PREVALENCE OF EATING DISORDERS AT THREE UNIVERSITIES IN THE WESTERN CAPE

BY

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CONTENTS

TABLES:

FIGURES:

ABSTRACT

Since the 1970's there has been an apparent increase in prevalence of eating disorders in the USA and Britain, especially among adolescent and young women, notably university students. While eating disorders are multi-determined, sociocultural factors have been particularly implicated, among them, pressures to be thin and successful. In developing countries and among ethnic minorities in Western societies, increasing numbers of women, especially achievement-orientated, Westernised young women from upwardly mobile families, have also been found to be at risk for developing eating disorders. This study seeks to establish the prevalence of eating disorders in a sample of South African university students, to investigate the presentation of eating disturbance in African and coloured students, and to establish the extent of body shape dissatisfaction.

Students from three universities (n = 715) completed the Eating Attitudes Test (EAT), the Bulimic Investigatory Test, Edinburgh (BITE) and the Body Shape Questionnaire (BSQ). Females scored significantly higher than males on all 3 questionnaires, and African students had the highest mean scores on both measures of eating disturbance. Four per cent of males and 16% of females scored 30 or above on the EAT, suggesting significantly disturbed eating habits. Prevalence of bulimia/binge-eating, as measured on the BITE, was 0.5% for males and 6% for females. 45% of students reported feeling overweight, and 24% of females scored 120 or above on the BSQ, indicating significant concerns about body weught and shape. No significant differences were found between white and coloured students or between English- and Afrikaans-speakers.

CHAPTER 1

SUMMARY OF CONTENTS

The aims of this study are to establish the prevalence of eating disorders and disordered eating patterns in a sample of South African university students, to investigate the presentation of eating disorders in African and coloured students, and to establish the extent of body shape dissatisfaction in the same sample of students. Female students in the USA and Britain have been shown to be at increased risk for developing eating disorders. In developing countries and among ethnic minorities in Western societies, achievement-orientated, Westernised young women from upwardly-mobile families have also recently been shown to be at risk for eating disorders. Body shape dissatisfaction, which seems to play a role in the development of eating disorders, has been found to be high among adolescent and young women in Western and non-Western countries.

Chapter 2 reviews the literature, in particular on the prevalence of AN/BN in the USA and Britain, sociocultural factors in the development of eating disorders, especially pressures to be thin and to succeed, case and prevalence studies on AN/BN in Africa, Asia and among ethnic minorities in Western countries, and DiNicola's (1990b) notion of "culture-reactive syndromes". The literature reviewed indicates that eating disorders, until recently thought to be restricted to white middle-class adolescent and young women, are increasingly found among women in developing countries and from ethnic minorities in the USA and Britain.

Chapter 3 presents the methods employed in the study. It

includes the aims of the study, procedures followed, and information on the subjects and on the instruments used. Statistical procedures employed are listed.

Chapter 4 presents the results of the study. It includes descriptive statistics of the demographic and physical characteristics of the students, as well as of the questionnaire scores. One-way and two-way analyses of variance are then applied to the data and the results reported.

Chapter 5 discusses the prevalence rates found for BN and for disordered eating behaviour, as well as the extent of significant body shape dissatisfaction. Gender and ethnic differences are highlighted and commented on. Comparisons are made with other studies. Limitations of the study are described and suggestions made for further research.

CHAPTER 2

REVIEW OF THE LITERATURE

2.1 INTRODUCTION

> " There is no human society that deals rationally with food in its environment. ... Eating... is always closely intermingled with interpersonal and emotional experiences and its physiological and psychological aspects cannot be strictly differentiated. ...[People] misuse the eating function in their efforts to solve or camouflage problems of living that to them appear otherwise insoluble."
>
> (Bruch, 1974, p.3)

Anorexia Nervosa (AN), once considered a rare disorder, appears to have become more common, especially since the 1970's (Bruch, 1985; Garner and Garfinkel, 1985; Gordon, 1990; Dolan, 1991). The physiological sequelae and possible causes of AN have been described in detail by numerous authors, among them Bruch (1974), Selvini Palazzoli (1974) and Crisp (1980). The diagnostic criteria for AN according to the DSM-IV (American Psychiatric Association, 1994) are: refusal to maintain body weight at or above a minimal normal level; intense fear of gaining weight or becoming fat even though underweight; body image disturbance with self-evaluation unduly influenced by body weight or shape, or denial of degree of weight loss; and, in postmenarcheal females, amenorrhoea. DSM-IV further differentiates between restricting and binge-eating/purging type AN. Although Morton (in Yates, 1989) in 1694 described a young woman with many symptoms of AN, calling it "nervous consumption", it was Gull and Lasegue who, working independently of each other, both presented full descriptions

of AN in 1873. Gull settled on the name anorexia nervosa while Lasegue termed the illness l'anorexie hysterique (Yates, 1989; Di Nicola, 1990a). Since there is no loss of appetite in AN (as the word 'anorexia' would imply) but rather denial and suppression of hunger, Selvini Palazzoli (1974) prefers the phrase "self-starvation", and Bruch (1974; 1985) notes that the German name for AN, pubertaetsmagersucht or "pubertal desire for thinness", seems more accurate.

In the general population, prevalence of AN has been put at 0.6-1.6 per 100 000 in Britain (Kendell et al, 1973) and at 0.64 per 100 000 in one county in the USA (Jones et al, 1980). However, prevalence rates of up to 1% have been reported among English adolescent females at private schools (Crisp et al, 1976). AN has been thought to be restricted to Western white upper-to-middle class adolescent females (Russell, 1985; Di Nicola, 1990a; Gordon, 1990), causing some authors to dub it a "culture-bound syndrome" (e.g. Swartz, 1985; Gordon, 1990). However, since the 1980's numerous studies (see reviews by DiNicola (1990b) and Dolan (1991))have reported the rising incidence of disordered eating patterns in Africa and the Indian sub-continent, and among ethnic minorities in the USA and Britain. This prompted DiNicola (1990a; 1990b) to postulate the notion of AN as a "culture-reactive syndrome". These studies are examined in a later section of this chapter.

Bulimia Nervosa (BN) or "binge-eating syndrome" was first described by Russell (1979) as a variant of AN. He noted that further research might establish BN as a disorder independent of AN, and numerous prevalence studies have since proved the accuracy of this prediction. (See the following section of this chapter). According to the DSM-IV (American Psychiatric

Association, 1994) the current diagnostic criteria for BN are: recurrent episodes of binge-eating, coupled with a feeling of lack of control over eating behaviour; regular inappropriate compensatory behaviour such as fasting, misuse of laxatives, diuretics, or enemas, excessive exercise or self-induced vomiting to prevent weight gain; at least two binges a week for three months, with accompanying inappropriate behaviour to prevent weight gain; body shape and weight has undue influence on self-evaluation. DSM-IV further differentiates between purging and non-purging (use of only fasting or excessive exercise) BN.

The ratio of females to males for both AN and BN is 9:1, with BN considered during the 1980's to be five to ten times more common than AN (Gordon, 1990). Furthermore, it seems that BN is more likely than AN to be underreported, with only the worst cases reaching the attention of clinicians, because of the shame and embarrassment the syndrome engenders (Lambley & Scott, 1988).

Because both AN and BN can be fatal, and because of the marked increase in the number of people suffering from full-blown or "partial syndrome" (Mann et al, 1983) AN or BN in recent years, attempts have been made to establish the prevalence of these disorders in Western countries, and to find explanations for the seeming epidemic. Further, as more studies show that eating disorders seem to be on the increase in developing countries and among ethnic minorities in Britain and the USA, there has been an attempt to expand on the notion of the eating disorders as "culture-bound syndromes". These issues will now be examined.

2.2 PREVALENCE OF EATING DISORDERS

Several studies have been conducted on university students in the USA. Halmi et al. (1981) found symptoms of bulimia in 13% of their sample, with a female to male ratio of about 9:1. Ten percent of the students reported using vomiting or laxatives to prevent weight gain. However, not all the DSM-III criteria were used, and a minimum frequency requirement for binge-eating was not imposed. Pyle et al. (1983) found a prevalence of 2.1% in their student sample (4.5% of females, 0.4% of males) when they added the criterion of weekly binge-eating. Also, the "bulimic" students tended to fast rather than induce vomiting to control weight, unlike bulimic patients in a comparison group. Pope et al. (1984) reported a prevalence of 1% to 4.2% for AN, and 6.5% to 18.6% for BN, among their female subjects. No males met the criteria for either disorder. However, the frequency of these behaviours was not reported. The different findings obtained when DSM-III criteria were strictly adhered to is illustrated by the study of Katzman et al. (1984). Thirty-eight per cent of male students and 56% of female students in their sample reported binge-eating, but only 4% of women fulfilled DSM-III criteria for bulimia. In an ongoing cross-sectional study, Pyle et al. (1991) reported a decline in incidence of bulimia from 3.2% in 1983 to 2.2% in 1990 among female students. In Britain, Whitehouse and Button (1988) found a much lower prevalence rate of 1.6% for BN among female students, and 1 in 220 students had AN. They speculated sociocultural factors might explain this discrepancy between British and US students. However, Katzman et al. (1984) noted the limitations of estimating a prevalence rate for BN by questionnaire without a clinical interview, and the two studies which give a lower

prevalence rate both used follow-up interviews with high scorers on the questionnaires (Pyle et al., 1986, 1991; Whitehouse & Button, 1988).

