depression to be rare in Africa (Carothers, 1953). Even now there is an apparent dearth among hospital admissions of the depressive component of affective disorder (German, 1972). Unipolar manic psychosis is diagnosed proportionately more often (Makanjuola, 1982) in Nigeria. This may of course reflect the criteria for admission which is salient floridly disturbed behaviour. However, diagnostic difficulties have also been encountered among immigrants to the UK, particularly from Africa and the Caribbean, with problems in interpreting atypical presentations of psychosis and apparently high rates of schizophrenia with proportionately lower rates of depression (reviewed by London, 1986).

Yet epidemiological studies in Africa have shown the pattern of psychiatric morbidity to be similar to that in Western countries (Giel & Van Luijk, 1969; Binitie, 1981; German, 1987). Far from depression being rare in Africa, Orley & Wing (1979), and Bebbington *et al* (1981) with comparable methods, using the Present State Examination (PSE), showed higher rates of depression in the community among Ugandan villagers than inner-city Londoners. Similarly, Hollifield *et al* (1990) showed higher rates of anxiety and depression in Lesotho than an American community.

Yet there seem to be barriers to the appropriate detection and treatment of depression in Africa. Multinational WHO studies in developing countries (Harding *et al* 1980) have demonstrated that 14% of people attending primary health care (PHC) clinics were suffering from psychiatric disorder, chiefly

anxiety and depression, but were presenting with somatic symptoms. Only one-third were correctly diagnosed by clinic staff. This study has been replicated several times (Ndetei & Muhangi, 1979; Dhadphale, 1983; de Jong, 1986). Although cross-cultural studies have demonstrated the fundamental consistency across races in the experience of depression (Binitie, 1975; Ndetei & Vadher, 1984) they acknowledge the differences in presentation. Kleinman (1986) among the Chinese, and Racy (1980) among Saudi women have demonstrated the difficulty in revealing the psychological component in a predominantly somatic presentation of depression.

What is the natural history of such unrecognised depression? Do these depressives in the community get worse and present to hospital? If so, under what guise? The present study was conducted during the development of community psychiatric services in Swaziland, Southern Africa. This necessitated a move out of the custodial mental hospital which selected only the most salient psychotic disorders, and allowed an exploration of psychiatric disorder as it occurred in the community. In order to train paramedical staff in diagnostic skills, it was necessary to clarify and define common syndromes encountered both in community and in hospital practice on account of the discrepancy with Western textbooks. As part of the training programme, a technique of active case finding by health teaching with vignettes was used to elicit from rural communities their common mental illnesses. This method was used by Wig *et al* (1980) to assess community reactions to mental disorders. In the interest of feasibility this study focused upon a limited, well defined group – school populations in adolescence or early 20s. The scope of psychiatric morbidity in this

group was explored by case collections over a three-year period. Samples from the general population were collected to check for generalisation.

This is not an epidemiological study. It represents an attempt to sample community psychiatric morbidity, and to make a connection between the common prevalence of depression in the community and its apparent rarity in hospital.

There are several advantages in selecting school populations for study. Schools are accessible, so preliminary findings could be tested out in more formal epidemiological surveys (papers III and IV, this supplement). Furthermore, data have been collected on a prevalent form of somaticised anxiety and depression associated with education in Africa called the brain fog syndrome. Originally described by Prince (1962) in Nigeria, it has since been reported all over Africa (Mbanefo, 1966; German, 1969). It is characterised by a rich variety of somatic symptoms particularly related to the head and to autonomic anxiety (Anumonye, 1980) but also by cognitive symptoms, such as poor concentration and poor retentivity, and by visual symptoms. Aetiology is thought to be related to the over expectations and financial investment in education (Minde, 1974; Thebaud & Rigamer, 1972). Since this study would include an exploration of the natural history and complications of the brain fog syndrome, the scope was extended to include not only students still at school but also those within a year of school leaving because this might be a vulnerable time with disappointment of expectations.

Method

Series 1. Subjects were students still at school or within a year of school leaving who were in adolescence or their early 20s, either in secondary school (76%) or late primary (23%). The latter were approaching the primary leaving exam which terminated formal education in most of the school population, of which between 21% (1976 census) and 48% (1986 census) go on to secondary. Significant learning difficulty would have been largely eliminated by this stage by educational selection. Over the three-year period, 178 cases of functional psychiatric disorder were collected. Data on healthy students were taken from the school survey which developed out of this study (paper IV, this supplement).

Series 2. In order to place student morbidity in the context of the adult population and to see if findings could be generalised, a parallel adult series was formed. All the cases of psychosis formed a series reported in paper II in a comparison of brief reactive psychosis and the major functional psychoses.

Cases were obtained in the ways outlined below.

(a) *Active case finding in the community.* This technique had three objectives: to provide community-orientated clinical training for diagnostic psychiatric nurses during a

one-year, post-basic diploma course; to pioneer new community mental health clinics; and to explore the profile of mental illness in the community. Trainee community psychiatric nurses (CPNs) were posted in pairs for a month at a time to strategic primary health care clinics. The CPNs approached a variety of groups such as chiefs' meetings, clinic attenders or schools. Using vignettes illustrating epilepsy, psychosis, depression and alcohol-related problems, they advertised the scope of psychiatric disorder for which treatment was available. Within two weeks there would be a brisk response. The psychiatrist visited twice in the month to examine the cases collected. Five clinics were covered at each placement, and over the three years this training exercise was repeated five times. Thus, active case finding was carried out in 25 rural or periurban settings. Urban slum situations which are only just arising in Swaziland were not explored. The diagnostic proportions elicited were epilepsy 38%, anxiety or depression 33%, alcohol-related disorder 16%, mental retardation (or 'slow learning' in primary school children) 8.5%, functional psychosis 3%, and dementia 0.9%. Students comprised 10% of cases elicited in this way, i.e. 51 cases, mostly brain fog syndrome, hysteria and panic.

(b) *Out-patients attending community or hospital clinics.* These were self-referred, brought by relatives or sent by PHC nurses, or teachers. Cases of simple depression were more likely to present to clinics. They were older, more hypochondriacal and more determined to seek treatment.

All the non-psychotic cases were collected by these two methods. Data do not represent incidence to services but only those cases who came to the psychiatrist's attention. During this three-year period there was only one psychiatrist in the country. Clinics were run by diagnostic nurses visited in rotation by the psychiatrist travelling by landrover to remote areas.

