Arch Womens Ment Health (2007) 10: 285–292
DOI 10.1007/s00737-007-0199-3
Printed in The Netherlands

Archives of Women's Mental Health

Original contribution

The relationship between personality traits and eating pathology in adolescent girls

A. S. F. Silva

University of the Witwatersrand, Johannesburg, South Africa

Received 18 February 2007; Accepted 3 July 2007; Published online 26 November 2007
© Springer-Verlag 2007

Summary

This research investigated the relationship between personality and the tendency towards developing eating disorders in adolescent females Personality traits were assessed using the High School Personality Questionnaire (HSPQ) and dysfunctional eating attitudes and behaviours were assessed using the Eating Attitudes Test (EAT-26) and the Eating Disorder Inventory (EDI). The sample consisted of 244 students from a high school in Johannesburg, South Africa. Significant relationships were found between certain personality traits and eating dysfunction. Reservation, emotional instability, excitability, opportunism, shyness, individualism, proneness to guilt feelings, self-sufficiency and high tension were the personality factors that were significant in relation to eating dysfunction. This thus suggests that personality appears to influence the tendency towards developing eating disorders.

Keywords: Personality; predisposition; eating disorders; South Africa

Introduction

For many years, personality constructs have been considered important in the development and maintenance of eating disorders (Millon 1994; Wonderlich 1995). Thus, personality traits with regards to eating disorders is an area of great interest in the field of psychology (Leon et al. 1993; Sohlberg and Strober 1994; Vitousek and Manke 1994; Leon et al. 1995). While no single personality type has been associated with eating disorders, clinical observations and psychometric studies suggest particular themes and tentative conclusions with regards to personality that are common in subtypes of eating disordered patients (Swift and Wonderlich 1988; Wonderlich 1995). However, few studies have investigated this relationship before the onset of the eating disorder thus the possibility exists that the 'true' personality of the eating disordered individual has been distorted by the disorder. This research consequently has attempted to investigate the non-clinical personality of those vulnerable to eating disorders, which will increase the knowledge base of this area. This research viewed 'normal' adolescent girls in a high school as a population at risk for developing eating disorders. Since this study was exploratory in nature no hypothesis were made (Rosenthal and Rosnow 1991).

Eating disorders

While the term 'eating disorders' normally refers to a wide range of problems, the main focus of this study was on the two main eating disorders; anorexia nervosa and bulimia nervosa. Anorexia nervosa is characterised by body image disturbance together with a relentless pursuit of thinness, often to the point of starvation while bulimia nervosa refers to recurrent episodes of eating large amounts of food accompanied by a feeling of being out of control and then purging to regain a feeling of control (Kaplan et al. 1994). Both anorexia nervosa and bulimia nervosa are baffling, disturbing and intriguing syndromes. Anorexia nervosa and bulimia nervosa are

Correspondence: Adilia S. F. Silva, Psychology – School of Human and Community Development, University of the Witwatersrand, Private Bag 3, WITS, 2050, Johannesburg, South Africa
e-mail: Adilia.Silva@wits.ac.za

generally viewed as uncommon disorders and thus have not been studied as completely as some of the other psychiatric disorders (Attie and Brooks-Gunn 1995). Definitive statistics on the prevalence and prognosis of eating disorders is virtually impossible to obtain due to sampling problems, methods of assessment and differences in definition (Costin 1999). Complicating features of these disorders such as shame and secretiveness have led to poor prevalence studies, which further underestimates the population rates of these disorders (Attie and Brooks-Gunn 1995; Costin 1999). Nonetheless, it is believed that eating disorders are on the rise since the 1980s, the rise however could be due to an increase in true abnormality or due to an increase in the proportion of cases referred or reported (Garfinkel and Garner 1982; Attie and Brooks-Gunn 1995).

Binge eating often results in people suffering from anorexia nervosa, similarly people with bulimia nervosa can develop anorexia nervosa (Kaye et al. 2000). Restrained eating behaviour and dysfunctional cognitions relating weight and shape to self-concept are shared by both anorexics and bulimics and transitions between these syndromes occur in many individuals. Thus, it has been argued that anorexia and bulimia have at least some risk and liability factors in common (Kaye et al. 2000).

The focus of this study was on the relationship between personality and eating disorders. Hence, reference to how personality was viewed in this study will now be focused on.

Personality

Each personality theorist emphasises different factors in their attempt to explain personality (Feist and Feist 1998). The trait approach seeks to label, measure and classify people in order to compose their psychological attributes (Mischel 1986; Schultz and Schultz 1998). Traditionally, the essence of the trait approach has been the assumption that behaviour is primarily determined by generalised traits – basic qualities of the person that express themselves in many contexts (Mischel 1986; Schultz and Schultz 1998). Guided by this assumption investigators attempt to find the individual's position on one or more trait dimensions, which remain stable over time (Mischel 1986; Schultz and Schultz 1998). These trait dimensions are continuous and arranged quantitatively in terms of how much of that characterisation the individual has (Mischel 1986; Schultz and Schultz 1998). Hence, traits provide a dispositional signature for personality, estimating a person's relative positions on a series of linear, bipolar scales whose definitions are a matter of consensual agreement (McAdams 1994). Empirical studies (Mershon and Gorsuch 1988; Paunonen 1998) have found that primary factors have found greater variance than combined personality trait factors in predicating behaviour hence Cattell's theory of personality was used in this investigation.