Hart and Ollendick (1985) found a discrepancy in prevalence rates for BN between working women (1%) and female students (5%) using questionnaires, and postulated that students were subject to particular stresses which might increase their chances of developing disordered eating habits. However, Rand and Kaldau (1992), using structured interviews, found a prevalence for BN of 4.1% among women aged 18-30, with no difference in prevalence rate between students and nonstudents the same age. Prevalence of BN for their total sample of adults was 1.1%, which is similar to the finding of Whitaker et al. (1989) who surveyed the high school population of a New York county. In Britain, a study by questionnaire of women attending a family planning clinic gave a 1.9% prevalence rate for BN (Cooper & Fairburn, 1983). The authors felt that an anonymous questionnaire might in fact yield more accurate information than interviews, since BN sufferers would be reluctant to disclose their eating habits to an interviewer.

Finally, given the wide variation in prevalence rates in the literature reviewed here, and the tendency of people with BN to suffer in secret, it seems that a precise prevalence figure will remain elusive (Fairburn & Beglin, 1990). However, even a conservative estimate of 1 - 4% among adolescent and young adult women is cause for concern, and does not take into account the "full spectrum" of eating disturbance in any given population (ibid., p.407). Also, 1 - 4% may be an underestimate of the prevalence of BN among female students, who do seem more vulnerable overall to eating disorders.

2.3 SOCIOCULTURAL FACTORS IN THE DEVELOPMENT OF EATING DISORDERS

Apart from the fact that many women with AN may go on to develop BN (Russell, 1979; Casper et al., 1980), those with AN or BN have in common an intense pursuit of thinness and a morbid fear of gaining weight or becoming fat (Russell, 1979). Yet these aspects of the disorders need to be seen in the context of what Gordon (1990) terms the "contemporary mania" (p.11) for dieting and thinness. A multiplicity of factors is implicated in the development of AN and BN, as numerous authors, among them Garner and Garfinkel (1980) and Hsu (1983) attest. However, because eating disorders seem to occur predominantly among middle-class adolescent females in western societies, it would appear that socio-cultural factors play a major role. The fact that other industrialised societies where Western values are influential also yield a high prevalence rate for AN - Japan, among South African whites and among upper-class Chileans (Gordon, 1990) - serves to reinforce this point.

Crisp (1980) looked at several studies and noted that weight and diet were concerns of 70% or more of girls aged 17-18 in Scandinavia, Britain and the USA. In the same year Garner et al (1980) published a study which put a figure on the extent to which the ideal body shape for women as exemplified by Playboy centrefolds and Miss America beauty contestants, had thinned down from 1959 to 1978. They noted articles in women's magazines on dieting had increased over the same period. In contrast to women portrayed as having the "ideal", thin body shape, Garner et al (1980) also pointed out that the average weight of women under 30 had actually increased since 1959

because of improved nutrition. Wiseman et al (1992) found that the trend discerned by Garner et al (1980) had continued, in that the body weight of Playboy centrefolds and Miss America contestants from 1979 to 1988 had decreased to and stabilised at 13-19% below expected weight. They noted that body weights below 15% of expected are one of the DSM-III-R criteria for AN, so that the "ideal" body shape in the USA has almost become that of an anorexic. Furthermore, a similar study in Britain on fashion models also showed a shift to a more "tubular" figure from 1967 to 1987 (Morris et al, 1989). Little wonder then that women's concern and discontent with weight and body image should be considered normative in Western societies (Thompson, 1990).

Supporting this view is the work of Fallon and Rozin (1985) with adults, Cohn et al (1987) with adolescents and Collins (1991) with children. All three studies found that females selected as Ideal Self a figure significantly thinner than that chosen to represent Self. In Collins' study, 42% of girls aged 6-9 wanted to be thinner. An earlier study (Furnham & Alibhai, 1983) found that British women in their sample reacted favourably to near-anorexic body shapes. The difficulty is that, at least from adolescence, womens' self-esteem is often related to how attractive they feel they look, which requires being thin (Grant & Fodor, 1986). Thus, body image dissatisfaction is often linked to low self-esteem (Thompson, 1990).

Apart from the articles discussed so far, numerous other studies have commented on the widespread socio-cultural pressures on women to be slim, e.g. Garner and Garfinkel (1980); Hsu (1983); Le Grange et al (1994a). Selvini Palazzoli

(1974) also drew attention to this phenomenon, but emphasised as well the increasing pressure on women to compete and achieve power in the workplace, while still fulfilling their traditional roles and remaining well-groomed and attractive. Indeed, Gordon (1990) postulated a high prevalence of BN among women in high status or competitive, male-dominated careers, who achieved a facade of perfection and competence while feeling very differently about themselves. Bruch (1974) also highlighted the perfectionism and self- or parentally-imposed pressure to achieve of people with AN, coupled with a profound underlying sense of being ineffectual, and resultant low self-esteem.

It seems, then, that in Western societies certain individuals, particularly females, may be 'vulnerable' to developing eating disorders because of the interplay of familial, developmental or other psychosocial difficulties with a number of social and cultural factors. Their self-esteem may be strongly linked to how satisfied they feel about their appearance, and their perfectionism may make them prey to feelings of inadequacy when faced with a pressure to succeed as a career woman, homemaker and mother.

2.4 DISORDERED EATING PATTERNS IN NON-WESTERN POPULATIONS

Case and prevalence studies of eating disorders in Africa, Asia and among ethnic minorities in Britain and USA will now be examined, and an attempt made to discern trends.

An early case history of AN in a young black woman from Zimbabwe (Buchan & Gregory, 1984) gave evidence of recurring cultural displacement (beginning with immigration to Britain

at age two and being lodged with a White foster mother). Her father placed pressure on her to succeed academically, which she did, though at the cost of social isolation at a mainly white boarding school in Zimbabwe and then at a British university. She studied medicine to please her father, but homesickness, loneliness and lack of interest in her courses led to poor results. At the start of her second year she became depressed and stopped eating. Eventually she returned to Zimbabwe, where after long-term therapy she resumed studying, in a field that interested her.

Thomas and Szmukler (1985) detailed three cases of AN and BN among British Afro-Caribbean women. They came from working-class backgrounds, but all sought better careers and social status than their families. The five women with BN described by Lacey and Dolan (1988) all had histories of emotional deprivation. One girl, born in Pakistan, was in conflict with her family over her adoption of Western dress and refusal to accept an arranged marriage, but had also been sexually abused by her father. These women were from mixed-race partnerships, and all five described racial identity as a problem; four came from separated families and had been cared for by white women for long periods. The authors hypothesized that it was only the severely disturbed Afro-Caribbean and Asian women who were being recognised as bulimic by their GP and referred for treatment of their eating disorder. In another study of black eating disordered patients in Britain, Holden and Robinson (1988) noted that their socioeconomic and educational status was superior to that of the rest of the black population in Britain. Thus, like the patients in the study by Thomas and Szmukler (1985), they were upwardly mobile and, perhaps, subject to a self-imposed pressure to achieve.

Silber (1986) reported on AN in a group of black and hispanic adolescent girls in the USA. They were middle-class, and for half of them the original referral was not for an eating disorder. Like Lacey and Dolan (1988) he speculated that doctors were failing to diagnose AN/BN in groups considered low-risk.

Case studies of eating disorders among immigrants (Bulik, 1987; Schmidt, 1993) emphasised that the demands made by cultural transition over and above the expected psychosociobiological demands of adolescence, put these individuals at risk for eating disorders, especially in the USA and Britain, where the media strongly conveys the notion that being thin and attractive leads to acceptance and success in the host culture. Supporting this is the earlier finding by Furnham and Alibhai (1983) that, while Kenyan Asian women favoured larger figures, their compatriots who had been living in Britain for 4 years or more favoured body shapes even thinner than those favoured by British women. Nasser (1986) reported that 6 out of 50 female Arab students in London fulfilled the criteria for BN, and 22% had disordered eating habits. None of 60 in a matched group in Cairo fulfilled BN criteria, but 12% of the Cairo sample also had disordered eating habits. He felt that degree of Westernisation differentiated the two groups, but that recent socioeconomic changes in Egypt had meant increasing exposure to Western concepts of beauty and fashion, despite an upsurge in religious fundamentalism. Hooper and Garner (1986), in a study of black, mixed race, and white adolescent females at private schools in Zimbabwe, found bulimic tendencies to be strongest among mixed race pupils, while pursuit of thinness was evident among all three race groups. They felt the competitive

academic environment in these schools and the sociocultural changes in Zimbabwe might explain the emergence of Westernised attitudes toward body shape among black pupils.

An American study yielded higher prevalence rates for eating disturbance among native American high school students (14%) and Hispanics (13%), with whites lower on 10% (Smith & Krejci, 1991). A comparative study of adolescents in Spain and the USA found that while overall level of unhealthy eating habits was higher among the Americans, nearly half the Spanish females wanted to lose weight (Raich et al, 1992).

Mumford et al (1992) found that the more Westernised (speaking English and eating Western meals at home) girls in English-medium (upper-class) schools in Pakistan were more at risk for developing eating disorders. Most of this effect was linked to greater body shape dissatisfaction. Conversely, among Pakistani schoolgirls in Britain, whose immigrant parents had been peasant farmers in Pakistan, they found the risk of eating disorders to be greater among girls from more traditional families (Mumford et al, 1991). They speculated that the conflicting values of the traditional and host cultures contributed to the stresses these girls experienced. A later study (Choudry & Mumford, 1992) conducted in the area from which the British Pakistani families in the 1991 study had migrated, found a much lower prevalence of eating disorders. Of overall note is that on interviewing subjects who scored highly on self-report questionnaires, Mumford et al. (1992) failed to discover eating disorders any different from those prevalent in Western societies.

It seems, then, that eating disorders are becoming more

prevalent among ethnic minorities in the USA and Britain, especially among immigrants. In developing countries undergoing rapid socioeconomic change and westernisation, there also appears to be a rise in the levels of eating disturbance. In both the developing countries and among ethnic minorities in Western countries, young women who come from upwardly mobile families, are fairly Westernised and/ or are achievement-orientated in educational or career terms, seem to be particularly at risk for developing eating disorders. Finally, it may be that health professionals fail to diagnose eating disorders in what have been considered low risk groups, except for severe cases.