(c) *Hospital admissions.* This was first admissions for functional psychosis, and represents incidence in hospital. However, since there is an important traditional healing sector which caters for a large proportion of mental illness, it is not true incidence. It was apparent that transient psychosis particularly was effectively treated by the healers (Wessels, 1985). As confidence in community clinics increased, so more transient psychosis presented outside the hospital.

Data were collected in the form of vignettes with psychosocial history, and mental state examination taken by the psychiatrist using Swazi CPNs as interpreters. Structured interview schedules were *not* available although the PSE glossary was used as a guide in defining phenomena.

Most students knew their ages because of school registration requirements, but many peasants did not. Age in series 2 often had to be estimated to the nearest half decade with the aid of a history of national events to date births. Education is neither universal nor free in Swaziland. This has contributed to the wide age range in schools owing to delay in starting school or interruptions because of farming commitments or lack of school fees. Thus, students could remain in primary school until their late teens or in secondary school until their early 20s.

Selection criteria for functional psychosis and exclusion of organic factors are outlined in paper II of this supplement.

Alcohol- and cannabis-related psychoses were excluded from the study, but in order to demonstrate the relative importance to student morbidity compared with the adult population, an estimate based on annual hospital admissions is reported.

Results

Four syndromes predominated in student psychiatric morbidity (Table 1); the brain fag syndrome, depressive neurosis, hysteria and panic, and brief reactive psychosis. Of these, the brain fag syndrome was much the commonest (see prevalence study, paper III, this supplement).

Table 1
The study sample: functional psychiatric morbidity collected over a three-year period

	Series I students n = 178	Series II non-students
Community based:		n = 34 ¹
Anxiety neurosis		7
Brain fag syndrome	54	
Depressive neurosis	22	16
Hysteria	17	5
Panic disorder	6	6
Parasuicide	3	
Miscellaneous (stammer, migraine, cardiac neurosis, conduct disorder)	10	
Hospital based: (first admissions)		
Brief reactive psychosis	39	55
Schizophreniform psychosis	18	38
Schizophrenia	6	23
Affective psychosis	3	11
Alcohol/cannabis-related psychosis ²	45	218

1. Comparison sample only.
2. 3-year estimate extrapolated from annual hospital admission statistics.

The hospital incidence for functional psychosis suggests that brief psychosis is proportionately more common among students than the adult population. The difference may of course be an artefact resulting from excluding functional psychosis with superimposed alcohol abuse. Alcohol- and cannabis-related psychosis is a much more serious problem among adults (chiefly male).

Some syndromes could be discerned through the prevailing somatic and hysterical colouring. For instance, conduct disorder was seen particularly in younger boys doing badly at school, but was not considered an indication for referral to the clinic (Appendix: Case 1). Nor did school refusal present as such, although school dropout was often a component of the clinical picture (Appendix: Case 2). The reason for referral was salient disturbed behaviour.

Other syndromes were noticeable by their absence or rarity. Anorexia nervosa was not encountered at all in spite of active case finding using vignettes of depression showing that poor eating and weight loss could indicate mental disorder. Occasionally, such cases were referred from

primary care clinics but were found to have adequate physical causes such as fulminating tuberculosis. Psychogenic eating disorder was only seen in the context of acute psychosis (food refusal 8%, bingeing and vomiting 2.7%), as was self-laceration (4% of acute psychosis) (see Appendix: Case 3). Obsessional symptoms as part of longstanding neurosis did not present in any age group. Instead, they occasionally featured in the prodromal phase of acute schizophrenia (6%), disappearing as the psychosis became manifest.

Parasuicide as a form of attention-seeking behaviour was rare. Of the three cases seen, two were from Westernised mixed-race families and one was a Swazi boy who presented initially with brief reactive psychosis then the following year at school exams overdosed with the chlorpromazine with which we had supplied him (Appendix: Case 1). Suicidal behaviour meets with strong disapproval and does not elicit the same helping response as does salient disturbed behaviour (see Appendix: Case 4).

Brain fag syndrome

The symptom profile (see Fig. 1) was similar to that described elsewhere in Africa. Somatic aspects of anxiety were prominent: headaches with variable crawling sensations or hot fluid in the scalp, abdominal and chest pains, malaise and fatigue, also autonomic symptoms such as palpitations, shaking hands, faintness and dizziness. Cognitive features

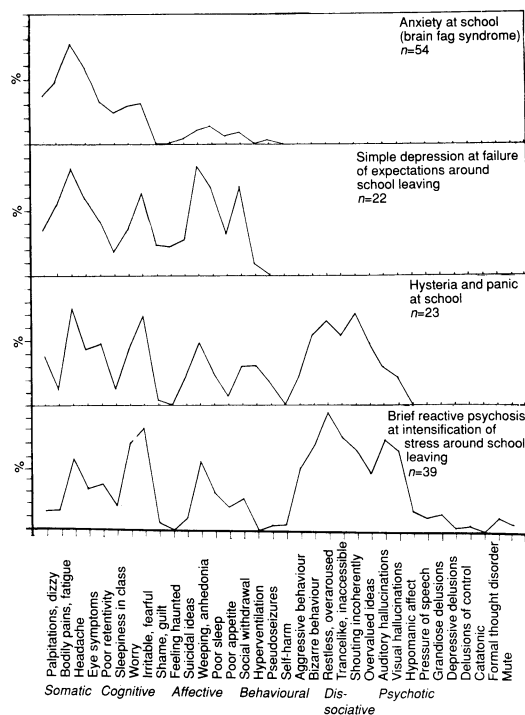


Fig. 1 Comparison of symptom profiles in syndromes encountered in school populations.

of anxiety included poor concentration, poor retentivity when learning, "mind going blank", as well as the symptom characteristic of the syndrome, "falling asleep in class". There were relatively few affective symptoms reflecting the linguistic difficulty in describing psychic pain. Anxiety was most closely translated as "thinking too much" or occasionally "the mind is boiling hot". Most students resisted psychological explanation of their symptoms. Disturbances of sleep and appetite were uncommon.

There were also features suggestive of conversion reaction in keeping with the hysterical complications described below. These were functional disorders of vision and hearing and the use of the hands, especially near exam times. For example, in one student, every September for three consecutive years the hands would close up into fists and remain so throughout the exam term, but functioned normally during the rest of the year. In some students, the autonomic symptoms would become exaggerated producing a cardiac neurosis. Of the students, 59% complained of eye pain, watering and blurring of vision, and printed figures becoming twisted. Whenever possible, eyes were tested but seldom revealed refractive errors. Some students reported difficulty in 'hearing' the teacher; they could hear but the words meant nothing. The proportion of physical to functional ear and eye disorder requires further clarification as middle-ear disease is common and use of spectacles uncommon.

