

Case Studies of Brain Fog Syndrome in South Africa

Gerard le Cornu Finnemore

A thesis submitted in partial fulfilment of the requirements for the degree of Master of  
Arts in Clinical Psychology.

Rhodes University, Grahamstown  
February 2000

## Acknowledgements

Professor David Edwards, for his diligent and dedicated interest in this research.

Samantha Foley, for her love and support.

Dr Patricia Bowery, for her encouragement.

Ruth Ancer and Pumla Ntlabati for their assistance with the participant interviews.

To all those who generously helped with the recruitment of the participants and to the staff at the Rhodes library.

To my relations and friends, especially John, Martheanne, Ted, Shirley, Keith, Nondumiso, Rupert, Robb, Joss, Tristan, Ann, Dan, Caroline, James, Ralph, KJ, Les, Amber, Anne, Julie, Jane, Cathy and Graham for the many ways in which they helped.

To the participants and particularly those who joined the case study phase of the research.

The Centre for Scientific Development for their financial assistance.

And finally, my parents, and especially my mother, Diana, who even though she did not live to see the completion of this work, in the hope that it might have improved her lowly opinion of psychology.

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## Abstract

Against the background of culture bound syndromes and the universalism/relativism debate, this research set out to investigate the diagnosis of brain fag syndrome by examining case studies in a South African context. Diagnostic criteria were identified by way of an analysis of the symptoms reported by a convenience sample of 20 black students experiencing problems related to study. In-depth case studies were conducted with three of the participants from the sample who most thoroughly met the criteria for brain fag syndrome. In a comparison between the brain fag diagnoses and the DSM-IV diagnoses, it was established that while the DSM-IV was not without merit in a cross cultural context, cultural differences were found which suggested the usefulness of the brain fag syndrome diagnosis. A speculative statement on the universalism/relativism debate was proposed based on the principle of complementarity derived from Quantum physics.

**Key words:** Brain fag syndrome; Universalism; Relativism; DSM-IV diagnoses; Study Problems; Culture Bound Syndrome; Primary Health Care; Language; Somatisation.

## Chapter One

### Introduction

For there is, I maintain, no such thing as the real world, no unique ready made absolute reality apart from and independent of all versions and visions. Rather, there are many right world versions, some of them irreconcilable with others; and thus there are many worlds if any. A version is not so much made right by a world as a world is made by a right version. Obviously, rightness has therefore to be determined otherwise than by matching a version with a world.

Nelson Goodman (1984, p. 285)

#### 1.1 Brain Fag Syndrome

Brain fag syndrome was first described by Prince (1960) working among a Nigerian student population in the fifties. The name was derived from the way in which students themselves spontaneously described their condition. At that time he described the symptoms of brain fag syndrome as comprising “intellectual impairment, sensory impairment (chiefly visual), and somatic complaints most commonly of pain or burning in the head or neck [and] an unhappy, tense facial expression” (p. 559). He found that the symptoms usually occurred when the student commenced studying but could be present all the time and became exacerbated when study was attempted.

Brain fag syndrome is regarded as occurring only in Africa. As such, it is what is known as a culture bound syndrome. Prince (1985) defines a culture bound syndrome as “a collection of signs and symptoms of disease...which is restricted to a limited number of cultures by reason of their psychosocial features” (p. 197). In other words, it is a psychiatric condition regarded as peculiar to a particular culture. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) defines a culture bound syndrome as "recurrent locality specific pattern(s) of aberrant behaviour and troubling experience that may or

may not be linked to a particular DSM-IV diagnostic category” (p. 844). It adds that there is seldom a unitary correspondence between a culture bound syndrome and a DSM-IV diagnostic entity.

### 1.2 The Universalism/Relativism Debate

Culture bound syndromes lie at the heart of the debate between universalism and relativism. The universalist position holds that biology determines the cause and structure of mental illness (the pathogenetic effect) and that culture and social factors determine only the content of the disorder (the pathoplastic effect). Thus mental illness is believed to be basically the same the world over and cultural ‘wrapping’ needs only to be made apparent to reveal this (Swartz, 1998). In the case of anxiety or depression in non-Western cultures, for example, biology determines the inner form of these disorders but cultural beliefs and values shape the expression of the disease, often in the form of bodily complaints. The ‘real’ disease is thus biological.

In this view diagnosis becomes a reductive procedure where the ‘relevant’ signs and symptoms must be isolated out of the indistinct phenomenological field. Thus a patient in rural Africa complaining of bodily complaints and ‘thinking too much’ might be seen as the same as a sophisticated Western urbanite complaining of depression and both would be prescribed antidepressants (Kleinman, 1988). Implicit in this view is that Western psychiatry has ‘discovered’ the core symptoms and that these can be diagnosed by applying universal diagnostic systems such as the DSM-IV and the International Classification of Mental and Behavioral Disorders (ICD-10), (World Health Organisation, 1992). This involves the application of universal diagnostic labels on the basis of signs and symptoms which are held to be largely discrete.

The reasoning behind universalism stems from Newtonian/Cartesian thinking where it is believed that the act of classification is necessary for knowledge about the world. The foundation of this epistemology is that objects can be put into classes on the basis of observable and shared attributes. This, it is argued, has proved to be a very efficient method of bringing a sense of order and control over the phenomenal world.

Based on Aristotelian logic, this kind of reductionism provides the basis for present-day classifications of diseases. It is based on the assumption that one can arrive at correct descriptions and arrange them in valid categories through traditional scientific endeavours of observation, classification and generalisation (Lock, 1987).

An opposing view born of Quantum physics that has gained acceptance among scientists during the latter half of the 20th century is that the natural world cannot be reduced to discrete building blocks but is in fact a web of interconnected relationships. In contrast to the mechanistic Newtonian/Cartesian view where the world is seen as a machine which can be broken up into a multitude of parts, in this understanding, it is seen as one indivisible whole whose parts are essentially interrelated and can only be understood as patterns within a cosmic process. In this view, it is not the parts that must be studied to understand the whole, but rather it is the whole that determines the behaviour of the parts (Capra, 1982).

Implicit in this understanding is the postmodern notion of self-reference where it is held that it is impossible to achieve an objective view of the world, because interconnectedness will always mean that observations will be influenced by the perspective of the observer (Atkinson & Heath, 1987). Thus knowledge is constituted not by way of objectively verifiable absolute rules, but rather by way of the lens we adopt to observe the world (Kapur, 1987). In psychology, this is expressed, amongst others, by the social constructionist position that questions whether there is a 'real world' that can be known with objective certainty, believing rather that knowledge arises through social exchange and is mediated through language, thus evolving "in the space between people, in the realm of the 'common world' or the 'common dance'" (Hoffman, 1991, p. 5).

According to this relativist view, the belief is that classificatory terms are externally imposed on illness experience. At the level of psychiatric illness, it proposes that ways of expressing personal distress are not shared by all cultures. It follows that advocates of this position believe that the pathogenicity/pathoplasticity model falls short when trying to explain culture bound syndromes such as brain fog syndrome and that these

disorders are more usefully seen as local idioms of distress. In other words, they are a form of communication which may give a sufferer more purchase in negotiating an untenable life situation (Kleinman, 1988).

By looking only for a limited range of signs and symptoms which could be speedily elicited, Kleinman believes professionals fail to enter the emotional worlds of the people they are treating, thus earning universalist psychiatry the title of 'veterinary psychiatry' (Swartz, 1998). Rather, he thinks what is equally important is the person's experience of illness and distress and it is this which will determine how the person behaves, the treatment sought and the reaction to treatment. Kleinman does not believe that biology should be withdrawn from the equation, but rather efforts should be made to investigate the complex interaction between biological, psychological and social sources of vulnerability. In this way, instruments can be developed that better describe psychiatric distress in specific cultures.

### 1.3 Classificatory Systems

It is against this background that many questions have been raised concerning the validity of the universalist positions on which the DSM-IV and ICD-10 are based. The criticism is based on the view that culture not only shapes the form of illness, but the way it is perceived. In other words, different cultural patterns of thought produce different symptoms (Kleinman, 1988). Thus while these classificatory diagnostic systems may facilitate professional comparisons and dialogue, they fail to recognise how local culture shapes the expression of psychological distress. In the process, vital clinical information may be lost (Ensink & Robertson, 1996).

A more radical position is adopted by those who propose that not only do diagnostic systems such as the above fail to adequately represent the diversity of human experiences of distress, but they can intensify the distress and become problems in and of themselves (Parker, Georgaca, Harper, McLaughlin and Stowell-Smith, 1995). Expressed another way, Parker (in press) writes that "a scientific approach devalues human freedom and the capacity of people to grow and change" (p. 4).

The response of the ICD-10 to culture bound syndromes is that they should be omitted from the manual as long as there is a lack of descriptive or epidemiological studies which might distinguish these disorders from those already included in the manual. The authors maintain culture bound syndromes should be seen as local variants of anxiety, depression or adjustment disorders. No mention is made of somatic or psychotic disorders.

A more conciliatory approach was adopted by the authors of the DSM-IV. Recognising the limitations of a universal categorical classification system, they responded to the need for cultural sensitivity by including the following:

- An outline designed to assist clinicians to comment on an individual's cultural context;
- A discussion in the text of cultural variations of DSM-IV disorders, and;
- A glossary of culture bound syndromes.

Brain fag syndrome is included in this glossary. There it is described as a condition found among students living in West Africa who report difficulties in concentrating, remembering and thinking. Additional somatic symptoms relate to "the head and neck including pain, pressure, tightness, blurring of vision, heat and burning" (p. 846). It adds that "brain tiredness" or fatigue from "too much thinking" (p. 846) is an idiom of distress in many cultures and the resulting syndromes can resemble anxiety, depressive and somatoform disorders.

Against the background of the universalist/relativist debate, it is the objective of the present work to investigate presentations of cases that conform to the symptom profile of brain fag syndrome and compare them with the appropriate DSM-IV diagnoses. In this way the value of the diagnosis of brain fag syndrome as an alternative instrument can be examined.

## Chapter Two

### Literature Review

#### 2.1 Historical Observations

Prior to Prince's (1960) first study on brain fog syndrome, there is very little published work on psychiatry in Africa. Two exceptions are *The African Mind in Health and Disease* by John C. D. Carothers published in 1953, wherein he made the assertion that "Africans behaved very much like lobotomised Europeans" (in Ilechukwu, 1991, p.169) and the writing in 1923 of Burchell (in Prince, 1962) about a Bushman in South Africa from his book entitled *Primitive Mentality*:

I have sometimes been obliged to allow Machunka to leave off the task, (of explaining his language) when he had scarcely given me a dozen words, as it was evident that exertion of mind, or continued employment of the faculty of thinking, soon wore out his powers of reflection and rendered him really incapable of paying attention to the subject. On such occasions he would betray by his listlessness and the vacancy of his countenance that abstract questions of the plainest kind soon exhausted all mental strength and reduced him to the state of a child whose reason was yet dormant. He would then complain that his head would begin to ache (p. 205).

In a report of psychiatric observations by Lambo (1956) in the Western region of Nigeria, he noted depressive presentations were very rarely encountered and thought that this might have been due to the "importance of the therapeutic buffering value of supernaturalism, dreams and visions, free emotionality, unrestricted sexuality, dancing, trances, etc." (p 1390).

These observations provide good examples of how early psychiatric observers in Africa dealt with cultures that were vastly different from their own and it was within this frame of reference that the first writings about brain fog syndrome emerged. In

particular, the description provided by Burchell foresaw many of the descriptions of the syndrome that were to follow.

## 2.2 Symptoms and Prevalence

Prince's (1960) initial findings on brain fog symptoms suggested that intellectual complaints centred on an inability to read, understand the meaning of text, or remember material which had recently been studied. In some cases students complained that were unable to remember anything they had *ever* studied. Sensory disturbances were often described in metaphoric terms and concerned an inability to see and hear even though the student was aware that these faculties were intact. An example of this is "I can't seem to see the page: if I look at it, it seems as if I'm blinded by a light"... "when I look at writing there is a strain across my eyes and my eyes are dim" (p. 560).

Somatic complaints included the following: pain in the back of the neck and back of the head, frontal headaches, burning sensations over the scalp and inside the head, vacancy feelings in the head and a feeling of waves passing over the scalp. In addition there were complaints of physical fatigue, weakness of the writing arm, insomnia and hypersomnia, dizziness, excessive perspiration, halitosis, stomach complaints, lack of sexual desire, impotence and a case of spontaneous ejaculation during the writing of an examination. Prince noted that depressive symptoms were not volunteered unless specifically asked about and even then, they were not found to be a marked feature of the syndrome, except for two students who felt that they had become depressed, as a result of not being unable to study rather than the other way around.

He found that the syndrome was most commonly seen among adult, unmarried Nigerian males between the ages of 15 and 30 who were students at university or secondary schools as well as teachers and government clerks who were studying in their spare time. He found members of the Yoruba tribe presented most frequently but attributed this to them being the majority in the areas where the study was undertaken.

Two years later Prince (1962) conducted an epidemiological study. A total of 844 students at five different Nigerian schools were asked to complete a short questionnaire. Prince found that 54% complained of symptoms associated with study. He noted that this did not mean they were psychiatric cases, merely that they suffered some degree of study impairment. At that stage, he formally listed the symptoms of brain fag syndrome as follows:

- (1) Unpleasant head symptoms (pain, burning, crawling feelings etc.);
- (2) Visual difficulties (blurring, eye pain, excessive tearing etc.);
- (3) Inability to grasp the meaning of printed symbols;
- (4) Poor retentivity; and
- (5) Fatigue and sleepiness in spite of adequate rest; these symptoms may be so severe as to be incapacitating (p. 198).

Minde (1974) published findings based on an experimental design that compared matched control and problem groups selected from a local secondary school about 350 kilometres north of Kampala in Uganda. Apart from study problems, other complaints centred on severe headaches, watering eyes, chest pains, muscle tension, dizziness and palpitations.

As a result of a qualitative study comprising extensive interviews with 20 referrals from a mental health clinic, Morakinyo (1980) conceptualised brain fag syndrome as comprising four groups of symptoms:

- Sensory disturbances in the head and body including pain, heat, burning, pressure, tightness and peppery sensations;
- Impairments of intellectual activity involving concentration, retentivity and inability to grasp the meaning of written words;
- Anxiety and depressive symptoms; and
- Fatigue and sleepiness in spite of adequate rest.

It should be noted that Morakinyo was the first researcher to include anxiety and depressive symptoms. This may be due to the fact that he interviewed actual referrals as opposed to drawing up symptom lists from epidemiological studies.

Based on a review of psychiatry in Africa, Ilechukwu (1991) summarised symptoms as follows:

- 1) Unpleasant head symptoms (pain, burning, crawling sensations, vacancy feelings);
  - 2) Visual disturbances (dimness of vision, pain in the eyes and tearing);
  - 3) Cognitive impairments (inability to grasp the meaning of written and sometimes spoken words, inability to concentrate, poor retention);  
and
  - 4) A variety of other symptoms such as weakness, dizziness, writer's cramp and bodily sensations of crawling, burning or migratory pains
- (p. 195).

In classifying the symptoms of brain fog syndrome into five main categories, Anumonye (1982) elaborated on previous profiles by including what he termed 'physiological disturbances'. These appear to be related to anxiety:

- Intellectual or cognitive problems such as poor concentration, poor memory, inability to read for long periods and difficulty in comprehension;
- Disturbance of affect characterised by sad or tense facial expression, agitation, and irritability;
- Sleep disturbances such as insomnia and hypersomnia;
- Physiological disturbances such as loss of weight, tremor, excessive perspiration, breathing and abdominal difficulties; and
- A wide variety of sensory disturbances which may or may not affect the head. Among these are crawling sensations, a feeling of heat, peppery sensations, heaviness, numbness, emptiness or a feeling of fluid in the head and blurring of vision.

An inquiry into brain fog syndrome was undertaken by Guinness (1992) as part of a four-part study that investigated the premise that psychiatric syndromes and their component symptoms are not the same in a developing pre-industrial society as in a developed post-industrial society. Guinness explored the profile and prevalence of brain fog symptoms among 2040 senior secondary students in different types of schools in Swaziland. She used two screening methods: the SRQ-24 (Standardised Self-report Questionnaire) and, to spontaneously elicit symptoms, an open question method. She found an adequate correlation between the two methods, although the level of symptoms elicited was higher in the SRQ method. She ascribed this to the inevitability of a direct question method magnifying symptom prevalence.

Guinness, from the outset, conceptualised brain fog syndrome as a manifestation of anxiety associated with education. She believed that the anxiety was somatised and that the cognitive problems experienced were a consequence of anxiety. She distinguishes the condition from depression which she thought often supervened on long standing brain fog symptoms. In her calculations of the prevalence of symptoms among students at schools, she states “only those symptoms possibly related to anxiety were counted” (p. 43) and “students with three or more symptoms [on the open question method] were arbitrarily defined as brain fog, and this level of morbidity was used in the subsequent analysis [and] there was limited opportunity to validate this by clinical examination of students who attended the clinics after the schools had been surveyed. Random testing was not possible” (p. 44). Thus it should be noted that she was not considering actual cases of brain fog syndrome, but rather those with anxiety symptoms related to education. Thus calculated, results showed that symptom prevalence was higher in rural schools (34%), than periurban schools (22%) and elite schools (6%). However, the highest of all (35%) was a central periurban school serving a shanty town.

Guinness found that there were three categories of symptoms. These were:

- Somatic (headaches, stomach and chest pains, palpitations, dizziness, fatigue, vision problems);
- Cognitive (difficulty understanding and remembering, poor concentration); and

- 'Spiritual' (beliefs that confusion was imposed from outside or textbooks were being bewitched).

Taking cultural beliefs into account, Guinness felt the term 'spiritual' was more appropriate because the students were clearly not delusional. It is not entirely certain why Guinness did not include anxiety symptoms as a category. It could be that she had already 'defined' brain fag syndrome as an anxiety disorder associated with education or that she saw spiritual symptoms as culturally determined expressions of anxiety. Regarding affective symptoms, these were very low on the open question method but comparable to cognitive and somatic scores on the SRQ method. She suggested that people in Africa experienced such symptoms but did not formulate them as relevant. The observation that affective symptoms were not readily volunteered by African students was confirmed by other writers (Anumonye, 1982; Peltzer, Cherian & Cherian, 1998; Prince, 1960).

Ensink and Robertson (1996) embarked on a study to identify and explore indigenous categories of distress and dysfunction affecting Xhosa children and adolescents, with a view towards evaluating whether it was feasible to include them in epidemiological studies. Indigenous healers were asked to provide descriptions of indigenous categories of distress in children and adults. The healers described five different categories. One of these was *isimnyama esikolweni* (translated as 'bewitchment at school') which the authors took as evidence that brain fag exists in South Africa. The predominant symptoms described were:

- Unable to see a book or paper;
- Watering eyes which may be red and painful;
- Headaches;
- Difficulty hearing at school;
- Fingers get weak;
- Dizzy while writing; and
- Heart palpitations.

The authors noted that the key difference from symptoms described in the context of brain fag syndrome was the lack of affective or cognitive symptoms, although the first and fourth symptoms might be construed as evidence of concentration difficulties described metaphorically in a similar manner to that reported by Prince (1960).

The most recent inquiry into brain fag syndrome (Peltzer *et al.*, 1998) was conducted in the Northern region of South Africa in 1997. A questionnaire based on the symptoms identified by Prince was administered to a sample of 622 Grade 11 secondary school students from 20 predominantly rural schools in the age group 17 to 24 years. In addition, voluntary responses were invited to an open question on any further symptoms associated with reading or study. The results were as follows (with symptoms 5 – 8 identified from the open question section):

Symptom	Boys	Girls	Total
1. Unpleasant head symptoms	73	135	208
2. Visual difficulties	54	72	126
3. Cognitive impairment	104	135	239
4. Fatigue and sleepiness	48	57	105
5. Body pains (abdomen, neck, shoulder)	51	78	129
6. Dizziness	31	48	79
7. Nervousness	27	52	79
8. Other	71	98	169 (p.1190)

Regarding affective and anxiety symptoms, the authors noted the following. Few students volunteered any affective symptoms but these did score highly on a 20-item self-reporting questionnaire (comprising 10 depressive, five anxiety and five somatic questions) with as much as 31% of students reporting a positive answer to feelings of unhappiness.

While stating that no adequate epidemiological studies had been conducted, Prince (1989) reviewed those that had been performed from the early sixties. These give the prevalence of brain fag syndrome ranging from 20% to 54%. In other studies where

the frequency of brain fog type symptoms was measured in schools and universities, prevalences varied from 70% (crawling in the head) and 50% (heat in the head) to 40% (heat in the head) and 32% (dizziness). Peltzer *et al.* (1998) noted that a weighted average applied to symptom frequency in their study could indicate the presence of brain fog syndrome in 25% of their sample. They suggested that the literature showed that brain fog syndrome “affects 20 to 40% of secondary schools and university students in diverse cultures across Africa south of the Sahara” (p. 1192). Ilechukwu (1991) noted that while there were nosological problems surrounding brain fog syndrome there was no doubt as to its prevalence among African psychiatric patients and ventured that it was the most common mode of presentation in Africa.

To summarise, symptom profiles determined by the aforementioned writers are presented in Table 1.

	Prince (1960)	Minde (1974)	Morakmyo (1980)	Anumonye (1982)	Ilechukwu (1991)	Guinness (1992)	Ensink & Robertson (1996)	Peltzer <i>et al</i> (1998)
Memory	*	*	*	*	*	*		*
Head symptoms	*	*	*	*	*	*	*	*
Vision difficulties	*	*		*	*	*	*	*
Fatigue	*		*			*		*
Concentration	*	*	*	*	*	*		*
Anxiety			*	*				*
Bodily symptoms	*	*	*	*	*	*	*	*
Sleep disturbances	*			*				
Depressive Symptoms			*	*				
'Spiritual'						*		

Table 1. Symptom profiles

As can be seen there is broad agreement between the writers concerning the presence of cognitive symptoms, head and body symptoms and vision difficulties. Those that are disputed are general fatigue, sleep disturbances, 'spiritual', depressive and anxiety symptoms. The latter three bring into question the possibility of different social or cultural constructions of emotions in African countries.

### 2.3 Aetiology

Prince (1960) suggested that brain fag syndrome was related in some way to the fusion of European learning techniques and the 'Nigerian personality'. He suggested some speculative psychodynamic explanations, while noting that a major difficulty in this regard was the Nigerian hesitancy to engage in any form of introspection. This made non-directive interviewing techniques very difficult. Inquiries about a relationship with a father, for example, would seldom lead to anything beyond the latter's occupation or physical size. In addition, the clinician would be idealised as omnipotent and any form of emotional causality was entirely alien, with symptoms being ascribed to the work of enemies or witches.

Prince described the 'Nigerian personality' in the following way. He said there was a strong sense of identity with the group and a limited sense of individual identity which would have accounted for the difficulty with non-directive interviewing described above. There was a distaste for isolated endeavour or individual creativity, a blind acceptance of authority and immobility in the face of new thinking. Prince conceptualised this as an 'oral' personality and believed that there was a poorly developed super-ego which might give rise to an internalised sense of self-esteem. He also found that the majority of students presenting with brain fag syndrome were 'spoiled' as children. This, he believed, stood in strong contrast to the Western manner of upbringing and, by extension, grossly underequipped the Nigerian for the rigours of Western education which demanded "isolated endeavour, individual responsibility, orderliness and organisational ability" (p. 568).

He thought that this 'clash of cultures' gave rise to painful feelings which resulted in brain fag syndrome, and might be seen as an unconscious rejection of the educational system, a regression to a 'child-like state'. He speculated that the problem of brain fag would lessen as Nigerians developed a more individualistic personality and that, in the meantime, more emphasis should be given to group learning techniques in line with their communitarian personality, a technique which would require a teacher well versed in the Socratic method of teaching of drawing knowledge rather than mere didacticism.

In addition, he felt that onset of the syndrome was not related to intelligence but he did find that almost all of the cases he interviewed came from polygamous families and he felt that the tensions involved in these families might have some effect on the 'psychology' of the family. He also alluded to the possible contribution of anxiety resulting from the difficulty of obtaining an education weighed against its benefits in terms of wealth and prestige.

Viewed after a period of nearly forty years, Prince's pronouncements on the 'Nigerian personality' appear somewhat severe. However, the aetiological importance that he attaches to cultural change and the concomitant anxiety it brings is a position that was taken up by many of the writers that followed, especially Anumonye (1982).

In a subsequent study Prince (1962) found no consistent relationship between sufferers of brain fag syndrome and tribal origin, age, study hours or gender. There was a small correlation between parental literacy and an absence of symptoms, although he cautions that this information was not reliable. If there was a correlation, this could be seen as further evidence of what he previously termed a 'clash of cultures'. His study also revealed that sleeping in class was very common and suggested that it might be a precursor to brain fag syndrome.

German and Arya (1969) felt that East African students might be more susceptible to anxiety related to study and examinations because of language difficulties and the enormous emphasis placed on academic success by families and society. The following year German, Assael and Muhangi (in Morakinyo, 1980) suggested that aetiological factors involved in brain fag-type symptoms may be "isolation from parents, hierarchical structures in schools, instruction in a second language, intergenerational discrepancy in life styles, borderline intelligence and faulty study habits" (p. 84). Neither language difficulties nor intelligence found any support among later researchers but anxiety borne of students' encounters with values that differed from their parents came to be thought of as an important aetiological factor by subsequent writers.

Minde (1974) found that students with brain fag syndrome tended to be older and had experienced more serious medical illnesses in the past (such as a hospital stay of over one week, operations and potentially dangerous diseases such as meningitis, fever with convulsions and tuberculosis). Furthermore, he found that affected students did not study for longer than controls but tended to study by reading on their own while the latter used discussions with oral recitations as well as reading. Sufferers also studied an average of 2,9 hours per day longer than controls during exam time. Agreeing with Prince, he found that intelligence did not have aetiological significance. Problem students preferred to rest by lying down while a greater proportion of controls relaxed by indulging in sport. Both groups reported adequate social support. Minde's results concur with German *et al.* (1969) about study habits. By contrast, he disagreed with Prince (1962) who found that age did not have aetiological significance.

Morakinyo (1980), in a qualitative study, found that brain fag syndrome exhibited a "multifactorial aetiology" (p. 88). He found that sufferers tended to be above average students with a nervous disposition as measured by the Eysenck Personality Inventory Neuroticism Scale. He also found that they were highly achievement-oriented and came from economically deprived backgrounds. This, he thought, resulted in anxiety regarding the outcome of the students' education. He found that symptoms almost always appeared during periods of intense reading or studying when students stayed up late at nights. This led Morakinyo to suggest that sleep deprivation, strong coffee and the use of amphetamines were implicated in the onset of symptoms.

In contrast to the preceding authors, Morakinyo was the first to postulate a circular model of causality. Anxiety related to the outcome of education in those of a nervous disposition, led to a way of studying that resulted in sleep deprivation. This resulted in an abnormal psychophysiological state which inhibited normal cognitive functions, leading to a secondary threat regarding the outcome of exams and further anxiety. Eventually this cycle would result in the onset of symptoms associated with brain fag syndrome. He felt that a variable that needed to be examined was sufferers' level of

social support. This was not found to be a factor of significance by Minde (1974) and it is interesting that no subsequent writers until Guinness (1992) and Peltzer *et al.* (1998) investigated this.