Cattell's trait theory of personality

Cattell (1950a) considers traits the building blocks of personality. He defines personality as that which tells what an individual will do in a given situation and considers personality traits to be relatively permanent and broad tendencies (Cattell 1965). Human traits are continuous since they are conceived through the interaction of heredity and environment i.e. imprinting.

Cattell believes that if we know both the structure and the dynamics of personality we can predict human behaviour (Feist and Feist 1998). He further believes personality is a function of a finite number of variables which can be predicted. Thus, personality to Cattell (1950a) is that which permits a prediction of what a person will do in a given situation; it is concerned with both overt and covert behaviour. Cattell (1950a, b, 1965) has identified a large number of traits in his attempt to map the entire sphere of human personality.

Eating disorders and personality

The conceptual relationship between personality and the eating disorders is very complex (Halmi 1995; Wonderlich 1995). Personality disturbances may be considered a predisposing factor, a complication or a distinct entity that is unrelated to the eating disturbance. Due to the absence of prospective studies, this relationship remains unclear. Methodological issues such as the effects of starvation on personality assessment, age-inappropriate measures in adolescent populations, reliance on clinical samples, changes in the definition of the eating disorders along with the different editions of the the *Diagnostic and Statistic Manual of Mental Disorders* and controversy over the best way to assess personality have further complicated these studies. Thus, studies of the relationship between personality and eating disorders have yielded widely discrepant results as will become apparent below (Leon et al. 1993, 1995; Sohlberg and Strober 1994; Vitousek and Manke 1994; Halmi 1995; Wonderlich 1995).

In this study, the researcher attempted to eliminate these problems. The population group chosen was a

high-risk group i.e. female adolescents. According to the *DSM-IV* (1994), the most frequent age of onset of eating disorders lies within 14–18 age range, and in addition according to Nasser (1997) adolescents are at a higher risk since they develop early in life a negative attitude towards obesity. Thus, the researcher tried to eliminate the complicating factor of starvation on assessment. Furthermore, an age-appropriate personality questionnaire based on the trait approach of choice in this study was chosen i.e. the High School Personality Questionnaire (HSPQ). To determine eating dysfunction among the girls the Eating Disorders Inventory (EDI) was chosen since it is based on trait theory. The Eating Attitudes Test (EAT-26) was also chosen to assess eating disorders. Two eating disorders inventories were chosen as each one assesses slightly different areas of eating pathology, the EDI aids in diagnosing eating pathology and the EAT-26 assesses attitudes and behaviours associated with eating disorders.

Personality and anorexia nervosa

There has been diversity of opinion regarding premorbid personality and anorexia nervosa (see Halmi 1995; Wonderlich 1995; Devlin et al. 2002). Morgan and Russell (as cited in Garfinkel and Garner 1983) argue that there is no characteristic personality structure in this disorder. In contrast, Dally (as cited in Garfinkel and Garner 1983) and Halmi (1995) observed anorexics to have obsessional and hysterical traits. Crisp (1980), Halmi, Golberg, Eckert, Casper and Davis (as cited in Garfinkel and Garner 1983) and Nye and Johnson (1999) describe anorexics as compliant, perfectionist and dependent i.e. "good little girls".

Strober (1983) describes the anorexic to be of excessive conformance and regimentation, overcontrol and minimisation of emotionality, and interpersonal anxieties. Thus, for decades there has been a stereotype of the anorexic restrictor as being compliant, isolated, individuals who are anxious and thereby gravitate to orderliness or control (Steiger and Séguin 1999). Bruch (1973) saw such features as reflections of pervasive feelings of low self-worth and ineffectiveness. Other prominent personality features of these individuals include approval from others, conformity, conscientiousness, and a lack of responsiveness to inner needs (Garfinkel and Garner 1983). Anorexics have consistently been found to be approval seeking, self-doubting, conflict avoidant, excessively dependent and socially anxious (Nye and Johnson 1999).

It is important to note the personality distinctions of the two types of anorexia as the restrictor-type is the more widely known form of anorexia nervosa where the patient is emancipated and restricts her food intake (DSM-IV, 1994). While the binge-purge type of anorexia nervosa is more similar to bulimia nervosa except that in bulimia nervosa body weight is maintained whereas in this type of anorexia nervosa body weight is not maintained. Early studies using the Eysenck Personality Inventory on the personality of anorexics showed that binge-purge type of anorexics displayed greater extraversion and neuroticism than anorexics with a restrictor type of anorexia (Strober, as cited in Steiger and Séguin 1999). Studies based on the Minnesota Multiphasic Personality Inventory (MMPI) tended to reiterate the same findings (Steiger and Séguin 1999).