Brain fog symptoms typically develop at the approach of an important public examination, but once precipitated persist for years. There is often a fall in school attainment after onset, and students may drop out of school because of incapacitating symptoms. Precipitants, however, are not confined to the school situation. A range of relevant psychosocial factors were identified and formed the basis of the subsequent epidemiological field study in schools (paper IV, this supplement), see Table 2. These included threat to the school fees, e.g. the relative paying the fees loses his job, or resents the financial burden (such as an older sibling) or demands early repayment. Several students

reported their distress at the envy by neighbours, siblings, or stepmothers (especially co-wives in polygamous families) at their educational opportunities or success. They perceived this as bewitchment and attributed their symptoms to it (Appendix: Case 3). Parental illness, or family conflict (e.g. marital, child custody or inheritance disputes) could also precipitate symptoms. In half the cases there was unstable parental union, i.e. students were reared by stepmothers or single parents rather than both their biological parents. The 54 students with uncomplicated brain fog were significantly younger and had a lower index of composite adversity (adverse factors per head) than the other syndromes (Table 2). There were twice as many first borns as would be expected, with an average sibship size of 7.2.

Depression

Depression was diagnosed when symptoms such as impaired sleep and appetite, social withdrawal and anhedonia, or suicidal ideas could be elicited in addition to the volunteered symptoms. Students seldom admitted to depressed mood, occasionally to "heart sinking or sore", "soul ebbing away" or "bad news is coming". Most gave a history of longstanding brain fog symptoms before frank depression supervened. Volunteered symptoms were of three types: firstly, hypochondriasis, that is intensification of the original somatic symptoms; secondly, self-expressed confusion in terms of forgetfulness and inefficient thinking, i.e. worsening of the original cognitive symptoms; and thirdly, feelings of being possessed, haunted or spooked. Such ideation is commensurate with cultural beliefs about bewitchment.

In this series, such neurotic depression occurred in the older age groups (Table 2) typically at school leaving after exam failure or school drop-out from lack of fees; family conflict was also an important factor. The sex ratio was equal. The profile of psychosocial predisposes and precipitants was similar to the other syndromes.

Table 2
Demographic and psychosocial factors by diagnosis in older school populations

	Brain fog syndrome	Simple depression	Hysteria & panic	Brief reactive psychosis	Healthy students (data from school survey part IV)
<i>n</i>	54	22	23	39	179
Sex					
<i>m</i>	74%	50%*	34%	64%	52%
<i>f</i>	26%	50%	65%**	36%	48%
Age: mean (s.d.)	16.3 (2.4)	19 (2.3)**	17 (2.4)	17.8 (2.7)	17.5 (1.7)
First borns	16	8	3	14	50
(factor exceeding expected rate)	($\times 2.1$)	($\times 2.2$)	($\times 1$)	($\times 2.9$)	($\times 1.8$)
Mean sibship size	7.2	6.3	7.2	8.2	6.3
Family conflict	7%	54%**	43%*	28%*	
Unstable parental union	48%	68%	69%	47%	27%
Threat to school fees	61%	68%	61%	56%	42%
Fear of envy and bewitchment	24%	31%	43%*	28%	11%
Exams as precipitant	53%	18%	72%	66%	
School failure	16%	59%*	35%	58%*	
Composite adversity (factors per head)	2.3	3.5**	3.4**	3.6**	

Significantly different from brain fog sample ** $P < 0.001$, * $P < 0.01$.

Of all the students identified with depressive illness (47 cases) only 44% showed this uncomplicated picture. There were 15% with some form of hysterical dissociative state, 6% with hyperventilation syndrome, and 33% with brief reactive psychosis. When these salient episodes had subsided, the underlying depression could be elicited (see Fig. 1 and Appendix: Case 4). Occasionally a prospective association could be observed when transient psychosis supervened in a case already diagnosed as depressed in the clinic (Appendix: Case 5).

Hysteria and panic

The commonest form of hysteria was the simple dissociative state. This could be recurrent and situation-related, or occur in epidemic form in schools. There would be a sudden onset of emotional disinhibition and disturbed behaviour with subjects running about wildly, screaming or chanting repetitively, and experiencing auditory and visual hallucinations, usually of understandable cultural or affective content. This would last a few hours and sometimes end in collapse. In one such episode of group hysteria, four out of five of the girls were found to have long-standing brain fog symptoms with many family problems (see Appendix: Case 6). In some episodes, the worst affected would not recover spontaneously in a few hours but would pass into the transient psychotic state lasting one to two weeks.

Other types of dissociation were the pseudoseizures, 'fits' or fugue states which had to be distinguished from grand

mal or temporal lobe epilepsy, the latter being relatively common. A history indicating a clear relation to situation or stress, but neither typical tonic-clonic movements nor stereotyped automatisms, but with underlying anxiety or depression and numerous social problems, suggested a psychogenic origin. Often secondary gain to the patient was evident (Appendix: Case 7). Features could include transient disturbance of consciousness, vivid affect-laden hallucinations, e.g. voices telling the subject to strangle himself, or symbolic actions, such as tearing up school books, or unconvincing descriptions of jerking, occasionally wandering in an inaccessible amnesic state. Occasionally it was possible to substantiate the informants' descriptions of these ill-defined 'attacks' by direct observations in interview. In some, the mechanism was a paroxysmal panic attack with the tetanic spasm of the hands mistaken for epileptic movements. Some older, more sophisticated patients could describe the onset of abdominal discomfort, globus hystericus, palpitations, shortness of breath and mounting terror typical of hyperventilation syndrome. However, in others the mechanism was clearly dissociative when the fluctuating inaccessible trance-like state brought on by the terror of magical beliefs could be titrated with intravenous diazepam. Hysterical conversion reactions were less common. They included inability to use the hands at school or to walk. The latter had to be carefully distinguished from the fluctuating paraplegia caused by bilharzial granuloma of the spinal cord.