Noting that there had been very little objective assessment of the intellectual impairment experienced by sufferers of brain fog syndrome, Morakinyo (1985) later conducted a controlled study designed to examine the memory functions and intellectual capacity of brain fog sufferers and compared them with matched normal subjects. There were no statistically different results on the intelligence tests or the vocabulary tests, suggesting that intelligence was not a significant aetiological factor. (In the intelligence tests, slightly over 70% were above the 50th percentile). The study did find, however, that there was a significantly reduced ability to learn the meaning of new words and to retain the meaning. It followed that brain fog sufferers had to spend more time studying to acquire the same amount of information. He also found that there was a positive correlation between this impairment and increasing age.

Schematically, his model is represented as follows:

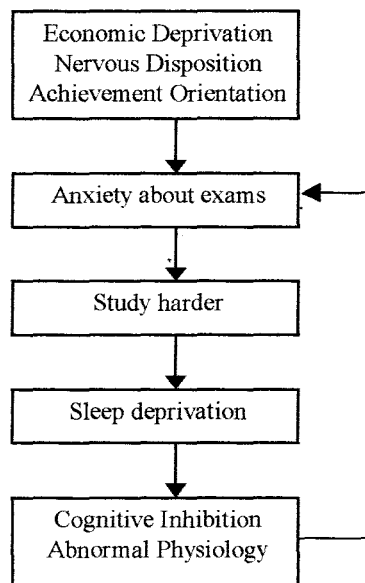


Figure 1. Morakinyo's aetiological model

Within his model, predisposing, precipitating and maintaining factors would be as outlined in Table 2.

Predisposing	Precipitating	Maintaining
Economic deprivation	Education anxiety	Longer study hours
Nervous disposition		Sleep deprivation
Achievement orientation		Amphetamines
		Coffee
		Cognitive inhibition
		Abnormal physiology

Table 2. Morakinyo's predisposing, precipitating and maintaining factors

Morakinyo's model added significantly to the debate by including the concept of circularity and demonstrating how cultural factors filter down and manifest in the individual. However, his maintaining factors of amphetamines, coffee and sleep deprivation appear too specific to be universally applicable. Also, he does not elaborate on what may account for nervous disposition.

In the single case study described by Harris (1981) of a student who developed brain fog syndrome with psychotic features, a number of stressors were identified including the father's illness, relocation and financial pressures. Regarding aetiology, Harris suggested that the patient had several features in common with the model proposed by Morakinyo (1980). The patient was of high intelligence with a strong motivation to achieve. The onset of symptoms and the psychotic episode were related to a period of intense mental activity with sleep deprivation.

Working in Nigeria, New Guinea as well as other African countries over a period of twenty years, Anumonye (1982) collected material on the psychological, sociological, physiological, biochemical and pharmacological aspects of brain fog syndrome and brings some engaging perspectives to bear on the subject. Of particular interest to him was the effect of rapid change which he catalogues as "urbanisation, industrialisation, detribalisation and cultural disintegration" (p. 3), and he devotes considerable attention to the ideological and emotional pressures experienced by Nigerian students.

Not unlike South Africa in the 90's, education in Nigeria, once restricted to a small minority, was, in the 70's, thrown open to the general population. At the same time technological advancement led to increasing demand for those suitably educated. Higher education thus constituted the new status symbol in Nigeria and the key to power and prestige. There had also been enormous growth in the media as well as transformed social and political values based on capitalism, individualism and the common usage of the English language.

Anumonye (1982) felt that these changes created confusion and conflict in Nigerian society. In particular, it was difficult for students to reconcile newly acquired or adopted values with their parents' traditional values. This was exacerbated by parental ambivalence: they valued education for their children but undermined or rejected the challenge that this brought to traditional ways of thinking. The overall effect was to greatly increase the stress on students entering the university system.

Anumonye held that brain fag syndrome might contain elements of an "hysterical syndrome" (p. 58). It is not entirely clear what the author means by this but it appears that he believes that even though students manifesting brain fag symptoms were of average or above average intelligence, many of them were apprehensive of failure. This was a consequence of the fact that many students were self sponsored with family responsibilities, meaning that success in exams became very important. In this respect he argued that it might also be possible for the symptoms to be produced as a face-saving mechanism in the light of possible failure. He did, however, find considerable evidence of anxiety and depressive elements.

Anumonye introduced the notion that it was not correct to regard brain fag symptoms as a direct result of exhaustion but rather as a mechanism to protect the mind from exhaustion. This biochemical protective procedure varied between individuals. But he problematised this by arguing that easy yet boring work generated fatigue far quicker than interesting but difficult work.

Anumonye also drew attention to what he termed the different context of the "space-age" (p. 61). He argued that the neocortex had become more important than the limbic system (which controlled 'ancient wisdom') and that the two opposed each other. This led to misplaced autonomic responses such as a rise in blood pressure, increased heart rate and vasodilatation in muscle tissue. He suggested that an individual might even misinterpret normal body activity as symptoms of disease. In addition, the limbic system lacked ordinary time sensation. This resulted in past or anticipated emotions being experienced as present emotions, a consideration well documented in psychodynamic theory.

The extent to which these affected an individual was a function of personality in the form of psychobiological programs which predetermined an individual to react to psychosocial stressors in a certain way. The factors that were relevant in this context were physical and psychosocial stimuli, genetic factors, earlier environmental influences, vulnerability, resistance and predisposition as well as physiological factors such as neuroendocrine functions. He believed these factors operated cybernetically with continuous feedback. Schematically, Anumonye's model might be constructed as follows:

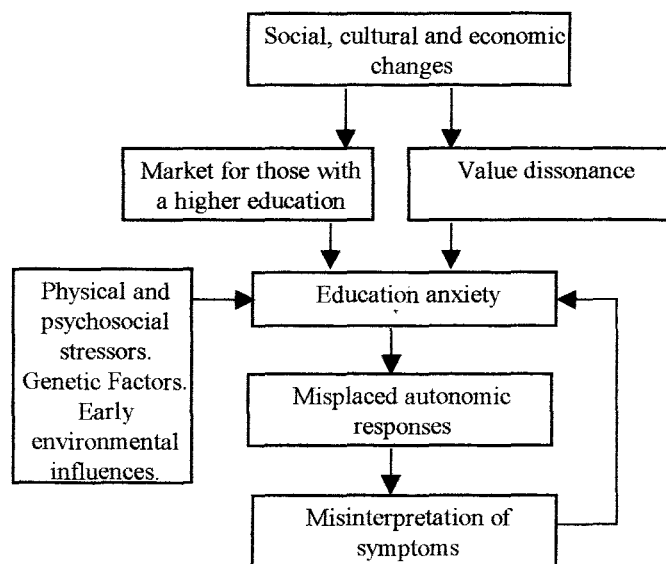


Figure 3. Anumonye's aetiological model

Within his model, predisposing, precipitating and maintaining factors would be as outlined in Table 3.

Predisposing	Precipitating	Maintaining
Social, cultural and economic change	Physical and psychosocial stressors	Misplaced autonomic responses
Market for those with a higher education	Education anxiety	Misinterpretation of symptoms
Value dissonance		
Early environmental influences		
Genetic factors		

Table 3. Anumonye's predisposing, precipitating and maintaining factors

There are similarities between Anumonye's and Morakinyo's models in that both see anxiety surrounding education as the precipitating factor. This is predisposed by an economic need to achieve and compromised by what Anumonye calls early environmental and genetic factors while Morakinyo calls this nervous disposition. Both see autonomic responses as a maintaining factor. Differences are that Morakinyo devotes more attention to other maintaining factors such as sleep deprivation and longer study hours while Anumonye emphasises the importance of precipitating psychosocial stressors.

Guinness (1992), noting that Swaziland was an appropriate context for the study of brain fog syndrome because it was an example of a country undergoing a rapid social transition from a subsistence to a cash economy, obtained data on the following: type of school, academic ability as well as the following psychosocial variables: sibling size, birth rank, parental status, family adversity (unstable parental union, pre-school rearing, parental ill health, father absent on migrant labour, paternal use of alcohol), threat to school fees, parental anger at failure, and fear of envy and bewitchment. The relationship between the above and anxiety at school were examined by chi-squared tests.

The variables most strongly associated with anxiety at school were 'fear of envy/bewitchment' and 'threat to school fees'. In addition, all five components of family adversity correlated with anxiety. Log linear analysis of the above resulted in five independent factors:

- The financial implications of education in Africa comprising the difficulty in purchasing it and its potential in terms of earning. She reasoned that in an economy undergoing a transition from subsistence to cash, education became very important. It was the key to social mobility, power and prestige. It also placed financial burdens on those involved. For example, younger siblings could not go to school until the older ones could finance them. Also, because of colonial backgrounds, there were unrealistic expectations of the advantages of education.
- The components of family adversity. As far as families are concerned, she noted that the nuclear family was rare in Swaziland. Rather, it was common for children to live with a wide range of relatives. This raised the question of the importance of biological parents. She found that pre-school rearing by both parents protected against mental ill health and psychosocial adversity, whereas early rearing by the grandmother predisposed to both. Even though Guinness maintained that the extended family proved a cushion against adversity, the forces of urbanisation and overpopulation were eroding these valuable support systems. Migrant labour further fragmented the family structure. A corollary of urbanisation was rural depopulation. The risk factor of pre-school rearing by a grandmother represented the effect of three conditions: increased illegitimacy; the old were enlisted to care for the young; and the departure of able-bodied adults from the rural areas. The study also showed that use of alcohol by the father was related to adolescent anxiety, by increasing financial difficulty and family adversity. Guinness believed that societal transition also resulted in the erosion of protective social customs such as child-rearing practices and guidelines for adolescent behaviour.
- Cultural aspects concerning the interaction between traditional beliefs or world views and the advent of Western education. She thought that the cultural distortion and dissonance which resulted from rapid change gave rise to paranoid projections which were responsible for feelings of fear of envy and bewitchment. It was hypothesised that the strong association between anxiety at school and fear of envy and bewitchment represented an exaggerated response to the disruptive effect of Western education. If culture was understood as a learned set of behaviours, frames of reference and coping strategies, then those who had

renounced the old culture and not yet fully assimilated the new were caught between two cultures (as was the case with students) and were at risk for what Lambo (in Guinness, 1992) calls 'malignant anxiety'.

- Academic ability and attributes of the school. She noted that while factors related to the educational process itself were not researched, attributes of schools in deprived rural areas tended to increase student anxiety. She found that poor academic ability was a weak risk factor and good academic ability proved to be a weak protective factor.

The author concluded by saying that while previous studies had looked at individual factors such as ambition, academic ability, temperament and parental pressure to succeed; her own study found these to be the least significant. She concluded that aetiological attention should be focused on the influence of large scale changes occurring in contemporary Africa.

Guinness proposed a transitional aetiology for brain fog syndrome as follows:

Adolescents having a group orientation and representing the hopes and investment of their extended families, contend with the demands of an alien, exam-based individually oriented educational system, concerning which there is considerable competition expressed in cultural terms as bewitchment. The least-able students and those lacking the cohesive support of their extended families are the most vulnerable. Those with the united interest of and established relationships with both biological parents are best able to meet the challenge of Western education (p. 64).

Thus Guinness asserts that considerable anxiety is generated as a society moves from a communitarian culture and a subsistence economy into the more competitive arena of Western capitalism where education becomes a powerful resource to gain an advantage in the system. The expression of this anxiety 'lags' behind an as yet unassimilated set of values associated with the West, and the anxiety is thus

conceptualised as attributions of bewitchment. Guinness is to be commended on her elegant presentation of the contextual factors that influence the occurrence of brain fag symptoms. However, a limitation of this study is that no clear clinical definition is made of brain fag syndrome. Rather, an arbitrary number of factors which allude to anxiety at school are taken as 'evidence' of brain fag syndrome.

In presenting an aetiological model based on an albeit rigorous statistical model, it is possible that material which would have provided a richer understanding of the condition may be excluded. A degree of anxiety will always accompany the act of trying to attain an education, particularly when a country is undergoing transition to a Western capitalist model. But this anxiety alone is not equivalent to a student seeking help for a condition felt to be distressing or inhibiting academic performance. As such, it must be questioned why she found 'individual' factors such as temperament and ambition to be the least significant.

In an informally reported study conducted in the Grahamstown area, Buijs (1998) requested 126 matric pupils and 120 standard six pupils to complete a questionnaire based on that used by Guinness. She found that the majority of pupils reported health problems consistent with a diagnosis of brain fag syndrome. These were eye problems followed jointly by headaches and dizziness. She reported that it was clear that the eye problems "did not have a physiological basis and they can therefore be seen as part of a preliminary diagnosis of brain-fag" (Buijs, 1998, p. 57). However, it must be questioned whether these symptoms are sufficient to warrant a diagnosis of brain fag syndrome.

Implicated in the onset of brain fag syndrome (as defined by the above symptoms) was the difficulty of purchasing an education within a culture of poverty in South Africa weighed against its potential in terms of earning power. Three other factors which played a part in the aetiology of brain fag were: unstable parental unions; early rearing by grandmothers; and the part played by traditional views of envy and jealousy. In conclusion the author suggested that not enough attention was being paid to the emotional pressure which the desire for academic qualifications brought to

poor children in the form of brain fag syndrome. Buijs concludes that her results concur with those of Guinness (1992) but does not say enough about her methodology for comment to be made on this.

No formal aetiological model was suggested by Ensink and Robertson (1996) in their study of idioms of distress as described by indigenous healers. However, healers attributed *isimnyama esikolweni* to bewitchment where jealous people employed evil spirits to prevent academic success. The neglect of certain Xhosa customs required by the ancestors was given as a cause by one healer.

In the study conducted by Peltzer *et. al.* (1998), in addition to a questionnaire to collect data on brain fag symptoms and the self-reporting questionnaire (designed to measure anxiety, depression and somatic complaints) mentioned above, students were also asked to complete the following: socio-economic background (including age, gender, religion, occupation, education, parents' income, parental status, family size, birth order, parental alcohol abuse and attitudes to religion); a 26-item cultural orientation scale; a 31-item student stress scale; and a 10-item general self-efficacy scale.

Analysis of variance showed the following factors to be related to brain fag symptoms:

- Cultural orientation;
- Socio-economic status;
- The depressive score of the self-reporting questionnaire;
- The self-reporting questionnaire with the anxiety component excluded;
- Increasing birth order for girls;
- Sex problems (boys);
- Pregnancy (girls); and
- Death of family members.

The authors concluded that brain fag seemed to “vary directly with the degree of Westernisation of the culture of the area from which the pupils come” (p. 1193).

While not stating the direction of this variation, the authors suggest this may support the hypothesis that the condition is aetiologically linked to a movement away from a collectivist and co-operative culture to the individualistic and competitive demands of Western education.

Factors not significantly related to brain fag symptoms were age, anxiety, gender, parental education, hours of study, student stress, perceived stress (within the last month), self-efficacy and family size. The following factors are suggested by the authors as being precipitating factors, although it is not clear how these were derived:

- Study-related matters (increased workload at school, lower marks than expected, failing an important subject in the first quarter of the year);
- Interpersonal issues (death of a close family member, serious argument with a close friend, change in health of a family member, death of a close friend, parental alcohol abuse); and
- Financial factors.

Regarding the lack of association between perceived stress and brain fag symptoms, the authors suggest, following Prince, that unlike Western students where the pattern is a distressing interpersonal event leading to emotional upheaval and then to a study inhibition; among brain fag students it is hard intellectual work, followed by the appearance of brain fag symptoms, followed by anxiety or despair over an inability to study or continue with their education.

Certain aspects of the report are not entirely clear. For example, it is not stated how the elements comprising 'socio-economic status' varied with the incidence of brain fag symptoms. The study seems to support a 'transitional model' but it is felt that if actual cases had been considered, more comment might have been able to be made on individual factors.

In summarising these perspectives, most writers (Morakinyo, 1980; Anumonye, 1982; Guinness, 1992; Peltzer *et al.*, 1998) agree that sufferers of brain fag syndrome are faced with a financial imperative to secure a good education. Students may be

ambitious or from impoverished families dependent on the income the student will generate in the future. Often this forms part of broad social, cultural and economic changes operating in the country which can also create value or cultural dissonance. There is also general consensus that within these broader influences, students who are experiencing current psychosocial stressors and those who have grown up in dysfunctional or disrupted family settings are most likely to succumb. All these factors combine to produce considerable anxiety regarding their education. At this point, there is less agreement as to what maintains the condition. It is felt by Anumonye and Morakinyo that anxiety inhibits the ability to study and measures are then taken to remedy this situation. Often this results in longer hours being spent studying which creates fatigue and further exacerbates the anxiety.

In terms of predisposing, precipitating and maintaining factors, the aetiological model proposed above can be represented as follows :

Predisposing	Precipitating	Maintaining
Social, cultural and economic changes	Psychosocial stressors	Misplaced autonomic responses
Financial imperative to secure a higher education	Education anxiety	Study inhibition
Value or cultural dissonance		Longer study hours/fatigue
Dysfunctional family backgrounds/neuroticism		

Table 4. A consensual model of predisposing, precipitating and maintaining factors

## 2.4 Associated Diagnoses in Africa

Reference has already been made to the fact that both the DSM-IV and the ICD-10 view brain fog syndrome as resembling, or local versions of, anxiety, depressive, somatoform and adjustment disorders. Each one of these disorders is reviewed with reference to the writers who have worked in the area of brain fog syndrome.

### 2.4.1 Depression

Prince (1960) concurred with Lambo (1956) by noting that there was almost a complete lack of depressive symptoms reported in his study. He found this to be consistent with the low incidence of depression in Nigeria and Africa generally. In a later (1962) study, however, Prince revised this to state that depressive features were

not usually admitted until patients were specifically questioned. German and Arya (1969) considered that many of the patients they saw in a student population could have been diagnosed with brain fog syndrome, and stated that depressive symptoms were common. Morakinyo (1980) was the first to list a depressive component in his symptom profile.

Ifabumuyi (1981) considered that the symptoms of burning and crawling were the equivalent of depressive affect resulting from a predilection to somatise. Along with other writers, Anumonye (1982) suggested that the Nigerians lack words for depression and that this accounted for the absence of spontaneous complaints of feeling depressed. This lack of self disclosure was also found by Peltzer *et. al.* (1998) where few students voluntarily admitted any affective symptoms but as high as 31% of the sample answered positively to the item 'feeling unhappy' on a self-reporting questionnaire.

Prince (1989) noted in a review that many authors had concluded that brain fog syndrome was a depressive equivalent or a masked depression. These authors felt that the reason depression was not usually diagnosed was the narrow definition of depression that placed too much emphasis on verbalisation (which was rare in Africa) of sad feelings.

Not finding much evidence of depression in her study, Guinness (1992) concluded that it did not present with psychological and affective symptoms typical of an industrialised society but with somatic symptoms and other forms of disturbed behaviour such as transient psychoses. She thought it was important to adopt an historical perspective and cited the example of transient psychosis which had decreased after being widespread in 19th century Europe, but was now common in Africa.

Swartz (1998) considered that over the past 30 years there had been a substantial difference in the way depression was perceived in Africa - from the view that it was rare - to the present where it was thought to be possibly even more common than in Europe and North America. He reviewed a number of reasons for this. Weighed

against the more dramatic psychotic presentations at psychiatric hospitals, it was possible that it was simply not noticed. There was also the possibility that primary health care workers were not adequately trained to detect the symptoms of depression, or if they did, they refrained from investigating the condition too deeply knowing that the likelihood of being able to offer further assistance was remote due to overtaxed resources. There was also the view that the body may be used for the expression of emotional distress (see 2.4.3).

Swartz also cites Rumble *et al.*, that by way of attributions of witchcraft as a model for explaining misfortune, presentations that appeared to be paranoid to health care workers may have disguised features of depression. These views highlight the issue of whether depression was present but being expressed a different way or whether it was simply missed by health care workers. Another explanation might be that the incidence of depression was increasing as life expectancy increased and epidemiological studies would be needed to investigate that.

In summarising these perspectives, one issue becomes clear: the translation of depression, an essentially Western psychiatric concept, into other cultures is a complex one. As Swartz reiterates, the tendency to unproblematically reify depression into an objective entity that can be 'found' in the outside world must be examined. Increasingly, there has been a trend among writers to consider depression as a major component of the presentation of brain fog syndrome. This raises the question of whether they inferred it even if patients did not conform to the DSM-IV criteria. Often it was seen as a 'masked depression' which was diagnosed after-the-fact and this was explained on the basis that depression was present but was difficult to detect because of the African hesitancy to self disclose matters of that nature.

Another question is whether different criteria are necessary for an African population whose communitarian way of living 'protects' against Western presentations such as loneliness and guilt. These questions point to the complex path by which phenomenology is voiced, a process which appears crucial to an examination of depression in an African population.

#### 2.4.2 Anxiety

In Prince's (1960) study he noted that less than three percent of his subjects complained of anxiety. Later he made reference to that fact that his patients were unable to indulge in any form of introspection and, in his model of how diagnoses are made, anxiety was deemed to be present if palpitations and tension were reported. It should be noted that palpitations were also regarded as a symptom of *isimnyama esikolweni* by South African indigenous healers (Ensinck & Robertson, 1996).

Subsequent authors consistently found evidence of anxiety and located its source in the difficulty of obtaining an education weighed against its potential benefits in countries undergoing transition (Anumonye, 1982; Buijs, 1998; German & Arya, 1969; Guinness 1992; Harris, 1981; Morakinyo, 1980). In particular Morakinyo implicated a spiral of anxiety which became secondary and maintained the cycle. He conducted physiological tests that confirmed that his subjects exhibited a significantly higher level of arousal as measured by electrodermal and electromyographic activity. This, he maintained, led to a tendency for learning and performance to be disrupted. Others also saw anxiety as a consequence of societal changes which disrupted the protective nature of traditional values (Anumonye, 1982; Guinness 1992).

Peltzer *et al.* (1998) found that while nearly 13% of their sample complained of nervousness as a 'symptom' associated with study, the anxiety scale, on the self-reporting questionnaire was not significantly related to brain fag symptoms. These authors note that this conflicts with Guinness (1992) who found that that brain fag syndrome was an anxiety disorder. A possible explanation for this might be that Guinness from the outset conceptualised brain fag syndrome as an anxiety disorder associated with education and in her study, took note only of symptoms which she felt were related to anxiety. Peltzer *et al.* found that the depressive scores on the self-reporting questionnaire were significantly related to brain fag symptoms and the authors conclude that "brain fag symptoms represent more a depressive and depressive-anxiety equivalent...than an anxiety disorder" (p. 1192). Regarding this

conclusion, it should be noted that specific 'diagnoses' of brain fag syndrome were not established.

While writers disagree on the source of anxiety, some stressing the role of temperament and others that of broader contextual issues such as socio-economic and cultural change necessitating the urgency of education, the majority agree that it plays a significant role in the presentation of brain fag syndrome. As with depression, a difficulty in this regard is the African hesitancy to volunteer information of this nature and again it must be questioned whether its presence is being inferred rather than directly articulated.

#### 2.4.3 Somatisation

It is the combination of cognitive as well as somatic symptoms that play a pivotal role in the diagnosis of brain fag syndrome and largely distinguishes it from similar conditions in the Western world, where according to Prince (1960) students are more likely to complain of anxiety, depression, insomnia, palpitations and obsessive thinking.

In answer to the question of the burning and crawling symptoms, Prince (1989) suggested that most African people presented physical symptoms to be allowed to enter the sick role. He added that many diseases in Africa involve temperature elevations (such as malaria and smallpox) and crawling sensations (hookworm and guinea-worm). He argued that it followed that entry into the sick role required the presentation of symptoms involving heat or crawling sensations. (This is similar to 'formication', which, according to a psychiatric view (Kelly, 1999), is used to describe a sensation of ants crawling over the body and is commonly found among patients suffering from organic disorders and substance abuse. It is not common among Western patients with depression or anxiety).

Prince cited Buckley who described a Yoruba folk theory of disease involving a bag of invisible insects or worms in the body. When any activity was taken to extremes (such as excess sexual activity or too much sun) the worms crawled out of the bag

and gave rise to a variety of illnesses. Although studying itself was not mentioned by Buckley, excessive study would in all likelihood transgress the rule of moderation. Studies of other traditional or cultural theories of disease would be necessary to ascertain whether this theory has wider appeal outside the Yoruba tribe.

Ifabumuyi (1981) found that African psychiatric patients, irrespective of age, sex, social class, ethnicity and religion, most commonly complained of heat in the centre of the head, pain in the brain, crawling, pinching or biting sensations in the brain and the feeling that something, usually worms, were moving over the body from the lower abdomen up to the brain, or up the spinal cord to the head. He offers an explanation as to why the heat symptoms are primarily located in the head. He suggests that in African cosmology, the belief is that success is determined by the head/brain (the terms are used interchangeably) and that if things are not proceeding well in life, then the head bears the brunt of the blame. This explanation contrasts with other cultural explanations where distress is transferred onto external sources in the form of bewitchment (Guinness, 1992).

Guinness (1992), Jegede (1982) and Leff (1988) took an 'evolutionist' position on somatisation, noting that this form of presentation is more common in less psychologised communities and when they became sophisticated enough to explain their symptoms in more psychologically oriented terms, it would decline. Swartz (1998) unsettled this view. He believed this was an example of assigning undue importance to a 'psychological' way of being in the world and as such overlooked or ignored the meaning of somatic expressions. He highlighted the prevalence of chronic fatigue syndrome in the West and suggested that somatisation may well be "a language, a way of seeing the world and a way of negotiating with the world" ( p. 129). In this respect he extends a challenge that mental health workers be more open to the possibility that minds and bodies are not as separable as commonly believed.

Although the DSM-IV states that somatic presentations of depression and anxiety are more common in non-Western societies, the fact remains that in the context of brain fog syndrome, the vivid presentation of somatic symptoms seems to exceed those

listed by DSM-IV descriptions of anxiety, depressive or somatisation disorders. This would seem to argue strongly against a universalist position and suggest that there are significant cultural differences in the way distress is articulated.

#### 2.4.4 Adjustment Disorder

No instances could be found of writers who viewed brain fog syndrome as an Adjustment Disorder. This is surprising in view of the fact that many draw attention to the effect of broad cultural changes and value dissonance in its aetiology. That this diagnosis was not considered could be due to the fact that the DSM-III-R had a limit of six months of symptoms for Adjustment Disorder. Clearly, the symptoms of most brain fog sufferers would have exceeded this limit and disqualified the diagnosis. Changes were made in the Adjustment Disorder category in the DSM-IV, published after much of the brain fog research was conducted. The DSM-IV allows for longer periods, stating that “acute and chronic specifications have been provided to indicate presentations lasting less than 6 months and 6 months or longer, respectively” (p. 787).

#### 2.5 The Status of Brain Fog Syndrome, Culture and the Construction of Illness

A question of major importance addressed by many of the authors is whether local culture should be taken into account in the way that illness is constructed, earning brain fog syndrome the ‘status’ of a discrete diagnosis or whether it should be subsumed under existing universalist diagnostic categories, being simply a veneer that needs to be stripped away to reveal the ‘underlying’ biological cause.

Anumonye (1982) introduced the notion that depression may be qualitatively different in the tropics. It is argued that in this presentation of depression, affective elements were light and hence ignored. At the same time somatic and intellectual impairments were strong enough to be disabling. In this sense there exists the possibility that affective symptoms are felt less severely in a communitarian culture where an external locus of control is the norm and adversity, distress or hardship is regarded as a condition that does not involve individual responsibility as it does in the West (Sampson, 1988).

Jegade (1983) questioned the validity of the brain fag diagnosis, arguing that there was no evidence that the symptoms constituted a different disease entity from those already known. He maintained that there was no need for a new syndrome when existing diagnostic categories were quite adequate. He argued that brain fag syndrome was a neurotic condition and that a close look showed its symptoms were identical to the DSM-III categories of anxiety neurosis and depressive neurosis depending upon which symptoms were dominant.