Evidence gathered using the Millon Clinical Multiaxial Inventory revealed that over controlled and disinhibited personality tendencies coincided inconsistently with the restrictor and purge-binge distinctions of anorexia nervosa, respectively (Steiger and Séguin 1999). Results suggested schizoid (typically these individuals are detached from social relationships and have a restricted range of expression of emotion in interpersonal settings) or avoidant (typically those who are socially inhibited, have feelings of inadequacy and are hypersensitive to negative evaluation) tendencies among restrictors and histrionic (these people are attention seekers and tend to exaggerate their thoughts and feelings) tendencies among bingers (Steiger and Séguin 1999). Thus, restrictors are more socially detached or inhibited, show restrictive ranges of emotion and are sensitive to evaluation and bingers are more social since they are attention seekers they also tend to exaggerate their emotions and thoughts (Casper, Ecker, Halmi, Goldberg and Davis, as cited in Steiger and Stotland 1995).

Casper, Hedeker and McClough (as cited in Steiger and Séguin 1999) found anorexic restrictors to show greatest self-control, conscientiousness and emotional inhibitions when using the Multidimensional Personality Questionnaire. Parallel findings have been established with the Tridimensional Personality Questionnaire (Steiger and Séguin 1999). Casper et al. (as cited in Steiger and Séguin 1999) also concluded that normal-weight bulimia nervosa individuals were less conforming and more impulsive than both of the two subtypes of anorexia nervosa.

Personality and bulimia nervosa

The personalities of bulimics vary widely, and they are said to be a more heterogeneous group than anorexics. However, there are some typical personality features that are encountered in a large number of cases. One of the

most common is where externally the bulimic appears well functioning however internally she has profound feelings of neediness and dependency (Gordon 1992).

A variety of personality assessment measures have been used and converged to depict the typical bulimic individual as impulsive, interpersonally sensitive and low in self-esteem. Studies using the MMPI produce a profile associated with poor impulse control, chronic depression, acting-out behaviour and low frustration tolerance. However, these same studies have also revealed substantial variability in personality functioning (Gordon 1992; Katzman and Wolchik, as cited in Weiss et al. 1994; Wonderlich 1995; Nye and Johnson 1999).

Elevated scores on the Neuroticism Scale of Eysenck Personality Questionnaire have been reported in clinical and community-based samples of bulimics. Among university women significant associations have been reported between neuroticism and anorexic and bulimic symptomatology as measured by the EDI (Janzen et al. 1993).

Holleran et al. (1988), Katzman and Wolchik (as cited in Weiss et al. 1994) and Nye and Johnson (1999) report that bulimics had the following behaviour and personality: poor body image, high self-expectations, high need for approval, great restraint, low assertion, perfectionistic and experience sex role differences. Bulimic patients are also more depressed, impulsive, neurotically anxious and alienated than normal peers (Swift and Wonderlich 1988). In addition impulsivity has also been related to bulimia nervosa with consistency (Swift and Wonderlich 1988). Psychometric reports also suggest that obsessional traits and interpersonal sensitivity are common in bulimic patients (Grace, Jacobson and Fullager, as cited in Swift and Wonderlich 1988; Katzman and Wolchick, as cited in Swift and Wonderlich 1988; Weiss and Ebert, as cited in Swift and Wonderlich 1988).

Whereas anorexia nervosa has been associated with anxiousness, introversion and overcontrol, bulimia nervosa has been connected with extraversion, sensation seeking and dyscontrol (Steiger and Séguin 1999). Both anorexics and bulimics have been described as having difficulty identifying and articulating internal states (Nye and Johnson 1999). Nonetheless, the two personality trait descriptions for anorexia and bulimia paint a picture of two different adolescents (Steiger and Séguin 1999). In general, the anorexic teenager is anxious to please, driven to achieve, perfectionistic, self-restrained, shy, inhibited and at times picky or obsessive (Steiner et al. 1995). In contrast, the bulimic girl is impulsive, less careful about her impression on others, and may show borderline characteristics (Steiner et al. 1995; Diaz et al. 2000).

Methods

Sample

Non-probability convenience sampling was used, since there was no random selection and the sample was chosen primarily for convenience with no equal probabilities of being chosen (Rosenthal and Rosnow 1991). The sample consisted of grade 8 to grade 11 girls, at a high school conveniently located in Johannesburg. In total 244 students participated in this study. The age of the sample ranged from 13 to 18, with a mean age of 15 ($SD = 1.26$) and a mode of 16. The majority of the sample consisted of Black girls ($N = 175$), there were only 69 Caucasian girls. Thus, in terms of race the girls were representative of the South African population. The majority of the girls were from a medium to high socio-economic class; hence, the girls were not representative of South African low socio-economic class girls (White et al. 1993).

Instruments

The instruments consisted of an eight-page questionnaire, which included a cover page, an informed consent form, the EAT-26, the EDI and the South African version of the High School Personality Questionnaire (HSPQ).