Hysteria was seldom seen as an isolated event except occasionally when 'normal' people were swept into the

Table 3
Frequency of symptoms related to anxiety and depression: comparison of students and adult population attending community psychiatric clinics

	Students <i>n</i> = 99	Non-students <i>n</i> = 34
Age: mean (s.d.)	17.1 (2.5)	30 (10)
Somatic symptoms		
Head: aching, heavy, burning, crawling, pressure, "brain shrinking"	79%	78%
"General body pain", abdomen, chest, bizarre pains, fatigue, malaise	41%	72% **
Autonomic symptoms: palpitations, fainting, dizziness, trembling	37%	57% *
Functional symptoms		
Eyes: aching, watering, vision blurred	55% **	21%
Hands: in spasm, cannot write	4%	0.9%
Biological symptoms		
Sleep: insomnia, bad dreams	28%	72% **
Appetite: poor	12%	48% **
Affective symptoms		
Anxiety: "thinking too much", irritable, angry, tense, fearful	47%	57%
Depression: "unable to play", withdrawn from others, "heart sinking or sore" "low in spirit", foreboding	34%	45%
Feeling haunted, possessed, bewitched	12%	30% *
Suicidal ideas	12%	30% *
'Hysteria'		
Panic attacks and pseudoseizures	14%	24%
Dissociative states	17%	12%
Cognitive symptoms		
Self-expressed confusion, forgetfulness, poor concentration, falling asleep in class, poor retentivity	58% *	30%

** $P < 0.001$, * $P < 0.01$.

epidemics. It typically occurred in the context of anxiety or depression. In 87% of the sample, brain fog symptoms were elicited, and in 34%, depressive. Table 2 indicates the female preponderance, younger age and the importance of family conflict and fear of bewitchment.

Neurosis in students compared with adults

When seen in the context of the general population, the brain fog syndrome is simply a variant of the common somatic presentation of anxiety and depression. Table 3 shows that there were significantly fewer unequivocal depressive symptoms among the students. This suggests that brain fog is essentially the expression of anxiety in the study situation and is characterised by the triad: headaches, eye complaints and cognitive symptoms.

The typical constellation of symptoms indicating anxiety or depression among adults in primary health care clinics were headaches, bodily pains, palpitations and insomnia. This was popularly regarded as “high blood pressure” by both patients and clinic staff. Unfortunately it was seldom recognised as psychiatric illness which resulted in repeated fruitless clinic attendances. Worse still, it was often treated with reserpine. Yet simple examination would often yield typical depressive symptoms and a history of many psychosocial problems.

How did such people, often women, secure the help they needed? Salient episodes such as hysteria, panic attacks or transient psychoses had evident value as illness behaviour because they were recognised as indications for referral to the traditional healer. Depressed women would comment “I feel like dancing and chanting like a sangoma” (female diviner who passes into trance-like states) (Appendix: Case 5). This could be compared to the English idiom “I shall go crazy, round the bend, etc.” which is uttered during intolerable frustration. Possibly it is an anthropological clue to earlier patterns of stress reaction.

Commonly associated psychosocial situations reported by these women had potential implications for the welfare of the child population and so were incorporated into the questionnaires for the field study in schools (paper IV, this supplement). They illustrated possible effects of urbanisation and rural depopulation. There were the anxious/depressed women struggling to rear many children whose fathers were away doing migrant labour. These men were sending inadequate remittance home, and moreover were siring illegitimate children whom they sent back to the rural homestead for their wives to rear (the man always had right of custody of the child). Another variant was the elderly woman caring for too many pre-school grandchildren single-handed in the harsh subsistence farming environment because the parents had left to seek work in the towns. This was called the “overloaded grandmother syndrome”. Alcohol abuse in the family, squandering meagre food and labour resources, was another contributor.

Brief reactive psychosis

This typically presents with sudden onset in relation to stress of intense overarousal, restlessness and excitement increasing

to frenzy. Behaviour manifests the “fight or flight” reaction – aggressive and destructive or else running away and stripping naked, or other bizarre antisocial behaviour such as burning clothes or smearing faeces. The patient is often inaccessible or in an apparent state of clouded consciousness. This has more of a trance-like quality than the typical fluctuating level of awareness of acute organic confusion. Speech may be pressurised with flight of ideas, occasionally there is evidence of Ganser-type speech (Appendix: Case 8) but more often repetitive chanting to the point of exhaustion or else excited fragmentary expression of fearful cultural ideas. The delusional quality of these ideas can be very difficult to determine. The strong cultural and magico-religious content is often understandable in terms of the situation precipitating the psychosis. Therefore in this study they have been classified separately as “overvalued cultural ideas” as opposed to unequivocal delusions. This is equivalent to symptom 83 rating 3 on the PSE (subculturally influenced delusions). Likewise, a distinction was made between the “incoherent shouting” and formal thought disorder. Fleeting, changeable, often terrifying visual and auditory hallucinations appeared to reinforce the intense fear. These were best described as ‘dissociative hallucinations’ (PSE symptom 64).

Figure 1 shows how these transient psychotic states have few unequivocal psychotic phenomena, being characterised more by florid behaviour, volatile affect and altered consciousness.

Indeed, the distinction between the simple hysterical dissociative state and brief reactive psychosis lies essentially in duration and intensity rather than in form. PSE symptoms 64, 83 and 100 could be applied to both with rating (1) for simple dissociation and rating (2) for transient psychosis. Both syndromes were shown by 16% of students (Appendix: Case 8).

In the overall sample, duration of the psychotic episode was two to three days in 21%, one week in 20%, two weeks in 47% and three weeks in 12%. Whereas the simple dissociative state usually resolved in a matter of hours, it was unlikely to be a single episode but rather to show a pattern of recurrence in key situations such as school or church (Appendix: Case 6). The transient psychosis could also fluctuate in response to situational factors in a rather manipulative manner suggestive of secondary gain – for instance if the key relative visited or the patient was discharged to face the same unresolved conflict (Appendix: Case 9) or the psychosis could recede as the stress diminished and recur as it threatened again (Appendix: Case 3). Some reactions were of greater severity suggesting major psychosis (Appendix: Case 4). The latter case also indicates how salient psychotic disturbance rather than serious suicide attempt secured medical attention.