2.5 EATING DISORDERS AS CULTURE-BOUND SYNDROMES

Gordon (1990) uses the writings of George Devereux as the basis for his discussion of AN and BN as culture-bound syndromes. Devereux preferred the term "ethnic disorder" in his examination of the relationship between culture and psychopathology to avoid the "foreign" and "exotic" connotations of "culture-bound". Some of the salient features of an ethnic disorder, as summarised by Gordon (1990) are:

1) The symptoms and underlying dynamics of the disorder are continuous with normal elements of the culture, so the disorder ranges in intensity from "subclinical" (as in "partial syndrome" AN) to full-blown.
2) Conflicts and psychological tensions pervasive in the culture are expressed in the disorder.
3) The symptoms are extensions and exaggerations of normal behaviours and attitudes within the culture, often including behaviours that are usually highly valued.

4) People who develop the disorder can range from mildly to severely disturbed.

5) The disorder is a "highly patterned and widely imitated model for the expression of distress"... giving members of the society an "acceptable means of being irrational, deviant or crazy". (Gordon, 1990:p7).

Given the emphasis placed on dieting and weight control in pursuit of the thinness that is held to be attractive in Western society (e.g. Garner et al, 1980), and given that many adolescents and young women are unhappy with their body shape (e.g. Klemchuk et al, 1990), it would appear that AN and BN do lie on a continuum of disorder. Many women in Western societies would, it seems, be able to identify with women who develop eating disorders, and may even envy those with AN. Thus, AN and BN could be said to be ethnic disorders/culture-bound syndromes. But, eating disorders are developing in cultures far from where they were originally noted, and among minority groups hitherto thought to be somehow "protected" from them. Perhaps the notion of AN/BN as culture-bound syndromes needs to be expanded to accommodate the increasing prevalence of disordered eating habits in countries undergoing rapid socioeconomic change (or Westernisation), and among immigrants attempting to adapt to a (Western) host culture. DiNicola (1990b) attempts to do this by developing the idea of a "culture-change syndrome" to explain the vulnerabiltiy to eating disorders of adolescent females in families which migrate to highly industrialised Western societies. He then puts forward a more general term, "culture-reactive syndrome" to cover both culture-bound and culture-change syndromes. DiNicola's idea of a culture-change syndrome can also be used to describe eating disorders in rapidly industrialising

countries, which are, after all, undergoing drastic cultural as well as socioeconomic change.

2.6 CONCLUSION

The literature reviewed here indicates a prevalence rate among white adolescents and young women of 1% for AN, and 1-4% for BN in the USA and Britain. However, the prevalence rate for bulimic behaviours and disordered eating habits in general seems much higher, particularly among female students. High incidence rates for binge eating have also been noted among male students.

While a multiplicity of factors is implicated in the development of eating disorders, sociocultural factors do seem particularly salient, given the demographic pattern for AN/BN until recently. It is in Western societies where much emphasis is placed on weight control and thinness as desirable attributes for females, that AN/BN have chiefly occurred, among middle-class adolescent females. Such are the perceived pressures on women to be slim, that dissatisfaction with body shape is considered normative among young women in Western societies. Apart from these pressures to be attractive (i.e. thin) and well-groomed, women also seem to be expected to be competitive and achievement-orientated in the workplace while fulfilling traditional female roles at home. Individuals who feel they need to conform to these conflicting demands may be prone to low self-esteem given the difficulty of achieving in all three areas. In the face of pressure to succeed academically or vocationally, and to be a model homemaker and mother, their perfectionism may make them prey to feelings of inadequacy. Certain vulnerable individuals may find that

controlling their weight by whatever means restores some of that self-esteem, especially if to begin with their self-esteem is strongly linked to how they feel about their appearance.

Case and prevalence studies from Africa and Asia, and from ethnic minority groups in the USA and Britain, indicate a rise in the prevalence of eating disturbance, more particularly among adolescents from families which have immigrated to Western countries, and among young women in countries undergoing rapid Westernisation. In turn, in both the developing countries and among the ethnic minorities in the western countries, young women from upwardly mobile families and/or under pressure to succeed in academic or career terms, seem to be most at risk for developing eating disorders. Health professionals may be under-diagnosing eating disorders in what have been considered low-risk groups, except for severe cases.

Because eating disorders seem to have become more prevalent in developing countries in Africa and Asia, and among ethnic minorities in Western societies, DiNicola (1990b) felt the notion of eating disorders as culture-bound syndromes was restrictive. He added the idea of eating disorders as culture-change syndromes in countries where rapid change to Western socioeconomic and cultural norms is taking place, or where acculturation of adolescent immigrants involves adapting to Western cultural values. South Africa is a country where rapid political, socioeconomic and cultural change is taking place. Thus it seems pertinent to investigate the prevalence of eating disorders in a group which from the literature would seem now to be particularly at risk, i.e. young African and

coloured women under considerable pressure to succeed and/or from upwardly mobile families - university students.

CHAPTER THREE

METHODOLOGY

3.1 RATIONALE

The literature reviewed in Chapter 2 has indicated that the prevalence rates for AN, BN and for disturbed eating patterns have risen in the last two decades among young women and some men in Western societies, mainly the USA and Britain. Eating disorders are multidetermined, but sociocultural factors do seem to have a major role to play, considering the widespread pressures on women to be slim and to diet, along with the demands made on women to be competitive and achievement-orientated at work while remaining traditionally nurturing and compliant at home.Trying to live up to these demands can lead to feelings of inadequacy, especially in individuals who are perfectionistic, or whose self-esteem is strongly linked to how attractive they feel they look. Since body image dissatisfaction is often associated with low self-esteem and depression, it was disturbing to note that dissatisfaction with one's body shape is considered normative among women in Western societies.

However, further study of the literature shows that AN and BN are not restricted to Western societies. Adolescent and young women in Africa, Asia and from ethnic minorities in the USA and Britain were shown to be increasingly prone to eating disorders and to disturbed eating patterns. Young women in countries undergoing rapid socioeconomic and sociocultural change (i.e. Westernisation) seem to be at risk, especially if they are fairly Westernised and come from upwardly mobile

families and/or are achievement-orientated in academic or career terms. University students would seem to fit these categories, and to constitute a population at risk, in developing countries such as South Africa as well as in Western countries.

The aims of this study are:
1) To establish the prevalence of eating disorders (AN and BN) in a sample of South African university students.
2) To investigate the presentation of eating disorders in African and coloured students - until recently considered a low-risk population in terms of these disorders.
3) To establish the extent of body shape dissatisfaction in the same sample of students, as it has been posited as a factor in the development of eating disorders.

3.2 SUBJECTS

Students from three universities in the Western Cape participated in the study. One university is Afrikaans-medium, one English-medium, and at the third, English has replaced Afrikaans as the principal medium of instruction. All subjects were undergraduates studying Psychology I. Permission to conduct the research was granted by the Executive Committees of Senate of two universities, and by the Department of Psychology of each university. At two universities the lecturers concerned agreed to set aside part of a lecture period for the students to complete the battery of questionnaires, and at the third the students themselves requested time during the lecture. This was granted by the lecturer. One class out of five was chosen at random at one university, and one out of two at another. At the third

university both classes were included in the sample. Students were informed that a survey of eating attitudes and behaviour was being conducted by the researcher, and were invited to fill in the questionnaires. Overall fewer than 20 chose to leave. Students were assured of confidentiality. They were asked to give their name, a contact address and telephone number, but in order to maximise participation and accuracy of responses to the questions, it was stressed that this was voluntary. At the Afrikaans-medium university a glossary (see Appendix 1) translating key terms was distributed with the questionnaires. However, the researcher was informed that only a small minority, if any, of the Afrikaans-speaking students would need it. The researcher undertook to report the findings of the study to all participating universities.

A total of 762 students returned questionnaires, of which 47 were discarded because they were incomplete, thus leaving 715. The age range for the total sample of students was 17-38 years ($\bar{X}$=19.7, SD$\pm$2.95). For further demographic data, see Table 1 in Chapter 4.

3.3 INSTRUMENTS

1. **Demographic Questionnaire**: All subjects completed demographic details including age, gender, marital status, parents' occupations, current living arrangements, ethnicity, home language, religion, present weight and height, ideal weight, history of eating disorder, and menstrual history (if female).

2. **Eating Attitudes Test (EAT)** (Garner & Garfinkel, 1979). This is a 40-item self-report measure of eating disturbance

and abnormal attitudes to food, eating, body image, shape, and weight. Total scores may range from 0-120. Responses are on a 6 point Likert scale. A score of 30 or above indicates a possible eating disorder. However, a high score on this test is not in itself diagnostic of an eating disorder; the EAT is a useful screening instrument, but cannot replace a clinical interview. Garner et al. (1982) demonstrated the satisfactory reliability and validity of the EAT in both clinical and non-clinical groups. Nasser (1986) and Mumford et al. (1992) have used the EAT to identify possible eating disorders in non-westernised population groups, and Mumford et al. (1992) found strong evidence for the cross-cultural validity of the EAT and the BSQ (Body Shape Questionnaire). The EAT is the most widely used measure for anorexic and bulimic symptoms (Whitaker et al., 1989).

3. **Bulimic Investigatory Test, Edinburgh (BITE)** (Henderson & Freeman, 1987). This is a 33-item self-report multiscale measure of both symptoms and severity of bulimia nervosa and associated disturbed eating patterns. It has been shown to correlate well with scores on the EAT in a clinical group. A score of 25 or above indicates a person who may have, or be at risk for, bulimia nervosa. Scores above 10 may indicate subclinical subjects with disordered eating patterns. Again, the BITE is a useful screening tool; BN can only be diagnosed in a clinical interview.