The Eating Attitudes Test-26 (EAT-26)

The EAT-26 was developed to evaluate a broad range of target behaviours and attitudes found in eating disorders (Garner and Garfinkel 1979). It has been used as a screening instrument for detecting undiagnosed cases of eating disorders in populations at high risk for eating disorders (Garner et al. 1983). It has also been reported to be useful in identifying a group with abnormal concerns with eating and dieting (Garner et al. 1982). Gross et al. (1986) showed that the EAT-26 can be successfully used to discriminate eating disorders from control subjects. The internal reliability obtained by the makers of the EAT-26 for an American anorexia nervosa sample was 0.90 (Garner et al. 1982). The internal reliability for a South African sample with eating disorders was 0.62 (Senekal et al. 2001). The test-retest reliability over a 2- to 3-week period for 56 subjects was found to be 0.84.

The Eating Disorders Inventory (EDI)

The original EDI is an objective instrument that may be useful in assessing meaningful cognitive-behavioural dimensions in eating disorders (Garner et al. 1983). It is recommended for use as a screening device, outcome measure or as an aid in typological research, both with in- and outpatients (Swassing 1989). Hence, all the items of the EDI were used as a screening device similarly to the EAT-26. The EDI consists of 64 items in total and is made up of eight subscales. Coefficient alphas for the EDI subscales range from 0.69 to 0.91 with the exception of the Maturity Fears subscale (0.65) in a group of 11- to 18-year olds (Shore and Porter 1990). The one-year test-retest correlations on a sample of 282 non-patients ranged from $r = 0.41$ to $r = 0.75$ (Williamson et al. 1995). Test-retest reliabilities after three weeks for 70 non-patients ranged from $r = 0.81$ to $r = 0.97$, for a 1-week period the reliabilities were above $r = 0.80$

except for the Interoceptive Awareness subscale ($r = 0.67$) (Wear and Pratz 1987; Williamson 1995).

The High School Personality Questionnaire (HSPQ)

The South African version of the HSPQ has been developed for people aged between 12 and 18 years (HSRC 1995). The South African version of the HSPQ is identical to the original version except that is was normed on a South African population. The HSPQ is used to obtain the maximum amount of information on the adolescent individual on a broad spectrum of personality dimensions within the shortest possible time. The test measures a set of 14 factorially independent dimensions of personality in terms of source traits. It consists of 142 items in total however; two of the items are not scored. Each personality factor consists of 10 items (HSRC 1995). This personality test is therefore sample and theory specific i.e. it is appropriate for the adolescent sample used and it is based on the personality theory used in this study.

The test-retest reliability coefficients for a 1-week period ranged from $r = 0.60$ to $r = 0.78$, while that for 2-weeks ranged from $r = 0.53$ to $r = 0.64$. These coefficients are regarded as adequate if one considers that scales like the Anxiety Scale will differ at each moment. The internal reliability coefficients calculated using Küder-Richardson (Formula 8) on form A ranged from 0.44 to 0.63 (HSRC 1995).

Procedure and ethics

Prior to beginning the research, a certificate of ethics clearance was received from the ethics committee at the University of the Witwatersrand. Participation was stressed both orally and in written form to be voluntary and students that participated had to give informed consent. Confidentiality and anonymity were assured.

Participants were given a parental consent letter prior to the day of administration of the questionnaire. The parental consent letters were collected in random order before the distribution of the instrument and placed in a sealed envelope. A teacher from the school checked that only those students with parental consent participated. The researcher asked students to participate by completing the questionnaire. The students were then given the questionnaires and asked first to give their assent before continuing with the questionnaire. Students assent forms were collected randomly and separately from the questionnaire and placed in a sealed envelope. After the students completed their questionnaires, the researcher collected them in no particular order. The resultant questionnaire responses were then entered and scored on computer and the relevant statistical analyses were conducted using SPSS (Version 10.0). After preliminary analysis, a feedback letter was given to the school.

Results and discussion

The EAT-26 and the EDI had significant positive correlations with various personality factors ranging from 0.14 to 0.44. The phlegmatic temperament–excitability personality factor (factor D) was found to have a significant positive correlation with EAT-26 ($r = 0.14$, $p < 0.05$) and EDI ($r = 0.26$, $p < 0.01$), respectively. An individual with an excitability personality trait is characterised as being demanding, impatient, attention-seeking,

Table 1. Correlation between the EAT-26 and the HSPQ factors

		A	B	C	D	E	F	G	H	I	J	O	Q2	Q3	Q4
Total EAT-26 score	*r*	−0.10	0.05	**−0.15**	**0.14**	0.04	0.03	−0.05	*−0.21*	−0.04	*0.18*	*0.26*	*0.19*	0.01	**0.15**
	p	0.11	0.42	**0.02**	**0.03**	0.57	0.60	0.45	*0.00*	0.52	*0.01*	*0.00*	*0.00*	0.94	**0.02**

$N = 244$
Values in bold indicate significance at $p < 0.05$ (2-tailed).
Values in italics indicate significance at $p < 0.01$ (2-tailed).
A reserved – outgoing, *B* concreteness – abstract thinking, *C* emotional instability – emotional stability, *D* phlegmatic temperament – excitability, *E* submissiveness – dominance, *F* soberness – carefreeness, *G* opportunistic – conscientious, *H* shyness – social boldness, *I* tough mindedness – tender mindedness, *J* zestfulness – individualism, *O* self-assurance – proneness to guilt feelings, *Q2* group dependency – self-sufficiency, *Q3* low self-sentiment integration – high self-sentiment integration, *Q4* low ergic tension – high ergic tension.