When examined after the psychosis had subsided, 72% of students gave a history of previous headaches, concentration problems or visual symptoms, i.e. brain fog. This anxiety could be observed between episodes (Appendix: Cases 1 and 8). Underlying depression which antedated the psychosis by weeks or months was seen in 42% (Appendix: Cases 4 and 5). Yet these depressed people did not usually present a reactive psychosis with depressive phenomena but with overarousal, terror or excitement. It was necessary to

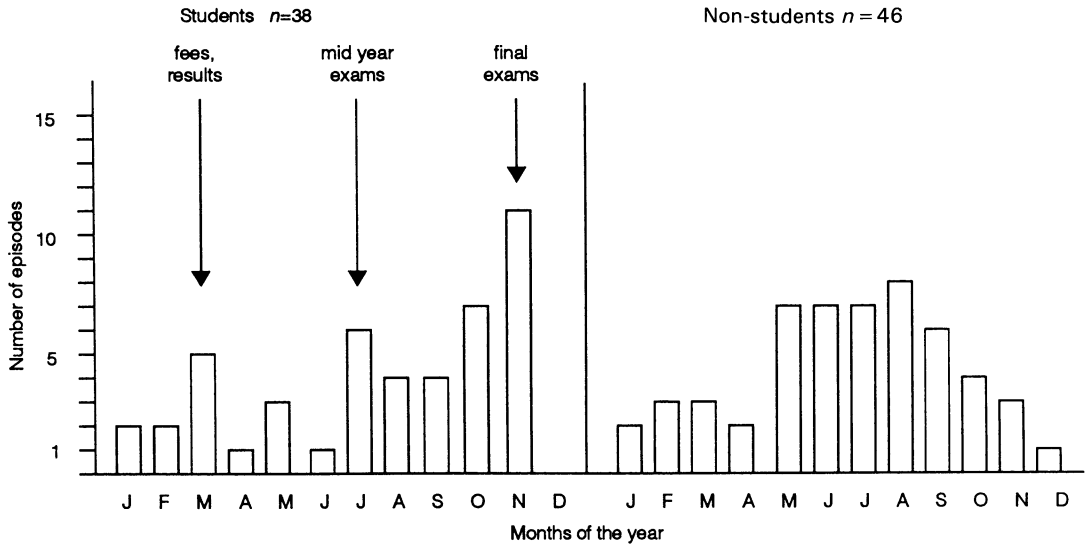


Fig. 2 Episodes of transient psychosis by month of onset showing the temporal relationship with the school calendar in students compared with non-students.

reassess the patient one or two weeks later, when a picture of withdrawal and misery would often emerge, and when definitive biological symptoms of depression could be elicited. The diagnosis was not easy because of the paucity of psychological symptoms and the predominance of hypochondriasis, self-expressed confusion and paranoid ideation. Case 5 (Appendix) describes a common clinical picture but where the depression was diagnosed prospectively.

The phenomena, classification and outcome of brief reactive psychosis as compared with the major psychosis are further described in paper II (this supplement).

The chief difference between the student and non-student sample was the temporal pattern of incidence of transient psychosis. Figure 2 plots the month of onset and shows how the incidence of psychosis in students is related to the school calendar, with a significant peak in November during state exams and lesser peaks in March related to payment of fees and publication of results. This reinforces the finding that the precipitants of brief reactive psychosis are exacerbations of the stresses associated with the underlying anxiety or depression (Table 2). Among the non-students there is an apparent sparing of the season of maximum agricultural activity.

Discussion

Exploration of functional psychiatric morbidity among older student populations in a developing country in the earlier stages of urbanisation (Swaziland) has indicated a profile characterised by somatic and hysterical expressions of neurosis and by transient reactive forms of psychosis, but lacking

some of the features recognised in industrialised societies such as eating disorders and parasuicidal behaviour. The prevailing forms of presentation to medical attention were either somatic symptoms or salient disturbed behaviour. This could have several effects; it could obscure other syndromes. Community sampling by active case finding cannot be exhaustive, nor are negative findings conclusive. Yet phenomena typical among Western adolescents such as eating disorders, self-laceration, and parasuicide were only encountered in the context of acute psychosis.

Pierloot & Ngoma (1988), comparing hysterical manifestations across cultures, found a predominance of transient psychosis among the African sample (Zaire) who were mostly students, compared with eating disorders and addictions in the Belgian sample. German & Arya (1969) reported the one-year prevalence rate of established psychiatric disorder among Ugandan university students. They found similar morbidity rates to British universities, with a trend towards somatic symptoms, hysterical conversion and paranoid psychosis in the Ugandan sample, but no parasuicide nor anorexia nervosa.

An important finding was the part played by cultural concepts of appropriate illness behaviour in the presentation of depression. Depression is not recognised by the general public as an illness. The withdrawn depressive is scolded as lazy; somatic complaints are seldom interpreted correctly by clinic staff, and serious suicidal behaviour does not secure

attention. Orley (1970) describes how in Uganda completed suicide is regarded as anathema and the body desecrated. He also notes the cultural sanction of trance states and the supportive response they engender. Jilek (1970) suggests that hysterical psychosis also had this role in pre-industrial Europe. In this study, 44% of depressed students presented with hypochondriases, 6% with hyperventilation attacks, 15% with a dissociative state, and 33% with transient psychosis. This indicates one reason for the apparent dearth of unequivocal depression in hospital compared with the community. Depressives, especially women, are selectively admitted when they present with brief reactive psychosis which acts as a form of illness behaviour fulfilling popular criteria for illness. But it also leads to diagnostic confusion. Rwegellera (1977a) describes this in Zambia. In a series of female cases he attributed the floridly disturbed affect and behaviour which precipitated admission to hysteria, and found the essential diagnosis was depression but this could not be confirmed until the initial disturbance had subsided. These women were being diagnosed as schizophrenic.

The hypothetical model linking these syndromes is depicted diagrammatically in Fig. 3. The model suggests that the common anxiety state (brain fag) can complicate with frank depression following loss events such as school failure, or with transient psychosis at major threatening life events (see paper II, this supplement), or with hysteria and panic, depending on personality and constitutional factors, or family and psychosocial situations. It was

seldom possible to obtain prospective evidence for these associations, although the retrospective link was clear. It would be feasible, even in a Third World situation, to follow through a large cohort of anxious students because they are an accessible population. Due attention should be paid to the importance of the school year in terms of life events. Furthermore, the type of school – elite, urban or rural – is important because they show different rates of anxiety (Prince, 1962; paper III, this supplement).