He further suggested that the fact that brain fag syndrome symptoms had been observed in illiterate persons (who could not be classified as brain workers) would greatly diminish the aetiological role of intellectual activity or studying *per se*. Jegede maintained that physical symptoms might mask or cover depression such that patients might not experience sadness of mood. He found that patients who were sophisticated enough to be able to explain their symptoms in more psychologically oriented terms were less likely to complain of somatic manifestations associated with brain fag. Lastly, he argued that paraesthesiae which he regarded as the dominant feature of brain fag syndrome, were not confined to Africa but were found in all parts of the world. He concluded that the cluster of symptoms was not one disease entity. An issue that Jegede does not address, however, is why the particular symptom cluster (in its totality) occurs with such prevalence in a particular culture. Furthermore, he seems to undermine his own universalist position by 'inadvertently admitting a cultural component in the use of the qualifier 'sophisticated enough'.'

Prince (1985) addressed the core issue by asking whether brain fag patients were simply suffering from a depressive illness and using a non-Western discourse to describe it. Mental health personnel then 'translated' their symptoms into a psychiatric discourse. This echoes the questions raised above where it was questioned whether clinicians in Africa were 'inferring' depression and anxiety.

While Prince conceded that the majority of patients labelled brain fag could be considered cases of 'anxiety-depression' rather than any other Western psychiatric

label, he continued by noting that “the Western manifestations of anxiety-depression with their overriding psychological complaints of panic or sadness and self-castigation is the oddity” (p. 201) and observed the most common world picture of the condition is a variety of somatic complaints. In these presentations, psychological complaints were a rarity. He highlighted the example of Chinese patients with a predominance of bodily weakness, loss of libido, headache and gastro-intestinal upsets but with none of the burning and crawling sensations so characteristic of African presentations. He concluded that to say that it is the equivalent of Western depression represents an incomplete picture or premature closure.

On the construction of emotions in Africa, Guinness (1992) concluded that because affective states were not expressed directly, they were subconsciously converted into a representation of the patient's concept of illness. This might be a conversion reaction mimicking a physical illness but more commonly it was a dissociative or psychotic reaction eminently suitable for presentation to a traditional healer. This is consistent with the views of Leff (1988) who thought that in the communication of distress, people offered the type of symptom that they considered most relevant to the potential source of help. He found that more cognitive problems were reported to teachers and more somatic problems to doctors. Leff also traced the development of the language of the emotions and found that along with the growth of a popular introspective psychology, there was a decline in somatisation and hysteria in association with the social changes of industrialisation in Western cultures.

Guinness (1992) cites Littlewood who suggested that a useful way of understanding culture bound syndromes might be a response to the impact of Westernisation upon traditional culture. Again, this seems to unfairly foreground Western conceptions and one might want to raise the question of the status of Anorexia Nervosa, itself a ‘Western’ condition. Guinness argued that during transition, members of the affected society would face adaptation demands such as diminished support systems, alien work roles, intense rivalry for social advancement, and the fragmentation of the extended family. She concluded that brain fag syndrome could be called a transitional

syndrome and the symptom profile was typical of that of a pre-industrial society rather than that of an exotic or alien culture.

Guinness concluded that the experience of mental illness was fundamentally similar through the world. In adopting a universalist position, thus, she felt that the principles of modern psychiatry were universally applicable provided they were exercised in a flexible and adaptive manner. She conceded that there were differences in psychiatric presentation but these were variations on a theme rather than fundamental differences and were the result of Western classification systems being based on post-industrial profiles. It seems that there is some tension in this conclusion. While she admits that there is a 'local' or 'pre-industrial' cultural component, she seems to unproblematically migrate to a universalist position without fully embracing the implications of this.

Kleinman (1988) believed that the forms and functions of mental illness emerge from the link between social structure and personal experience. This two-way interaction was the source of thought, emotion and action. It was this that created experience. It was as basic to the formation of personality as it was to the causation of mental disorder. He believed that mental illnesses were the outcome of experience that resulted from physical matter interacting with the attribution of meaning. In this respect, culture played a very significant role.

Psychiatry itself, he believed, was not exempt from culture. Thus a psychiatric diagnosis was dependent on the practitioner's orientation. As such, there would always be some tension between this and 'flesh-and-blood' lived experience which was deeply personal and physiological. The experience of illness was a culturally shaped phenomenon just as were idioms for expressing emotion and table manners. There was no direct measurement of pain independent of its subjective experience. And experience amplified or dampened or expressed in unpredictable or idiosyncratic ways the symptom pain.

Thus the view that 'illnesses' such as depression and schizophrenia were seen as 'things in the world', must be seen against the background that words were merely signs that signified largely unquantifiable phenomenological experiences in a world mediated by language, culture, taxonomies, notions of relevance and interpretation. Psychiatric categories, so essential for diagnosis, were themselves the product of historical development, cultural influence and political negotiation.

Echoing the views of Leff, he believed the pattern of symptom reporting was such that a patient selected out those symptoms that were familiar and salient, usually the ones that fitted popular blueprints. This practice was reinforced by friends and relatives. Thus it could happen that a symptom report was already a 'diagnosis'. In addition, substantial experience was left out to facilitate the fit of experience to diagnostic category and what was left out may be more useful than what was included.

It seems feasible that culture and context play a role in the construction of emotions and that this process operates in a cybernetic manner: people create culture and culture creates people. Parker (in press) expressed it this way, "the question is not 'what is inside the mind', but 'what is the mind inside'". It would seem, thus, that the first step in creating a culturally corrected view of mental illness and the emotions is a recognition of the diversity of emotional experience in different contexts. As such, the task is not to impose illness classifications on a 'top-down' basis but rather to try to make sense of what the symptom profile means in a particular context (Swartz, 1998)

## 2.6 A Final Note

It seems clear that neither the passage of time nor the work of several eminent researchers in the area of brain fog syndrome has done much to resolve the universalist/relativist issue. In this respect it must be noted that cultural relativism is a relatively new position and that much of the work reviewed is prior to its ascendancy. Jegede (1983) maintained there is nothing about brain fog syndrome to distinguish it from existing psychiatric disorders. Anumonye (1982) and Prince (1985) probably

came the closest to supporting a relativist position by noting the different nature of depression in Africa and the predominance of unusual somatic symptoms rarely encountered in the West. It is interesting that Guinness, who worked in the 90's and quotes freely from the work of Kleinman, ends her substantial exploration with the view that the principles of psychiatry are applicable worldwide.

Others like Swartz and Kleinman believe that Western dominance needs to be decentred and that patterns of behaviour found in culture bound syndromes should be seen not only in terms of the shared cultural meanings they employ but as instrumental communications of distress which serve to readjust personal relationships. Hughes (1996) goes even further, and asks why the symptoms of culture bound syndromes should be seen as *that* different that they can be taken as a shorthand for a discriminantly separate class of disorders. He maintains they should properly be seen as disorders of the very process of life, not diseases having an autonomous ontological status all of their own. He believes that "one must reframe the issue in terms of mutually reinforcing informational feedback loops between person and the cultural environment and not as static fixed entities on either side of this interacting duality" (p. 299). He argues that the DSM-IV cannot adequately account for culture bound syndromes for the simple reason that the DSM-IV itself is so culture bounded.

Being at the centre of the universalist/relativist debate, there is no doubt that the status of culture bound syndromes elicits heated debate from professionals around the world. But there are also pressing pragmatic considerations. Anecdotal evidence suggests that there are a substantial number of students presenting with study related problems, yet there is no published research on actual clinical cases of brain fag syndrome in South Africa. In the light of the foregoing, the question of whether brain fag syndrome is a *useful* diagnosis is both complex and relevant. Drawing on an expression of Bateson, Prince (1985) vividly expresses the dilemma surrounding the status of brain fag syndrome by asking the question of whether there is a difference that makes a difference. Ultimately, its usefulness will hinge on whether as a description of a condition, it is materially different to descriptions that would come by

way of universalist diagnoses such that our identification and understanding of the constellation of symptoms is greatly enriched.

## Chapter Three

### Method

#### 3.1 Introduction

The aims of the present research are as follows. The first step is to establish whether there are cases in South Africa that conform to the symptom profiles that have been described in other parts of Africa. Following from this, pilot criteria for the diagnosis of brain fog syndrome in South Africa will be drawn up. It is not the objective to provide definitive criteria but to initiate the process until such time as larger samples can provide a more accurate account. The intention is to improve upon descriptions of brain fog syndrome that appear in the culture bound syndrome glossary of the DSM-IV based on this study as well as criteria presented in the literature. Finally, it will be investigated whether standard DSM-IV diagnoses adequately describe the cases thus identified or whether the diagnosis of brain fog syndrome might be clinically useful.

Nuclear to the methodology of the present research, then, is a close analysis of the phenomenology, context and meanings surrounding those who present with brain fog symptoms. This will assist in examining the view that universalist diagnostic systems fail to do justice to the intricacies and idiosyncrasies of individual presentations which, it is believed, can be significantly coloured by cultural and local values (Ensinck & Robertson 1996). In addition, there is the view that quantitative, group-based multivariate research designs have failed to produce the kind of knowledge that is directly useful in clinical practice (Edwards, 1998). Also, with the exception of one epidemiological study, there is no known research on clinically diagnosed brain fog cases in South Africa. All these reasons point towards the use of a qualitative, in-depth case study methodology in the present research. This approach provides an opportunity to draw upon and expand people's ability to be reflective and attempts to make sense of their place in the world.

Kleinman (1988) noted that while questionnaires quantify so that statistical analyses can be used to assure 'scientific' results and more objective measures of significance, the meaning of a person's life experience and nature of problems in the social field were lost or worse, mystified. He suggested it was more useful to know how perceived social situations and meaningful relationships relate to illness. He believed a 'softer', subjective, ethnographic description with a biography and local history offered a more valid portrait.

This is not to suggest that quantification is not in any way useful to the generation of psychological knowledge. Rather, the utilisation of the case study method is to avoid the pitfall of devaluing people into things and transform the "variety of human experience and its surprising creative transformations in different cultures and historical periods into a soulless accumulation of 'facts' devoid of a moral standpoint" (Shotter, cited by Parker, in press). Quantification can be useful to arrive at an overall picture of the extent to which experience is articulated in a certain way and there are instances where it is used in this way in the present research.

To this end, a protocol of psychometric tests was employed to enrich the data in the sense of assisting with the DSM-IV diagnoses and adding further discourses and contexts to a study that attempts to faithfully reflect on aspects of human experience. Finally, note should also be taken of the fact that "it is a perilous affair comparing across cultures... [but] at its best it makes our own cultural practices appear strange and unnatural, as if they could be other than they are" (Potter & Wetherell, 1987, p.104).

### 3.2 Study One: Development of Brain Fog Syndrome Criteria

#### 3.2.1 Recruitment of Participants.

As stated above, at the time of planning this research, there was no published work on the symptomatology of brain fog syndrome in South Africa. Since that time, the work of Peltzer *et. al.* (1998) has been published. For these reasons and the fact that the condition is regarded as culture specific, it was first necessary to establish whether similar symptom clusters could be identified in South Africa. This was achieved by

interviewing a convenience sample of black students from secondary and tertiary educational institutions who were experiencing study problems. To assist with recruitment, the following institutions were approached and the appropriate personnel were fully briefed on the nature of the research and the symptoms associated with brain fog syndrome:

- Rhodes University Student Advisor's Office;
- Rhodes University Sanatorium;
- Grahamstown Technical College;
- University of Port Elizabeth Student Health Centre;
- Port Elizabeth Technicon Student Counselling Office;
- Nombulelo High School (Grahamstown);
- Mary Waters High School (Grahamstown);
- Fort England Hospital Outpatients Department (Grahamstown); and
- Graeme College (Grahamstown).

In total, 21 students were interviewed. Nine were referred by relevant school or technical college counsellors as students who were experiencing study problems. One was recruited after contact had been made with him during the course of community work. A further twelve students responded to a verbal communication by a teacher at a traditionally 'white' school in Grahamstown. The teacher explained the nature of the research to the students and asked whether any students felt they were experiencing study problems and would like to be interviewed. Of the twelve, eleven were interviewed. (One did not make himself available). One of the eleven students, however, reported no difficulties with memory or concentration and he was omitted from the results. All others reported either a memory or concentration problem.

Most of the participants lived in township homes in Grahamstown or Fort Beaufort or were boarders in Grahamstown with homes in other parts of the Eastern Cape. One participant lived with relatives in a traditionally 'white' suburb of Grahamstown.

### 3.2.2 Procedure

The nature of the research was explained to the participants in the sense that it concerned people who were experiencing study problems. Interviews were conducted one-on-one at the schools, in boarding houses, at the participant's home and, in one instance, at a community clinic. Each participant was asked to respond to a 59-point structured interview schedule (Appendix A). This was based on symptom profiles derived from Ilechukwu (1991), Prince (1962), Anumonye (1982) and Guinness (1992) to be as inclusive as possible. In the event of a question or answer not being fully understood, explanations and clarifications were both given and requested by both parties. Responses were scored as 'yes' or 'no'. Those who reported the presence of a symptom at least twice a week in the past three months were scored as a 'yes'. Participants' biographical details were recorded and they were also briefly interviewed with regard to their problems associated with study.

### 3.2.3 Data Display

Symptoms were clustered on the same basis as that used in the interview schedule. The results were ranked and frequency distributions drawn up.

### 3.2.4 Development of Diagnostic Criteria

The objective was to develop a set of preliminary diagnostic criteria for brain fog syndrome in South Africa similar to the format used in the DSM-IV. This was achieved by applying the following principles. Firstly, symptoms with a frequency of more than 40% in the convenience sample were considered for inclusion. Secondly, where a symptom frequency was below the 40% threshold, but was extensively reported in the literature (especially in South African studies), then it was also considered for inclusion as a brain fog syndrome symptom. This process is described in greater detail in 4.1.4.

## 3.3 Study Two: Case Studies

### 3.3.1 Participant Selection

Based on the fact that their presentations most closely resembled the criteria devised in section 3.2.4, participants 2, 5 and 19 were invited to take part in study two. They

were chosen from a short list of five. Criteria for the selection of the short list were the number of symptoms present, the nature of their presenting problem (derived from the short interview), availability for interviewing and they had to be black first language Xhosa speakers. The three participants in study two agreed to further in-depth audio-taped interviews. Strict confidentiality was assured and each signed further consent forms.

### 3.3.2 Interviews by the Author

Each of the three participants were interviewed on three separate occasions by the author. They were offered the option of a translator but responded that they felt comfortable conducting the interviews in English. Total interviewing time was about six hours each. Questions were based on an interview guide designed to elicit the following information in a manner that encouraged rather than restricted the diversity of the participants' responses:

- Presenting and associated problems;
- Family history;
- Early childhood;
- Schooling;
- Sexual history;
- Medical history;
- Significant life events;
- Lifestyle;
- Habits;
- Financial position;
- Physical condition;
- Study habits;
- Academic performance;
- Stressors;
- Social activities; and
- Coping styles.

All the interviews were taped and transcribed. To assist with the diagnostic work, the following tests were administered:

- Beck Depression Inventory-II (Steer, Ball, Ranieri & Beck, 1996);
- Beck Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988);
- Bradford Somatic Inventory (Mumford, Bavington, Bhatnagar, Hussain, Mirza & Naraghi, 1991);
- Raven Coloured Progressive Matrices (Raven, 1965).
- The Social Support Questionnaire (Sarason, Levine, Basham & Sarason, 1983);
- The Eysenck Personality Inventory (Eysenck & Eysenck, 1975);
- The Digit Span Sub-scale of the SAWAIS (Human Sciences Research Council, 1969); and
- Items in a room memory test. This is a test of immediate and short term memory where respondents are required to repeat the names of five commonly found items in a room immediately after hearing the list and again after 20 minutes.

All the above tests were administered at the same time as the interviews conducted by the author during November and December 1998 with the exception of the Social Support Questionnaire and the Eysenck Personality Inventory which were administered during July 1999 at the time when the interviews in the home language were conducted (see 3.3.4).

### 3.3.3 Interviews by an Independent Clinician

The participants were further interviewed on one occasion each for about two hours by an independent clinician, an intern psychologist with well developed diagnostic skills gained from prior experience in social work. Although she was familiar with the nature of the research, she was not supplied with any material concerning the participants. Her brief was to interview and assess the participants with a view to arriving at diagnoses using strict DSM-IV criteria.

### 3.3.4 Interviews in the Home Language

Two of the participants were interviewed on a final occasion for about two hours each in Xhosa. The third participant declined to be interviewed again because, even

though she was assured of confidentiality, she felt that the material was too private to be shared any further. The interviewer was a black M.A. (Clinical Psychology) student with several years experience as a school teacher. The rationale for this interview was, notwithstanding the fact that the participants readily agreed to the use of English in the first two series of interviews, it was felt that the material would be enriched by an interview in a home language. The brief to the interviewer was to clarify certain specific issues arising from the first interviews and obtain a history of the presenting problem as well as a personal and family history of the participant. She was also invited to offer any impressions on the interviews and possible diagnoses. She was given a brief verbal summary of the nature of the research as well as biographical details of the participants.

#### 3.3.5 Collection of Collateral

Where possible, data was contextualised by way of interviews with relevant observers. In the case of the first and third participants, discussions were held with the college and school counsellors, and in the case of the second participant, the medical records from the primary health care clinic where he presented, were secured.

#### 3.3.6 Case Narratives

On the basis of an integration of the collateral, the home language interviews and the author interviews, a case narrative was prepared for each of the participants. This took the form of a biography which described the participant's life history, presenting problem and contextual issues designed to assist with an understanding of the symptoms. The historical and phenomenological accuracy of each narrative was checked by reading it telephonically to the participants for their comments. One of the participants was especially pleased and requested a copy of the narrative. It was felt that this validated the methodology employed.

#### 3.3.7 DSM-IV Diagnosis

From a review of the data obtained above, a DSM-IV diagnosis was obtained for each of the three participants. This was done according to strict DSM-IV criteria.

### 3.3.8 Independent DSM-IV Diagnosis

From a review of the data obtained by the independent clinician, she arrived at a DSM-IV diagnosis for each of the three participants.

### 3.3.9 Consensual DSM-IV Diagnoses

The diagnoses obtained in 3.3.7 and 3.3.8 were compared. Where there were differences of opinion, these were resolved by discussion between the researcher and independent clinician; reverting to the participants telephonically for clarification and by conferring with a consultant psychiatrist.

### 3.3.10. Case Formulation

In each case the material presented in the narratives was synthesised in the form of a case formulation in order to make conceptual sense of the predisposing, precipitating and maintaining factors of the presenting symptoms.

### 3.3.11. Evaluation of DSM-IV Diagnoses Versus Brain Fog Syndrome Diagnosis.

The DSM-IV diagnoses were juxtaposed with the diagnoses of brain fog syndrome and the relative merits of each were discussed. This was done according to the following criteria:

- Is a single diagnosis able to account for the full symptom picture? If not, how many?
- To what extent do the symptoms fit those typically seen with each diagnosis?
- Does the diagnosis provide an 'explanation' for the symptoms in terms that the patient can readily understand?
- Are the symptom criteria expressed in terms appropriate to local language usage?
- How efficiently can the diagnosis be used at a primary health care level?

It is accepted that the first two criteria are more important for assessing the merits of each diagnosis. It is also accepted that diagnoses are necessary for professional communication and it not the intention to suggest that a diagnosis is not useful if it is not understood by patients. However, it is felt that that the relevance of questions three, four and five is that they address the subject of the relativity of knowledge,

informing the question of universalism and relativism and whether one can have objective knowledge independent of the people who construct it.

## Chapter Four

### Results

#### 4.1 Study One: Development of Brain Fog Syndrome Criteria

##### 4.1.1. Biographical Details

Table 5 displays the biographical data of the 20 participants in Study One. The average age was 20 years old with a range from 16 to 34. All were black first language Xhosa speakers with the possible exception of three participants where this data was missing. These participants would have been black or 'mixed race'.

<u>Participant</u>	<u>Age</u>	<u>Gender</u>	<u>Place of Residence</u>
1	22	M	Grahamstown
2	20	F	Fort Beaufort
3	23	M	Grahamstown
4	26	M	Grahamstown
5	34	F	Grahamstown
6	18	M	Grahamstown
7	16	F	Grahamstown
8	16	F	Grahamstown
9	16	M	Grahamstown
10	17	M	Grahamstown
11	17	M	Grahamstown
12	18	M	Grahamstown
13	19	M	Grahamstown
14	19	M	Umtata
15	18	M	East London
16	19	M	East London
17	20	M	Peddie
18	17	M	East London
19	22	M	Fort Beaufort
20	23	F	Grahamstown

Table 5. Biographical details of participants in study one

##### 4.1.2 Symptom Prevalence

The results of responses given in the preliminary interviews are displayed in the form of frequency graphs on the following pages. They have been presented under the following categories:

- cognitive symptoms;
- head symptoms;

- vision difficulties;
- bodily symptoms;
- sleep difficulties;
- affective and anxiety symptoms; and
- psychotic symptoms.

Items are grouped under the same categories which were used in the interview schedule with the exception of ‘do people say you look tense or unhappy’ which was transferred from ‘psychotic symptoms’ to ‘anxiety and affective symptoms’. The raw data are included in Appendix B. The results are then summarised in Table 6 from the most frequently reported symptoms to the least.