Table 2. Correlation between the EDI and the HSPQ factors

		A	B	C	D	E	F	G	H	I	J	O	Q2	Q3	Q4
Total EDI score	*r*	*−0.28*	0.05	*−0.40*	*0.26*	−0.05	−0.05	**−0.16**	*−0.43*	−0.14	*0.27*	*0.44*	**0.28**	−0.07	*0.42*
	p	*0.00*	0.47	*0.00*	*0.00*	0.47	0.43	**0.01**	*0.00*	0.83	*0.00*	*0.00*	**0.00**	0.27	*0.00*

$N = 244$
Values in bold indicate significance at $p < 0.05$ (2-tailed).
Values in italics indicate significance at $p < 0.01$ (2-tailed).
A reserved – outgoing, *B* concreteness – abstract thinking, *C* emotional instability – emotional stability, *D* phlegmatic temperament – excitability, *E* submissiveness – dominance, *F* soberness – carefreeness, *G* opportunistic – conscientious, *H* shyness – social boldness, *I* tough mindedness – tender mindedness, *J* zestfulness – individualism, *O* self-assurance – proneness to guilt feelings, *Q2* group dependency – self-sufficiency, *Q3* low self-sentiment integration – high self-sentiment integration, *Q4* low ergic tension – high ergic tension.

excitable, prone to jealousy, egotistical, easily confused and showing signs of nervousness (HSRC 1995). The characteristic of nervousness and attention seeking in girls with a propensity to eating disorders is in accordance with Steiger and Séguin's (1999) and Swift and Wonderlich's (1988) findings of the personalities of those with eating disorders. Studies (Gordon 1992; Wonderlich 1995; Nye and Johnson 1999) conducted with the eating disordered demonstrate that these individuals are impatient, as was found in this study. The characteristic of impulsivity has also been previously reported in individuals with eating disorders (Swift and Wonderlich 1988; Gordon 1992; Steiner et al. 1995; Diaz et al. 2000).

A significant positive correlation was found between a zestfulness–individualism personality factor (factor J) and the EAT-26 ($r = 0.18$, $p < 0.01$) and EDI ($r = 0.27$, $p < 0.01$), respectively. An individual with an individualism personality trait is characterised as being individualistic, guarded, wrapped up in the self, meticulous, fastidious and evaluative without becoming involved. Strober (1983) and Steiger and Séguin (1999) have previously described the eating disordered as being isolated. They have also been described as being introverted, independent and meticulous (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982; Byrant-Waugh 1988; Steiger and Séguin 1999). Furthermore, associations with perfectionistic characteristics have been made with the eating disordered (Katzman and Wolchick as cited in Weiss et al. 1994; Steiner et al. 1995; Nye and Johnson 1999).

There appears to be a significant positive correlation between the self-assurance–proneness to guilt feelings personality factor (factor O) and the EAT-26 ($r = 0.26$, $p < 0.01$) and the EDI ($r = 0.44$, $p < 0.01$), respectively. The proneness to guilt feelings personality trait is characterised by anxiousness, insecurity, depression, being overcome by moods, sensitivity to people's approval or disapproval, scrupulousness, feelings of inadequacies, being full of fears and loneliness (HSRC 1995). This personality trait has the anxiousness characteristic in common with the excitability personality trait, a characteristic which, has previously been recorded in individuals with eating disorders (Swift and Wonderlich 1988; Steiger and Séguin 1999). Insecurity and feelings of inadequacies are expressed by individuals with eating disorders as low self-esteem (Bruch 1973; Gordon 1992; Nye and Johnson 1999; Steiger and Séguin 1999). Depression is a characteristic that individuals with eating disorders express (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982; Byrant-Waugh 1988; Swift and Wonderlich 1988). The need for approval by others has previously been reported in individuals with eating disorders (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982, 1983; Byrant-Waugh 1988; Steiger and Séguin 1999).

A positive correlation was obtained between a group dependency–self-sufficient personality factor (factor Q2) and the EAT-26 ($r = 0.19$, $p < 0.01$) and EDI ($r = 0.28$, $p < 0.05$), respectively. As the name indicates, the self-sufficient personality trait is characterised by self-sufficiency, resourcefulness and avoidance of social contact as faith is had in one's own decision-making (HSRC 1995). These characteristics are not in accordance with previous studies that reported eating disordered women to be dependent and socially detached due to their anxieties (Crisp 1980; Steiner et al. 1995; Nye and Johnson 1999; Steiger and Séguin 1999).