4. **Body Shape Questionnaire (BSQ)** (Cooper et al., 1987). This is a 34-item self-report measure of concerns about body shape and "feeling fat". Responses are on a 6 point Likert scale, with total scores ranging from 34-204. A score of 120 or above indicates significant concerns about feeling fat and body

shape dissatisfaction. The BSQ has been shown to correlate well with EAT scores in clinical and non-clinical groups. Dolan et al. (1990) found that in a non-clinical sample of white, Asian and Afro-Caribbean women, there was no ethnic difference in BSQ scores. Mumford et al. (1992) reported finding strong evidence for the cross-cultural validity of the BSQ.

3.4 STATISTICS

1. Descriptive statistics. Means and standard deviations were calculated for the demographic information and questionnaire scores.
2. One-way Analysis of Variance (ANOVA) was used to analyse differences between groups.
3. Two-way ANOVAs were performed to examine interaction between variables.
4. Results of subjects with scores at or above the cut-off point for the EAT, BITE and BSQ were analysed.

CHAPTER 4

RESULTS

4.1 DESCRIPTIVE STATISTICS

Demographic Characteristics

Demographic characteristics of the students are shown in Table 1. The students were predominantly female, *middle to upper-middle class, Protestant and raised in an urban setting. Twenty-seven per cent were from lower-middle to working class families. On average, white students were from social class I (middle to upper-middle class), African students were predominantly from social class II (lower-middle to working class) and coloured students fell between the two. Over half were white and almost half spoke English as a first language. Of those who spoke an African language (n=180), most spoke Xhosa (n=114). Most of the students sampled lived in a university residence (51%, n=367) or with their family (35%, n=249). While the age range for the total sample of students was 17-38 years, 93% fell in the range 17-24 years (n=667). Mean age for the total sample was 19.7 years (SD±2.95). Mean age for women was 19.36 years, and for men 20.82 years. On average, African students were 3 years older than the other students (X=22.02 years, as opposed to X=18.67 years for coloured students and X=18.96 years for white students). Ninety-eight per cent of the sample were unmarried (n=669).

*Social class was informally assessed as I (middle to upper-middle class) or II (lower-middle to working class) based on parental occupation. Many participants gave insufficient information to enable more formal analysis.

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF UNIVERSITY STUDENTS (N=715)

GENDER			RELIGION		
Female	75%	(537)	Protestant	70%	(497)
Male	25%	(178)	Catholic	7%	(51)
			Muslim	3%	(19)
LANGUAGE			Jewish	3%	(20)
African	25%	(180)	No Preference	17%	(122)
English	43%	(303)			
Afrikaans	32%	(232)	UNIVERSITY		
			UCT	43%	(311)
SOCIAL CLASS*			US	38%	(270)
I (High)	73%	(520)	UWC	19%	(134)
II (Low)	27%	(195)			
			RACE		
			African	27%	(194)
BACKGROUND			Coloured**	17%	(123)
Rural	24%	(172)	White	56%	(398)
Urban	76%	(543)			

NOTES:

* Social Class was informally assessed

** Includes Indian students (n=11) for statistical purposes

TABLE 2

ANOVA OF MEANS FOR MALES AND FEMALES ON THE BITE, EAT, BSQ AND FOR BMI

	MALES n=178	FEMALES n=537	F Value (Pr>F)
	MEAN (SD)	MEAN (SD)	
BITE	6.99 (0.54)	10.34 (0.31)	F = 28.80 (p<0.000)
EAT	12.12 (0.88)	17.51 (0.50)	F = 28.10 (p<0.000)
BSQ	55.87 (2.55)	93.18 (1.47)	F = 161.34 (p<0.000)
BMI	22.52 (0.23)	21.52 (0.13)	F = 13.66 (p<0.000)

Physical Characteristics

The mean BMI (Body Mass Index = weight/height in metres squared) for the total sample was well within the normal range of 20-25 (X=21.77; SD±3.14). Mean BMI of 22.52 for males was significantly higher than that for females (X=21.52, F = 13.66; p<0.000) (See Table 2 for standard deviations). Mean BMI for all African students (X=22.99) was also significantly higher than that of white (X=21.30) or coloured students (X=21.37) [BMI (AA > AC), t(315) = 28.82, p<0.000] (See Table 3 for standard deviations). Overall, discrepancy between present weight (X=60.7kg; SD±10.4) and desired weight (X=57.7kg; SD±10.8) was 3kg. In total, 319 students considered themselves slightly or very overweight (45%). Few (mainly males) regarded themselves as underweight (n=74). Fourteen per cent of the sample reported a history of eating problems (n=98). Twenty-three per cent of females (n=123) reported irregular menstrual cycles or amenorrhoea, many ascribing this to their use of a contraceptive injection, Nuristat.

4.2 TOTAL SAMPLE: SCORES ON QUESTIONNAIRES

The mean scores obtained for the questionnaires are presented in Table 7. Overall, a mean BITE score of 9.5 was obtained (SD±7.35). For the EAT, a mean score of 16.17 was obtained (SD±11.97), and for the BSQ, the overall mean was 83.89 (SD±37.59).

Gender Differences

Analysis of variance showed significant differences between males and females on all three questionnaires (see Table 2 for

TABLE 3

COMPARISON OF MEANS AND STANDARD DEVIATIONS FOR THE DIFFERENT ETHNIC GROUPS ON THE BITE, EAT, BSQ, AND FOR BMI

	AA (n=194)	AC (n=123)	AW (n=398)	SIG. DIFFS FOUND (Probability)
BITE	10.71 (0.52)	9.44 (0.66)	8.93 (0.37)	AA > AC AA > AW (p<0.0000)
EAT	19.05 (0.85)	15.94 (1.07)	14.83 (0.59)	AA > AC AA > AW (p<0.0000)
BSQ	76.83 (2.68)	88.69 (3.37)	85.85 (1.87)	AW > AA AC > AA (p<0.0000)
BMI	22.99 (0.22)	21.37 (0.27)	21.30 (0.15)	AA > AC AA > AW (p<0.0000)

NOTES:
AA = ALL AFRICANS
AC = ALL COLOUREDS
AW = ALL WHITES

TABLE 4

MEAN BITE SCORES FOR ETHNIC GROUPS BY GENDER

	AFRICAN	COLOURED	WHITE
MALES	9.53 (n=64)	7.37 (n=27)	5.00 (n=87)
FEMALES	11.29 (n=130)	10.02 (n=96)	10.03 (n=311)

TABLE 5

MEAN EAT SCORES FOR ETHNIC GROUPS BY GENDER

	AFRICAN	COLOURED	WHITE
MALES	16.23 (n=64)	11.11 (n=27)	9.40 (n=87)
FEMALES	20.44 (n=130)	17.30 (n=96)	16.34 (n=311)

TABLE 6

MEAN BSQ SCORES FOR ETHNIC GROUPS BY GENDER

	AFRICAN	COLOURED	WHITE
MALES	60.30 (n=64)	62.19 (n=27)	50.64 (n=87)
FEMALES	84.97 (n=130)	96.15 (n=96)	95.69 (n=311)

F values). Females scored higher on these measures. For the BITE, males' mean score was 6.99 (SD±0.54), while females averaged 10.34 (SD±0.31). On the EAT, males scored a mean of 12.12 (SD±0.88) and females 17.51 (SD±0.5). For the BSQ, males averaged a score of 55.87 (SD±2.55) and females 93.18 (SD±1.47). All these differences were statistically highly significant ($p<0.000$).

Ethnic Group Differences

Mean scores on the questionnaires for the different ethnic groups are presented in Table 3. On all three measures African students scored significantly higher than both coloured and white students. A mean BITE score of 10.71 (SD±0.52) for African students was contrasted with 8.93 (SD±0.37) for white students [AA - AW, $t(590) = 31.45$ $p<0.000$) and 9.44 for coloured students (SD±0.66) ($p<0.000$). Similarly, for the EAT, African students averaged 19.05 (SD±0.85), coloured students 15.94 (SD±1.07) and white students 14.83 (SD±0.59). For BSQ this trend was reversed, with African students scoring significantly lower (X=76.83; SD±2.68) than coloured students (X=88.69; SD±3.37) or white students (X=85.85; SD±1.87). All these differences were highly significant ($p<0.000$).

There were no significant differences between coloured and white students on questionnaires or for mean BMI (see Table 3). The only significant differences found were between male and female students.

Scores on the three measures for ethnic group by gender are in Tables 4-6, Figures 1-3. When African, coloured and white students were divided by gender, ethnic group and total sample

gender differences were largely retained. African males (X=9.53) scored higher on the BITE than coloured (X=7.37) and white (X=5.0) male students, and African females (X=11.29) also scored higher than white (X=10.03) or coloured (X=10.02) females on BITE. On the EAT, a similar pattern emerged. African males (X=16.23) scored higher than coloured (X=11.11) or white (X=9.4) males. African females (X=20.44) scored higher than coloured (X=17.3) or white (X=16.34) females. On the BSQ, African (X=60.3) and coloured (X=62.19) males scored higher than white males (X=50.64). However, African females (X=84.97) had a lower mean score than white (X=95.69) or coloured females (X=96.15).

In the 2-way ANOVA, on the BITE there were main effects for gender ($F = 20.46$, $p<0.000$) and race ($F = 8.65$, $p<0.000$), but no interaction between gender and race. On the EAT, again there were main effects for gender ($F = 26.18$, $p<0.000$) and race ($F = 11.85$, $p<0.000$) but no interaction. However, on the BSQ, as well as a main effect for gender ($F = 110.59$, $p<0.000$), there was an interaction between gender and race ($F = 4.88$, $p<0.008$), because the differences in mean scores of women by race did not parallel those of the males by race.