The African literature on the brain fag syndrome lends some support for a sequential association between these syndromes. Boroffka (1975), Rwegellera (1981), and Jegede (1983), in Nigeria, report the variable depressive component to brain fag. Kagwa (1964) and Muhangi (1973), report epidemic hysteria in East African schools which they attributed to the prevalent anxiety associated with education. There are references to other hysterical complications of the brain fag syndrome. Lehmann (1972) reports pseudoparalyses. Indeed, the common eye complaints are to some extent functional symptoms of conversion type – ophthalmologists in East Africa (Foster, personal communication) report that only 20% of student eye symptoms were due to optical errors. Panic was found to be an important component in pseudoseizures and other salient episodes in anxious or depressed Swazi students. Studies on Western adolescents suggest similar associations. Herskovitz (1986) in the USA reported depression in adolescents presenting as panic disorder which was misdiagnosed as temporal lobe epilepsy or pseudoseizure. Moss & McEvedy (1966) studied two episodes of mass hysteria in girls' schools in the north of England. They concluded that the phenomena were due to panic and hyperventilation in the context of prevailing anxiety about a local polio epidemic. They were triggered by a few girls with psychiatric problems and spread by hysterical contagion particularly to those with high neuroticism scores.

Harris (1981), in Tanzania, describes a case of brain fag complicated with transient psychosis in reaction to the typical picture identified in Swaziland – financial threat, family problems and exam failure. Indeed, this study found that anxious students were at risk of transient psychosis at crisis events, such as exams and threat to school fees, such that incidence could be predicted by the school calendar. This is very relevant to the finding of apparently high rates of schizophrenia among African students who go to the UK for tertiary education (Rwegellera, 1977b). These immigrant students present with hypochondriasis and anxiety states indicative of brain fag (Tewfik & Okasha, 1965; Cox, 1980) but also with high rates of atypical

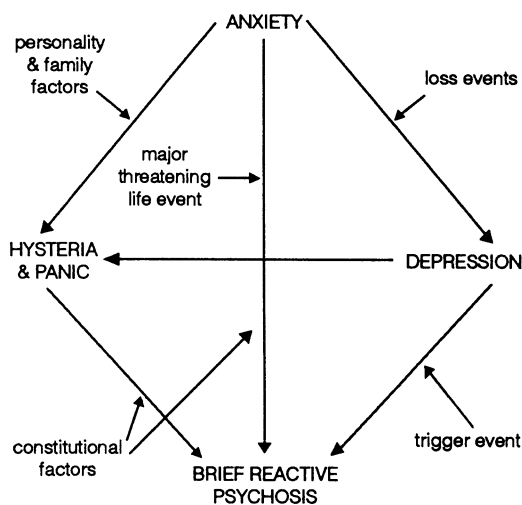


Fig. 3 Hypothetical model for the association between brief reactive psychosis and the neuroses.

psychosis characterised by violent behaviour and terrifying magical beliefs – very similar to the transient psychosis described here. It is possible that the transitional stresses and overexpectations contributing to the original brain fag at home (paper IV, this supplement) are exacerbated by the temporary emigration for study and render the students more vulnerable to psychotic breakdown – but what is the nature of the psychosis?

This study found little distinction between the phenomena of the simple dissociative state and the full psychotic reaction; the difference being chiefly in duration and intensity rather than form. Moreover, psychotic phenomena expressed in the dissociative state are considered as distinct from schizophrenia. Perhaps the two syndromes are best considered on a continuum of severity. Their mechanism of action would appear to include panic (of which Hollifield *et al* (1990) report high rates in African communities – Lesotho) together with poor recognition of depression and also the effect of cultural beliefs and sanction of floridly disturbed behaviour. The classic symptom of panic is fear of going mad. Overwhelming autonomic arousal with panic and frenzy could lead to protective dissociation of consciousness and produce a picture of transient psychosis. Certainly terror is a component consistently reported. Field (1962) in Ghana describes “fear psychosis” in response to terrifying cultural beliefs. Jakovljevic (1964) suggests a “fight or flight” reaction producing either pathological aggression or frenzied escape in response to delusions of possession. Lambo (1962) regarded transient psychosis as a form of malignant or frenzied anxiety. Clinical descriptions of culture-bound psychoses elsewhere in the world, such as *amok*, *latah* and *windigo*, include malignant anxiety, morbid rage and hyperventilation symptoms with varying degrees of dissociative trance state (Yap, 1967; Langness, 1967). Jilek (1970) suggests that transient psychosis represents the ultimate defence against overwhelming stress – discrete brief ego disruption followed by amnesia and denial. The finding in paper II of this supplement that 50% of cases have depressive symptoms which antedate the psychosis by weeks or months and re-emerge after resolution, but are absent during the actively psychotic phase, could represent the success of the dissociative defence in obtaining primary gain for the patient. Hollender & Hirsch (1969) proposed three mechanisms which could produce the clinical picture of hysterical psychosis – culturally sanctioned illness behaviour, appropriation of psychotic behaviour in conversion and dissociation reactions, and true psychosis. The marked psychogenicity of these reactive states, together with their dissociative quality, has led to the

concept of hysterical psychosis or ‘hysterophrenesis’ (Smarrt, 1956) in preference to atypical schizophrenia.

The cultural sanction of these syndromes can be understood in terms of African world views and concepts of illness (Orley, 1970; Cheetham & Cheetham, 1976; Ngubane, 1977; Cheetham & Griffiths, 1980). In Africa there is a group orientated, holistic concept of man, a belief in the imminence of the supernatural, and in the integration of the biological, religious and social causes of illness. Misfortune and illness are the result of malign, external forces, not the fault of the individual. This is alien to the contemporary Western view with its emphasis on scientific cause and effect, biomedical concepts of illness, and individual achievement and responsibility. It can be appreciated therefore that symptoms regarded as psychotic in the West are not necessarily so in Africa, for example, there is a lower threshold for hallucinations which are revered as the voices of the ancestors, likewise feelings of being possessed and controlled by spirits. In paper III (this supplement), comparison is made between students’ spontaneously expressed symptoms and their response to an instrument designed according to Western concepts of mental illness (the SRQ 24). This suggested that ‘psychotic’ SRQ items or ‘spiritual’ symptoms represent a cultural expression of neurosis. The overvalued cultural ideas or subcultural delusions characteristic of transient reactive psychosis (see paper II, this supplement) could be understood as an intensification of these symptoms in the over-aroused state.