Lastly a positive correlation was found between a low ergic tension–high ergic tension personality factor (factor Q4) and both the EAT-26 ($r = 0.15$, $p < 0.05$) and EDI ($r = 0.42$, $p < 0.01$). A high ergic tension (tense) personality trait is associated with frustration, continuous tenseness and irritability. In people with eating disorders, these personality traits could be attributed to their impulsive nature and the need for control (Strober 1983; Swift and Wonderlich 1988; Gordon 1992; Steiner et al. 1995; Steiger and Séguin 1999; Diaz et al. 2000).

The EAT-26 and the EDI had significant negative correlations with various personality factors. These correlations were weak to medium as they ranged from 0.15 to 0.43. There appears to be a significant negative correlation between an emotional instability–emotional stability personality factor (factor C) and both the EAT-26 ($r = -0.15$, $p < 0.05$) and EDI ($r = -0.40$, $p < 0.01$). An individual with an emotional instability personality trait is characterised by being emotionally influenced thus interests and attitudes are easily changeable, evading responsibility, tending to worry, getting into problem situations and as for the excitability personality trait becomes easily confused (HSRC 1995). The emotional fluctuation is a trait that is not in accordance with previous studies of the eating disorders, as these individuals were characterised as minimising their emotions (Strober 1983; Steiger and Séguin 1999). However, Diaz et al. (2000) and Steiner et al. (1995) do report elements of emotional fluctuations specifically in bulimics. Furthermore, it would be expected that an individual with an eating disorder would constantly worry specifically about their body weight and shape as well as their food intake.

There appears to be a significant negative correlation between a shyness–social boldness personality factor (factor H) and the EAT-26 ($r = -0.21$, $p < 0.01$) and the

EDI ($r = -0.43$, $p < 0.01$), respectively. Individuals with a shyness personality trait are characterised as being shy, reserved, unsociable, emotionally cautious, modest in the face of the opposite sex and controlled (HSRC 1995). Due to the eating disordered feelings of social anxiety and social and personal introversion, it is expected that they would be unsociable, reserved and modest in the face of the opposite sex (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982; Byrant-Waugh 1988; Steiger and Séguin 1999). Those individuals with bulimia however, do not have feel that they have control (Steiger and Séguin 1999) while those with anorexia nervosa do show a great sense of self-control (Strober 1983; Steiger and Séguin 1999).

Significant negative correlations were found between the EDI and a reserved–outgoing personality factor (factor A) ($r = -0.28$, $p < 0.01$). The reserved personality trait is characterised as being reserved, inflexible, critical, aloof, precise, sceptical and rigid (HSRC 1995). These personality traits are very similar to those already discussed with reference to the shyness personality trait. Thus, due to the eating disordered social anxieties they could be perceived as being aloof and reserved. Individuals with eating disorders have a tendency to see things in black and white terms, which makes them inflexible, and rigid (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982; Byrant-Waugh 1988).

There appears to be a significant negative correlation between the EDI and an opportunistic–conscientious personality factor (factor G) ($r = -0.16$, $p < 0.05$). Individuals with an opportunistic personality trait are opportunistic, disregard moral and social rules, fickle, frivolous, self-indulgent, indolent and undependable (HSRC 1995). Most of these traits are in direct contrast to the personality traits previously observed in eating disorder patients. These patients adhere to moral and social rules as they long to be within societies norms with regards to body weight and shape. They also cannot be fickle and frivolous if they are considered conscientious and perfectionistic (Bruch 1973; Crisp 1980; Garfinkel and Garner 1982; Byrant-Waugh 1988). Furthermore, due to their obsession with their eating behaviour they probably are not very dependable.

Conclusion

Thus, it can be noted that personality could play a role in predisposing girls to develop eating disorders. The theory appears to be correct; personality might have a predisposing role in the development of eating disorders (Akiskal, Hirschfel and Verevanian, as cited in Guertin 1977; Friedman 1990; Millon 1996; Swift and Wonderlich 1998). However, since this is a correlational study no causal relationships can be determined. It appears that the following personality traits can be said to be associated with adolescents' development of eating disorders: reservation, emotional instability, excitability, opportunism, shyness, individualism, proneness to guilt feelings, self-sufficiency and high tension. These results are particularly relevant as they were obtained in a non-clinical sample and thus the pathological symptoms of these disorders did not appear to interfere with an inspection of the true personality of the adolescents.

The personality traits seen in this study are mostly in accordance with previous studies, which indicate that starvation may not interfere with the determination of personality traits. Alternately, some of the girls in this study's sample may be experiencing starvation due to a pre-existing eating disorder without the researchers' knowledge of their condition. The commonality of the personality traits observed in this study and in international studies demonstrates that the characterology of eating disorders appears to be universal. Furthermore, one can determine that these personality traits may play a role in predisposing girls to develop eating disorders, which in turn may help enhance the understanding of the predisposing factors of eating disorders in South Africa. Thus, this study has succeeded in exploring an aspect of the complex interaction between eating disorders and personality.