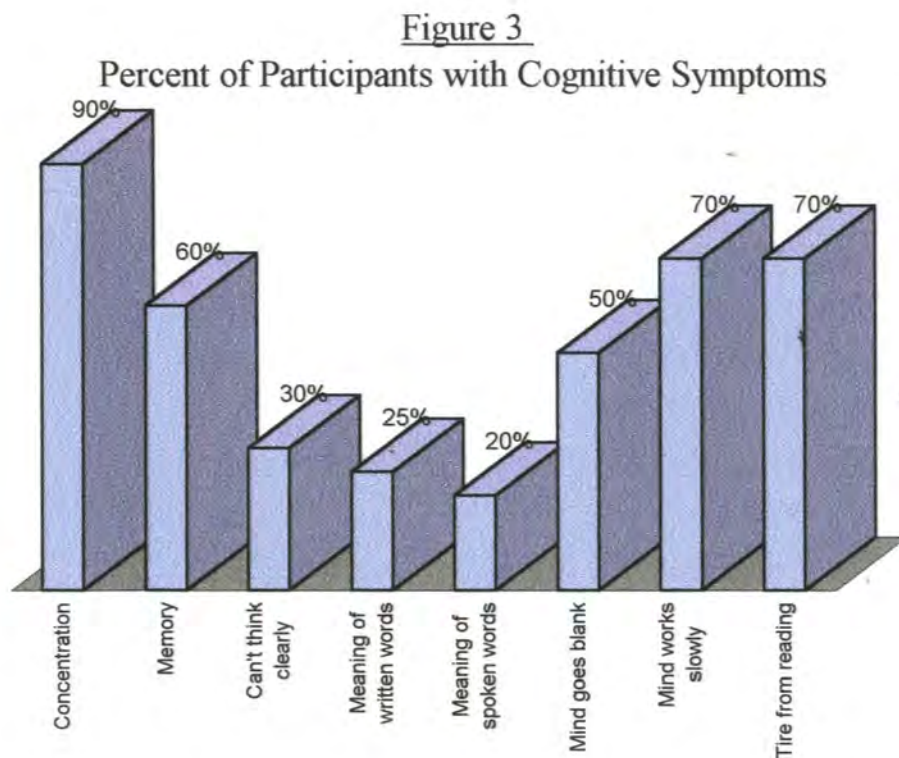


Figure 4  
Percent of Participants with Head Symptoms

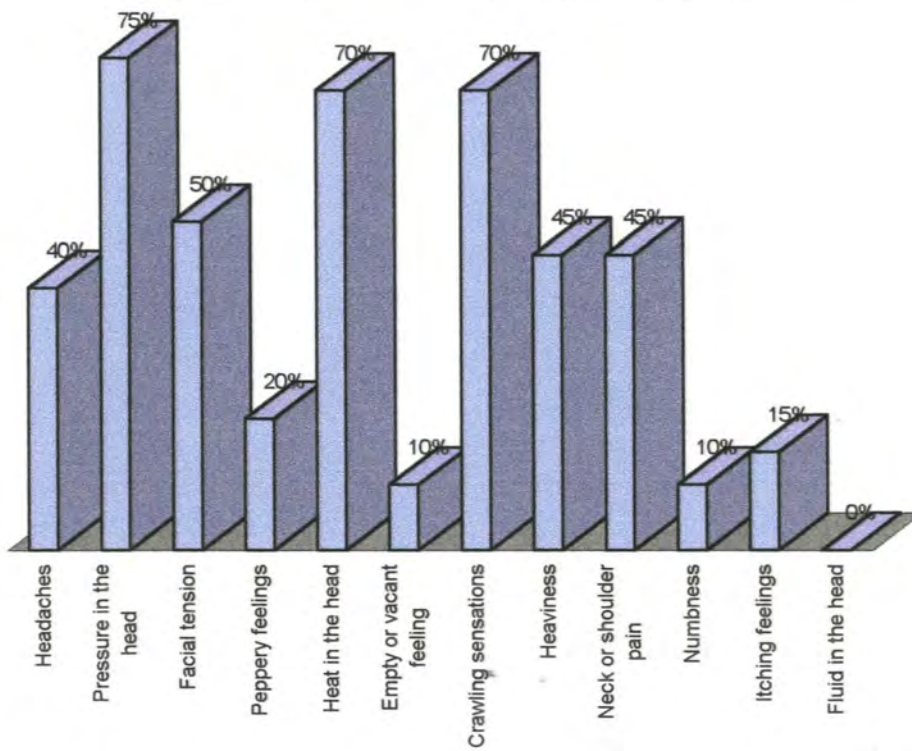


Figure 5  
Percent of Participants with Vision Difficulties

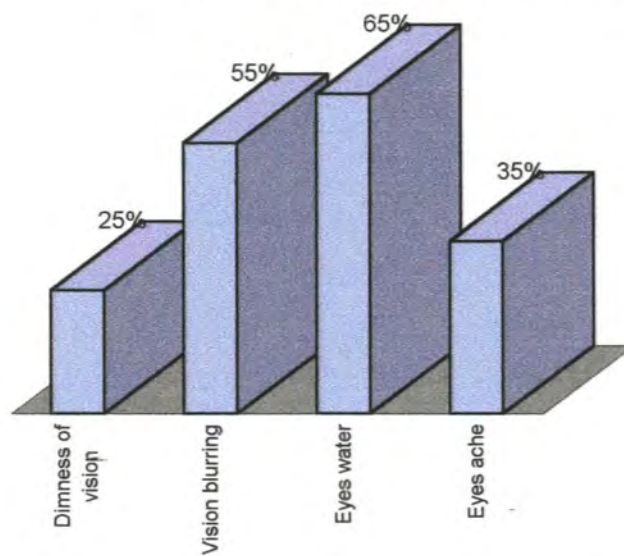


Figure 6  
Percent of Participants with Bodily Symptoms

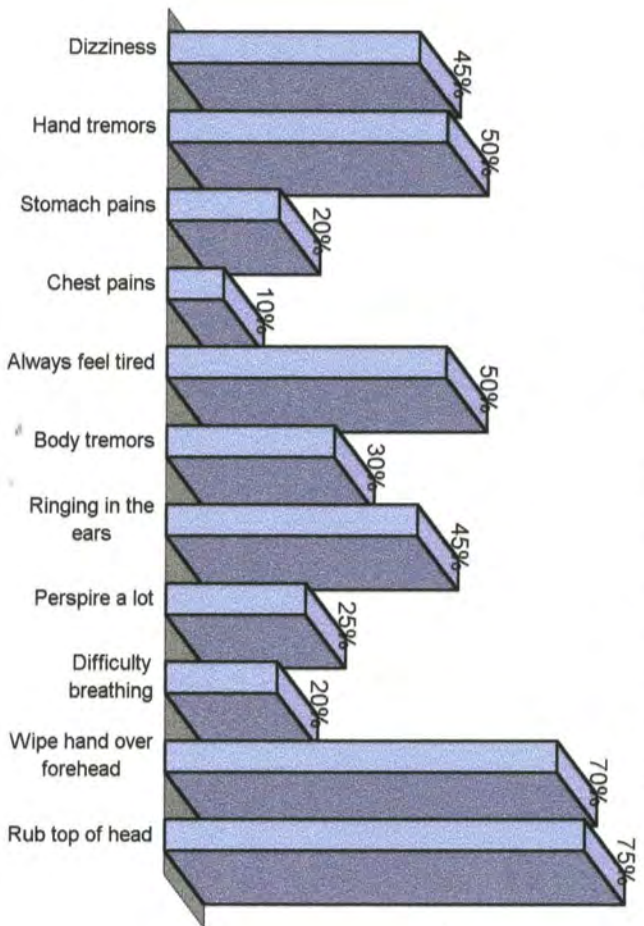


Figure 7  
Percent of Participants with Affective and Anxiety Symptoms

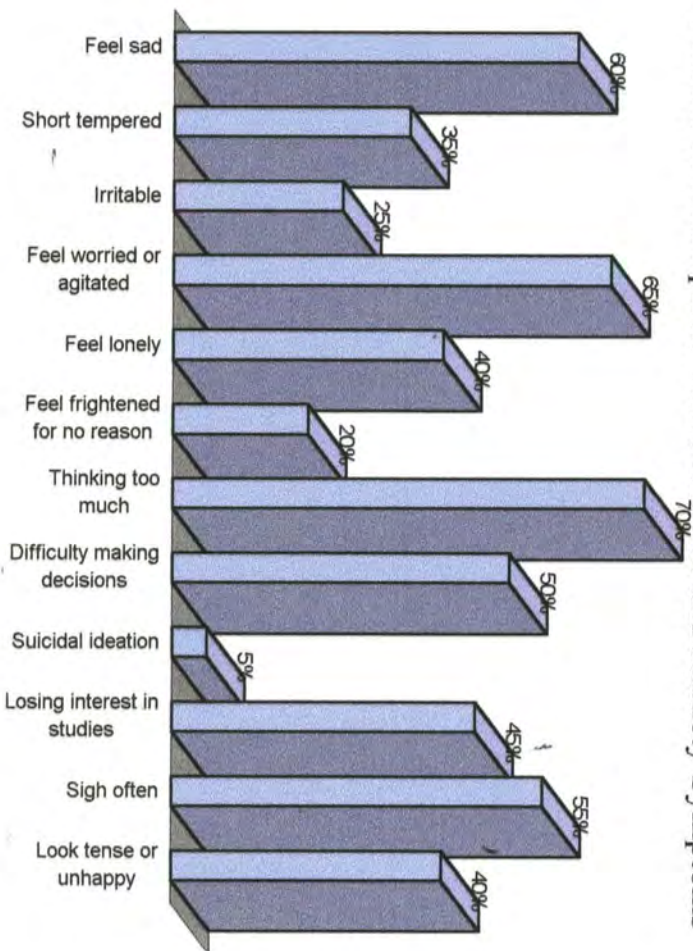


Figure 8  
Percent of Participants with Sleep Difficulties

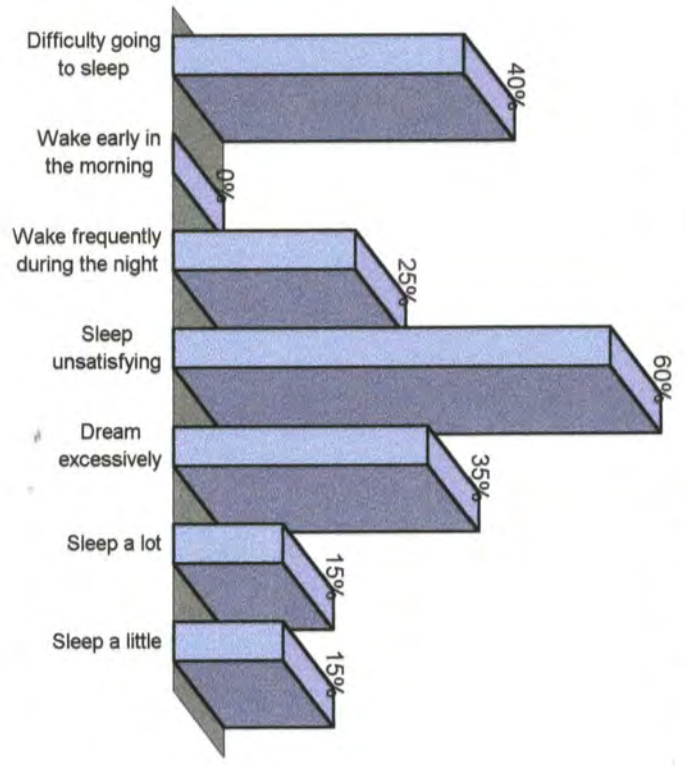
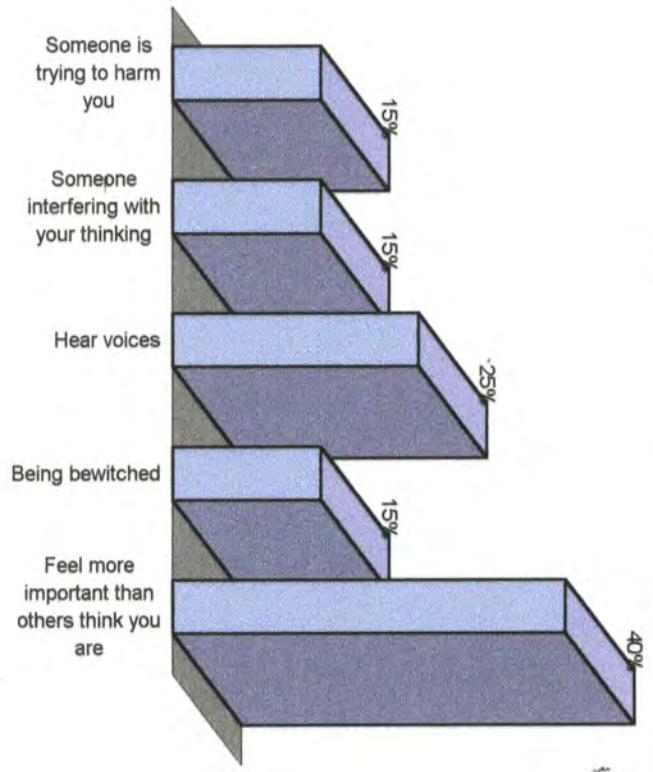


Figure 9  
Percent of Participants with Psychotic Symptoms



Rank	Percent of participants with this symptom	Type of Symptom
1	90	Concentration difficulties
2	75	Feelings of pressure in the head A habit of rubbing the top of the head
4	70	Mind works slowly Get tired quickly from reading Feelings of heat in the head Crawling sensations in the head and neck area Often wipe hand over forehead Feel worried, tense or agitated Thinking too much
11	65	Eyes watering
12	60	Memory difficulties Feelings of sadness Sleep is unsatisfying
15	55	Sigh often Vision blurring
17	50	Hand tremors Mind goes blank Facial tension Always feel tired Difficulty making decisions
22	45	Feelings of heaviness in the head/neck area Neck and shoulder pain Dizziness Ringing in the ears Am losing interest in studies
27	40	Felt lonely recently Difficulty going to sleep Others say I look tense or unhappy I feel more important than others think I am Headaches
32	35	Eyes ache Short-tempered Dream excessively
35	30	Body tremors Difficulty thinking clearly
37	25	Difficulty understanding written words Dimness of vision Perspire a lot Irritable lately Wake frequently during the night Hear voices
43	20	Someone is interfering with my thinking Feel frightened for no reason Difficulty breathing Stomach pains Peppery feelings in head and neck area Difficulty understanding spoken words
49	15	Sleep a lot Sleep a little Someone is trying to harm me Someone has bewitched me Itching feelings in the head and neck area
54	10	Chest pains Numbness in the head and neck area Empty or vacant feelings in the head
57	5	Suicidal ideation
58	0	Wake early in the morning Feelings of fluid in the head

Table 6. Summary of symptom frequencies

#### 4.1.3 Examination of Symptoms

In this section, symptoms which were reported by 40% or more of the participants are discussed. Reference will also be made to the extent to which the symptom featured in the literature.

1. Concentration. This featured prominently in the convenience sample (90%) and was mentioned by all the major writers with the exception of Ensink and Robertson (1996). However, the symptoms mentioned in the latter study, namely 'unable to see a book or paper' and 'difficulty hearing at school' may be evidence of concentration problems described in a metaphoric manner similar to that outlined by Prince (1960).
2. Feelings of pressure in the head. This was listed only by Morakinyo (1980) who, it must be noted, was one of the few researchers to interview actual cases of brain fog syndrome. In the present study it was reported by 75% of the sample.
3. Mind works slowly. This was listed by Anumonye (1982) and reported by 70% of the sample.
4. Get tired quickly from reading. Also referred to by Anumonye, this was reported by 70% of the sample.
5. Feelings of heat in the head. Identified by Prince, Morakinyo, Ilechukwu (1991), and Anumonye, this symptom was also reported by 70% of the sample.
6. Crawling sensations in the head and neck area. Listed by Prince, Ilechukwu and Anumonye, 70% of the sample complained of this.
7. Feel worried, tense or agitated. Anxiety was highlighted by Anumonye, Peltzer *et al.* (1998) and Morakinyo and featured prominently in this study. Although Guinness (1992) does not list anxiety as a symptom, her conceptualisation of brain fog syndrome was as an anxiety disorder.
8. Thinking too much. Guinness originally included this as a 'psychotic symptom' but later, taking into account cultural explanations, labelled it as a symptom indicating nervousness or worry. It measured 70% in the sample.
9. Vision difficulties. With the exception of Morakinyo, this was listed by all the major writers including Buijs (1998) and Ensink & Robertson (1996). The

components of vision difficulties appeared as follows: eyes watering (65%), vision blurring (55%), eyes aching (35%), dimness of vision (25%).

10. Memory difficulties. This was also listed by all the major writers except Ensinck and Robertson. Sixty percent of the sample complained of this.
11. Feelings of sadness. Depressive symptoms were mentioned only by Morakinyo and Anumonye. Most of the major writers asserted that affective elements were not easily volunteered. Again, sixty percent of the sample admitted feelings of sadness.
12. Sleep difficulties. Sleep disturbances were mentioned only by Prince and Anumonye. In the present study, the overriding complaint regarding sleep was that it was felt to be unsatisfying (60%). Only 40% of participants experienced difficulty falling asleep. Other sleep difficulty symptoms were reported as follows: dream excessively (35%), wake during the night (25%), sleep a lot (15%), sleep a little (15%) and wake early in the morning (0%).
13. Hand tremors. This was found to be a symptom by Anumonye and was reported by 50% of the sample.
14. Mind goes blank. This resulted from Guinness's study and featured moderately in the present study (50%).
15. Facial tension. Mentioned by Prince and Anumonye, this was also reported by 50% of the sample.
16. Always feel tired. This was experienced by 50% of sample. In other studies it was found to be a symptom by Prince, Morakinyo, Peltzer *et. al.* and Guinness.
17. Difficulty making decisions. This was mentioned by Guinness and described by 50% of the sample.
18. Feelings of heaviness in the head and neck area. This was reported by Anumonye and 45% of the sample.
19. Neck and shoulder pain. Reported by Prince, Ilechukwu and Peltzer *et. al.*, it featured in the present study at 45%.
20. Dizziness. This was widely reported in studies by Prince, Ilechukwu, Ensinck & Robertson, Buijs, Peltzer *et. al.* and Minde (1974) and in this study was reported by 45% of the sample.
21.  ringing in the ears. Listed only by Anumonye, this was reported by 45%.

22. Losing interest in studies. Tested by Guinness, this was reported by 45% of the sample.
23. Felt lonely recently. Also mentioned by Guinness, this featured at 40% in the sample.
24. Others say I look tense or unhappy. This was included in view of the fact that many of the studies found that anxiety or affective concerns were not easily volunteered. The incidence was 40%.
25. Feel more important than others think I am. Thirty percent of the subjects tested by Guinness responded positively to this. In the present study it was 40%.
26. Headaches. This was found to be a symptom by Prince, Guinness, Buijs, Anumonye, Ensink & Robertson and Minde. In the present study it was reported by 40%.

Reference has already been made to Guinness (1992) who tested a category of symptoms traditionally called psychotic symptoms ('confusion imposed from the outside', 'schoolbooks being bewitched'). After obtaining some positive answers to these, she changed the category to 'spiritual' because it was clear that the students were making cultural attributions rather than being delusional. In the convenience sample of the present study, only three participants each responded positively to 'someone is trying to harm me' and 'someone has bewitched me'. At a qualitative level, the bewitchment question was often received with bemusement, participants replying that they did not believe in that way of thinking. This finding is contrary to expectation, as the Guinness study is recent and Swaziland is a country with many close historical, ethnic and geographic links to South Africa.

Buijs (1998) also obtained data (in 1996) on attributions of bewitchment and the proportion of students who felt others were jealous of them. She found that almost half of the 126 matric students thought that others were jealous of them as opposed to slightly over a fifth of 120 standard six pupils. The figures were lower for attributions of bewitchment: 21,9% for matric students and 17,4% for standard six pupils. While direct comparisons are not possible between Buijs (her study did not interview actual cases) and the present study (which was not a random sample), the

frequency of attributions of bewitchment is lower in the present study. Reasons for this may be that most of the convenience sample in the present study were urbanised or attended a traditionally 'white' school or may be prone to a social desirability effect. Another reason might be that cultural attributions are in fact declining. The latter is suggested by the fact that the study showed lower figures for those in standard six than matric students. It could be possible that a 'new generation' of students do not subscribe to cultural attributions.

Cunningham (1995) conducted case study research into three Rhodes University students who were exhibiting brain fog symptoms. Of these, two made attributions of bewitchment to explain their symptoms.

Of the three participants in the present study who responded positively to bewitchment, one felt it might be the reason that he was the only sibling who did not do well at mathematics. The parents of another had consulted a traditional healer who felt that the participant's mediocre academic performance was due to bewitchment and the third had consulted a traditional healer some years before but no longer believed in it. Of the five who 'heard voices' one appeared to be related to bereavement and the others appeared to be manifestations of anxiety. None can be said to constitute auditory hallucinations. Those who answered positively to 'someone is trying to harm me' all referred to friends at school who had spoken badly of them and were not 'true' friends. Of the three positive answers to 'someone is trying to interfere with my thinking', one explained this in that it was friends who made him chortle in class when it was his turn to read and two others saw this as their parents trying to unduly influence their lifestyles.

Limited interviewing time precluded the generation of definitive answers to the reasons why some participants felt 'they were more important than others thought they were' but none appeared to suggest any form of delusion. Rather, mostly were suggestive of mild narcissistic tendencies such as "I have a role to play in life". Another possible explanation is that they felt others were underestimating them or that they were failing to live up others' expectations.

#### 4.1.4 Brain Fog Syndrome Criteria

An analysis of the symptoms discussed above yielded the following consensual position for preliminary criteria for a diagnosis of brain fog syndrome. In arriving at these, the following considerations were taken into account:

- From the symptoms included in the original 59-point questionnaire, only those symptoms with a frequency of 40% or higher were considered. Although 40% was arbitrarily selected as a cut-off point, an examination of those excluded did not reveal any anomalies with the exception of 'peppery feelings' about which comment will be made later.
- Symptoms which clearly did not have any diagnostic power (such as 'a habit of rubbing the top of the head', 'often wipe hand over forehead' and 'sigh often') were not considered for inclusion.
- Where a symptom was below the 40% threshold, but was extensively reported in the literature (especially in South African studies), it was then considered for inclusion as a brain fog syndrome symptom.
- An objective in drawing up the criteria for brain fog syndrome was to make them substantially more detailed than in the glossary of the DSM-IV.
- The overall structure of the diagnostic criteria was intended to be similar to that used in the DSM-IV.
- The criteria are intended as a starting point pending future studies, particularly those utilising larger samples.

#### Category A

There is no doubt of the necessity of category A which specifies the presence of cognitive complaints in a study context. It does not call for both concentration and memory complaints in view of the fact that some felt that their memory was intact but still felt that their ability to study was compromised. The criteria are as follows:

- A. Cognitive difficulties associated with study. These may be related to concentration problems, poor memory, mind going blank, slowness of thought processes or a feeling that the brain was 'tired'.

### Category B

Category B describes head symptoms, the most common of the somatic symptoms that accompany study difficulties. Heat and pressure in the head as well as vision difficulties have been widely reported and figured prominently in this study. Headaches, heavy feelings around the head and dizziness featured prominently in the literature, justifying their inclusion. Dizziness has been included as a head rather than a bodily symptom. Crawling sensations were reported by 50% of the sample and were widely reported in the literature. Although mentioned by Morakinyo and Anumonye, the frequency of 'peppery feelings' was very low in the present study and was omitted. Also omitted was 'ringing in the ears' as it was mentioned only by Anumonye and not felt to be sufficiently discriminative. The criteria are as follows:

B. The presence of at least two of the following symptoms associated with the head, experienced at least twice a week:

- (1) Feelings of pressure inside the head.
- (2) Feelings of heat inside the head.
- (3) Headaches.
- (4) Crawling sensations associated with the head.
- (5) Feelings of heaviness associated with the head.
- (6) Dizziness.
- (7) Vision difficulties.

### Category C

Category C describes affective and anxiety symptoms. It was felt that it would be inappropriate to omit this section as the frequency of 'feeling worried, tense or agitated' was 70% and 'feeling sad' was 60%. Also included in this category are symptoms generally associated with affective and anxiety complaints such as 'losing interest in studies', 'difficulty making decisions' and 'thinking too much'. It was also decided to include three bodily symptoms strongly associated with anxiety in this category since a separate exclusive category for bodily symptoms did not seem justified or diagnostically discriminative on its own. Another reason is that

'psychologised' affective and anxiety symptoms may not be readily volunteered. It was decided to include 'attributions of bewitchment/feelings of envy' as, even though it did not feature strongly in the present study, it was found by Guinness (1992), Cunningham (1995) and Buijs (1998) to be significant. It was felt that 'neck and shoulder pain' (45%), would be subsumed under the category 'muscle or facial tension'. The criteria are as follows:

C. The presence of at least three of the following affective or anxiety-related symptoms:

- (1) Feels worried (as indicated by subjective report or observation by others). This may also be expressed as 'thinking too much'.
- (2) Feels sad (as indicated by subjective report or observation by others).
- (3) Difficulty making decisions.
- (4) Loss of interest in studies.
- (5) Attributions of witchcraft, or the experience of being the object of envy.
- (6) Muscle or facial tension.
- (7) Hand tremors.
- (8) Feelings of fatigue in spite of adequate sleep.

D. The symptoms must have been present for a period of at least three months.

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (as indicated by subjective account or observation made by others).

F. The symptoms are not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication, or other treatment) or a general medical condition.

Categories D, E and F are taken from standard criteria used in the DSM-IV.

Initially, the minimum number of symptoms necessary to qualify on criterion B and C were set at three. At these levels, all those on the short list and two of the group comprising the next five most symptomatic participants would have qualified. On reviewing the clinical information regarding the latter group, it was decided that a diagnosis of brain fog syndrome would probably be appropriate for a further two of these. This indicated that the minimum number of symptoms necessary to qualify be reduced to two on criterion B. No adjustments were deemed necessary to criterion C. A final review of those who qualified for the diagnosis was conducted and found to be satisfactory. However, these levels can be no more than a general guide on the basis of this study and future research with larger samples will substantially refine this task. Possible symptoms which were not researched were bodily weakness, palpitations, feelings of powerlessness, impotence/lack of sexual desire and feelings of tightness around the head. These would need to be researched to ascertain their diagnostic relevance.

## 4.2 Study Two: Case Studies

As described in the method, narratives were prepared for the three participants invited to join the case study phase of the research. These were the participants from the short list of five who most clearly met the criteria as described in 4.1.4. All were black first language Xhosa speakers. It was envisaged that these participants would assist in examining the view that universalist diagnostic systems fail to do justice to the intricacies and idiosyncrasies of individual presentations which, it is believed, can be significantly coloured by cultural and local values.

### 4.2.1 Case Study #1

#### 4.2.1.1 Biographical Details

Name: Rose.

Age: 20.

Date of birth: 06/07/79.

Educational level: Standard 10 (1997).

Additional Education: Management Assistant Course (First year of two years completed, 1998).

Occupation: Part-time grader in a fruit packing co-operative.

Marital Status: Single.

First language: Xhosa

Date of interviews: November 1998 and July 1999.

#### 4.2.1.2 Narrative

Rose was born in Somerset East in the Eastern Cape in 1979. Her father, 54, is a taxi driver and a brick merchant. He sometimes complained of headaches but does not smoke or drink. Her mother, 43, was unemployed after recently being retrenched from a bakery in Fort Beaufort. She complained of 'nerves', experienced headaches and often got 'lost in thought'. The relationship between her parents was not stable and there were periods where they have lived apart. She has an older sister aged 25

who was an unemployed teacher and an older brother who attended a technical college. There are four younger siblings: a sister aged 17 in standard eight, a brother aged 14 in standard six, a sister aged 13 in standard four and a sister aged seven in standard 2. She had a maternal grandmother aged 83 who lived with the family and suffered from liver problems and diabetes.

At the time of Rose's birth her mother was working on a farm near Somerset East while her father was working in Fort Beaufort. At the age of five, Rose says she elected to move to Port Elizabeth to stay with an aunt. She went of her own free will at the invitation of her aunt. While there, her aunt became ill and was admitted to hospital. This necessitated that Rose stay with another male relative in a township in Port Elizabeth. At that time there was considerable political unrest in the area and particularly when the relative was on night duty, Rose stayed on her own and remembers feeling frightened and lonely. After being in Port Elizabeth for three years from 1984 to 1987, she moved back to her family in Fort Beaufort.

The following year, in 1988, Rose started school at the age of nine. She did not start school earlier while in Port Elizabeth because of the political unrest. At the time her family felt that she did not look well and sought medical help for her. Symptomatically, it felt as if there was a stabbing feeling in her heart when she breathed. She was diagnosed as having a 'rheumatic heart' and was given medication. However, the medication made her feel restless and it was discontinued. She still experiences stiff joints which she considers to be related to the 'rheumatic heart'.

Rose was promoted to Sub B during the same year (1988) and went on to pass standard one the following year. In 1990 she was promoted directly to standard three as her teachers felt that she would cope quite easily at that level. She passed standard three to standard seven at a junior secondary school from 1990 to 1994. In 1995 she enrolled at a senior secondary school and matriculated in 1997. In standard eight she elected to include mathematics and physical science as part of her subject choice. She was the first in her family to study these and as a result became the target of considerable mockery from her siblings who had all limited themselves to history and

geography. Her siblings were convinced that she would never pass, as mathematics and physical science were considered to be very difficult.

Her matriculation symbols were as follows:

Mathematics (standard grade)	F
Science (standard grade)	E
Biology (standard grade)	F
English (standard grade)	C
Xhosa (higher grade)	D
Afrikaans (higher grade)	D
Aggregate	S (Non-university exemption)

While at school Rose was almost always placed top of her class. She says that her mother was very proud of her and that she was her mother's favourite. Her mother was fond of using her as an example for the other children to follow. She reports a conflictual relationship with her father who she felt made her work harder than the other children. This involved 'ordering' that she assist him with brick deliveries and repairing motor cars. For example, she complained that during the build-up to her matric exams, she was unable to practice mathematics with her study group because of chores that she had to do at home. The only way she got to study was by helping other pupils who came to her for assistance. In the process of doing this, she herself would learn. She does, however, report that when she was not at home, the other children say that her father is very proud of her. She regrets the fact that this admiration has never publicly been expressed in her presence. She admitted to having an 'authority problem' which she explained in terms of wanting to do what she likes and found it hard to consult authority figures in her life.

In spite of the family tension, Rose recalls that she had good friends at high school and that it was a happy time. During 1996 while in standard nine she fractured her hip while playing soccer. She was forced to walk on crutches for about two months and gave up all active sport for three years. At the time she had been playing volleyball, soccer and doing karate. She also had to relinquish ballroom dancing. To replace

these activities, Rose now plays chess and pool. She also enjoyed watching TV, 'debating', and listening to reggae music. She enjoyed visiting friends and watching them play soccer matches. She has been involved in a relationship with a man who is employed by the South African National Defence Force and they enjoy satisfactory sexual relations.

A particular incident that caused Rose considerable distress was the murder of her uncle at Easter 1996. He was a very important person in her life whom she deeply respected and loved. On the night of his death, a messenger arrived at Rose's home with news of the incident. At the time her parents were asleep. The messenger did not know the name of her uncle, reporting merely that a man had been stabbed in a neighbouring township. She thought the messenger was jokingly trying to attract her attention and she did not respond. Even though she knew that her uncle was stabbed in the heart and died virtually immediately, she felt very guilty that she not respond. She still feels sad about his death.

After matriculating Rose applied to study at a distance learning college. However, the plan was vetoed by the aunt who lives in Port Elizabeth who considered that Rose would not cope with distance education at a tertiary level. This aunt was often consulted on matters of that nature. Rose applied to, and was accepted at a tertiary college in Grahamstown. Her first choice had been Mechanical Engineering but because of her poor symbol for mathematics she then opted for the Management Assistant course. (She had wanted to stay an extra year at school to improve her mathematics symbol but this was refused by the school on account of the fact that she had passed).

She described her initial transition to Grahamstown and tertiary education in 1998 as unproblematic as, even though she missed some of her school friends, there were some who attended the same college and were able to provide support. At the beginning of the year, she stayed in a rented room but moved in with relatives in August. She stressed that they were not her 'family' but shared the same clan name and that she had helped their daughter who had experienced a 'drinking problem'. In

return, they asked her to come and stay with them. The environment was supportive but noisy. She did not spend much time there as most of her time was taken up at college or visiting friends.

Rose described the problems which led her to present at the college counsellor in the following way. They first started when she was staying in the rented room during the first part of 1998. She became irritable and angry for no apparent reason. The first time that she experienced this irritation was in matric but it was mild at that time. In a social situation with friends, she would suddenly become quiet and not take part in the conversation unless directly addressed. Often she would become angry and leave the circle. She would then often either play pool at a bar or go and sit at a graveyard. Questioned on the latter, she answered that not only did she find it quiet at the graveyard but she had a choice to make a noise if she wished. She was also able to put her mind at rest by thinking about nothing. It was always quiet there instead of the pressure of having to be with people.

On the nature of her behaviour in company, she elaborated as follows. It felt as if she was being left out of conversations or that she did not get a chance to explain why she had said a certain thing or taken a certain course of action. The only point at which she participated was when there was something that the group did not understand, at which point she said her views were requested. There were times when a group might find something amusing and laugh but the reason for the laughter would be unknown to her. In a group she often did not listen to what they were saying because she got lost in her own thoughts. When asked what was going through her mind when she withdrew into herself, she perceived the others to be happy whereas she was preoccupied with problems such as her financial problems. She had experienced a financial problem most of the year because she always only had enough money for a term at a time.