Language

As noted in the previous section, there were no significant differences between coloured and white students on the questionnaires or for mean BMI, except for gender differences. Similarly, no significant differences were found between English- and Afrikaans-speaking students. Significant differences were found between students speaking an African language and those speaking English or Afrikaans on the EAT,

Figure 1

Comparison of Mean Scores for the BITE

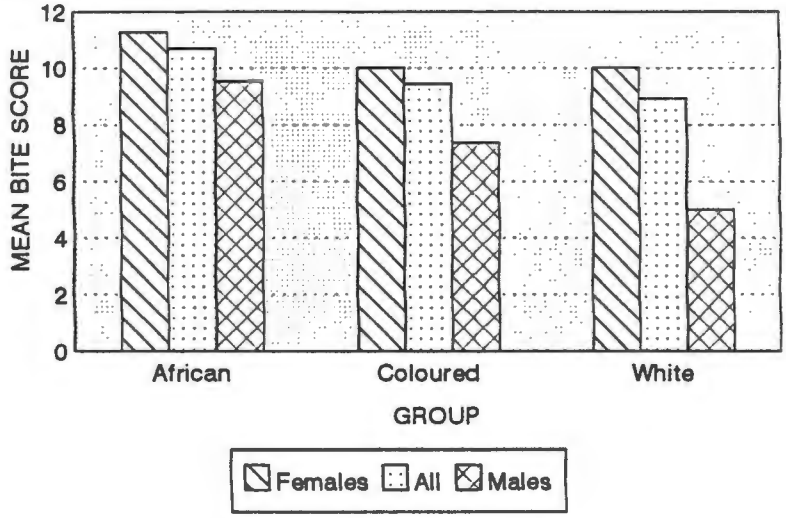


Figure 2

Comparison of Mean Scores for the EAT

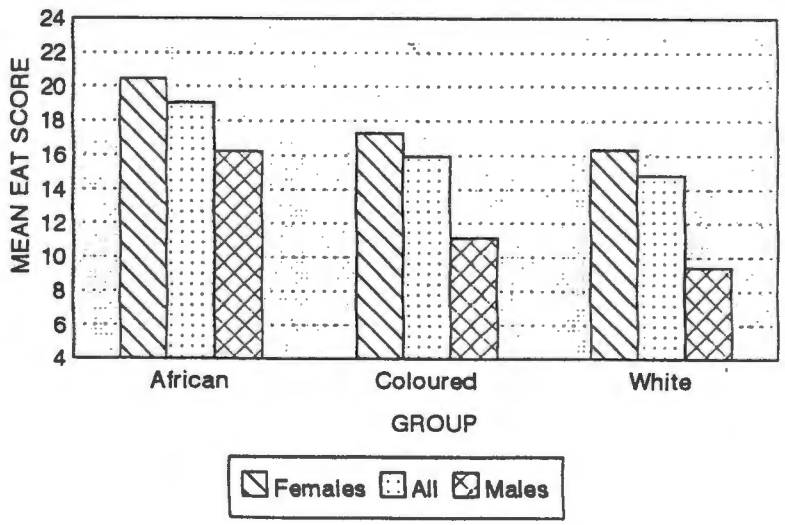


Figure 3

Comparison of Mean Scores for the BSQ

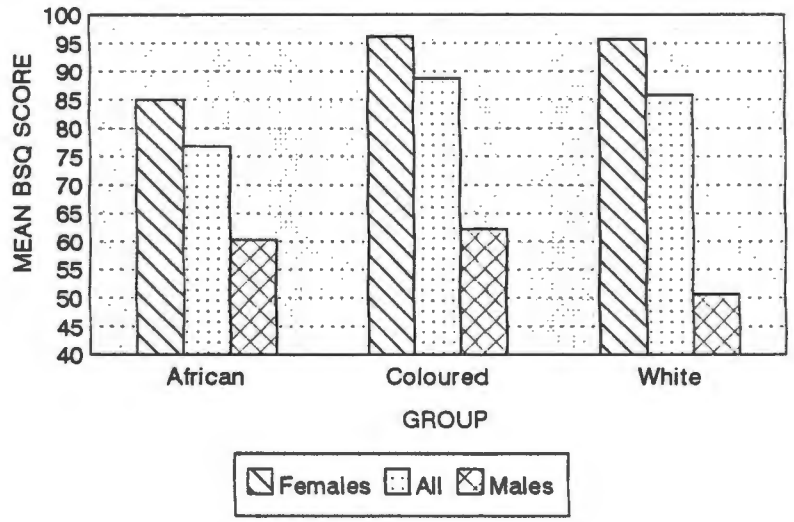
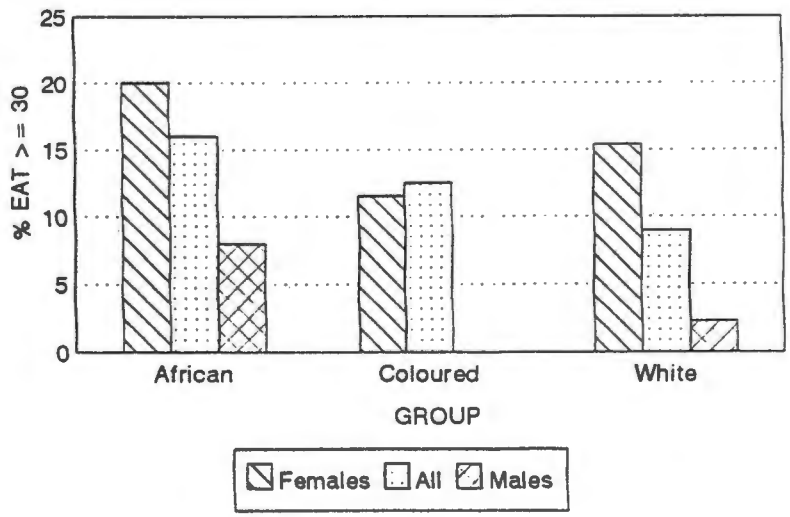


Figure 4

Percentage of Subjects with EAT >= 30



BSQ, and BMI. All but four students who described themselves as African also reported they spoke an African language as their first language. Also, all students who spoke English or Afrikaans described themselves as either white or coloured. Thus, the differences and similarities in mean scores found when examining home language seem to parallel the ethnic differences reported in the previous section.

Religion and Current Living Arrangements

No significant differences were found among the religious groups (Protestants, Catholics or those who indicated they had no religious affiliation). Also, no significant differences were found between students with different living arrangements (at home or living in a university residence).

Social Class

Overall, a trend was noted for the lower-middle to working-class students to score higher on the EAT and BITE than did the upper-middle to middle-class students. As with language it was felt that this reflected the ethnic differences found.

4.3 STUDENTS WITH HIGH BITE SCORES

Mean scores on the EAT, BITE and BSQ of high scorers on the BITE are compared with total sample scores in Table 7. This group may be considered binge-eaters, and at risk for developing BN. When compared with the total sample of students, male and female, high scorers on the BITE ($\geq$ 25) (n=34) had consistently higher mean scores on the other measures as well. When compared with all female students (see

TABLE 7

COMPARISON OF MEANS AND STANDARD DEVIATIONS OF ALL SUBJECTS WITH SCORERS ABOVE CUT-OFFS ON THE BITE, EAT AND BSQ

	TOTAL SAMPLE (n=715)	BITE ≥ 25 (n=34)	EAT ≥ 30 (n=92)	BSQ ≥ 120 (n=130)
BITE	9.50 (7.35)	30.12 (5.20)	18.79 (9.34)	18.58 (8.35)
EAT	16.17 (11.97)	36.79 (16.56)	41.17 (9.99)	29.84 (15.14)
BSQ	83.89 (37.59)	148.41 (33.36)	134.58 (34.19)	146.05 (19.95)
BMI	21.77 (3.14)	22.99 (3.60)	22.46 (3.80)	22.54 (3.19)

TABLE 8

PERCENTAGES AND NUMBERS OF SUBJECTS WITH BITE ≥ 25 BY ETHNICITY AND GENDER

	AFRICAN	COLOURED	WHITE
ALL	4.1% (n=8)	4.1% (n=5)	5.3% (n=21)
MALE	1.6% (n=1)	0.0% (n=0)	0.0% (n=0)
FEMALE	5.4% (n=7)	5.2% (n=5)	6.8% (n=21)