References

American Psychological Association (1994) Diagnostic and statistical manual of mental disorders, 4th edn. American Psychological Association, Washington, DC

Attie I, Brooks-Glunn J (1995) The development of eating regulation across the life span. In: Cicchetti D, Cohen DJ (eds) Developmental psychology, vol 2: risk, disorder and adaptation. John Wiley & Sons, New York, pp 332–368

Bruch H (1973) Eating disorders: obesity, anorexia nervosa and the person within. Routledge and Kegan Paul, London

Byrant-Waugh R (1988) Anorexia nervosa. In: Fisher S, Reason J (eds) Handbook of life stress, cognition and health. John Wiley & Sons, New York, pp 351–368

Cattell RB (1950a) An introduction to personality study. Hutchinson's University Library, London

Cattell RB (1950b) Personality: a systematic theoretical and factual study. McGraw-Hill Book Co, New York

Cattell RB (1965) The scientific analysis of personality. Penguin Books, Middlesex

Costin C (1999) The eating disorders sourcebook: a comprehensive guide to causes, treatments and prevention in eating disorders, 2nd edn. Lowell House, Los Angeles

Crisp AH (1980) Anorexia nervosa: let me be. London: Academic Press

De Bruin GP (2001) Personality assessment. In: Foxcroft C, Roodt G (eds) An introduction to psychological assessment in the South African context. Oxford University Press, Cape Town, pp 227–247

Devlin B, Bacanu S, Klump KL, Bulik CM, Fichter MM, Halmi KA, Kaplan AS, Strober M, Treasure J, Woodside DB, Berrettini WH,