She also regretted the fact that, even though she spent a considerable amount of time helping other people with their problems, there was no-one to help her. This was also the case in her family. She felt she dare not raise her problems in the family setting as

she feared rebuke in the sense that as someone who was clever enough to study mathematics and physical science, she should be clever enough to solve all her own problems. The result was that she did not share problems but kept them to herself. Rose said that she had difficulty expressing her feelings in company. If she was upset by something, she would not raise it either at the time or later but stated that she "held it in". She felt that, if she did express herself, the person would become hurt and may not talk to her again. This caused her to ruminate over events and become angry. Later she would get relief by crying or withdrawing into herself.

She described herself as a "survivor" and said that the others at her home would agree with that view. If she were asked why her life had become such a "mess", the reply would be that if she had grown up like other children her age, then she would have been all right. Asked what was different about her life, she replied that she was refused a lot of things that she wanted to do because she was forced to do household chores when she should be studying. This would make her feel angry. When asked why she did not protest, she did once try but was then branded as being cheeky and difficult.

Academically, Rose had always been a hard worker and set high standards for herself. During 1998 she dropped from averages of around 80% to between 65% and 70%. During the second half of the year, work which she had studied the night before became blocked and she could not recall it. It was as if her brain was tired or working slowly. She found it very difficult to concentrate.

Other symptoms that came to the fore in 1998 were as follows. She felt as if her mind was "full" and that she was under a lot of pressure. It seemed as if "the information is shut off, it can't get out and sometimes it feels as if there is pressure inside my head, maybe it will just burst". This started a few months into her year at the tertiary college and was present for the rest of the year. She said that it was worst when she was feeling sad, worried or when "there are other things that I should be keeping in mind".

When she went to a shop to buy something, she would not remember everything that she had gone there for, but looked on the shelves and was able to remind herself in that way. She also experienced a heavy feeling in her head. When asked something, she would need a few seconds in which to think before replying. This happened with friends and teachers. She also reported a feeling of heat inside her head. This happened about three times a week, particularly when she was studying.

She reported back, chest and abdomen pains as well as headaches. She experienced headaches about three times a week, often on a hot day and she sometimes woke up with a headache. She also reported feelings of dizziness when she sat down. She would then stand up and wait for the feeling to recede, which it did after a few seconds. She also reported problems with her vision. She said "sometimes it gets dark in front of my eyes and I can't see properly". In addition, her eyes watered when she was studying and sometimes text appeared blurred so it became difficult to read. She also reported a 'peppery feeling' as if she wanted to sneeze, but did not. That happened about twice a day. When she felt very tense, she experienced hand and body tremors.

Her appetite had declined in the last few months of 1998 and she had lost 17 kilograms, from 75 to 58 kilograms. She also reported feeling sad often, even if "she had not thought of anything sad". In addition, she experienced lowered self-esteem. She expressed this by saying that she "was not as good as she used to be" and measured this by way of her marks. She felt that her mother was very proud of her and she wanted to justify her pride. She studied about two to three hours every day excluding weekends. She had experienced suicidal ideation but had not ever seriously considered suicide. Rather, when she was feeling very sad, she would go to the graveyard.

She also reported sleep difficulties. She often found it difficult to fall asleep and often woke during the night and was unable to get back to sleep. She also experienced auditory hallucinations on a few occasions. This had subsided but at its most frequent, she experienced this about three times a day. She described this as if hearing a male

voice calling her name. She would ask people with her at the time if anyone had called her and the reply would always be negative. Sometimes this would wake her from sleep. She once had the experience of seeing someone sitting on her bed but when she called out to the person, there was no-one. She experienced this on a day when someone had seen a snake in the garden where she lived. She has been very scared of snakes. She also reported that on occasions, she imagined that she saw someone in the periphery of her vision, on the side. But when she looked around, there was no-one.

She described herself as “playful”, but mentioned that there were times when she did not like being with people. It would just depend on her mood. She also described herself as a “sad” person. The sadness was associated with the anger that she felt. She was unable to share her pain but brooded over it and became angry. Rose thought that it was her inability to study properly that caused her irritability and feelings of anger and sadness. Asked what would alleviate her problems, she replied that if she were able to complete her studies then things would improve for her. It was also of great concern to her that her marks had dropped from previous levels, and she felt that she was not as good as she used to be. What was most important to her was her academic achievement. Secondary to this, in her mind, were her interpersonal problems and her somatic presentations. She did not feel that she was bewitched or that others were envious of her.

Part of the intervention given by the counsellor was that Rose should try to relax by practising meditation. She gave the following account of this. Initially she meditated 20 minutes in the morning and 20 minutes in the evening. The effect was that her mind came to a standstill. Even if about to do homework, her mind would go blank. For example, if she would be given an exercise to complete on the computer, or any exercise where she would have to apply her mind, if this was after meditation, her mind would draw a blank.

She denied however, that meditation had a negative effect on her and there appeared to be some confusion in her own mind about that. She went back to her counsellor

who suggested that they try a different intervention but Rose insisted on continuing with meditation. They compromised by agreeing that she meditate only in the evenings before going to bed. She claimed that this worked better and that she would wake up with a fresh perspective on things, i.e. a new way of studying or tackling some problem. Her mind would be “fresh” in the morning without it being overloaded with a lot of thoughts. Eventually, however, she stopped meditation and changed to playing chess. She regards the two as the same in that both involve solitude and concentration. After the game there would be nothing on her mind except the memory of the game.

Rose passed all her exams at the end of 1998 with the exception of one subject in which she was granted a supplementary exam. However, she could not raise the money to pay for her final term in time for the supplementary exam and did not attend the examination. She subsequently did raise the money to pay for the final term but did not have the funds to register in 1999. At present she is staying with her family in Fort Beaufort and attempting to find work to be able to finance the completion of her studies.

#### 4.2.1.3 Psychometric Test Results

##### Beck Depression Inventory-II

Score: 31.

This indicates severe depression (29 - 63).

##### Beck Anxiety Inventory

Score: 28.

This indicates severe anxiety (26 - 63).

##### Bradford Somatic Inventory

Score: 31,5.

According to norms standardised for a rural Indian population scores above 23 represent a somatic condition.

### Social Support Questionnaire

Extent of social support (SSQN): 44. Norm: 72 (32.84)

Satisfaction with social support (SSQS): 103. Norm: 139 (22,44)

Norms are standardised for 3<sup>rd</sup> year students at the University of Western Cape.

### Digit Span

Digit Forwards: 6. Norm: 6.88 (1.1).

Digits Backwards: 4. Norm: 5.04 (1.19).

Norms are standardised for 18 - 25 year African language university students.

### Items in a room

Immediate: 5/5.

20" delay: 5/5.

### Ravens Coloured Progressive Matrices

Score: 33.

This suggests an IQ in the normal range (90 - 109).

### Eysenck Personality Inventory

Neuroticism Scale: 19. This places the subject in the 98th percentile. Norms for neuroticism standardised for a South African population at a College of Education in Umtata are 13.6 with a standard deviation of 3.1.

Lie Scale: 1. This places the subject in the 25th percentile.

Extroversion Scale: 14. This places the subject in the 70th percentile.

(Percentile norms are standardised for American university students).

### Comment on the Psychometric Tests

The elevated scores for anxiety, depression, somatic condition and lack of social support are commensurate with the manner in which Rose described herself. The scores for depression and anxiety include the period in which Rose wrote exams and these may be over-estimating on that account. It is noteworthy that the memory tests

show no significant deficit. Her Digit Span scores are within one standard deviation of the norm which is for university students. It is also suggested that her intelligence is in the upper range of the normal category in which she scored. The Eysenck Personality Inventory scores are also in keeping with the way in which she described herself. She gave the impression of being moderately extrovert and symptomatic. As such, there is no obvious disagreement between the test protocol and her narrative.

#### 4.2.1.4 DSM-IV Diagnosis

On the basis of the narrative, the following differential diagnosis was considered:

- Bereavement
- Mood Disorder
- Adjustment Disorder
- Anxiety Disorder
- Somatoform Disorder

#### Bereavement

This diagnosis was considered in view of Rose's strong feelings of sadness and guilt with respect to the death of her uncle. However, in view of the fact that the symptoms were still present more than two years after the loss, a diagnosis of Major Depressive Episode would be more appropriate. In this regard the DSM-IV does state that "the duration and expression of 'normal' bereavement [may] vary considerably among different cultural groups" (p. 684). The consensus of anecdotal opinion on this matter is that it is considered normal among Xhosa speakers to grieve for the loss of a close relative (spouse, parent or child) for a period of one year. A period of three months would be considered normal for the loss of an uncle. Longer than this would be considered abnormal. For these reasons, this diagnosis is excluded.

#### Mood Disorder

As there is no evidence of Manic Episodes, Substance Abuse or a General Medical Condition, nor have Rose's symptoms lasted longer than two years (thus excluding Dysthymic Disorder), the diagnosis to be considered under this category is Major Depressive Disorder. Rose meets seven of the nine criteria for a Major Depressive

Episode (five are necessary for the diagnosis). These are: depressed mood most of the day; significant weight loss; insomnia; fatigue and loss of energy; feelings of worthlessness; diminished ability to think or concentrate; and recurrent thoughts of death. Criterion D is met in that there is significant impairment. Criterion E is also met if the normal mourning period is considered to be one year. With regard to the fact that Rose 'heard voices' on occasions, suggesting the possibility of a diagnosis of Major Depressive Disorder with Psychotic features, the DSM-IV notes that "culturally distinctive experiences (e.g. the feeling of being hexed or bewitched, feelings of "heat in the head" or crawling sensations of worms or ants or vivid feelings of being visited by those who have died) must be distinguished from actual hallucinations or delusions that may be part of a Major Depressive Episode" (p. 324). Because Rose had not experienced a previous depressive episode, the diagnosis of Major Depressive Disorder, Moderate, Single Episode, was deemed appropriate.

#### Generalised Anxiety Disorder

Rose worried more days than not about her academic performance and financial situation. She also found it difficult to control her worry which was accompanied by many physical symptoms, meeting five of the six criteria listed in criterion C. Criteria E and F are also met. The DSM-IV states that "the general convention in the DSM-IV is to allow multiple diagnoses to be assigned for those presentations that meet the criteria for more than one DSM-IV disorder" (p. 6) but to discourage these by way of exclusion criteria. In this case the exclusion criterion (D) is not met as it is felt that her worry is not confined to a Major Depressive Disorder, and thus a diagnosis of Generalised Anxiety Disorder is appropriate. The DSM-IV states that a "Generalised Anxiety Disorder very frequently co-occurs with a Mood Disorder (e.g., Major Depressive Disorder or Dysthymic Disorder)" (p. 433).

#### Adjustment Disorder

This is a residual category used to describe the presentations that are a response to an identifiable stressor that do not meet the criteria for another specific Axis I disorder.

### Undifferentiated Somatoform Disorder

Criteria A and B are met. In terms of criterion C, it is thought that the somatic symptoms experienced by Rose were of sufficient severity to cause clinically significant distress or impairment. Criteria D, E and F are met and this diagnosis is deemed appropriate.

### DSM-IV Diagnosis

Axis I:           Major Depressive Disorder, Moderate, Single Episode.  
                  Generalised Anxiety Disorder.  
                  Undifferentiated Somatoform Disorder.

### 4.2.1.5 Independent Clinician's Assessment

The objective of this was to independently interview and assess the participants with a view to arriving at diagnoses. The brief was to use strict DSM-IV criteria. Although familiar with the nature of the research, the independent clinician was not supplied with any material concerning the participants.

### Summary of Findings

The symptoms the participant complains of began in 1996 shortly after she moved from an intermediate school to a senior secondary school. The symptoms intensified at the beginning of 1998, shortly after she began tertiary education at a technical college. I found the participant to be suffering from a Major Depressive Disorder, Moderate, Single Episode, for the following reasons:

### Symptoms

1. Depressed mood, nearly every day, most of the day;
2. Loss of appetite and weight loss, particularly during stressful periods at college. In the past six months, she has lost 17 kilograms (75 - 58 kg);
3. Disturbance of sleep patterns, manifesting in initial insomnia (difficulty falling asleep) and middle insomnia (waking during the night and having difficulty returning to sleep);

4. Feelings of restlessness, irritability, anxiety and nervousness;
  5. Decreased energy and fatigue without physical exertion;
  6. Low self esteem and feelings of guilt related to the death of her uncle, for which she feels responsible;
  7. Difficulty with memory, concentration particularly related to academic material;
  8. Difficulty making decisions;
  9. Transient, recurrent thoughts of death; while not actively suicidal she sometimes feels it would be “nice to go to sleep and not wake up”;
  10. Feelings of loneliness and isolation;
  11. Social withdrawal, preferring to spend time by herself (often in a graveyard) rather than with others; and
  12. Physical symptoms such as recurrent headaches, backache, abdomen pain, vomiting, dizziness, heart palpitations, difficulty swallowing, sweating and trembling.
- These symptoms are present particularly at times of stress related to her academic performance.

These symptoms reflect a change in her previous functioning and have impacted negatively on her interpersonal and academic functioning.

#### Diagnosis

While some of the above symptoms (dizziness, heart palpitations, difficulty swallowing, sweating and trembling) are also criteria for Panic Disorder, the additional diagnosis of Panic Disorder is not made as these symptoms are not accompanied by a month or more of fear of having additional attacks, associated concerns or behaviour changes.

Some of the symptoms may suggest Generalised Anxiety Disorder (restlessness, fatigue, concentration, memory problems, muscle tension and sleep disturbances). However, an additional diagnosis of Generalised Anxiety Disorder is not made as the focus of the anxiety and worry appears to revolve primarily around her academic performance and failure to fulfil her own and familial expectations of success rather than a generalised anxiety about everyday life circumstances.

The physical complaints she presents with may suggest Somatisation Disorder. However, the participant's physical complaints have been limited to the period she has been depressed rather than recurrent complaints, regardless of her mood state.

A particular focus of the participant's symptoms appear to revolve around her academic performance. She feels that she is under tremendous pressure to achieve and struggles to cope with what she perceives as her family demands. These symptoms began and intensified following moves to a new academic environment.

In sum, the participant fulfils the criteria for:

Major Depressive Disorder, Moderate. Single Episode.

#### 4.2.1.6 Consensual DSM-IV Diagnosis

There was agreement on the diagnosis of Major Depressive Disorder. With respect to the diagnosis of Generalised Anxiety Disorder, after a discussion, it was agreed that her anxiety (which was excessive and difficult to control) was sufficient to warrant the diagnosis even though it was primarily directed to her finances and education. It was also agreed that even though a Somatisation Disorder was not appropriate, the default diagnosis of Undifferentiated Somatoform Disorder should be made as a consequence of the participant's many somatic complaints. Thus the consensual multiaxial diagnosis was:

Axis I: Major Depressive Disorder, Moderate, Single Episode.

Generalised Anxiety Disorder.

Undifferentiated Somatoform Disorder.

Axis II: Nil

Axis III: Nil

Axis IV: Inadequate finances

Academic problems

Death of a family member

Difficulty with acculturation

Axis V: GAF = 60 (current)

#### 4.2.1.7 Case Formulation

As a young child, Rose grew up in an unsettled, financially indigent home environment. Her parents' relationship was not stable and they did not always live together. In addition, at various times Rose stayed with other relations in a different town altogether. Although there is no concrete evidence that she was anxious as a child, her unstable upbringing may have predisposed her to this. In this respect, her score on the neuroticism scale of Eysenck Personality Inventory was two standard deviations above the norm and there is evidence that her mother was similarly inclined. There are indications that she occupied the position of the favoured child in the family and that during her subsequent school career she built up a self concept around the view that she was 'the clever one in the family'. This position led her to become the object of considerable raillery among her siblings. It seems that she felt that it was not her place to help with household chores and that she should be allowed this time to study, suggesting evidence of a sense of entitlement.

In support of this, Rose admits that she found it hard to accept authority. This suggests evidence of value dissonance between herself and her father, with whom she had a conflictual relationship. There is some evidence of emotional disturbances during the final years of her schooling but it is only during her first year of tertiary education, away from her home environment, that this came to the fore with some severity. It could also be postulated that her uncle of whom she was very fond, and whom she regarded as a sophisticated and urbane person, helped to fulfil her need for admiration. This might explain the tremendous amount of guilt that she felt that she could have somehow prevented his death even though the facts of the incident do not bear this out.

Away from the 'protective' home environment where she enjoyed favoured status, she experienced anxiety, irritability, lowered self-esteem, social isolation, troubled relationships, feelings of sadness and study inhibitions. There is considerable evidence of attempts that she made to sustain her favoured position. An example of this is her

assertion that she would only join in a conversation when she would be needed to settle a dispute or provide expert opinion. This elevated sense of herself might have precluded her from expressing her own emotional needs and there is also much evidence in her narrative of always having to solve others' problems while there was no-one to solve hers. Being the 'cleverest' one disqualified her from being allowed to have problems and she admits that she was not able to self disclose. There was evidence of compulsive helping and that this was serving to fortify her position as the best equipped to provide advice and solve others' problems.

This set in place a spiral, increasing her social isolation and anxiety, and impacting negatively on her ability to study. When she became aware that her marks were no longer at a standard which satisfied her self concept as the 'clever' one, the spiral intensified. There is also evidence that her sojourns at the graveyard, meditation and chess (which allowed her to 'empty' her mind) were strategies to overcome her anxiety. It is possible that her numerous somatic complaints were also a consequence of her unexpressed emotion. It is also important to consider the context of the milieu in which Rose found herself during her year at the tertiary college. It was a time when there was considerable social, cultural and economic change. Education has been seen as very important among black students with many new opportunities and commensurate pressures unfolding, along with an accompanying sense of competition. As the year progressed (fuelled by her financial problems and desire to meet her own and her parents expectations) she developed depressive symptoms. This might have been exacerbated by unresolved grief surrounding the death of her uncle.

To summarise this formulation of Rose's situation during 1998, it was a time when there was considerable pressure on black students to perform well and educate themselves. There were issues in Rose's background which ill-prepared her for the demands that this placed upon her in her first year away from home as a tertiary student. As the year progressed, her anxiety grew and was largely unexpressed. This was exacerbated by lower than expected academic performance, impacting negatively on her self concept as someone who is ambitious and academically talented. This led her to develop depressive and somatic symptoms which further fuelled her anxiety

and resulted in a study inhibition. The way in which she constructed or 'explained' her plight was that it was her inability to satisfy her educational or career ambitions that were at the centre of her distress.

#### 4.2.1.8 Comparison of DSM-IV Diagnosis Versus Brain Fog Syndrome Diagnosis

In terms of a brain fog syndrome diagnosis, Rose fulfilled all the criteria. On criterion B, she fulfilled all seven of the symptoms (minimum: 2) and on criterion C, 7 of the eight (minimum: 3). As such, she can be considered a very likely case of brain fog syndrome. This is to be contrasted against the DSM-IV diagnoses of Major Depressive Disorder, Generalised Anxiety Disorder and Undifferentiated Somatoform Disorder. In this section, the two diagnoses are juxtaposed so that the relative merits of each can be assessed.

#### Is a single diagnosis able to account for the full symptom picture? If not, how many?

Both diagnostic systems were adequately able to account for Rose's symptom profile. The diagnosis of brain fog syndrome was able to do this on its own whereas in the case of the DSM-IV, three diagnoses were necessary.

#### To what extent do the symptoms fit those typically seen with each diagnosis?

There was little difficulty assigning the diagnoses of Major Depressive Disorder and Generalised Anxiety Disorder to Rose. In each case, she more than fulfilled the minimum number of symptoms required in the criteria. In the case of Undifferentiated Somatoform Disorder, however, Rose's symptoms were quite atypical and she qualified more by default than by closely meeting symptom criteria.

It should be noted that the cultural notes in the DSM-IV suggest that in other cultures "depression may be experienced largely in somatic terms rather than with sadness or guilt" (p. 324) and "in some cultures anxiety is expressed predominantly through somatic symptoms, in others through cognitive symptoms" (p. 433). If this is the case, then the diagnosis of Undifferentiated Somatoform Disorder may not be deemed necessary by invoking the exclusion cause. But given Rose's numerous

somatic complaints, this would lessen, not strengthen, the ability of the DSM-IV to describe her condition.

Regarding brain fog syndrome, Rose's symptom profile can be seen as a very typical case, especially regarding the somatic presentations. However, while the brain fog syndrome diagnosis does identify the presence of affective and anxiety symptoms, these are more fully expressed in the DSM-IV diagnoses.

Are the symptom criteria expressed in terms appropriate to local language usage? In the sense that Rose's understanding of English was good, there were no problems encountered in eliciting answers to criteria relating to depression and anxiety in the DSM-IV. The somatic symptoms are mostly local in character and would not be identified by way of the DSM-IV. In this sense, the brain fog syndrome diagnosis has a distinct advantage.

Does the diagnosis provide an 'explanation' for the symptoms in terms that the patient can readily understand? The problem Rose complained of was that she was not able to study properly, her marks had dropped and that it was principally those two things that made her feel sad and irritable. Secondary to this were her interpersonal issues and her somatic complaints. These were part of a more general malaise that she was able to articulate. If all she required was an answer to her primary study problem, then brain fog syndrome provides a very useful, easy to understand answer.

However, even the explanation of brain fog syndrome requires some translation of the concepts anxiety and depression into terms that would be meaningful to Rose. It is surely the explanation of the symptoms that is more important than the label. In this sense, a clinician sensitive to cultural differences would be able to deliver this explanation using only the DSM-IV diagnoses. Given enough time, whatever diagnostic system was being used by a clinician, the answer (or explanation) should be similar. Thus, in theory at least, the diagnosis of brain fog syndrome does not seem to have a significant advantage.

How efficiently can the diagnosis be used at a primary health care level? At a pragmatic level, it must be noted that in the course of this study, at least ten hours were spent with Rose in order to arrive at an in-depth assessment of her circumstances. The three DSM-IV diagnoses given to Rose require of a primary health care worker not inconsiderable training and diagnostic skills. In the world of primary health care in South Africa, with notoriously strained resources where patient's interviews are often only minutes in length, it is questionable whether applying DSM-IV criteria would have provided as full a picture as they did in this study. In this respect, a clinician armed with the brain fog syndrome criteria would, in a much shorter space of time, been able to arrive at this diagnosis and prescribe whatever treatment was deemed appropriate.

In conclusion, the DSM-IV was not found to be lacking in the way it was able to describe Rose's depressive and anxiety states. It was considerably less efficient at describing her somatic presentations. The criteria for brain fog syndrome were more capable of describing the somatic complaints but possibly less so the depressive and anxiety symptoms. As a label, brain fog syndrome was more meaningful but what was most useful in this respect is an explanation of her condition that Rose would be able to understand. However, at the level of primary health care, the process of arriving at a diagnosis would be facilitated by way of using the 'local' diagnostic criteria of brain fog syndrome.

## 4.2.2 Case Study #2

### 4.2.2.1 Biographical Details

Name: Thandile.

Age: 22 years.

Date of Birth: 17-08-77.

Educational level: Standard 10.

Marital Status: Single.

First Language: Xhosa.

Date of Interviews: November 1998 and July 1999.

### 4.2.2.2 Narrative

Thandile is a 22 year-old Xhosa speaking male matric student. Both his parents were deceased, his father having died in 1983 and his mother in 1979. At that time the family was staying with Thandile's maternal grandmother in Fort Beaufort. He reported that his relationship with his father was good and that both his parents had been churchgoers. He has a sister aged 29 who matriculated in 1992 and works in Johannesburg at a nursery school, another sister aged 27 who left school after passing standard nine in 1998, and a brother aged 18 years who was in standard eight. Thandile reported that he enjoyed a good relationship with all of them.

Thandile was born in 1977 on a farm in the Fort Beaufort district region of the Eastern Cape. At the time his father was a farm worker. He did not remember much about the farm as they left while he was very young. The family then moved into Fort Beaufort. Thandile's early memories are dominated by what he refers to as a "terrible problem". This concerned the fact that he suffered from fits from the age of three until seven. He cannot remember the frequency of fitting except that he would fall down and that his "jaw would stick". He was treated by a traditional healer and the problem abated altogether after the age of seven in 1984.

Thandile started school at the age of nine in 1986 at a primary school in Fort Beaufort. At the time he lived with his brother and sisters at the home of their maternal grandmother in Fort Beaufort. During 1992 Thandile's grandmother died and the family home was destroyed in a fire, necessitating a move to another home. He suffered from stomach ache that year and this resulted in poor attendance at school. Even though the principal was informed of these events, Thandile claims he was unsympathetic. Because of that he failed standard five, an incident which upset him because Thandile and his group of friends were excited about attending high school together. In view of these events, it was decided that he go and stay with his uncle (his deceased father's brother) in Bedford and attend the local school. A secondary reason was that there were doctors in Bedford who would be able to help him with his stomach ailment.

Thandile reported that his uncle, 43, was a very significant person in his life. He was a teacher at the same school that Thandile attended, drank moderately, and they had a very good relationship. His uncle has been very supportive and took a keen interest in Thandile's studies, "encouraging" him when he did not do well. He reported that he had a "relatively good relationship" with his aunt who was also a teacher at the same school. Also resident in the home were Thandile's brother and his uncle's infant son. He reported that he viewed the move to Bedford in a very positive light.

In Bedford, he successfully completed standard five in 1993. He reported that the stomach problem went away before he had seen a doctor. It was during the following year, in 1994, while in standard six, that Thandile first experienced problems with study. This was due to headaches. However, schoolwork was not badly affected in that he still managed to pass that year but he thought that he could have done better had it not been for the headaches. During that year, Thandile consulted a local general practitioner who prescribed medication for the headaches. He says that this did not really help and as he was going to East London for the Easter vacation, he consulted a doctor there. He diagnosed Thandile as having a "nervous" complaint but did not prescribe any medication. At the time Thandile complained of feeling dizzy and "exhausted in his mind" even when not studying.

The same year, 1994, Thandile sought help from a traditional healer in Queenstown who diagnosed that an (unidentified) woman was "fighting against his achievement". This was brought about by jealousy as the woman (or whomever she represented) did not wish to see him succeeding in life. Herbs were prescribed. He reported that his headaches improved after the visit. However he said that traditional healing "is not his belief" and he would rather believe in "Almighty God". He felt that his memory problem may be "heredity", inherited from his grandfather.

The problem recurred in 1995 when he was in standard seven. He cannot recall any social, psychological or instrumental pressure during that time. When asked to describe his symptoms he reported dizziness, as if "his brain is overworking or is tired". This occurred even if he hadn't been studying. He also reported a "fogginess" in his eyes. This would last for a day and sometimes up to three days. He would sleep, but this would not help. At times he would experience up to a month's reprieve but the symptoms would always return. They would be worse on some days more than others and he had no explanation for that. He became better in 1997 although he would not describe himself as completely symptom-free during that year.

The headaches recurred with some severity in 1998 and again he consulted a general practitioner. He was advised to consult a doctor and a psychologist from Fort England Hospital who attended the Bedford primary health clinic. The psychologist gave him various "tasks" (psychometric tests) to do and he was prescribed a month's antidepressants by the doctor. He reported that he felt better after speaking to them and that his concentration also improved. When asked about this, he says the "tasks" helped his listening skills. It should be noted that the differential diagnosis given by the doctor at this time was: mood disorder/brain fag; impaired intellect; learning problem or underlying psychological stress. At an interview where his academic future was discussed with the doctor, Thandile became extremely anxious.

Thandile's associated symptoms can be described as follows. He reported an inability to recall work that he had studied the previous day. He described himself as being

“not as sharp as he used to be” and this extended to sporting activities. He would also lose his concentration easily. He experienced feelings of heat inside his head and a heavy feeling in his head as if he was going to fall. He would tire easily even if he had not done much work. He would also feel tired when he woke in the morning. He experienced tremors in his hands and a pain “in the vein at the back of his neck”. Finally he experienced erectile dysfunction and an inability to realise that he had ejaculated during sexual intercourse.