Figure 5

Percentage of Subjects with BITE >= 25

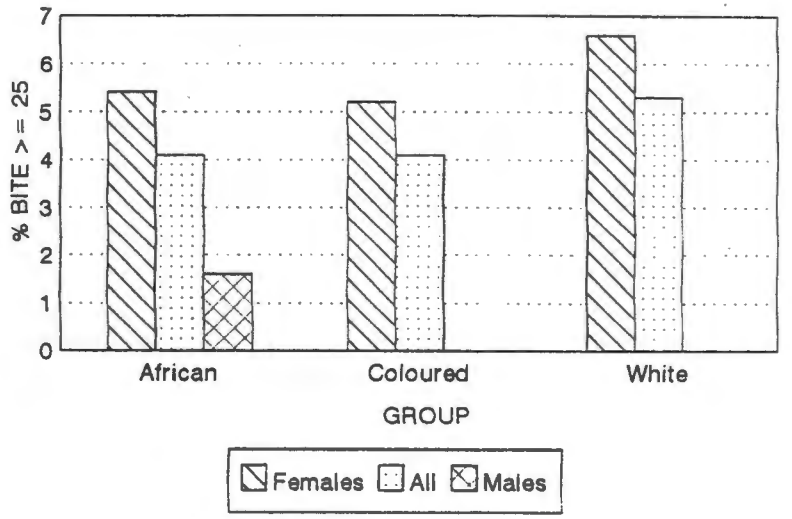


Figure 6

Percentage of Subjects with BSQ >= 120

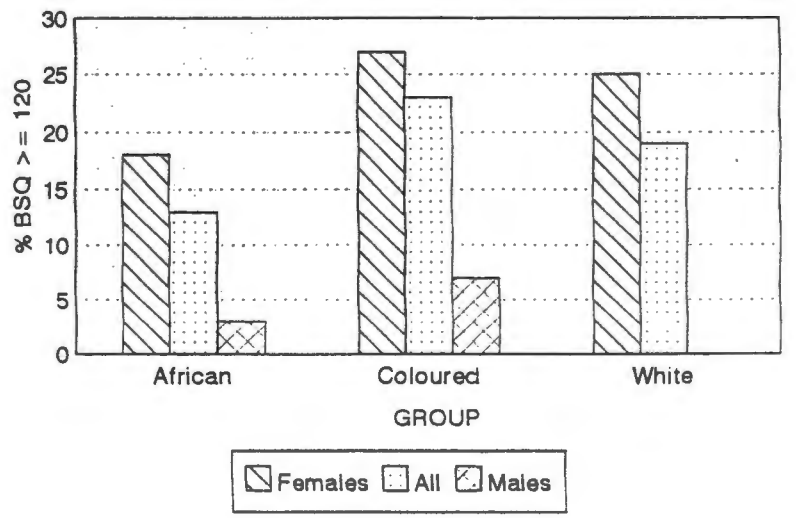


Table 2) the high scorers on the BITE still had consistently higher mean scores on all measures. Since only 1 male scored above the cut-off point, it may be more accurate to compare high scorers with all females in the sample. For BITE, there is a mean discrepancy of 20 points (BITE $\geq$ 25, X=30.12, all females X=10.34) (see Tables for standard deviations). For EAT, a similar discrepancy was found (those with BITE $\geq$ 25, X=36.79, all females X=17.51). For BSQ, those with BITE $\geq$ 25, X=148.41, all females (X=93.18). Finally, for BMI, those with BITE $\geq$ 25, X=22.99, while all females (X=21.52). Thus, high scorers on the BITE had mean scores above the cut-off points on the EAT and BSQ as well. It should be noted that while the mean BMI of high scorers on the BITE was heavier than that for all females, it still fell in the normal range. Half (n=17) felt they had an eating problem and most (n=29) thought they were overweight.

The prevalence rates found for symptoms of BN are presented in Table 8 and Figure 5. Overall, a prevalence rate of 6.1% was found for symptoms of BN among female students. Only one male, an African student, scored above the cut-off point. For this sample, 5.4% of African females (n=7), 5.2% of coloured females (n=5) and 6.6% of white females (n=21), could be considered to have, or to be at risk of developing BN.

4.4 STUDENTS WITH HIGH EAT SCORES

Scores on the three questionnaires of high scorers on the EAT are compared with scores for the total sample in Table 7. Scorers at or above the cut-off point ($\geq$30)on the EAT (n=92) could be considered to have disordered eating patterns and to be at risk for developing an eating disorder. A prevalence

rate of 13% was found. High scorers on the EAT also scored consistently higher than the total sample on all three measures and had a heavier mean BMI. For BITE they scored X=18.79 while all students scored X=9.5. For EAT, high scorers had a mean of 41.17 while all students had X=16.17. For BSQ, high EAT scorers' mean of 134.58 contrasted with a total sample mean of 83.89. Mean BMI for this subgroup was heavier at 22.46 as opposed to 21.77 for the total sample, but slightly lighter than the mean for high scorers on the BITE (22.99). Just over one-third (n=34) felt they had an eating problem.

Prevalence rates found for disordered eating patterns as measured by the EAT are presented in Table 9 and Figure 4. African males and females had higher prevalence rates for disordered eating patterns than their white and coloured counterparts. In this sample, 8% of African males (n=5) as opposed to no coloured males and 2.3% of white males (n=2) scored at or above the cut-off point. However, 20% of African females (n=26), 11.5% of coloured females (n=11) and 15.4% of white females (n=48) scored 30 or above on the EAT. The heavier mean BMI of African students compared with coloured and white students seems relevant here, as the heavier students seem to show greater eating disturbance as measured by the EAT. Overall, a prevalence rate of 13% was obtained - 4% for males and 16% for females.

4.5 STUDENTS WITH HIGH BSQ SCORES

Mean scores on all three measures for this group are compared with scores for the total sample in Table 7. Scorers at or above the cut-off point ($\geq$120) on the BSQ (n=130) can be

TABLE 9

PERCENTAGES AND NUMBERS OF SUBJECTS WITH EAT ≥ 30 BY ETHNICITY AND GENDER

	AFRICAN	COLOURED	WHITE
ALL	16.0% (n=31)	9.00% (n=11)	12.6% (n=50)
MALE	8.0% (n=5)	0.0% (n=0)	2.3% (n=2)
FEMALE	20.0% (n=26)	11.5% (n=11)	15.4% (n=48)

TABLE 10

PERCENTAGES AND NUMBERS OF SUBJECTS WITH BSQ ≥ 120 BY ETHNICITY AND GENDER

	AFRICAN	COLOURED	WHITE
ALL	13.0% (n=25)	23.0% (n=28)	19.0% (n=77)
MALE	3.0% (n=2)	7.0% (n=2)	0.0% (n=0)
FEMALE	18.0% (n=23)	27.0% (n=26)	25.0% (n=77)

considered to have significant concerns about their body shape, and to feel unacceptably fat. In this sample, 2.3% of males (n=4) and 23.5% of females (n=126) had these concerns, despite having a mean BMI in the normal range (22.54; SD±3.19) (see Table 7). Given this group's mean EAT score of 29.84 (cut-off point for EAT= 30), they could also be considered at risk for developing an eating disorder. Their mean score on the BITE, 18.58, was almost exactly the mean BITE score of the high EAT scorers (X=18.79). This group's mean BSQ score (146.05) was very similar to the mean score on the BSQ of the high BITE scorers (148.41) (see table 7). Of this group, 81% felt they were overweight (n=106) and 27% (n=36) thought they had an eating problem.

In Table 10 and Figure 6 prevalence rates found for significant concerns with body shape are presented. Only 3% of African males (n=2) and 7% of coloured males (n=2) scored above the cut-off point. In keeping with the overall mean score for white males on the BSQ of 50, none of this group scored at or above 120. However, 18% of African females (n=23), 27% of coloured females (n=26) and 25% of white females (n=77) scored 120 or more.

CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

This study aimed to establish the prevalence of eating disorders and disordered eating patterns in a sample of South African university students, to investigate the presentation of eating disorders in African and coloured female students, and to establish the extent of body shape dissatisfaction in the same sample of students. Female university students in the USA and Britain have been shown to have higher prevalence rates for disordered eating patterns as well as for AN/BN than other women of similar age in the community (e.g. Hart and Ollendick, 1985). Also, recent studies have indicated an increase in the prevalence of disordered eating patterns and AN/BN among adolescent and young women in developing countries and from families who have emigrated to Western countries (e.g. Mumford et al, 1991; 1992). Young women in developing countries or from ethnic minorities in the USA and Britain seem particularly at risk if they are fairly Westernised, are from upwardly mobile families and/or are achievement-orientated. Finally, body shape dissatisfaction, which appears to play a role in the development of eating disorders, has been shown to be disturbingly high among adolescent and young women from Western and non-Western countries (Dolan et al, 1990; Klemchuk et al, 1990).

In this chapter major findings of the study will be discussed, limitations of the study will be pointed out, and suggestions made for further research in this area.

5.2 MAJOR FINDINGS

Prevalence of Eating Disorders

Using a cut-off of 30 or more on the EAT as a criterion, 4% of men and 16% of women in the sample could be said to be at risk for developing eating disorders, or may indeed be cases of AN or BN. However, given the heavier mean BMI of the high scorers, it seems that other disordered eating patterns may also be present, for instance chronic dieting and binge-eating. Katzman et al (1984) found a high prevalence of binge-eating among males and females in their student sample, and a much lower prevalence of BN. Garner and Garfinkel (1979) noted that high scores on the EAT may indicate not only possible cases of AN, but also chronic dieters who do not lose weight. Both Leichner et al (1986) and Whitaker et al (1989) found that the heaviest students had the most disordered eating attitudes and behaviours, i.e. achieved high scores on the EAT. This finding was confirmed in the present study.

The discrepancy between genders is in keeping with many previous findings (e.g. Katzman et al, 1984; Leichner et al, 1986; Whitaker et al, 1989). However, the higher prevalence of disordered eating cases among African students is surprising, and more so is the finding that, even though the gender discrepancy is retained across the different race groups, African males still obtain an 8% prevalence rate. A disturbingly high prevalence rate for African females (20%) was obtained. Again, it seems that the heavier BMI of all African students may be of relevance here. There are many social, political, economic and cultural changes currently occurring in South Africa. It seems that increasing exposure

through the media to the Western sociocultural emphasis on thinness may be affecting the African students in this sample. They may be in the process of rejecting the traditional African sociocultural norm of plumpness as attractive, and be frustrated at being heavier than the Western norm dictates. This in turn may lead to stringent dieting and other attempts to lose weight, as well as binge-eating in reaction to the hunger these attempts often cause. Whitaker et al (1989) commented on the high prevalence of pre-morbid obesity and chronic dieting behaviour in adolescents who later developed BN. It could be argued that as the process of acculturation to Western ideas of acceptable body weight and shape continues, increasing numbers of African adolescent and young women will consider themselves overweight, and begin dieting. They would then be vulnerable to developing eating disorders, especially BN.