Kaye WH (2002) Linkage analysis of anorexia nervosa incorporating behavioural covariates. Hum Mol Genet 11: 689–696
Diaz MM, Carrasco JL, Saiz J (2000) A study of temperament and personality in anorexia and bulimia nervosa. J Personal Disord 14: 352–359
Feist J, Feist GJ (1998) Theories of personality, 4th edn. McGraw Hill, Boston
Friedman HS (1990) Personality and disease: overview, review and preview. In: Friedman HS (ed) Personality and disease. John Wiley & Sons, New York, pp 3–13
Garfinkel PE, Garner DM (1982) Anorexia nervosa: a multidimensional perspective. Brunner/Mazel, New York
Garfinkel PE, Garner DM (1983) The multidetermined nature of anorexia nervosa. In: Darby PL, Garfinkel PE, Garner DM, Coscina DV (eds) Anorexia nervosa: recent developments in research. Alan R Liss, New York, pp 3–14
Garner DM, Garfinkel PE (1979) The eating attitudes test: an index of the symptoms of anorexia nervosa. Psychol Med 9: 273–279
Garner DM, Olmsted MP, Bohr Y, Garfinkel PE (1982) The eating attitudes test: psychometric features and clinical correlates. Psychol Med 12: 871–878
Garner DM, Olmsted MP, Polivy J (1983) The eating disorders inventory: a measure of cognitive-behavioural dimensions of anorexia nervosa and bulimia. In: Darby PL, Garfinkel PE, Garner DM, Coscina DV (eds) Anorexia nervosa: recent developments in research. Alan R Liss, New York, pp 173–184
Gordon RA (1992) Anorexia and bulimia: anatomy of a social epidemic. Blackwell, Oxford
Gross J, Rosen JC, Leintenberg H, Willmuth ME (1986) Validity of the eating attitudes test and the eating disorders inventory in bulimia nervosa. J Consult Clin Psychol 54: 875–876
Guertin WH (1977) Classification in psychopathology. In: Cattell RB, Dreger RM (eds) Handbook of modern personality theory. John Wiley & Sons, New York, pp 615–628
Halmi KA (1995) Current concepts and definitions. In: Szmulker G, Dare C, Treasure J (eds) Handbook of eating disorders: theory, treatment and research. John Wiley & Sons, New York, pp 29–42
Holleran PR, Pascale J, Fraley J (1988) Personality correlates of college age bulimics. J Counselling Development 66: 378–381
Human Sciences Research Council (HSRC) (1995) Manual for the high school personality questionnaire. Institute for Personality and Ability Testing, Pretoria
Janzen BL, Saklofske DH, Kelly IW (1993) Personality and bulimic symptomatology. J Clin Psychol 49: 649–653
Kaplan HI, Sadock BJ, Grebb JA (1994) Kaplan and Sadock's synopsis of psychiatry: behavioural sciences, clinical psychiatry, 7th edn. Williams & Wilkins, Baltimore
Kaye WH, Klump KL, Frank GKW, Strober M (2000) Anorexia and bulimia nervosa. Annu Rev Med 51: 299–313
Leon GR, Fulkerson JA, Perry CL, Cudeck R (1993) Personality and behavioural vulnerabilities associated with risk status for eating disorders in adolescent girls. J Abnorm Psychol 102: 438–444
Leon GR, Fulkerson JA, Perry CL, Early-Zald MB (1995) Prospective analysis of personality and behavioural vulnerabilities and gender influences in the later development of disordered eating. J Abnorm Psychol 104: 410–149
McAdams DP (1994) Can personality change? Levels of stability and growth in personality across the life span. In: Heatherton TF, Weinberger JL (eds) Can personality change? American Psychological Association, Washington, D.C., pp 299–313
Mershon B, Gorsuch RL (1988) Number of factors in the personality sphere: does increase in factors increase predictability of real-life criteria? J Pers Soc Psychol 55: 675–680
Millon T (1994) MIPS: The Millon index of personality styles, manual. Harcourt Brace and Company, Orlando
Millon T (1996) An integrative theory of personality and psychopathology. In: Millon T (ed) Personality and psychopathology: building a clinical science. John Wiley and Sons, New York, pp 59–71
Mischel W (1986) Introduction to personality: a new look, 4th edn. Holt, Rinehart & Winston, Fort Worth
Nasser M (1997) Culture and weight consciousness. Routledge, London
Nye SS, Johnson CL (1999) Eating disorders. In: Netherton SD, Holmes D, Walker CE (eds) Child and adolescent psychological disturbances: a comprehensive textbook. Oxford University Press, New York, pp 397–414
Paunonen SV (1998) Hierarchical organisation of personality and predication of behaviour. J Pers Soc Psychol 74: 538–556
Rosenthal R, Rosnow RL (1991) Essentials of behavioural research: methods and data analysis, 2nd edn. McGraw-Hill, Boston
Schultz D, Schultz SE (1998) Theories of personality. Brooks/Cole Publishing, Pacific Grove
Senekal M, Steyn NP, Mashego TB, Nel JH (2001) Evaluation of body shape, eating disorders and weight management relate parameters in black female students or rural and urban origins. South African J Psychol 31: 45–53
Shore RA, Porter JE (1990) Normative and reliability data for 11 to 18 year olds on the eating disorder inventory. Int J Eat Disord 9: 201–207
Sohlberg S, Strober M (1994) Personality in anorexia nervosa: an update and a theoretical integration. Acta Psychiatr Scand 89 Suppl 378: 1–15
Steiger H, Séguin JR (1999) Eating disorders: anorexia nervosa and bulimia nervosa. In: Millon T, Blaney PH, Davis RD (eds) Oxford textbook of psychopathology. Oxford University Press, New York, pp 365–389
Steiger H, Stotland S (1995) Individual and family factors in adolescents with eating symptoms and syndromes. In: Steinhausen HC (ed) Eating disorders in adolescence: anorexia and bulimia nervosa. Walter de Gruyter, New York, pp 49–68
Steiner H, Sanders M, Ryst E (1995) Precursors and risk factors of juvenile eating disorders. In: Steinhausen HC (ed) Eating disorders in adolescence: anorexia and bulimia nervosa. Walter de Gruyter, New York, pp 95–125
Strober M (1983) An empirically derived typology of anorexia nervosa. In: Darby PL, Garfinkel PE, Garner DM, Coscina DV (eds) Anorexia nervosa: recent developments in research. Alan R Liss, New York, pp 185–196
Swassing CS (1989) Review of the Eating Disorder Inventory. In: Conoley JC, Kramer JJ (eds) The tenth mental measurement yearbook. Buros Institute of Mental Measurement, Lincoln, Nebr, pp 274–276
Swift WJ, Wonderlich SA (1988) Personality factors and diagnosis in eating disorders: traits, disorders & structures. In: Garner DM, Garfinkel PE (eds) Diagnostic issues in anorexia nervosa and bulimia nervosa. Brunner/Mazel Publishers, New York, pp 111–165
Vitousek K, Manke F (1994) Personality variables and disorders in anorexia nervosa and bulimia nervosa. J Abnorm Psychol 103: 137–147
Wear RW, Pratz O (1987) Test-retest reliability for the eating disorder inventory. Int J Eat Disord 6: 767–769
Weiss L, Katzman M, Wolchick S (1994) Bulimia nervosa: definition, diagnostic criteria, and associated psychological problems. In: Alexander-Mott L, Lumsden DB (eds) Understanding eating disorders. Taylor & Francis, Washington, D.C., pp 159–180
White C, Vincent A, Modumise B (1993) Status of South African women: A source book in tables and graphs. The ANC Women's League, Marshalltown
Williamson DA, Anderson DA, Jackman LP, Jackson SR (1995) Assessment of eating disordered thoughts, feelings, and behaviours. In: Allison DB (ed) Handbook of assessment methods for eating behaviours and weight related problems: measures, theory and research. Sage, London, pp 347–386
Wonderlich SA (1995) Personality and eating disorders. In: Brownell KD, Fairburn CG (eds) Eating disorders and obesity: a comprehensive handbook. Guilford, New York, pp 171–176