Thandile described himself as a hard worker, working up to six hours a day, and he felt that he under-performed at school, especially during 1996. He never failed a standard between standard six and matric. His matric subjects were English, Afrikaans, Xhosa, Agriculture, History and Biology. Academically, his best subjects at school were Xhosa and English and his worst were Afrikaans and Biology. Subjects he enjoyed the most were Agriculture and History and the least were Physics and Maths. He normally came between 8th and 10th in a class of 40. He received a lot of encouragement from his uncle "to do better" and he felt a sense of duty to do well.

Thandile described himself as a “happy” and sociable person who liked to meet people, share views and advise people when they have problems. In the past he had been employed on a part-time basis by a butcher in Fort Beaufort. He declined further employment because he said that at R10 a day, the rewards were unsatisfactory. At school he played rugby for the first and second teams. He also played soccer. He did not like dancing and singing. He felt that his voice was "too small" for singing. He did not smoke, and drank wine or beer on about five or six occasions a year.

He liked to read short stories, 'You' magazine and the 'Eastern Province Herald' newspaper. His favourite items on TV were films and sport. He had a lot of friends at school, "especially the guys", and he liked to make them laugh. He seldom argued with his friends and his relationship with his uncle was very good. His uncle supported him and he was dependent on his uncle. He had a girlfriend at the time and had his first sexual experience at the age of 16.

He was not an excessive worrier. He did not lose his temper easily, only becoming angry when someone was doing something that transgressed his sense of justice. He worried about the future and felt that he would never pass standard 10 if his memory and concentration problems continued. He was determined to make a good future for himself and “did not want to grow up to be a thug”. Regarding self disclosure, he does not easily share problems, especially with his uncle as problems are "personal". He reported that the atmosphere at his uncle's home was without any problems at all. The only thing that made him feel sad was the problems that interfered with his education. If those were able to be alleviated, he would be able to achieve his goals. He emphasised repeatedly that this was his only problem.

In the matric examinations at the end of 1998, Thandile failed two subjects but was granted supplementary examinations which he passed, attaining an overall ‘S’ non-university exemption aggregate. On the advice of his uncle, he decided to return to the same school in 1999 to improve his matric symbols to give him a better chance of being accepted into a traditionally ‘white’ agricultural college. During 1999, he reported that his study problems had abated virtually altogether. He attributed this to the fact that his self-confidence had grown considerably now that he had proved to himself that he could pass matric.

#### 4.2.2.3 Psychometric Tests Results

##### Beck Depression Inventory-II

Score: 29.

This indicates a severe depression (29 - 63).

##### Beck Anxiety Inventory

Score: 17.

This indicates moderate anxiety (16 - 25).

### Bradford Somatic Inventory

Score: 19.

Scores above 23 represent a somatic condition (rural Indian population).

### Social Support

Extent of social support (SSQN): 54. Norm: 72.08 (32,84)

Satisfaction with social support (SSQS): 140. Norm: 139.05 (22,44)

Norms are standardised for 3<sup>rd</sup> year students at the University of Western Cape.

### Ravens Coloured Progressive Matrices

Score: 32.

This suggests an IQ in the normal range (90 - 109).

### Digit Span

Digits Forwards: 6. Norm: 6.88 (1.1).

Digits Backwards: 3. Norm: 5.04 (1.19).

Norms are standardised for 18 - 25 year African language university students.

### Items in a room

Immediate: 4/5.

20" Delayed: 5/5.

### Bender Gestalt

Error score: 2. (Norm for organic impairment: >5).

### Eysenck Personality Inventory

Neuroticism Scale: 9. This puts the participant into the 48th percentile. The norm for male students at a College of Education in Umtata is 11,6 (SD: 3,3).

Lie Scale: 7. This puts the participant into the 99th percentile.

Extroversion Scale: 11. This puts the participant into the 42nd percentile.

(Percentile norms are standardised for American university students).

### Comment on the Psychometric Tests

The Beck Depression Inventory score placed Thandile on the entry margin of severe depression and the Beck Anxiety Inventory at the moderate level. The period of assessment included the time when he wrote exams and his scores might be over-estimating on that account. His Bradford Somatic Inventory score fell slightly below the cut-off for a somatic condition which is surprising in view of his many somatic complaints. It's possible that the cut-off is not appropriate for a male African population.

His social support scores are in keeping with his narrative. He did not report any difficulties in this regard and his score fell slightly under half a standard deviation below the norm, and overall, he expressed satisfaction with this level. The screening device for intelligence placed him within the normal range and this is in keeping with the clinical assessment. Memory tests did not show any obvious impairment with the exception of Digits Backwards which was slightly over one standard deviation below the norm. This sub-scale is known to be adversely affected by anxiety and this is one possible explanation. That he was able to remember 5/5 'items in a room' on the 20" delayed recall also suggests the presence of anxiety. As a consequence of Thandile's history of childhood epilepsy, the Bender Gestalt was administered but his score was found to be well below the cut-off for organic impairment.

The extroversion scale of the Eysenck Personality Scale was commensurate with Thandile's history, being close to the 50<sup>th</sup> percentile. However, a similar score on the neuroticism scale is possibly lower than would be expected. The elevated score on the lie scale (99<sup>th</sup> percentile) suggests that he wishes to present himself in a positive or moral light.

#### 4.2.2.4 DSM-IV Diagnosis

On the basis of the narrative, the following differential diagnosis was considered:

- Mood Disorder
- Anxiety Disorder

- Somatoform Disorder
- Adjustment Disorder

#### Mood Disorder

Thandile does not fulfil a minimum of five symptoms for a Major Depressive Episode. On criterion A, the only two positive symptoms are fatigue and concentration problems. There is no evidence of depressed mood most of the day, nearly every day; or markedly diminished interest or pleasure. Thus Dysthymia is also excluded. He also does not meet the criteria for the Melancholic Features Specifier, Atypical Features Specifier or Depressive Disorder Not Otherwise Specified. There is also no evidence of Manic Episodes, Substance Abuse, Bereavement or a General Medical Condition. A Mood Disorder is thus excluded.

#### Generalised Anxiety Disorder

Thandile meets the criterion for A in that his worry is excessive but not criterion B in that he does not find it difficult to control the worry. He fulfils criterion C in that he is easily fatigued, experiences muscle tension and has difficulty concentrating. Criteria D, E and F are also met. Although there is evidence of anxiety, the diagnosis of Generalised Anxiety Disorder is excluded.

#### Anxiety Disorder Not Otherwise Specified

This diagnosis is considered appropriate because there is clinically significant evidence of anxiety and depression, but criteria are not met for either a specific Mood Disorder or Anxiety Disorder.

#### Undifferentiated Somatoform Disorder

Thandile meets all the criteria for Undifferentiated Somatoform Disorder

#### Adjustment Disorder

The DSM-IV states “anxiety may be present in Adjustment Disorder, but this residual category should be used only when the criteria are not met for any other Anxiety

Disorder” (p. 435). As the criteria are met for Anxiety Disorder Not Otherwise Specified, Adjustment Disorder is excluded.

DSM Diagnosis:

Axis I:           Anxiety Disorder Not Otherwise Specified  
                    Undifferentiated Somatoform Disorder

4.2.2.5 Independent Clinician’s Assessment

Summary of Presenting Problem

The participant’s primary concerns appear to revolve around his academic performance. He reports that his problems began in 1994 during his first year of high school. During standard five, he went to live with his uncle’s family in Bedford and transferred to a new school. During his first year at high school he began to experience memory and concentration difficulties and reported frequently feeling dizzy and jittery. He felt these problems caused a deterioration in his schoolwork. He claims that they caused him to “lose courage in my study”. These problems have persisted and he complains that no matter how long he studies he cannot remember what he has read. He has no difficulty with other aspects of memory but claims that his memory problems relate specifically to academic material. His difficulty concentrating affects both his academic performance and social functioning. He attributes his lack of participation in class to a reluctance to speak out as he fears forgetting what he wished to share or ask. While he enjoys soccer and rugby, he finds it difficult to concentrate on his game.

The participant’s anxiety appears to be compounded by the importance he has attached to succeeding academically. There are signs of poor self-esteem and his academic achievements are closely tied to his sense of worth. An added factor is the tremendous pressure he feels to make his uncle proud of him. It is possible that his parents’ lack of education may add to an investment in his school performance and thus to the pressure that he feels.

The participant expressed a strong desire to continue with his education and would like to study agriculture. He spends much time worrying that his memory and concentration difficulties will hinder these goals. In addition, he complains of frequent headaches and occasional impotence. The patient suffered from epilepsy as a child. He was never medicated and his last seizure was at the age of seven.

#### Differential Diagnosis

The participant does not appear to be suffering from depression as there is an absence of a depressed mood and there is no evidence of a loss of interest or pleasure in activities. While the participant's anxiety and somatic symptoms may suggest a Generalised Anxiety Disorder, the anxiety is not pervasive and does not concern a number of events or activities, rather it seems restricted to concerns around academic performance. While there is evidence of somatisation, a diagnosis of Somatisation Disorder can not be made as the participant does not have a history of many physical complaints over a period of several years for which he has sought treatment.

#### Diagnosis

It appears that the participant's symptoms occurred in response to a new, demanding academic environment. These symptoms began shortly after starting standard six at a new school in a new town. As this stressor is a continuous one, his symptoms persist. This stressor significantly impairs his academic functioning. It is felt that the cognitive, anxiety and somatic symptoms form part of the difficulty in adjustment and cannot be accounted for by a cognitive disorder, anxiety disorder or general medical condition (childhood epilepsy) due to their specificity to the academic environment.

In sum, the participant fulfils the criteria for:

Adjustment Disorder, chronic, with anxiety.

#### 4.2.2.6. Consensual DSM-IV Diagnosis

A psychiatrist (Kelly, 1999) was consulted on the diagnosis of Adjustment Disorder and it was felt that a period of five years was too long for Thandile's transition to Bedford to be termed a chronic stressor. Also, there was evidence that his new

context in Bedford was an improvement over his previous place of residence. However, because there was anxiety present but the criteria for a diagnosis of Generalised Anxiety Disorder were not met, it was agreed that Anxiety Disorder Not Otherwise Specified was appropriate. It was also agreed that even though a Somatisation Disorder was not indicated, there were sufficient somatic complaints to warrant the default diagnosis of Undifferentiated Somatoform Disorder. The consensual, multi-axial diagnosis is as follows:

Axis I:           Anxiety Disorder Not Otherwise Specified  
                    Undifferentiated Somatoform Disorder  
Axis II:          Nil  
Axis III:         Nil  
Axis IV:         Academic problems  
Axis V:          GAF = 60 (current)

It is worth noting that in Appendix B of the DSM-IV which outlines criteria sets and axes for further study to possibly be incorporated in future editions of the DSM, there are two diagnoses which may be useful to describe Thandile's profile of depression and anxiety. These are:

- Minor Depressive Disorder which requires a minimum of two and less than five of the following symptoms normally associated with a Major Depressive Disorder: depressed mood most of the day, nearly every day; markedly diminished interest or pleasure in activities; significant weight loss or gain; insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness and diminished ability to think or concentrate. Thandile would have qualified for two of these but he would not have been given the diagnosis as one of the two symptoms was not depressed mood or diminished interest/pleasure.
- Mixed Anxiety-Depressive Disorder which lists the following symptoms:
  - A. Persistent or recurrent dysphoric mood lasting at least one month.
  - B. The dysphoric mood is accompanied by at least 1 month of four (or more) of the following symptoms: (1) difficulty concentrating or mind going blank, (2) sleep disturbance (difficulty falling or staying asleep,

or restless unsatisfying sleep), (3) fatigue or low energy, (4) irritability, (5) worry, (6) being easily moved to tears, (7) hypervigilance, (8) anticipating the worst, (9) hopelessness (pervasive pessimism about the future), (10) low self-esteem or feelings of worthlessness.

- C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.
- E. All of the following: (1) criteria have never been met for a Major Depressive Disorder, Dysthymic Disorder, Panic Disorder, or Generalised Anxiety Disorder, (2) criteria are not currently met for any other Anxiety or Mood Disorder (including an Anxiety or Mood Disorder, In Partial Remission), (3) the symptoms are not better accounted for by any other mental disorder.

It is clear that Thandile would have met the criteria for this diagnosis.

#### 4.2.2.7 Case Formulation

There is evidence to suggest that Thandile's childhood was troubled. His mother died when he was two years old and his father when he was seven and it was during this time that he suffered from childhood epilepsy. A series of further tragedies occurred at the age of 15: the family home burnt down, he suffered from stomach ailments causing him to miss classes and fail the year, and his grandmother (his custodian) died. At the same time he reported unsympathetic treatment from his headmaster. The advent of his study problems (initially in the form of chronic headaches) coincided with his first year at high school where his uncle and aunt (his new custodians) were teachers.

His study problems continued right through his high school career, certain periods being worse than others. Even though he reports positively about life with his uncle,

he feels tremendous pressure to achieve academically as part of a sense of duty to his uncle. As a student he is an extremely hard worker and is fully committed to furthering his study at a tertiary level. He places great store on securing a good education so that he may become financially independent and not grow up to be a "thug".

It is curious that in the opinion of all those who interviewed Thandile, while he appeared to be lacking in confidence and exhibit a moderate degree of anxiety, he did not appear to be clinically depressed. However, this conflicts with his elevated score on the Beck Depression Inventory. That he wished to present himself in a positive light was manifest during the interviews and is corroborated by his own assertion that "problems are private matters". In this respect, there is another factor which appears relevant: his high score on the lie scale of the Eysenck Personality Inventory. One might also have expected that his score on the neuroticism scale would have been higher. That he was suffering from some degree of depression is also suggested by the fact that he reported an improvement after a course of antidepressants.

It is probable that the deficits in his childhood caused him to accept as normal a very low or non-existent level of emotional support. Evidence of this is that he regarded his relationship with his uncle as supportive even though he did not feel comfortable discussing problems with him. The unavailability of emotional support rendered him particularly susceptible to anxiety in a life beset by difficulties. (Stomach ailments during junior school suggest evidence of somatised anxiety). The anxiety, both engendered and exacerbated a sense of inadequacy and low self-esteem. It appears that he lacks insight and compensates by minimising emotional concerns. Reference has already been made about his tendency to present a facade of normalcy to the outside world. (Indeed, his own conception of his study inhibition was that his sadness and worry were *due* to the fact that he was not able to study properly). Another reason that he feels it is not appropriate to express emotion could possibly be seen in a cultural context in the sense that it is "unmanly". It would then explain why he felt that his problems were much improved after his consultations at a clinic (where he did self-disclose).

As he grew older, in addition to feeling an obligation to perform academically for his uncle, he saw the solution to his psychological distress and financial dependency as emanating from securing a good tertiary education. At the same time, he possibly felt that his wardship constrained him from burdening his caregivers any further with affective problems. Both these factors intersected and caused considerable anxiety related to his education. It is also likely that his self-esteem was overly tied to his academic performance. Poor or disappointing performance would most likely result in some degree of decompensation. In any event, in his eyes, a substantial amount turned on his desire to do well at school. As someone of average intelligence, together with the social and economic changes which emphasise the need for education, these factors caused him substantial anxiety which impacted negatively on his cognitive abilities. In response, he worked longer hours and set in place a spiral of anxiety and depressive symptoms.

In conclusion, Thandile's life has been characterised by circumstances that have rendered him prone to anxiety and low self esteem. Securing a good education is seen by him as a solution to many of these life problems, including an improved sense of self. However, rather than being the solution, his overzealous need to perform academically is impacting negatively on the very issues that he hopes it will alleviate.

#### 4.2.2.8 Comparison of DSM-IV Diagnosis Versus Brain Fog Syndrome Diagnosis

In terms of a brain fog syndrome diagnosis, Thandile fulfilled all the criteria. On criterion B, he fulfilled five of the seven of the criteria (minimum: 2) and on criterion C, 6 of the eight (minimum: 3). As such, he can be considered a highly likely case of brain fog syndrome. This is to be contrasted against his DSM-IV diagnoses of Anxiety Disorder Not Otherwise Specified and Undifferentiated Somatoform Disorder. In this section, the different diagnoses are juxtaposed so that the relative merits of each can be assessed.

Is a single diagnosis able to account for the full symptom picture. If not, how many?  
Both diagnostic systems were able to account for Thandile's symptom profile. The

diagnosis of brain fag was able to do on its own whereas in the case of the DSM-IV, two diagnoses were necessary.

To what extent do the symptoms fit those typically seen with each diagnosis? There is a degree of controversy surrounding the DSM-IV diagnosis of Thandile. While in the opinion of the three clinicians who interviewed him, he did not appear to be clinically depressed, his score on the Beck Depression Inventory registered in the severely depressed range. There is also the fact that he reported feeling improved after a months' course of antidepressants.

There are a few possible explanations for this anomaly. It could be that the norms for Beck Depression Inventory are not standardised for a rural African population. Or it could be that depression is not 'equivalent' to Western conceptions in this population and that the DSM-IV was not efficient at locating it. Or it could be that the participant was repressing certain symptoms (or their severity). This quandary is echoed by the confusion in determining a diagnosis for Thandile when he first presented at the primary health care facility. There, his differential diagnosis was brain fag syndrome/mood disorder; impaired intellect; learning problem or underlying psychological stress. Also, in this context, note should be taken of what many writers (Anumonye, 1982; Guinness, 1992; Prince, 1989) refer to as the African hesitancy to divulge symptoms of an affective nature. But is this just a hesitancy (implying a reification of depression) or is it that the concept of depression itself is problematic when applied cross culturally?

Regarding the difference between the clinical assessments and the BDI score, it should be noted that a similar result was obtained by Lochner (1999) who interviewed 'mixed race' women in the Western Cape. Of her six subjects, one was clinically assessed as being euthymic even though her BDI score was 43, in the severely depressed range. Another was considered to mildly depressed but her BDI score was also in the severe range. Lochner found her study suggested that while some women explained their psychological problems in ways that sounded like Westernised ideas of depression, there were other symptoms and signs that did not fit

the diagnosis. She suggested that different discourses of depression are used and that health care workers play a more active and interpretative role regarding the intended meaning of a particular discourse.

Certainly, considered from the perspective of the DSM-IV, Thandile's presentation is atypical and 'relegated' to the status of Anxiety Disorder Not Otherwise Specified. However, that is not to say that the diagnosis does not have merit. It is reserved for presentations that contain elements of anxiety and depression, but not of sufficient severity to warrant the full diagnosis. This seems to accurately describe Thandile's presentation and reference has already been made to the fact that this diagnosis is seen as a precursor to possible changes in future editions of the DSM where a diagnosis of Mixed Anxiety-Depressive Disorder may be incorporated.

Regarding Thandile's somatic presentations, he earns the diagnosis of Undifferentiated Somatoform Disorder by default more than by this diagnosis accurately describing his symptoms.

So while there is controversy but not necessarily complete inefficiency surrounding the DSM-IV's ability to describe Thandile's presentation, the same cannot be said for the diagnosis of brain fog syndrome. Here elements of anxiety and depression are present and the somatic complaints are easily identified.

Are the symptom criteria expressed in terms appropriate to local language usage?

In view of the fact that Thandile was probably the least urbanised of the three participants and his level of proficiency in English less developed than the other two, the fact that the symptoms of brain fog syndrome are expressed in local terms was a distinct advantage. It could well be that the controversy around his DSM-IV diagnosis is a reflection of the rural milieu of his life. This is discussed in more detail in 5.3.

Does the diagnosis provide an ‘explanation’ for the symptoms in terms that the patient can readily understand? Thandile explained his feelings of sadness and worry as being a direct consequence of his study problems. He even felt that his lack of comfort with being asked to respond to questions in class was a consequence of what he called his memory problem. He had no awareness of the role that anxiety was playing in his life. He also had no understanding of the concept of depression. As such, the diagnosis of brain fag syndrome would be far more useful to him. However, even this diagnosis requires a rendering of these terms to some extent for the explanation to be meaningful. To this end, it is the explanation that is more important than the label. But for someone like Thandile, with significantly reduced awareness of anxiety and affective states, and a keen focus on his educational future, an explanation that directly addressed his concerns would be useful.

How efficiently can the diagnosis be used at a primary health care level? In the case of Thandile, this is an interesting question because he did consult a primary health care clinic. As stated above, the differential diagnosis was ‘mood disorder/brain fag; impaired intellect; learning problem or underlying psychological stress’ and he was referred for a psychological assessment. The breadth of this differential suggests the difficulty encountered in assessing Thandile. It is likely that the diagnosis of Anxiety Disorder Not Otherwise Specified is probably unknown outside academic circles. In all likelihood, he would have been diagnosed as being depressed or suffering from anxiety, but the difficulties associated with this in terms of his lack of awareness have already been indicated. It appears that at a primary health care level, with a patient presenting with a level of awareness such as Thandile, the diagnostic criteria of brain fag syndrome would be very useful and would have provided an explanation as well as a direction for treatment.

In conclusion, in the case of Thandile, diagnosing the extent of his affective or anxiety symptoms was not as easy as was the case with Rose. Both his diagnoses were relegated to residual categories of little diagnostic power. This confusion would have been less with a diagnosis of brain fag syndrome. The fact that the criteria were

expressed in local terms was an advantage in that Thandile's level of urbanisation and proficiency in English was lower than the other participants.

### 4.2.3 Case Study #3

#### 4.2.3.1 Biographical Details

Name: Mantombi.

Age: 34.

Date of birth: 24th September 1964.

Educational level: Standard 10 (current).

Marital Status: Widow.

First Language: Xhosa.

Date of Interview: November 1998.

#### 4.2.3.2 Narrative

Mantombi is a 34 year old Xhosa-speaking widow who lives in Grahamstown where she is a standard ten student at a local high school. At present her mother, 66, lives in Fort Beaufort. Her father passed away when she was very young and she cannot remember him. She has two step-brothers and a step-sister.

She was born in Port Elizabeth in 1964. From an early age it was not possible to live with her mother because her mother was a 'sleep-in' domestic worker. During this time she stayed with an aunt in Port Elizabeth and it was a happy period of her life. Unfortunately her aunt passed away in 1973 and from that time Mantombi reported that she "did not have a nice place to stay", spending time with various relations. She started school in the mid-70's in Port Elizabeth but cannot remember the precise year. Her mother arranged for her to transfer to a school in Alice during 1976 because she did not consider it safe in Port Elizabeth due to the political unrest at the time. She moved back to Port Elizabeth from Alice in 1982 to attend high school where, again, she did not stay with her mother. She did not experience any study problems and was happy at school. She said she was not a "brilliant" student but worked hard and never failed a standard.

During 1983, at the age of 19, while in standard eight in Port Elizabeth, she married and left school. After her marriage she found employment as a domestic worker in Port Elizabeth while her husband worked in a factory in Korsten (Port Elizabeth). They purchased a home and lived in Motherwell, a township outside Port Elizabeth. She reported that this was a very happy time, that she loved her husband very much and there were no problems in her life. They did not have children and she says that they did not want children. After being married for nearly ten years, her husband was killed in a motor car accident in 1993. Mantombi was severely traumatised by the accident and was treated by a doctor at the time on the recommendation of her brother and sister-in-law. The advice she received was "not to think about the tragedy too much or else she would also die".. In the period after his death, she lost a lot of weight. She cried every day, all the time for some months afterwards and sometimes still felt sad if she thought about him but that only happened about once a week

Mantombi said she deteriorated after the death of her husband to the point where she "looked like a granny". In particular she worried about the problems in her life such as her future and the dispute with her parents-in-law who were trying to claim her husband's possessions. Her sister-in-law advised her to "take hold of her life" and to attempt to rebuild it. She advised Mantombi to find ways of getting a better job so that, especially after her mother died, she would be able to support herself and enjoy the benefit of a career.

As a result of this conversation, during 1995 while still in Port Elizabeth, Mantombi decided to complete her schooling and enrolled at a night school to study for standard eight, taking four subjects a year. She completed standard eight in 1996. The following year a cousin in Grahamstown invited Mantombi to come and live with her. She agreed to this and enrolled at a night school in Grahamstown. That year, 1997, she passed only three of her four subjects and it was agreed that she rather attend day school so that she would be able to complete her matric quicker. The school, however, said she must first complete standard nine.

It was during this time, 1998, that Mantombi first experienced study problems. The previous years at night school had not been a problem as the atmosphere was more adult and there was no-one telling her what to do. If she did not feel like going to school, then she refrained. It was not strict, like day school.

She reported that she had difficulty understanding study material and because of that she would usually study longer hours. Often she would develop a headache and lose concentration. This happened two or three times a week. She found that, after studying, the following day she would not be able to recall the material. In addition, the problems with her memory would extend to non-academic activities such as remembering items needed from a supermarket.

During this period it felt as if her "brain was tired". She continued to worry about her life and this interfered with her ability to think clearly. In addition she reported a variety of somatic complaints. She experienced dizzy feelings which she associated with stress. She also complained of a feeling of pressure in her head and felt that this was caused by a throbbing of the muscles in the rear of her neck. She also experienced feelings of heat inside her head especially around the temples as well as heavy feelings associated with her head such that it became difficult to hold her head up straight. Her body felt tired often but not every day and she also felt tenseness around her jaw on certain days.

She did not go to sleep early as she would then not be able to fall asleep easily. In particular, she experienced sleep difficulties when she was feeling sad and worried about the problems in her life. She also experienced problems with her eyes "as if they went blank" and had difficulty seeing the blackboard at school. She had not been tested for short-sightedness. On the days that she had to write exams she experienced a variety of symptoms including hand and body tremors, feelings of coldness, fear and increased heart rate. She also felt that she might die during these episodes.

She studied about four hours a night but less if she became dizzy. Her motivation was high in that she was determined "to make something of her life" and attempt to

become financially independent. She felt that by getting matric she would be able to get a good job, possibly in Johannesburg.

Mantombi stated that on the whole she enjoyed good relationships with other people but that she was socially isolated at present. She enjoyed an adequate support system which comprised her sister-in-law in Port Elizabeth as well as her cousin in Grahamstown with whom she resides. She did not, however, talk easily about problems but waited until she was questioned on the matter. She got on well with her mother but not with her sister, saying that she does "not know what sort of person her sister is" and cannot understand her. During her free time, Mantombi stayed at home and watched TV or listened to the radio. She was a regular churchgoer and attends 'His People' church. She did not have many friends and was adamant that she did not want another relationship with a man, saying that she wanted to be able to live her own life. She did not preclude the idea of a friendship with a man. Since her husband died, she did have a relationship with a man but ended it when she felt that she was getting too close to him.

She worried about her future, her finances, the fact that her mother might die and that she might not pass at school. She knew that her life had taken "a bad turn" but she consoled herself with the thought that it was possible to make it better. There was also a legal dispute involving the sale of her house. Her ex-parents-in-law were attempting to take everything that was owned by her and her husband. She had used the services of a traditional healer to protect herself against this family as she heard that they too had consulted a traditional healer to help them win back their son's possessions. At no stage did she feel that bewitchment was responsible for her difficulties at school. She felt that the reason for her study problems were that she had a lot of problems in life.

Asked what worried her most, Mantombi replied "I want to make something of my life, to improve myself, to get a better job, at least if I have standard ten I can go anywhere to get a better job" and on another occasion, "life has changed for me but I must remember what I want... at least to change everything and make it better". She

saw her studies in a very positive light, saying "...this will boost my life, this will help me change my life, and at least help me feel that I am 'me' again". She believed that the worries in her life would be alleviated by attaining matric.

She described herself as not being a "funny person who changes her face, a quiet person". By 'changing face' she means she attempts to be even-tempered and would not say something, knowing that it would make someone angry by saying it. She did not wish to show the world her problems and attempted to "look nice" and "keep fresh".

#### 4.2.3.3 Psychometric Tests Results

##### Beck Depression Inventory-II

Score: 35.