Using the stricter criteria of the BITE, an overall prevalence rate for binge-eating/BN of 6% for females and 0.5% for males was found. While, as with the EAT, "caseness" would have to be investigated by means of a clinical interview, this rough prevalence rate for BN is in line with other studies with similar samples, e.g. Hart and Ollendick (1985) and Katzman et al (1984). Of interest is the fact that the ethnic differences in prevalence rates which were found when using the EAT, are not retained on the BITE, with the prevalence varying hardly at all (5.2% for coloured females, and 6.8% for white females). More importantly, African and coloured female students in this study obtained a prevalence rate for BN similar to that found among female students in the USA (e.g. 5%, Hart and Ollendick, 1985), while white female students exceeded this expected rate of 5%. It seems, therefore, that

the process of acculturation to Western norms of acceptable body shape and weight is well under way, at least in this sample of African female students, if one takes pressure for thinness as one prerequisite for the development of eating disorders.

On the BSQ, 24% of females scored 120 or above, indicating significant body shape and weight dissatisfaction. This is in keeping with Klemchuk et al's study (1990) which also found a high degree of body dissatisfaction among female students. In fact, 45% of the students reported feeling overweight, and for the total sample, the discrepancy between actual weight and ideal weight was 3kg. Very few males (four) scored over 120, which is to be expected given the findings of Fallon and Rozin (1985) and Cohn et al (1987). They reported that a substantial number of males wanted to be heavier and more muscular; similarly the current study found that those who considered themselves underweight were nearly all male.

Mean Scores: Gender Differences

As might be expected, the significant and substantial differences found between males and females for prevalence rates, were retained when mean scores were examined. The mean EAT score for males of 12.12 and for females of 17.51 compares with the findings of Le Grange et al (1994b). In a study of predominantly white high school pupils in Cape Town, the researchers obtained a mean score of 9.46 for males and 16.64 for females. Similarly, on the BSQ the males in Le Grange et al's (1994b) sample obtained a mean of 51.12 compared with the present study's mean of 55.87 for males. Female students in this study had a mean of 93.18 on the BSQ, while those in the

study by Le Grange et al (1994b) had a mean of 96.89.

On the BITE, males' mean score was 6.99, while females' mean score of 10.34 put them into the "subclinical" group of subjects with disordered eating patterns proposed by Henderson and Freeman (1987).

Thus it seems that overall, female students in this sample have a higher level of body shape dissatisfaction than the male students, a higher prevalence of disordered eating habits, and that females are more vulnerable than males to the development of eating disorders.

Mean Scores: Ethnic Differences

The differences in prevalence rates for eating disturbance between African students, and coloured and white students were retained when mean scores for the total sample were examined. Overall, African males and females scored significantly higher than their coloured and white counterparts on the BITE and EAT. In fact African males' mean scores were similar to those for coloured and white females on both measures, while African females scored somewhat higher than all the other groups. Thus, those "eating disordered" African students who scored above the cut-off points on the BITE, EAT and BSQ are part of a wider trend among African students . Again, the overall higher mean scores of African students on the BITE and EAT may be partly accounted for by their overall higher mean BMI.

Mean Scores: Body Shape Dissatisfaction

As might be expected from their higher EAT and BITE scores,

African males also scored higher on the BSQ than their white counterparts. This trend was reversed for African females, who scored on average 10 points lower than white and coloured females on the BSQ. However, African females in the present study achieved a similar BSQ score to all women in the study by Dolan et al (1990), and to the non-clinical sample of women in the validation study for the BSQ by Cooper et al (1987). Thus, even though African females scored relatively lower than other females in the current study, their level of body shape dissatisfaction is fairly high, and on a par with that of white, Asian and Afro-Caribbean women in Britain. Again, it may be that as the process of acculturation to Western ideas of acceptable body shape continues, African female students will become as dissatisfied with their body shape as their white and coloured counterparts seem to be with theirs.

Consistency of Scores on Questionnaires

High scorers on each questionnaire consistently had high scores on all three measures. Thus, those who scored above the cut-off points on the BITE and the BSQ, also had scores at or above the cut-off point on the EAT. Similarly, all three groups of high scorers had scores above the cut-off point on the BSQ, and high EAT and high BSQ scorers had virtually identical mean scores for the BITE, achieving a high "subclinical" score of ± 19 points. This pattern of consistently high scores was similar in all ethnic groups.

Also, those students who reported a history of eating problems had substantially higher mean scores on all three questionnaires than those who reported no eating difficulties. The mean scores for the BITE and EAT of students who reported

eating problems were twice as high as the scores found for those who reported no such difficulties, and on the BSQ a discrepancy of 24 points was found.

5.3 CONCLUSION

A substantial proportion of female students from all ethnic groups seem to be at considerable risk for developing an eating disorder. The proportion of female students at risk for BN is in keeping with prevalence rates for their counterparts in the USA and Britain, and substantially higher than the prevalence rates found in those countries for women from settings other than universities. Furthermore, while there was negligible difference across ethnic groups for increased risk of BN in particular, African female students seem most at risk for disturbed eating habits, which may in some cases develop into eating disorders (AN, BN or binge-eating disorder). While a higher BMI score may account for some of this difference, it is worth noting that many students, and African students in particular, commented in their responses to questionnaires on difficulties they had experienced in adjusting to life at university. Hart and Ollendick (1985) also speculated that the stresses peculiar to students might account for their higher incidence of BN. Given the fact that most students in the sample were first-years, it seems to make intuitive sense that some would be struggling to cope with the move from school to university, possibly from another city, and/or from home to a university residence. However, all students regardless of ethnic group are subject to these pressures.

Perhaps the findings of Furnham and Alibhai (1983) and Mumford et al. (1991; 1992) that adolescent and young women who are

recent immigrants from developing countries to Britain have higher prevalence rates for eating disturbance, or favour even thinner body shapes than their white British counterparts, are of relevance. It may be that urbanised, achievement-orientated African women in South Africa are increasingly adopting Western ideas of acceptable body weight and shape, and thus becoming subject to the same pressures to be thin as their white and coloured counterparts. In doing so, at some point they may become extreme in their rejection of the traditional non-Western equation of plumpness with beauty for women. In fact the proportion of African women with high scores on the BSQ is not far below the figure for white and coloured women in the sample. Thus, DiNicola's (1990b) contention that AN and BN should be regarded as "culture-reactive" rather than "culture-bound" syndromes appears to be valid for this study. South Africa is a country currently undergoing rapid transition in almost every sphere of life: political, economic, social and cultural. As industrialisation and urbanisation continue, upward mobility becomes a possibility for increasing numbers of black South Africans. Also, the traditional gender role expectations placed on African men and women are being increasingly challenged by ideas of equality and women's rights. Given the findings of this study, it could be speculated that as the changes occurring in South Africa continue, increasing numbers of African adolescent and young women will become vulnerable to the development of eating disorders.

Limitations of this study should be noted. First, the reliance on self-report questionnaires without follow-up interviews of high scorers to establish actual cases of AN/BN means that only rough estimates of prevalence were obtained. Also, the

students' estimates of their weight and height may be inaccurate, which would confound the findings based on the BMI. Also, despite the anonymity of the questionnaires, it is possible that symptoms of AN/BN were under-reported. The relatively low number of males in the sample, and the difference in numbers for the different ethnic groups mean generalisations to a wider student population should be made with caution. Finally, despite the fact that students speaking an African language were attending English- or, in a few instances, Afrikaans-medium universities, accuracy of responses may have been affected by having the questionnaires available only in English.

Ideas for further research include conducting follow-up interviews with those high scorers on questionnaires who chose to give their name and telephone number, and a comparative study of prevalence rates for eating disturbance in a sample of women from a setting other than a university. Since female students of all ethnic groups do seem to be vulnerable in terms of eating disorders, perhaps further prevalence studies at universities could be done, with a view to setting up or expanding counselling and preventative services at these institutions.

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APPENDIX 1

INSTRUMENTS

DEMOGRAPHIC QUESTIONNAIRE

Please CIRCLE the appropriate letter or FILL IN the necessary information.

1. What is your sex?
   Female (a) Male (b)

2. Are you:
   married (a) single (b) divorced (c) widowed (d)

3. How old are you? .....

4. Where were you mainly raised?
   rural area/farming area (a) urban/city region (b)

5. What is your father's occupation .....

   What is your mother's occupation .....

6. What is your current living arrangement?
   (a) university residence
   (b) commune/digs
   (c) on my own
   (d) with partner/spouse
   (e) family home
   (f) other: please specify .....

*7. Ethnicity:
   "African" (a)
   "Indian" (b)
   "White" (c)
   "Coloured" (d)
   Other: Please specify .....

8. What is/are your home language/s? .....

   .....

   .....

9. Do you have a religious affiliation?
   (a) yes (b) no
   If yes, please specify .....

10. At which university are you studying?

    .....

* The researcher recognises that such categorization may offend respondents, hence the use of inverted commas. However, it is necessary that this question is completed for the purposes of the research.

11. Year of study .....

12. What is your present weight? .....

13. What is your present height? .....

14. What do you think was the MOST you ever weighed? .....

15. What do you think was the LEAST you ever weighed? .....

16. Do you consider yourself to be presently:

very overweight	(a)
slightly overweight	(b)
average	(c)
slightly underweight	(d)
very underweight	(e)

17. What would you consider to be your ideal weight? .....

18. If female, is your menstrual cycle regular?
yes (a) no (b)
If no, please elaborate .....

.....

.....

19. Have you had any serious eating difficulty?
yes (a) no (b)
If yes, please specify the nature of your difficulty .....

.....

.....

.....

20. This item is voluntary. If you are prepared to be interviewed in future related research, please provide a contact address and/or telephone number. All interviews will be strictly confidential.

Address: .....

.....

.....

.....

Telephone number .....