Of particular interest in this context are the views of the African traditional healers. Cheetham & Griffiths (1980), Edwards *et al* (1982) and Wessels (1984) have worked clinically with Zulu healers and correlated their classification of mental illness with Western diagnostic categories. Healers recognise the major functional psychoses, epilepsy, and mental retardation as distinct entities. Hysterical states and reactive psychoses they regard as peculiarly “African diseases” requiring traditional treatment. They consider these disorders to be new this century, particularly since the advent of the mines when they occurred in epidemics (Watts, 1980). They have a complex classification of types based upon supernatural aetiology rather than empirical observation. Yet, nevertheless, these categories are useful. Indeed, they reflect the demographic distinctions identified in paper II. Thus *umhayizo* (or *lihabiya*) represents the simple hysterical dissociation which is commoner in girls and can occur in epidemics in schools, and is attributed to sorcery by love charms. *Ufufunyane* is the more prolonged ‘hysterical psychosis’ or ‘reactive mania’ commoner in young men and

attributable to the influence of alien spirits of other racial groups. This could be seen as the cultural expression of the impact of Westernisation. Another category, *ukuthwasa* corresponds to the older depressed woman who presents with hallucinations and disturbed behaviour which is interpreted as a call from the ancestors to become a healer. Such women join a healer's homestead and by assisting in treatment routines achieve therapeutic support themselves (Last, 1988).

Finally, in discussing psychogenicity, one must consider the contribution of cerebral factors, especially the much greater organic component to psychiatry in an impoverished Third World environment. Organic states such as trypanosomiasis can mimic schizophrenia (Smartt, 1956); psychomotor epilepsy can mimic brief reactive psychosis (Asuni, 1967). A reciprocal relationship can exist between reactive and organic psychosis (German, 1973) in that sudden illness can induce psychosis by the threat it implies, while functional psychosis can proceed to toxic confusional state by dehydration and exhaustion. However, it is not simply current organic factors which may be operating. German (1982) stresses the importance of previous toxic and infective agents and marginal nutritional states causing cerebral insults, particularly those occurring at critical stages of development, altering the biological substrate of the psyche and predisposing it to psychotic breakdown under stress. Gatere (1986), in a pilot study in Kenya, performed serial electroencephalograms (EEGs) on adolescents decompensating at school. They presented with brain fog symptoms and hysterical states but also with features of minimal brain damage. Many had histories of severe childhood illness. He found a high rate of immature EEGs; some students improved over two years on carbamazepine as the EEGs matured. Mundy-Castle (1970) also found high rates of abnormal EEGs in Ghana.

However, this case collection of brief reactive psychosis included many students approaching final matriculation (Cambridge Overseas Certificate at Ordinary level). In view of the rigours of educational selection in Africa, it is unlikely that there would be significant degrees of cerebral impairment at this stage.

This study of the psychiatric morbidity of a selected population group has suggested a relationship between brief reactive psychosis and the neuroses: anxiety, depression, panic and hysteria. The relationship with the major psychoses will be considered in paper II of this supplement.

Appendix

Case 1 – Acute 'psychosis' and later parasuicide as means of signalling distress in underlying anxiety or depression

A 14-year-old school boy, the senior son of the senior wife, was admitted after sudden onset of screaming, burning clothes and aggressive behaviour following exam failure and the birth of his mother's eighth child. He was incoherent and excited, and hallucinated – seeing small creatures squeezing him, he felt strangled and bewitched and fearful. He recovered in days.

During the next school year he had school anxiety symptoms – headaches, 'flickering eyes', poor concentration, sleepiness in class. Just before primary leaving exams he took an overdose of medication. However, he was sent back to school to try again as he had done well in the past, having been near the top of the class. A pattern of acting out behaviour ensued – running away and aggression. He became depressed with insomnia and misery. Behaviour improved on antidepressants rather than antipsychotics and he completed schooling.

A year after leaving school he was involved in a quarrel over cattle in which he was beaten up. Violent destructive behaviour, burning clothes in a state of excitement ensued for several days, but on admission there were no definitive psychotic features.

Case 2 – School refusal presenting with recurrent histrionic behaviour

A 15-year-old orphan, deserted by his mother at three-months old, was subsequently reared by his paternal aunt. He did well at school until early secondary when the aunt's husband, an uneducated migrant labourer, became resentful of his education. He overheard a quarrel between them about his school fees. Thereafter he became withdrawn and silent at home and refused to go to school. Over a three-month period there were intermittent episodes of excited, overtalkative, restless behaviour, stripping naked and running away. These lasted a few hours only and recovered spontaneously. Between episodes he was excessively hard working at home, doing all the farm chores. His aunt commented that he seemed to be desperately trying to please. After visits home from the step uncle he had recurrences of the hysteria. On interview he was evidently depressed, frightened and withdrawn but could speak coherently in a whisper, complaining of dizziness and weakness.

Case 3 – Fluctuating 'fear psychosis'

The 17-year-old son of a teacher of good supportive family was at an elite boarding school. He became intensely anxious when his textbooks were stolen. He believed spells would be put into the pages to enter his eyes as he read and cause him to fail. Over a three-month period he had three brief florid psychotic episodes, each lasting two weeks, during which he ran away and mutilated himself (with minor skin cuts). He relapsed each time he returned to school, or when his brothers came home and spoke of school. On admission, at the third episode, he was inaccessible, disorientated, with visual and auditory hallucination and

frightening ideas of reference; the radio spoke of him, the television showed his brothers on the screen. The psychosis cleared in two weeks; he had little memory for the episodes and remained intensely uneasy about the stolen books. After a term off school he was able to resume his studies.

Case 4 – Acute psychosis as a form of presentation of depression

The 24-year-old eldest son of the senior wife of a policeman with six wives had reached final matriculation. The parents were separated and there had been a long-standing dispute over whom he should live with. There was also a dispute over his career, his mother being opposed to his wish to join the army; she was also desperate for money. Eight months after leaving school he was admitted with a four-week history of violent, destructive behaviour.

On examination, he was in a semi-stupor, intensely suspicious, with slow fragmentary speech, complaining of crawling sensations all over the body, voices directing him, and visual and auditory hallucination. The psychosis cleared in ten days but he remained depressed for several weeks. He gave a history of headaches and eye symptoms at school and worry over the envy of his stepbrothers and fear of the exams. When his name failed to appear on the pass list broadcast by radio he had become withdrawn, shut himself up in his room and tried to strangle himself. The family rescued him from this suicide attempt but did not bring him for treatment. He continued to be depressed with very poor sleep and appetite for another five months during which he had several failed job applications, the last of which precipitated the psychosis.

On discharge from hospital he did a course in printing at the Vocational Rehabilitation Centre and remained well for a year, but as exams approached he became anxious again, complaining of numbness and headaches, and dropped out of the training.