This indicates a severe depression ( 29 - 63).

##### Beck Anxiety Inventory

Score: 22.

This indicates anxiety in the moderate range ( 16 - 25).

##### Bradford Somatic Inventory

Score: 28.

According to norms standardised for a rural Indian population scores above 23 represent a somatic condition.

##### Social Support

Extent of social support (SSQN): 42. Norm: 72.08 (32,84).

Satisfaction with social support (SSQS): 139. Norm: 139.05 (22,44).

Norms are standardised for 3<sup>rd</sup> year students at the University of Western Cape.

### Ravens Coloured Progressive Matrices

Score: 25.

This suggests an IQ in the lower average range (80 - 89).

### Digit Span

Digits Forwards: 5. Norm: 6.88 (1.1).

Digits Backwards: 3. Norm: 5.04 (1.19).

Norms are 18 - 25 year African language university students.

### Items in a room

Immediate: 4/5.

20" Delayed: 4/5.

### Eysenck Personality Inventory

Neuroticism Scale: 22. This places the participant in the 99th percentile. The norm standardised for female students at a College of Education in Umtata is 13,6 (SD: 3,3).

Lie Scale: 4. This places the participant in the 83rd percentile.

Extroversion Scale: 7. This places the participant in the 16th percentile.

(Percentile norms are standardised for American university students).

### Comment on the Psychometric Tests

Mantombi's score on the Beck Depression Inventory indicates severe depression. Her anxiety score falls in the moderate range. Testing included the period during which she was writing exams and her scores may be elevated on that account. Her score on the Bradford Somatic Inventory indicates a somatic condition in keeping with her symptom profile. Social support, which was slightly less than a standard deviation below the norm, is in keeping with her narrative. Even though her screening test for intelligence showed a score in the lower average range, her intelligence was clinically assessed to be close to normal and this is borne out by the fact that she never failed a standard during her 'first' school career prior to her marriage. Both her Digits Forwards and Digits Backwards score fell more than one standard deviation

below the norm. Although the norms do pertain to university students, this suggests mild impairment. The results of the Eysenck Personality Inventory are in keeping with her overall narrative history and symptom profile but her relatively high score on the lie scale might suggest that she wishes herself to be seen in a positive manner.

#### 4.2.3.4 DSM-IV Diagnosis

On the basis of the narrative, the following differential diagnosis was considered:

- Bereavement
- Mood Disorder
- Anxiety Disorder
- Somatoform Disorder
- Adjustment Disorder

#### Bereavement

Although Mantombi appears to harbour unresolved grief surrounding the death of her husband in that she sometimes still weeps when she thinks about him, a diagnosis of bereavement is excluded on the basis that her husband died over six years ago. Anecdotal reports are that in Xhosa culture, a grieving period of one year is regarded as 'normal'.

#### Mood Disorder

On criterion A Mantombi fulfils four (diminished interest or pleasure; insomnia; fatigue; and diminished ability to think or concentrate) of the five or more symptoms necessary for the diagnosis. However, in the period after her husband's death, she qualified for six of the nine. She fulfils all the other criteria. Thus it is proposed that the diagnosis of Major Depressive Disorder, In Partial Remission, is appropriate.

#### Dysthymic Disorder

The participant complies with all the criteria with the exception of A. In any event, a diagnosis of Dysthymic Disorder is not made if a Major Depressive Disorder, In Partial Remission, is found.

### Panic Attack

The participant experiences the following symptoms: palpitations; trembling or shaking; dizziness; fear of dying and chills or hot flushes. These are almost always experienced within the context of an impending examination to be written. Thus she qualifies for a diagnosis of situationally bound (cued) Panic Attack.

### Specific Phobia

Although the participant fulfils the criteria for a situationally bound (cued) Panic Attack, it is not clear whether her fear of exams would go so far as to warrant a diagnosis of Specific Phobia. In order to clarify this, the DSM-IV states “the diagnosis is appropriate only if the avoidance, fear, or anxious anticipation of encountering the phobic stimulus interferes significantly with the person’s daily routine, occupational functioning, or social life, or if the person is markedly distressed about having the phobia” (p. 405) and “the diagnosis should not be given if the fear is reasonable given the context of the stimuli (e.g. fear of being shot in a hunting area or a dangerous neighbourhood)” (p. 406). It is doubtful whether criterion E is fulfilled as the participant is still able to pass exams in spite of Panic Attacks at their commencement. Also, a certain amount of anxiety is acceptable in the period before an exam, thus excluding criterion A which calls for fear that is marked or unreasonable. Clearly this is a marginal case where clinical judgements would differ. A psychiatric opinion (Kelly, 1999) agreed that a diagnosis of Specific Phobia would not be appropriate. Rather, her Panic Attacks can be seen as an extreme symptom of her anxiety.

### Generalised Anxiety Disorder

The participant qualifies for four of the six criteria of C and reports that the extent to which she worries about her life interferes with her ability to study, thus fulfilling criteria A and B. Regarding criterion D, it is not easy to establish whether her anxiety is a consequence of her depression. However, the subject of her anxiety appears broader than this and the extent of her accompanying somatic complaints argue in favour of a more pervasive view of her anxiety. On balance, a diagnosis of Generalised Anxiety Disorder is appropriate in addition to her Mood Disorder.

#### Undifferentiated Somatoform Disorder

Mantombi fulfils criteria A, B, D, E and F. In terms of criterion C, it can be argued that the extent of Mantombi's somatic presentation are of sufficiently severity as to warrant 'significant distress'. Therefore this diagnosis is appropriate.

#### Adjustment Disorder

Adjustment Disorder is excluded on the basis of criterion C in that the stress related disturbance is better explained by the diagnosis of Major Depressive Disorder, In Partial Remission, and Generalised Anxiety Disorder. In addition, while the death of her husband could be seen as a chronic stressor, it is unlikely that a period of six years would be admissible for this.

#### DSM-IV Diagnosis

Axis I:           Major Depressive Disorder, In Partial Remission.  
                      Generalised Anxiety Disorder.  
                      Undifferentiated Somatoform Disorder.

It should be noted that Panic Attacks are not a codable diagnosis in terms of the DSM-IV.

#### 4.2.3.5 Independent Clinician's Assessment

The participant appears to fulfil the criteria for Major Depressive Disorder, Recurrent, Moderate, for the following reasons:

The participant claims that her difficulties began after her husband's death in 1993. She had originally left school at the age of 19 to get married and had worked as a domestic worker. After her husband's death she decided to return to school to complete her matric in order to become a secretary and be able to be more self sufficient.

She returned to night school in Port Elizabeth where she passed standard eight. She then moved to Grahamstown and attended a night school. However, she only passed three of her four subjects. This caused her to return to the same school as a full-time day student in 1998 where she was required to repeat standard nine.

The symptoms that she reports include:

1. Memory difficulties - she claims to study hard but her mind goes blank during examinations;
2. Difficulty concentrating;
3. Feelings of anxiety specifically about the need to look after herself;
4. Sleep disturbances including initial insomnia (difficulty falling asleep) and nightmares;
5. Feelings of loneliness and isolation;
6. Loss of interest;
7. Impaired decision-making ability;
8. Fatigue; and
9. Recurrent thoughts of death.

The following symptoms occur primarily during stressful academic situations such as examinations:

1. Trembling and shaking.
2. Heart palpitations.
3. Sweating
4. Chest pains.
5. Dizziness
6. A sense of losing control.

A probable cause of the patient's depressive feelings may be unresolved grief concerning her husband's death. The patient's major concerns at present appear to revolve around her feeling of being left alone in the world. She expresses a deep fear of her mother's death as she sees this as enhancing her aloneness. She feels the need to succeed academically in order to become more self reliant and self sufficient. Many

of her difficulties appear to be connected to the tremendous pressure she places on herself and the associated fear of failure.

While most the symptoms presented point to a diagnosis of Major Depressive Disorder, the symptoms which occur primarily during stressful academic situations are characteristic of a situationally bound Panic Attack. While the participant's depression appears to have started after the death of her husband, a diagnosis of Bereavement or Adjustment Disorder cannot be made as the symptoms are still present years later.

In sum, the participant fulfils the criteria for  
Major Depressive Disorder, Recurrent, Moderate.  
Panic Attacks.

#### 4.2.3.6 Consensual DSM-IV Diagnosis

There was a difference of opinion between the author and the independent clinician regarding the diagnosis of depression. The former found only four positive symptoms whereas the latter found five. This was resolved by reverting to the participant for clarification. The participant responded that her thoughts about death in relation to her husband did not occur more than about once or twice a week and did not cause her undue distress. Also, even though she felt sad at times, it was not every day. For this reason, it was decided to revert to the diagnosis of Major Depressive Disorder, In Partial Remission, as only four symptoms were found on criterion A. The extent of her anxiety was also debated and it was decided that even though it was mostly directed at her education, it was sufficient to justify the diagnosis of Generalised Anxiety Disorder. In addition, the extent of her somatic presentation warranted the default diagnosis of Undifferentiated Somatoform Disorder. Thus her consensual, multi-axial diagnosis is as follows:

Axis I:           Major Depressive Disorder, In Partial Remission.  
                  Generalised Anxiety Disorder.  
                  Undifferentiated Somatoform Disorder.

Axis II: Nil  
Axis III: Nil  
Axis IV: Death of a family member  
Academic problems  
Inadequate finances  
Axis V: GAF = 60 (current)

#### 4.2.3.7 Case Formulation

What characterises Mantombi's early childhood is the fact that at no stage did she live for any length of time with either of her parents. Her father died when she was very young and because her mother was a live-in domestic worker, they were not able to live together. Further disruptions occurred when she was forced to relocate on account of political unrest. The effect of Mantombi's dislocated childhood could well be that she developed unmet dependency needs. It is noteworthy that she scored nearly three standard deviations above the norm on the neuroticism scale of the Eysenck Personality Inventory.

Against this background, it was extremely unfortunate that a period of stability and happiness should end in the tragic death of her husband. It seems likely that substantial abandonment fears were evoked and Mantombi succumbed to a deep depression, vividly described by herself as "looking like a granny". This was exacerbated by the fact that her husband's family tried to take from her what might have constituted some form of financial security in the form of the home which they had purchased. With support from various members of her family, Mantombi embarked on a journey to become self-reliant and this involved completing her schooling so as to be able to secure a well-paid position.

While she made fairly good progress in this endeavour, it is curious that her study inhibitions only really became florid at the time when she reverted to full-time study at a high school in Grahamstown. One may speculate that this was partly due to the fact at the age of 34, she found herself amongst teenagers and subject to school discipline. She notes that the atmosphere at night school was more "adult" and age-appropriate.

This may have brought into focus what she saw as the desperate position that she was in and she admits to worrying constantly about aspects of her life. Significant among these are fears of what will happen to her if her aged mother (who is not in any position to provide material support) should die. Allied to this fear of abandonment is the fact that she steadfastly refuses to consider the possibility of another relationship. There is evidence that for her, to be in an intimate or close relationship, brings the spectre of hurt and unhappiness. She does not make her emotional needs known and aspires to show the world a "happy face". There is evidence of this in her elevated score on the lie scale of the Eysenck Personality Inventory and that the fact that she expresses satisfaction with her level of social support, which was a standard deviation below the norm.

She has placed great store on what she sees as the solution to her situation, i.e. attaining matric. At the time of exams, her anxiety becomes overwhelming and she experiences Panic Attacks. Her single-minded focus on academic matters has also resulted in the neglect of her social needs and this has led to her feelings of loneliness and vulnerability. Against a background of unmet dependency needs, she is determined to 'go it alone', imagining that academic achievement can substitute for loneliness. The corollary of this is that academic underachievement would be extremely distressing.

In summarising this perspective on Mantombi, it seems that an unstable home environment gave rise to dependent tendencies and fears of abandonment. Further tragedy exacerbated these vulnerabilities to the point where she became depressed. She feels that it is prudent to deny the possibility of a future relationship and become self sufficient by way of securing an appropriate education. These two aspects of her life have converged at a place where, on one hand she is dealing with certain on the problems which best her, but at the cost of generating considerable anxiety which itself undermines those efforts at self reliance. Within a context of social and economic changes where the need to be educated is much greater than in the past, she experiences considerable anxiety regarding her education. On top of unresolved grief which still maintains a partial depression, this appears to have initiated a spiral which

further impacts on her academic performance and is felt most severely when she has to write exams.

#### 4.2.3.8 Comparison of DSM-IV Diagnosis Versus Brain Fog Syndrome Diagnosis

In terms of a brain fog syndrome diagnosis, Mantombi fulfilled all the criteria. On criterion B, she fulfilled six of the seven of the criteria (minimum: 2) and on criterion C, 6 of the eight (minimum: 3). As such, she can be considered a highly probable case of brain fog syndrome. This is to be contrasted against her DSM-IV diagnoses of Major Depressive Disorder, In Partial Remission; Generalised Anxiety Disorder and Undifferentiated Somatoform Disorder. In this section, the two diagnoses are juxtaposed so that the relative merits of each can be assessed.

#### Is a single diagnosis able to account for the full symptom picture. If not, how many?

In the case of the DSM-IV, three diagnoses (excluding the non-codable diagnosis of Panic Attacks) were necessary to describe Mantombi's symptom profile. The diagnosis of brain fog syndrome was able to describe her condition with the exception of Panic Attacks that was not identified by the brain fog criteria.

#### To what extent do the symptoms fit those typically seen with each diagnosis?

Regarding the extent of her anxiety, there was little difficulty assigning the diagnosis Generalised Anxiety Disorder to Mantombi. There was initial disagreement about the extent of her depression. It was decided that she had partially recovered from her depression following the death of her husband and that the use of the qualifier 'In Partial Remission' was appropriate. In the case of Undifferentiated Somatoform Disorder, however, Mantombi's symptoms were quite atypical and she qualified more by default than by closely meeting symptom criteria. Regarding brain fog syndrome, Mantombi's symptom profile can be seen as a very typical case, especially regarding the somatic presentations.

#### Are the symptom criteria expressed in terms appropriate to local language usage?

Mantombi's understanding of English was fair, causing some problems in answering questions relating to depression and anxiety in the DSM-IV. The somatic symptoms

are mostly local in character and would not be identified by way of the DSM-IV. To the extent that brain fog symptoms are expressed in local usage, this is a distinct advantage.

Does the diagnosis provide an 'explanation' for the symptoms in terms that the patient can readily understand? Mantombi complained that she was not able to study properly on account of the fact that she had so many problems in life. As such, she already had her own 'explanation' but felt that her inability to study was making the prospects for her future worse. Her insight would have been greatly enhanced with some knowledge of the effects of anxiety and depression on her cognitive abilities.

The diagnosis of brain fog syndrome provides a direct answer to her study problems. However, even an explanation of brain fog syndrome requires some translation of anxiety and depression into terms that would be meaningful. It is surely the explanation of the symptoms that is more important than the label. In this sense, a clinician sensitive to cultural differences would be able to deliver this explanation using only the DSM-IV diagnoses. Whatever diagnostic system was being used by a clinician, the answer (or explanation) should be similar. Thus, in theory at least, the diagnosis of brain fog syndrome does not seem to have a significant advantage.

How efficiently can the diagnosis be used at a primary health care level? The three DSM-IV diagnoses given to Mantombi require of a primary health care worker time to take a full history, psychiatric knowledge and diagnostic skills. In the reality of primary health care in South Africa, with laboured resources where patient's interviews are often only minutes in length, it is unlikely that applying DSM-IV criteria would have provided as full a picture as they did in this study. In this respect, a clinician armed with the brain fog syndrome criteria would, in a much shorter space of time, been able to arrive at this diagnosis and prescribe whatever treatment was deemed appropriate.

In conclusion, the DSM-IV was not found to be lacking in the way it was able to describe Mantombi's depressive and anxiety states. It was considerably less efficient

at describing her somatic presentations. This position was reversed regarding the brain fog syndrome diagnosis. As a label, brain fog syndrome was more meaningful but what was most useful in this respect is an explanation that would give Mantombi insight into her condition.

## Chapter Five

### Discussion

This research has suggested that there is evidence of brain fog syndrome in South Africa and has examined three of these cases in detail. It is an appropriate time to consider some of the issues surrounding its value as a diagnosis. A helpful place to start might be to examine some of the concerns that arise from a comparison of the DSM-IV and brain fog syndrome diagnoses.

#### 5.1 Accounting for the Symptoms

The first point is that both diagnostic systems were able to account for the symptom presentations. Brain fog syndrome was able to do this with one diagnosis whereas it took two or three different DSM-IV diagnoses. The anxiety and depressive symptoms were identified by both systems whereas the somatic symptoms were better described by the brain fog diagnosis. There was also the question of Mantombi's Panic Attacks which were recognised as such by the DSM-IV but identified, at most, as an extreme form of anxiety by the brain fog diagnosis.

Regarding the use of more than one diagnosis to describe a case, the DSM-IV states "the general convention in the DSM-IV is to allow multiple diagnoses to be assigned for those presentations that meet criteria for more than one DSM-IV disorder" (p. 6) but includes exclusion criteria which help to prevent or discourage multiple diagnoses. In the three cases, the exclusion criteria did not obviate the need for more than one diagnosis.

It should be noted that even though the DSM-IV diagnoses were not identical, each contained the same elements - depression, anxiety and somatisation - differing only in degree, not kind. In this sense the DSM-IV assertion that brain fog syndrome can resemble anxiety, depressive and somatoform disorders, was supported. The effectiveness of the DSM-IV would have had to be acknowledged for succeeding in demonstrating an ability to yield consistent results in the formidable arena of cross-cultural diagnoses. This should be seen in the light of the fact that the DSM-IV does

not make any attempt to explain causation but claims to be empirical and acontextual, diagnosing only on the basis of signs and symptoms. The fact that it is unusual to find these diagnoses co-occurring in Western presentations must be separated from the issue of detection and will be discussed later. What is important at this stage is that DSM-IV was able to identify them and is not without merit in a cross cultural context.

## 5.2 Typicality

The second question enquired of the cases just how typical the presentations were. While the brain fog diagnoses were all considered to be typical cases, this is not true of the DSM-IV diagnoses. In each case the somatic presentations were atypical and relegated to the default diagnosis of Undifferentiated Somatoform Disorder. While Rose's depression and anxiety were 'typical', both Mantombi's and Thandile's depression gave rise to a lack of agreement between the independent clinician, the author and the score on the Beck Depression Inventory. Thandile's anxiety was also atypical, meeting only the criteria for a default diagnosis. It should also be noted that the combination of the three diagnoses together - depression, anxiety and somatisation - is atypical.

Regarding a lack of 'typicality', the DSM-IV states that "a categorical approach works best when all members of a diagnostic class are homogenous, when there are clear boundaries between classes, and when the different classes are mutually exclusive. Nonetheless, the limitations of a categorical classification must be recognised" (p. xxii) and "the specified diagnostic criteria for each mental disorder are offered as guidelines for making diagnoses, because it has been demonstrated that the use of such criteria enhances agreement among clinicians and investigators... these diagnostic criteria and the DSM-IV classification of mental disorders reflect a consensus of current formulations of evolving knowledge in our field. They do not encompass, however, all the conditions for which people may be treated or that may be appropriate topics for research" (p. xxvii). and, finally, that "in some cultures, depression may be experienced largely in somatic terms rather than with sadness or guilt" (p. 324)

The issues surrounding the depression diagnoses will now be discussed. Of the nine symptoms on criterion A for a Major Depressive Episode, probably the most difficult to judge was the first one: depressed mood most of the day, nearly every day. Over a period of nearly forty years, the majority of writers, from the first reviewed in this work, Prince (1960), to the last, Peltzer *et. al.* (1998), have drawn attention to what is termed as an 'African hesitancy' to divulge matters of an affective nature. But is it a hesitancy or is depression 'different' in Africa? Essentially both these views are consistent with Anumonye's (1982) suggestion that depression is qualitatively different in Africa: the affective components are light but intellectual and somatic elements are severe enough to be debilitating. Is it that a communitarian culture (where there is less individual responsibility) 'protects' against the affective severity of depression. (In fact some writers have implicated the loss of the protection of a communitarian culture in the onset of brain fog syndrome). If it is true that affective elements are light, then the ability of the DSM-IV to identify what is termed depression (in the Western sense) in an African population, would be obfuscated.

Swartz (1998) proposes another possible reason for this apparent African hesitancy. He notes that the Western styles of assessment involve asking a lot of direct questions regarding history, mental states and functioning. Vigorous questioning creates a barrier between a client and a professional. This is not the case in African cultures where traditional styles of healing make no clear distinction between assessment and healing (a position also taken by postmodern styles of Western therapy). Rather, traditional methods involve the making of statements in the presence of the patient and members of the family. Reactions are monitored and opinions formed on the basis of what might be called a co-authored reality where the healing relationship is foregrounded rather than the imperative to arrive at the diagnosis.

Louw & Edwards (1997) suggest that there is conflicting data surrounding the issue of whether depression is different in Africa. Many writers have observed that feelings of guilt are rare in Africa but a recent study found levels of 'severe guilt' to be four times higher in a Ugandan community than in London. Also, while it is feasible that

somatisation may prevail while there is no language available for describing inner psychological life, it could be that increasing media literacy is lessening the difference between Western and African depression.

With regard to the view that it was not common to find the diagnoses of anxiety, depression and somatisation co-existing with one another in Western presentations, Kleinman notes that cases involving this combination abound in other cultures. Rather than being seen as a hallmark of unsophisticated or 'unpsychologised' cultures, he suggests *not* using the body to express distress can be construed as a loss for Western societies. The traditional ways of dealing with great social pressure are religious modes, moral idioms of distress and bodily complaints. By way of the internalisation of a critical observer, Western 'remedies' involve the language of stress, self-defeating introspection and despair. Kleinman feels that there is no evidence to suggest the latter are in any way more 'advanced' or healthier than other bodily ways that express emotion indirectly. He also suggests that what is regarded as the 'phenomenon' of somatisation is tantamount to a history of the West trying to accommodate ways of being that break an important rule: that of the mind and body being separate. Indeed, culture bound syndromes as a whole represent a response to presentations that do not fit Western models.

Kleinman is correct to challenge what appears to be the 'arrogance' of the West to regard somatisation as an uncivilised or unsophisticated reaction to distressing circumstances. Furthermore, Swartz points out that somatisation is hardly uncommon in the West and refers to the proliferation of chronic fatigue syndrome. However, what the present research did indicate with reference to the DSM-IV was the following:

- Somatic presentations were consistently atypical;
- The three diagnoses of anxiety, depression and somatisation co-existing were also atypical; and
- There was controversy surrounding the diagnoses of depression.

So even though the DSM-IV was able to broadly identify these as outlined in 5.1, beyond that they were either assigned to atypical categories or not easily classifiable by the DSM-IV. This does suggest strong evidence of cultural difference.

### 5.3 Language Issues

The third issue that arises from a comparison of the diagnoses was the extent to which criteria were expressed in terms appropriate to local language usage? The DSM-IV, clearly, expresses itself in 'universal' language. It was found that in terms of applying DSM-IV criteria to the three cases, the ease with which this could be done seemed directly related to the extent to which they were urbanised and proficient in English. This was substantially less of a problem when applying the brain fog criteria. In particular, the somatic symptoms were quickly and easily elicited, with participants giving the impression of being 'understood'. Especially relevant in this regard was 'feelings of pressure and heat inside the head'. The same applies to symptoms such as 'thinking too much'.

The case that presented the most difficulty regarding a DSM diagnosis was Thandile, whose proficiency in English and level of sophistication was the least of the three participants. It is interesting to note that the diagnostic 'dilemma' was not resolved by conducting an additional interview in Xhosa. Even though the interview took place six months after those by the author and independent clinician, the research assistant who conducted this interview, also considered that Thandile displayed evidence of anxiety but did not appear to be clinically depressed. A possible reason for this, was that she was applying DSM-based criteria.

What this case shows is that effective communication does not seem to be case of merely translation from one language to another, but rather a 'cultural' translation. This echoes the view of Lochner (1999). This research shows that the more that language can be used to explore and make explicit the phenomenology and meaning associated with a condition, the more effective will be diagnosis and treatment in a cross cultural context. The extent to which this was done in drawing up the criteria

for the diagnosis of brain fog syndrome represent a start but it is felt that future research, focused in this direction, will be able to improve the criteria.

It is clear, then, that language can play an extremely important role in determining the ease with which a clinician can enter the emotional world of someone from another culture. Swartz (1998) illustrates the issue by drawing attention to two views of language, which echo the universalist/relativist debate itself. The empiricist view holds that language is a way of labelling reality 'out there'. Thus different languages are no more than different sets of labels for a common realities. According to the constructionist position, on the other hand, language plays a role in the construction of meaning. In this view translation is a complex matter because of the critical role language plays in the very manner emotional worlds are articulated. This research provided strong evidence of the second view.

Before addressing the fourth question which relates to whether the diagnosis provided an explanation for symptoms in terms that the patient could understand, it may be advantageous to review the aetiology and status of brain fog syndrome

#### 5.4 Aetiology

In examining the circumstances of the three participants' lives, there is substantial support for the 'composite' aetiological model derived from some of the major writers on brain fog syndrome in Africa (see 2.3). In each case, the participants found themselves in a climate of social, cultural and economic change commensurate with South Africa in the 90's. Within this is a tendency towards Western individualism. Each felt substantial pressure to secure a good education. Not only would this give them a career advantage but there is also evidence that attaining an education would in some way serve other, more personal needs such as maintaining self-esteem or counteracting social isolation. Furthermore, each grew up in a dysfunctional or disrupted family context which rendered them particularly vulnerable to anxiety. In the presence of other psychosocial stressors, this precipitated substantial anxiety with regard to their education. Particularly relevant in this regard were disappointing grades, interpersonal issues, parental expectations or financial problems. The anxiety

was largely unexpressed, leading to a variety of autonomic responses which, misinterpreted, increased anxiety. Over time this led to a failure to cope with the demands being made and a study inhibition, resulting in the participants studying for longer hours. This increased levels of fatigue and maintained the cycle by further undermining their ability to study, exacerbating anxiety surrounding their education.

Kleinman (1988), however, cautions against too linear an explanation of aetiology, emphasising complexity, multileveled social worlds and social historical realities:

Causation of mental disease is such a complex interaction between biological and psychological and social sources of vulnerability to the peril of precipitating events - one type of vulnerability intensified by the others not as separable risk factors but as a systematically interrelated web of susceptibility - that the term causation itself can be misleading. I prefer, therefore, to speak of social influences that place particular categories of persons at great risk for the onset of mental disorder or that contribute to the worsening of that disorder. In the onset of most episodes of mental disorder, one cannot simply say "this alone was the cause" (p. 58).

While Kleinman is correct to draw attention to the limitations of what might be termed the 'inappropriate punctuation' of linear explanations, he might be doing this at the expense of foregrounding broad socio-economic and cultural predisposing factors in his own account. This research did seem to indicate a common pathway and was consistent with models proposed in the literature. There are certain aetiological factors about which comment cannot be made such as age, intelligence, birth order and study habits. These provide opportunities for future research.

### 5.5 The Status of Brain Fog Syndrome

What kind of condition is brain fog syndrome? To review some of the perspectives already mentioned, Prince (1985) thought that brain fog was more like 'anxiety-depression' than any other Western psychiatric label but questioned the extent to

which it was the 'same'. As indicated above, Anumonye (1982) thought depression may be different in Africa with fewer affective complaints but more somatic and intellectual symptoms. Jegede (1982) (working from the DSM-III) thought it was an anxiety neurosis or a depressive neurosis depending on which symptoms were dominant. Guinness (1992) conceptualised brain fag as an anxiety disorder over which depression often supervened if the condition was long standing. Peltzer *et. al.* (1998) considered it more a depressive or depressive-anxiety disorder than an anxiety disorder. Before considering these views, it may be useful to recall that the DSM-IV sees anxiety and depressive disorders as separate, conceptually different categories.