EAT

ALWAYS	VERY OFTEN	OFTEN	SOMETIMES	RARELY	NEVER	
( )	( )	( )	( )	( )	( )	1. Like eating with other people.
( )	( )	( )	( )	( )	( )	2. Prepare foods for others but do not eat what I cook.
( )	( )	( )	( )	( )	( )	3. Become anxious prior to eating.
( )	( )	( )	( )	( )	( )	4. Am terrified about being overweight.
( )	( )	( )	( )	( )	( )	5. Avoid eating when I am hungry.
( )	( )	( )	( )	( )	( )	6. Find myself preoccupied with food.
( )	( )	( )	( )	( )	( )	7. Have gone on eating binges where I feel that I may not be able to stop.
( )	( )	( )	( )	( )	( )	8. Cut my food into small pieces.
( )	( )	( )	( )	( )	( )	9. Aware of the calorie content of foods that I eat.
( )	( )	( )	( )	( )	( )	10. Particularly avoid foods with a high carbohydrate content (e.g. bread, potatoes, rice, etc.)
( )	( )	( )	( )	( )	( )	11. Feel bloated after meals.
( )	( )	( )	( )	( )	( )	12. Feel that others would prefer if I ate more.
( )	( )	( )	( )	( )	( )	13. Vomit after I have eaten.
( )	( )	( )	( )	( )	( )	14. Feel extremely guilty after eating.
( )	( )	( )	( )	( )	( )	15. Am preoccupied with a desire to be thinner.
( )	( )	( )	( )	( )	( )	16. Exercise strenuously to burn off calories.
( )	( )	( )	( )	( )	( )	17. Weigh myself several times a day.
( )	( )	( )	( )	( )	( )	18. Like my clothes to fit tightly.
( )	( )	( )	( )	( )	( )	19. Enjoy eating meat.
( )	( )	( )	( )	( )	( )	20. Wake up early in the morning.
( )	( )	( )	( )	( )	( )	21. Eat the same foods day after day.
( )	( )	( )	( )	( )	( )	22. Think about burning up calories when I exercise.
( )	( )	( )	( )	( )	( )	23. Have regular menstrual periods.
( )	( )	( )	( )	( )	( )	24. Other people think that I am too thin.
( )	( )	( )	( )	( )	( )	25. Am preoccupied with the thought of having fat on my body.
( )	( )	( )	( )	( )	( )	26. Take longer than others to eat my meals.
( )	( )	( )	( )	( )	( )	27. Enjoy eating at restaurants.
( )	( )	( )	( )	( )	( )	28. Take laxatives.
( )	( )	( )	( )	( )	( )	29. Avoid foods with sugar in them.
( )	( )	( )	( )	( )	( )	30. Eat diet foods.
( )	( )	( )	( )	( )	( )	31. Feel that food controls my life.
( )	( )	( )	( )	( )	( )	32. Display self control around food.
( )	( )	( )	( )	( )	( )	33. Feel that others pressure me to eat.
( )	( )	( )	( )	( )	( )	34. Give too much time and thought to food.
( )	( )	( )	( )	( )	( )	35. Suffer from constipation.
( )	( )	( )	( )	( )	( )	36. Feel uncomfortable after eating sweets.
( )	( )	( )	( )	( )	( )	37. Engage in dieting behaviour.
( )	( )	( )	( )	( )	( )	38. Like my stomach to be empty.
( )	( )	( )	( )	( )	( )	39. Enjoy trying new rich foods.
( )	( )	( )	( )	( )	( )	40. Have the impulse to vomit after meals.

BITE

(MARK WITH AN X)

1. Do you have a regular eating pattern? YES NO

2. Are you a strict dieter? YES NO

3. Do you feel a failure if you break your diet once? YES NO

4. Do you count the calories of everything you eat, even when not on a diet? YES NO

5. Do you ever fast for a whole day? YES NO

6. .... If yes, how often is this? (CIRCLE NUMBER)

Every second day	5	2 - 3 times a week	4
Once a week	3	Now and then	2
Have once	1		

7. Do you do any of the following to help you lose weight? (circle number)

	Never	Occas ion-ally	once a week	2-3 times week	daily	2-3 times a day	5+ times a day
Take Diet Pills	0	2	3	4	4	6	7
Take Diuretics	0	2	3	4	5	6	7
Take Laxatives	0	2	3	4	5	6	7
Make yourself vomit	0	2	2	4	5	6	7

8. Does your pattern of eating severely disrupt your life? YES NO

9. Would you say that food dominated your life? YES NO

10. Do you ever eat and eat until you are stopped by physical discomfort? YES NO

11. Are there times when all you can think about is food? YES NO

12. Do you eat sensibly in front of others and make up in private? YES NO

13. Can you always stop eating when you want to? YES NO

14. Do you ever experience <u>overpowering</u> urges to eat and eat and eat? YES NO

15. When you are feeling anxious do you tend to eat a lot? YES NO

16. Does the thought of becoming fat <u>terrify</u> you? YES NO

17. Do you ever eat large amounts of food rapidly (not a meal)?* YES NO

18. Are you ashamed of your eating habits? YES NO

19. Do you worry that you have no control over how much you eat? YES NO

20. Do you turn to food for comfort? YES NO

21. Are you able to leave food on the plate at the end of a meal? YES NO

22. Do you deceive other people about how much you eat? YES NO

23. Does how hungry you feel determine how much you eat? YES NO

24. Do you ever binge* on large amounts of food? YES NO

25. .... If yes, do such binges* leave you feeling miserable? YES NO

26. If you do binge,* is this only when you are alone? YES NO

27. If you do binge*, how often is this? (CIRCLE NUMBER)

Hardly ever	1	Once a month	2
Once a week	3	2-3 times a week	4
Daily	5	2-3 times a day	6

28. Would you go to great lengths to satisfy an urge to binge*? YES NO

29. If you overeat do you feel very guilty? YES NO

30. Do you ever eat in secret? YES NO

31. Are your eating habits what you would consider to be normal? YES NO

32. Would you consider yourself to be a compulsive eater? YES NO

33. Does your weight fluctuate by more than 3 kg. in a week? YES NO

---

* Binge = The rapid consumption of large amounts of food (three times the normal adult daily intake) in a discreet period of time (usually less than 2 hours).

BSQ

We should like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:	Never	Rarely	Sometimes	Often	Very Often	Always
1. Has feeling bored made you brood about your shape?	1	2	3	4	5	6
2. Have you been so worried about your shape that you have been feeling that you ought to diet?	1	2	3	4	5	6
3. Have you thought that your thighs, hips or bottom are too large for the rest of you?	1	2	3	4	5	6
4. Have you been afraid that you might become fat (or fatter)?	1	2	3	4	5	6
5. Have you worried about your flesh being not firm enough?	1	2	3	4	5	6
6. Has feeling full (e.g. after eating a large meal) made you feel fat?	1	2	3	4	5	6
7. Have you felt so bad about your shape that you have cried?	1	2	3	4	5	6
8. Have you avoided running because your flesh might wobble?	1	2	3	4	5	6
9. Has being with thin women made you feel self-conscious about your shape?	1	2	3	4	5	6
10. Have you worried about your thighs spreading out when sitting down?	1	2	3	4	5	6
11. Has eating even a small amount of food made you feel fat?	1	2	3	4	5	6
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?	1	2	3	4	5	6
13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?	1	2	3	4	5	6
14. Has being naked, such as when taking a bath, made you feel fat?	1	2	3	4	5	6

	Never	Rarely	Sometim	Often	Very Of	Always
15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?	1	2	3	4	5	6
16. Have you imagined cutting off fleshy areas of your body?	1	2	3	4	5	6
17. Has eating sweets, cakes or other high calorie food made you feel fat?	1	2	3	4	5	6
18. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?	1	2	3	4	5	6
19. Have you felt excessively large and rounded?	1	2	3	4	5	6
20. Have you felt ashamed of your body?	1	2	3	4	5	6
21. Has worry about your shape made you diet?	1	2	3	4	5	6
22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?	1	2	3	4	5	6
23. Have you thought that you are the shape you are because you lack self-control?	1	2	3	4	5	6
24. Have you worried about other people seeing rolls of flesh around your waist or stomach?	1	2	3	4	5	6
25. Have you felt that it is not fair that other women are thinner than you?	1	2	3	4	5	6
26. Have you vomited in order to feel thinner?	1	2	3	4	5	6
27. When in company have you worried about taking up too much room (e.g. sitting on the sofa, or a bus seat)?	1	2	3	4	5	6
28. Have you worried about your flesh being dimply?	1	2	3	4	5	6
29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?	1	2	3	4	5	6
30. Have you pinched areas of your body to see how much fat there is?	1	2	3	4	5	6
31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?	1	2	3	4	5	6
32. Have you taken laxatives in order to feel thinner?	1	2	3	4	5	6
33. Have you been particularly self-conscious about your shape when in the company of other people?	1	2	3	4	5	6
34. Has worry about your shape made you feel you ought to exercise?	1	2	3	4	5	6

Affiliation - lidskap

Anxious - angstig

Binge - om baie kos baie vinnig te eet

Bloated - opgeblaas

Brood - peins

Comfort - gemak

Compulsive - sonder kontrole; kompulsief

Constipated - hardlywig

Deceive - mislei

Determine - bepaal

Dimply - soos selluliet

Disrupt - negatief beinvloed; omkrap

Diuretic - urineermiddel

Elaborate - verduidelik verder; gee besonderhede

Excessively - oormatig

Fast - om niks te eet nie

Fluctuate - verander

Laxative - lakseermiddel

Pinch - knyp

Preoccupied - om baie daaroor te dink; het obsessie daaroor

Rapidly - baie vinnig

Sensibly - n normale hoeveelheid

Strenuously - ywerig en baie energiek; baie intensief

Urge - sterk behoefde

Voluntary - is nie verplig nie

Vomit - opbring; opgooi