Case 5 – Depression followed by brief reactive psychosis

A 25-year-old primary teacher had made an unhappy marriage. Her stepfather was a stern uncompromising senior police officer who had forced her marriage when she became pregnant. Her mother and maternal grandmother had a history of mental illness. Her in-laws' household was unhappy on account of her father-in-law's drunkenness and her husband's unemployment.

She presented at the clinic complaining of headaches, numerous aches and pains, and a feeling that 'her body was contracting'. She felt a strong impulse to 'run away and scream', but coherently described her family problems. A two-year history of insomnia, poor appetite, irritability, lack of energy, and weight loss was elicited. She also gave a history of brain fag symptoms both at school and at training college – headaches and sleepiness on studying. She had dropped out just before the final exams because of a brief episode of 'running mad and seeing snakes'. She was given imipramine and chlorpromazine but failed to return to the clinic.

Four months later, her mother developed a life-threatening illness which precipitated one week of floridly

disturbed behaviour in which she was intensely restless, overaroused, alternately ripping her clothes, flinging herself on the ground, striking others, talking excitedly with pressurised speech how she felt controlled by the ancestors, and could see snakes threatening her. She was inaccessible, dehydrated and exhausted. The psychosis cleared in days and she remained in hospital until the depressive symptoms had resolved. She then returned to teaching and was seen three years later well and working.

Case 6 – School anxiety contributing to epidemic hysteria

A 15-year-old girl in a rural secondary school was the third born of eight siblings. Her father worked as a clerk in the town; he paid the school fees but otherwise took little interest in his family and seldom visited the rural homestead. The mother was often drunk and wandering for days. Other relatives were envious of the girl's educational opportunities "She has so many more advantages than we had; why should she have problems?" She had to walk a long distance to school and ate only once a day in the evening. For three years she had had headaches, dizziness, falling asleep in class, difficulty in comprehending when the teacher spoke, and poor sleep. She then developed episodes of disturbed behaviour in the classroom and in church, when she would scream, throw herself about, and faint. There was no description of tonic-clonic movements from witnesses.

There had been recurrent episodes at the school of epidemic hysteria in which she was involved each time. A group of girls would start screaming uncontrollably, running wild and smashing things, saying they could hear voices of men calling them. The local community had identified five girls who seemed to be leaders in these epidemics and referred them both to the traditional healer and the local clinic. The interpretation made by the healer was bewitchment of the girls by a man who desired them. The teachers in the school were intensely frightened. They identified as the 'witch' a boy who had been making a nuisance of himself with the girls, and expelled him. The psychiatrist interpreted the teachers' fear in terms of the very poor record of exam results at that school and the consequent local resentment. The prevalent anxiety among students would create the conditions for epidemic hysteria which was usually triggered by a few students with personal psychiatric and social problems.

Case 7 – Secondary gain from pseudoseizures

An 18-year-old girl approaching final matriculation in secondary school was clever and expected to pass first class. She was the first generation of a peasant family to be educated, the fourth of ten siblings from the father's three wives. The co-wives were jealous of her success compared to their own children and persuaded the father to withhold school fees. The girl developed headaches, and could not concentrate or study; she had poor sleep, early waking and suicidal ideas. She then developed daily 'fits' during which she experienced visual hallucinations of people chasing her, felt strangled and terrified. She would then, reportedly, collapse unconscious with jerking and frothing, but she never bit the tongue nor urinated. Phenobarbitone had no effect. The 'fits' stopped after three months when the

headmaster obtained a bursary for her. She completed schooling and passed first class which entitled her to a university place. When awaiting preliminary tests she became anxious with headaches and the 'fits' recurred briefly but stopped after she had secured her place. A few months later the family put pressure on her to leave university and become a traditional healer because her 'fits' and hallucinations were interpreted culturally as a call from the ancestors. 'Fits' began again in lectures – she would shout, throw herself about and then collapse. Her university tutor was asked to make careful observations of the 'fits'. There was no unconsciousness during the phase of movement; she remained aware and very frightened; the collapse at the end was a simple faint. The attacks were more likely to have been panic attacks with hyperventilation.

Case 8 – 'Hysterical psychosis'

An 18-year-old girl in secondary school was the eldest of five children whose mother was struggling to rear them singlehanded, the father having deserted them. The mother was desperate for funds to start sending the youngest children to school. She frequently urged her daughter to pass well. The girl became anxious about her studies, developed headaches and painful eyes, and could not keep awake in class. At the start of the exam term she became euphoric; there then followed a dramatic onset of bizarre screaming in church with restless, destructive behaviour and refusal to eat or sleep.

A week later, on admission, she was in a trance-like state moving like an automaton, inaccessible and making incoherent utterances, behaving as if hallucinated, avoiding unseen objects, and listening to hallucinatory voices. She occasionally spoke sensibly but usually gave meaningless replies to questions (suggestive of Ganser-type syndrome). This all resolved in two weeks on chlorpromazine, leaving her amnesic for the illness. She reported a similar briefer episode on starting secondary school three years before.

A year later when approaching final matriculation she became over-religious, praying continuously and chanting "I will pass". During the exam week she was intermittently confused, restless and inaccessible as above but recovered sufficiently to write each exam, relapsing between and afterwards. She achieved a third-class pass. A year later while she was working as a nursemaid, the baby she was feeding choked on porridge. Terror that the child was dead precipitated a manic state which lasted three weeks, in which she was uncontrollably violent and overactive, despite heavy medication.

Case 9 – Hysterical psychosis as defence against intolerable stress

The 19-year-old son of a bus driver, reared by a stepmother having been deserted by his own mother, was approaching final matriculation. He had repeated several classes because of exam failure. He developed anxiety symptoms, such as 'feelings of losing his memory', epigastric pain, 'something moving in his chest', and insomnia. He vomited after eating a bun given to him by a school mate. This convinced him he had been bewitched. The family took him to the healer who performed symbolic rituals. However, he became acutely disturbed, uncontrollably violent, terrified, and hallucinated with visions and voices. After five days in hospital he became coherent but was amnesic for his illness. He continued to be tense and fearful because the family were pressing him to sit the exams, pass well and start work to support the other children at school. They took him to the healer again and then back to school when he relapsed into a violent psychotic state once more, which resolved promptly on readmission. Overt depressive symptoms developed – insomnia, poor eating, misery and suicidal ideas. The family requested special medical dispensation for delayed sitting of the exams, much against medical advice.

For references see pp. 69–72.