Is it helpful to draw this distinction between anxiety and depression? In the diagnostic criteria for brain fag syndrome (see 4.1.4), they were included in one category. Is there justification for this? Kleinman presents evidence that they can be reconceived not as distinct diseases but rather as nonspecific psychobiological forms of human distress, suggesting that "what is important is not so much the diverging form of psychobiological response as the similar social antecedents" (p. 59). He further suggests that Western ideas of cause, course and treatment do not fit the data. Certain antidepressants can be used to treat anxiety disorders and certain anxiolytics can be used to treat depression. He suggests it is more rational to think of a continuum from pure depression to pure anxiety with most cases falling in between. Which package is elaborated and interpreted is often little more than a construction of the clinician

The data from this research clearly indicates that each participant was experiencing differing degrees of both anxiety and depression. This was largely unexpressed and may explain the significant degree of somatisation being experienced. In terms of being able to say which - anxiety or depression - came first, the case formulations suggest that in the case of Rose and Thandile, it was anxiety which was primary and depression in the case of Mantombi. While it is possible to distinguish different levels of anxiety and depression in the participants, as the condition progresses, it becomes increasingly unclear as to which is 'causing' which. For this reason, it might be more useful to think of anxiety and depression as each being on its own continuum as

opposed to Kleinman's suggestion of each being at the opposite end of one continuum. Thus the discussion in the DSM-IV to include a category called 'Mixed Anxiety-Depressive Disorder' is supported.

#### 5.6 The Explanatory Value of the Diagnoses

Insofar as brain fog syndrome is a contextually defined disorder in that it inhibits the ability of students to study, the diagnosis constitutes a focused and 'dedicated' answer for a patient. In spite of Kleinman's warning about being too uncritical about aetiology, brain fog syndrome appears to have relatively common aetiological elements. But in the explanation of what brain fog syndrome is, it is the concepts and effects of anxiety, depression and somatisation that need to be elaborated for the explanation to be meaningful. The inference is that whatever diagnosis a clinician has (DSM-IV or brain fog) the explanation to a patient should be similar. In this sense, neither diagnosis has a distinct advantage and it is the skill of the clinician in offering a useful explanation that is more important.

In a similar vein, both Swartz and Kleinman stress the importance of 'explanatory models', where a common ground is found between professional and patient, so that their understandings can merge. This, it has been suggested (Swartz, 1998) greatly increases the likelihood of compliance. The latter also draws attention to what he terms a 'meaning-centred approach' to understanding a culture bound syndrome such as brain fog. He asserts that this "focuses less on whether a culture bound syndrome may be 'translated' into a recognisable category than on ways in which personal and social meaning are translated through culture bound syndromes" (p. 158). As such his understanding is that the approach is a comprehensive term for many different ways of understanding a culture bound syndrome in context and involves a process whereby Western diagnostic systems' domination of what constitutes the 'truth' have to be deconstructed. It invites an elaboration of the meaning of symptoms or emotions in a person's life.

If it is more important for the patient as well as the clinician to understand the personal and social meanings that are translated through symptoms, then what use is a

diagnosis at all, whether it is from the DSM-IV or a culture bound syndrome. Clearly there are theoretical and pragmatic considerations. Professionals need to be able to communicate for a variety of reasons and some kind of common language is essential for this. However, what is far more meaningful, certainly from the point of view of explanation and treatment, and particularly in a cross cultural context, is a personalised case formulation or conceptualisation dealing with such questions as how the patient came to develop the complaint; significant life events; relational matrix; beliefs about the self, others and the world; assumptions; rules; attitudes; coping resources and life in the 'here and now'.

### 5.7 Primary Health Care

A question to be addressed with regard to the relative value of DSM-IV diagnoses versus brain fog syndrome relates to the efficiency with which it can be used at the level of primary health care. Reference has already been made to the fact that a considerable amount of time was spent with the participants in order to arrive at the DSM-IV diagnoses. Apart from time, DSM-IV diagnoses also require considerable skill and training. It is common knowledge that the resources of primary health care clinics are strained.

The brain fog syndrome diagnosis provides a very useful shorthand to what might otherwise appear as an atypical or unusual presentation to strictly applied Western diagnostic systems. And with the contextual elements implied by the diagnosis, it should indicate a specific direction for further questioning which might elucidate valuable knowledge for treatment. Considering the case of Thandile, (the least urbanised participant and the one who presented the most diagnostic complexity), would the primary health care workers' dilemma have been less had they been armed with the brain fog diagnostic criteria? It seems likely.

### 5.8 Comments on the Universalist/Relativist Debate

Kleinman's (1988) impression is that vast epidemiological data "does not sustain the radical cultural relativist argument that mental disorders are incomparable in greatly different societies" (p. 40) adding that the chief mental disorders are diagnosable

worldwide. However, he qualifies this by saying that in all aspects of mental illness there are both significant similarities and differences.

He suggests that in considering the universalist argument, it is true to say that the “psychological and biological vulnerability of a person combines with local social pressure to create syndromes of distress embodying neuroendocrine, autonomic, cardiovascular, gastrointestinal and limbic system responses. Such responses constitute a spectrum of affective, anxiety and somatic complaints. Cultural norms reciprocally interact with biological processes to pattern these body/self experiences so that different archetypes of distress are predominant in different social groups” (p. 60). This research suggests that the symptoms of brain fog syndrome may be such a patterning and it follows that a ‘dedicated’ set of criteria will facilitate an understanding of this condition.

Arguments have been presented to demonstrate how cultural components configure the way in which suffering is felt in a way that cannot be trivialised as a veneer that needs to be stripped away to reveal the real cause. At the same time the biological concomitants of depression and anxiety have to be acknowledged. It is the argument that when the biological state renders a universally equivalent mental state that the claims of universalism may be overstated. At that level, psychobiological feedback loops render a far more complex picture.

What are the implications of this for culture bound syndromes and the DSM-IV? Should brain fog syndrome be on the same level as Dysthymic Disorder, for example, and be included in future editions of the DSM? Should all culture bound syndromes be included in the DSM? If brain fog syndrome borrows so heavily from the concepts of anxiety and depression for its definition, can it claim to exist at the same logical level as them? Or should it be a variation of new categories being considered for future editions of the DSM such as Mixed Anxiety-Depressive Disorder.

Swartz (1998) discusses the ‘status’ issue in the context of meaning centred approaches. When applying these approaches, he asks, is the concept of a culture

bound syndrome such as brain fog syndrome or even a diagnosis itself useful? Part of the problem of deciding whether a culture bound syndrome is useful in a contextually-driven approach is that it leads to a situation in which *all* disorders can be regarded as culture bound syndromes and the DSM-IV itself a social construction. Does that imply that culture bound syndromes are themselves superfluous if one is committed to a perspective of viewing the meaning of symptoms in context?

Swartz argues that theoretically this is a coherent point of view but tempers this by suggesting that the category of culture bound syndromes should remain as part of the DSM purely for strategic reasons. He justifies this by noting that 'cultural' presentations occupy a lowly position within mainstream psychiatry and the mere presence of culture bound syndromes in the DSM is effective in keeping alive a concern which would otherwise once again fade into the background against the might of Western psychiatric categories. The other alternative would be to re-write the DSM-IV so as to rethink all disorders in cultural terms. This is highly unlikely to happen. There is also the view that within the financial politics of mental health there is a substantial vested interest in biological models and interventions: part of a new wave of colonialism driven largely by the global pharmaceutical corporations with a responsibility to shareholders.

Kleinman (1988), while acknowledging that medical anthropology carries its own bias, states:

... there is a bias in psychiatry in the very way knowledge is created, so that social causes and social remedies are minimised and even denied. Prevention, when thought of at all, is configured as the choices and behaviours of individuals. This bias gains support not only from the way psychiatrists are socialised and earn a living, but from the major sources of support that fund psychiatric research projects.

(p. 75).

One of Littlewood's (1996) suggestions is to motivate for continuing workgroups to carry out epidemiological and phenomenological studies on some of the most significant culture bound syndromes to establish differences and similarities with

existing DSM categories either for inclusion in a DSM category or a modification of the category. He predicts that this might even lead to narrowing of DSM categories.

Kleinman (1996) proposes a detailed plan dealing with how culture bound syndromes should be dealt with in what he terms a “culturally valid DSM-V” (p. 21). Amongst others he advocates the possible addition of a cultural axis and a variety of practical strategies to overcome common cross cultural difficulties. Concurring with Swartz, he notes, however, that the idea of the inclusion of culture bound syndromes as a category is flawed as “90% of DSM categories are culture bound to North America and western Europe... and the use of this concept to label only non-Western or ethnic syndromes is biased and inappropriate” (p. 23). To ghetto-ise culture bound syndromes in glossaries of future editions of the DSM does not seem to be a satisfactory answer.

Certainly, if at present the DSM-IV has categories such as Adjustment Disorders and Eating Disorders, then it would be hard to argue that a category such as Study Disorders (in which would be listed brain fag syndrome) should be excluded. But there is another, more central issue to be considered.

Brain fag syndrome is similar to Adjustment Disorder in that it is constituted from other disorders that also appear in the DSM-IV, primarily depression and anxiety. The question is whether it belongs at the same logical level *as items from which it is constituted*. Brain fag syndrome as a diagnosis seems to be a contextually-driven, culturally shaped arrangement of somewhat more ‘basic’ orders of psychological distress. This is not to detract from its value. The particular arrangement of anxiety, depression and somatisation that is brain fag syndrome is a frequently occurring condition within a particular context and as a diagnosis that can be made at a primary health care level, it has value.

However, it does seem as if there may be different logical types in the DSM-IV at present and the addition of culture bound syndromes would exacerbate this. This is similar to what Kleinman (1988) refers to as a category fallacy. He believes that

certain psychiatric diagnoses are valid worldwide (he mentions organic brain disorder, schizophrenia, certain anxiety disorders and possibly depression) but questions whether certain others such as Dysthymic Disorder and Anorexia Nervosa have anything like as much global appeal, especially in the Third World.

It also appears that the more 'basic' psychiatric disorders are those which tend to be easier to define at a biological level and which have more 'universal' appeal. If one accepts this argument, then it is not a question of whether brain fog syndrome (or Dysthymic Disorder or Adjustment Disorder) belong in the DSM-IV, it is that they are of a different logical level to the more basic (biological) psychiatric disorders. How exactly these levels might be organised in a comprehensive, global manual of mental disorders is both a complex task and entirely speculative. But if it existed, it might be a most useful instrument. That future DSM categories might be reduced by way of the inclusion of culture bound syndromes was hinted at by Littlewood (1996).

To the extent to which the relativism/universalism divide is still maintained with any great enthusiasm in professional circles, it's usefulness must be questioned. It is increasingly accepted that the two are not opposing positions in the same way that the mind is not a separate entity from body. Mind is a consequence of body/biology and body/biology is a consequence of mind. There is a cybernetic relationship between the two. There is then no tension between ideas such as social constructionism and biological models. Seen from a postmodern perspective, they are simply different views of the same entity - complementarity - in much the same way as wave/particle explanations in Quantum physics. What is seen, is a consequence of the lens through which it is viewed. In the same way, there is "no real world, no unique ready made absolute reality apart from and independent of all versions and visions of it" (Goodman, 1984). Whether the lens is biology or culture does not make either one right or wrong. The value is in the realisation that they both have value. To view them as opposites would be to operate within a reductionist epistemology and apply either/or reasoning. To apply both/and reasoning is to be able to say that brain fog syndrome is a local variant of depressive, anxiety and somatic symptoms and that it has value to all the stakeholders.

## Chapter Six

### Conclusion

Universalist diagnostic systems such as the DSM-IV and the ICD-10 claim that biology determines the cause and structure of mental illness and that it is fundamentally similar the world over. Cultural relativism disputes this, suggesting that culture not only shapes the form of mental illness, but the way it is subjectively experienced. Against this background, the present research set out to investigate issues surrounding brain fog syndrome, a culture bound syndrome occurring in Africa and associated with study difficulties accompanied by a variety of somatic complaints.

The first step was to enquire whether brain fog symptoms identified by researchers in other parts of Africa could be found in South Africa. A convenience sample of 20 black participants experiencing study problems were interviewed utilising a symptom list derived from the major writers on brain fog syndrome in Africa. The results of this showed that there was a marked similarity and as such it can be argued that there is evidence that the condition is present in South Africa. Based on the literature, pilot diagnostic criteria were identified which can be used as a preliminary basis for diagnosis pending further studies with larger samples.

The brain fog syndrome diagnoses were then compared to DSM-IV diagnoses obtained after in-depth case studies had been conducted with three participants from the convenience sample who most clearly met the criteria for brain fog syndrome as derived from the literature. It was found that the DSM-IV assertion that brain fog syndrome resembled anxiety, depressive and somatoform disorders was confirmed. Thus the DSM-IV was not found to be without merit in a cross cultural context. However, it was unusual to find these diagnoses co-existing. Also, certain of the DSM-IV diagnoses were atypical and relegated to default categories. Cultural differences were found in that there was evidence that depression and somatisation may not be the same for African patients as for Westerners.

That the brain fog diagnostic criteria were expressed in terms appropriate to local language usage was found to be an advantage, the more so if the sufferer was less

urbanised. It was concluded that at the level of primary health care, the diagnosis would be useful in facilitating explanatory models and providing contextual information. However, in terms of providing an explanation that a patient could understand, it was concluded that the concepts of anxiety, depression and somatisation were necessary for a meaningful explanation. It was argued that an explanatory model which was understandable to both clinician and patient was most valuable. This was most likely to emanate from an effective case formulation rather than a diagnosis *per se*.

An aetiological model was suggested based on the literature. Predisposing factors were found to be changing social, economic and cultural forces with a move away from communitarianism towards individualism and capitalism. Within this there was a financial imperative to secure a good education and career. Most prone are those from disrupted or dysfunctional families which inclined them to anxiety. Precipitating factors were found to be anxiety regarding a possible negative outcome to educational goals coupled with the presence of psychosocial stressors. Most common among these were interpersonal problems, disappointing grades, family expectations and financial problems. The anxiety thus generated was largely unexpressed and maintained by misinterpreted autonomic responses which generated further anxiety, inhibiting the ability to study. This led to longer study hours and fatigue which further exacerbated anxiety surrounding education.

Epidemiological studies (Peltzer *et al.*, 1998) estimate the prevalence of brain fag syndrome in secondary schools in the Northern province to be as high as 25 per cent. There is also anecdotal evidence of a considerable numbers of students presenting with study related problems at tertiary institutions. If personnel at the above institutions are in possession of the brain fag syndrome diagnostic criteria, this might assist diagnosis and treatment which might otherwise have presented diagnostic dilemmas and hardship for sufferers.

Some speculative offerings are also made at a broader level. It was suggested that brain fag syndrome (and other categories in the DSM-IV such as Adjustment

Disorder) exist at a different logical level to more 'basic' psychiatric disorders such as anxiety and depression from which brain fog syndrome is constituted. It also appears that the more 'basic' psychiatric disorders are those which tend to be easier to define at a biological level and which have more 'universalist' appeal. If one accepts this argument, then it is not a question of whether brain fog syndrome or similar contextually-driven conditions belong in the DSM-IV, it is that they are of a different logical level to the more basic (biological) psychiatric disorders.

This research supported the position that 'biology or culture' may not be a useful dichotomy at all. Rather, by applying the wave/particle metaphor derived from the principle of complementarity in Quantum physics, it was suggested that 'mind' is a consequence of biology and vice versa. There is no reality 'out there' independent of versions and observers. What is 'seen' is a consequence of the lens through which observations are made. Whether the lens is biology or culture does not make either right or wrong. Thus while the universalist claim may have psychiatric validity at the biological level, the way biology is expressed is the sense of 'mind' and symptoms is influenced by culture. While there are similarities between cultures, there are also significant differences.

To conclude, as a diagnosis, brain fog syndrome was found to have value. To the extent that it is still practised in professional circles, what is no longer useful is the type of adversarial thinking that imposes either/or, right or wrong judgements on matters which essentially owe their existence more to the template through which they are being viewed than to an absolute reality existing independently of the observer. What will also be extremely useful would be to focus on the development of models of treatment for brain fog syndrome. Limited success at treatment has been recorded by the authors reviewed in the course of researching this work. Above all, it is this area which constitutes potentially the most rewarding and pressing opportunity for future research.

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Appendix A: The 59-point Structured Interview Schedule

Do you have problems concentrating when studying?

Do you have problems remembering what you have read or learnt?

Do you have trouble thinking clearly?

Do you have difficulty understanding the meaning of written words when studying?

And spoken words?

Does your mind go blank?

Do you feel that your mind is working slowly?

Do you get tired quickly when reading?

Do you experience any of the following in the head or neck area?

Headaches

Feeling of pressure

Facial tension

Peppery feelings

Heat or hot feelings

Emptiness or vacancy feelings

Crawling sensations

Heaviness

Pain

Numbness

Itching feelings

Fluid inside the head

Do you experience any of the following to do with your eyes:

Dimness of vision?

Blurring?

Eyes watering?

Aching?

Do you experience any of the following in your body:

Dizziness?

Hands shaking?

Stomach pains?

Chest pains?

Always tired?

Trembling?

Ringing in your ears?

Do you perspire excessively?

Do you have difficulty with breathing?

Do you have a habit of passing your hand over your forehead?

Do you have a habit of rubbing the top of your head?

Do you feel any of the following:

Sad?

That you have a short temper?

Irritable?

Worried, tense or agitated,?

Lonely?

Frightened for no reason?

That you are thinking too much?

Do you have difficulty making decisions?

Do you ever think of killing yourself?

Are you losing interest in your studies?

Do you sigh often?

Do you have difficulty going to sleep?

Do you wake early in the morning?

Do you wake frequently in the night?

Do you find sleep unsatisfying?

Do you dream excessively?

Do you sleep a lot?

Or a little?

Do you feel someone is trying to harm you?

Is anything interfering with your thinking?

Do you hear voices?

Do you think that you are being bewitched?

Do people say that you look tense or unhappy?

Do you feel that you are more important than others think you are?

## Appendix B: Symptom Frequencies

1. Cognitive Symptoms
2. Head Symptoms
3. Vision Difficulties
4. Bodily Symptoms
5. Sleep Difficulties
6. Affective and Anxiety Symptoms
7. Psychotic Symptoms

Participant	Concentration	Memory	Can't think clearly	Meaning of written words	Meaning of spoken words	Mind goes blank	Mind works slowly	Tire easily from reading
1	Y	Y	N	Y	N	N	Y	N
2	Y	Y	Y	N	Y	Y	Y	Y
3	Y	Y	Y	Y	N	Y	Y	N
4	Y	N	N	Y	N	N	Y	Y
5	Y	Y	Y	Y	N	Y	Y	Y
6	Y	Y	N	N	N	N	Y	Y
7	Y	Y	N	N	N	Y	Y	Y
8	N	Y	N	N	N	Y	Y	Y
9	Y	Y	N	N	N	N	Y	Y
10	N	Y	N	N	N	Y	N	N
11	Y	N	Y	N	N	N	N	Y
12	Y	N	N	N	N	N	Y	N
13	Y	N	N	N	Y	Y	Y	Y
14	Y	N	N	N	Y	Y	N	N
15	Y	N	N	N	N	N	N	Y
16	Y	N	N	N	N	N	Y	Y
17	Y	N	N	N	N	Y	N	N
18	Y	Y	N	N	N	N	N	Y
19	Y	Y	Y	Y	Y	Y	Y	Y
20	Y	Y	Y	N	N	N	Y	Y
Totals	18	12	6	5	4	10	14	14
Overall Rank	1	12	35	37	43	17	4	4

Cognitive Symptoms

Participants	Head-aches	Pressure in the head	Facial tension	Peppery feelings	Heat in the head	Empty or vacant feelings	Crawling sensations	Heaviness	Neck or shoulder pain	Numbness	Itching feelings	Fluid in the head
1	N	Y	Y	N	Y	N	N	N	N	N	N	N
2	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	N
3	N	Y	N	N	Y	Y	N	N	Y	N	N	N
4	Y	Y	Y	N	Y	N	Y	Y	Y	N	Y	N
5	Y	Y	Y	N	Y	Y	N	Y	Y	N	N	N
6	N	N	N	N	Y	N	N	N	N	N	N	N
7	Y	Y	N	N	Y	N	Y	Y	Y	N	N	N
8	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	N
9	Y	Y	N	N	Y	N	Y	N	N	N	Y	N
10	N	Y	N	N	N	N	Y	N	N	N	N	N
11	N	Y	N	N	N	N	Y	N	N	N	N	N
12	N	N	N	Y	Y	N	Y	N	N	Y	N	N
13	Y	N	Y	N	N	N	Y	Y	N	N	N	N
14	N	Y	Y	N	N	N	Y	N	N	N	N	N
15	N	N	N	Y	Y	N	Y	N	Y	N	N	N
16	Y	Y	Y	N	Y	N	Y	Y	Y	Y	N	N
17	N	Y	N	N	Y	N	Y	Y	N	N	N	N
18	N	N	Y	N	N	N	Y	N	Y	N	N	N
19	N	Y	N	N	Y	N	N	Y	Y	N	N	N
20	Y	Y	Y	N	N	N	N	N	N	N	N	N
Totals	8	15	10	4	14	2	14	9	9	2	3	0
Overall Rank	27	2	17	43	4	54	4	22	22	54	49	58

Head Symptoms

Participant	Dimness of vision	Vision blurring	Eyes water	Eyes ache
1	N	N	N	N
2	Y	Y	Y	Y
3	N	Y	Y	N
4	Y	Y	Y	Y
5	Y	Y	Y	Y
6	N	N	N	N
7	N	Y	Y	Y
8	N	N	N	N
9	N	Y	Y	Y
10	N	N	Y	N
11	N	Y	N	N
12	N	N	Y	N
13	N	Y	Y	N
14	N	N	N	N
15	N	N	Y	N
16	N	Y	Y	Y
17	N	N	N	N
18	Y	Y	Y	Y
19	Y	Y	N	N
20	N	N	Y	N
Totals	5	11	13	7
Overall	37	15	11	32
Rank				

Vision Difficulties

Participant	Dizziness	Hand tremors	Stomach pains	Chest pains	Always feel tired	Body tremors	Ringing in the ears	Perspire a lot	Difficulty breathing	Wipe hand over forehead	Rub top of head
1	N	N	N	N	N	N	N	N	N	Y	N
2	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
3	Y	N	N	N	N	Y	N	N	N	Y	Y
4	Y	N	N	N	Y	N	N	N	N	Y	Y
5	Y	Y	N	N	Y	Y	Y	N	N	N	Y
6	Y	Y	N	N	Y	N	N	N	Y	Y	Y
7	N	Y	Y	N	Y	N	Y	N	N	N	Y
8	Y	N	N	N	Y	N	Y	N	N	N	Y
9	N	Y	N	N	N	N	Y	N	N	N	N
10	N	N	N	N	N	N	N	Y	N	Y	Y
11	N	N	N	N	N	N	N	N	N	N	Y
12	N	N	N	N	N	N	Y	Y	N	N	N
13	N	Y	N	N	N	Y	N	N	N	Y	Y
14	Y	N	N	N	N	N	Y	N	N	Y	Y
15	N	N	N	Y	Y	N	Y	N	N	Y	Y
16	Y	Y	N	N	N	Y	N	N	Y	Y	Y
17	N	Y	N	N	N	N	N	N	N	Y	N
18	N	N	N	N	Y	N	N	Y	N	Y	Y
19	Y	Y	Y	N	Y	Y	Y	Y	M	Y	Y
20	N	Y	Y	N	Y	N	N	Y	Y	Y	N
Totals	9	10	4	2	10	6	9	5	4	14	15
Overall Rank	22	17	43	54	17	35	22	37	43	4	2

Bodily Symptoms

Participant	Difficulty going to sleep	Wake early in the morning	Wake during the night	Sleep unsatisfying	Dream excessively	Sleep a lot	Sleep a little
1	N	N	N	Y	N	Y	N
2	Y	N	Y	Y	N	N	N
3	N	N	Y	N	N	Y	N
4	N	N	N	Y	Y	N	N
5	Y	N	N	Y	Y	N	Y
6	N	N	N	Y	N	N	N
7	N	N	N	Y	N	N	N
8	Y	N	N	Y	N	N	N
9	Y	N	N	Y	N	N	N
10	N	N	N	N	N	N	N
11	N	N	N	N	Y	N	N
12	N	N	N	N	Y	N	N
13	N	N	N	N	N	N	N
14	Y	N	N	N	N	N	N
15	N	N	N	N	Y	N	Y
16	Y	N	Y	Y	Y	N	N
17	Y	N	Y	Y	Y	N	Y
18	Y	N	N	Y	N	Y	N
19	N	N	Y	N	N	N	N
20	N	N	N	Y	N	N	N
Totals	8	0	5	12	7	3	3
Overall Rank	27	58	37	12	32	49	49

Sleep Difficulties

Participant	Feel sad	Short tempered	Irritable	Feel worried or agitated	Feel lonely	Feel frightened for no reason	Thinking too much	Difficulty making decisions	Suicidal ideation	Losing interest in studies	Sigh often	People say you look tense or unhappy
1	N	N	N	N	Y	N	N	N	N	Y	Y	N
2	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y
3	N	N	N	Y	Y	N	Y	N	N	Y	N	N
4	Y	N	N	Y	Y	N	Y	Y	N	Y	Y	Y
5	Y	N	N	Y	Y	N	Y	Y	N	N	Y	Y
6	Y	N	N	Y	Y	N	Y	Y	N	Y	Y	Y
7	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	Y
8	N	N	N	N	N	N	Y	Y	N	N	N	Y
9	Y	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y
10	N	N	N	N	N	N	N	N	N	N	Y	N
11	N	N	N	N	N	N	N	Y	N	N	N	N
12	N	N	N	N	N	N	N	N	N	N	N	N
13	N	Y	N	N	N	N	Y	N	N	N	Y	N
14	Y	N	N	Y	Y	N	Y	Y	N	N	N	N
15	N	Y	Y	Y	N	N	Y	N	N	Y	Y	N
16	Y	Y	Y	Y	N	N	Y	Y	N	Y	Y	N
17	Y	Y	N	Y	N	Y	N	N	N	N	Y	N
18	Y	N	N	N	N	N	Y	N	N	N	N	N
19	Y	N	N	Y	N	N	Y	Y	N	N	N	N
20	Y	N	N	Y	N	Y	Y	N	Y	N	Y	Y
Totals	12	7	5	13	8	4	14	10	1	9	11	8
Overall Rank	12	32	37	4	27	43	4	17	57	22	15	27

Affective and Anxiety Symptoms

Participant	Someone is trying to harm you	Someone is interfering with your thinking	Hear voices	Being bewitched	Feel more important than others think you are
1	N	N	N	N	N
2	N	Y	Y	N	Y
3	N	N	N	N	Y
4	N	N	Y	N	Y
5	N	N	N	N	N
6	N	Y	N	N	Y
7	N	N	N	N	N
8	N	N	Y	N	N
9	N	N	Y	Y	N
10	N	N	N	N	N
11	N	N	N	N	Y
12	Y	N	N	N	N
13	Y	N	N	Y	N
14	N	N	N	N	Y
15	N	N	N	N	N
16	N	N	N	N	N
17	Y	Y	N	Y	Y
18	N	N	N	N	N
19	N	N	N	N	Y
20	N	N	Y	N	N
Totals	3	3	5	3	8
Overall Rank	49	43	37	49	27

Psychotic Symptoms