

**Subclinical Eating Disorder in female students: development
and evaluation of a secondary prevention and well-being
enhancement programme.**

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M.Ed. (Educational Psychology)**

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CONTENTS

Acknowledgements	p. ii
Summary	p. v
Opsomming	p. ix
Preface	p. xiii
Letter of consent	p. xiv
SECTION 1: Introduction:	p.1
SECTION 2: Article 1: Development of a secondary prevention programme for female university students with Subclinical Eating Disorder.	p. 4
2.1 Guidelines for authors: <i>South African Journal of Psychology</i>	p. 5
2.2 Manuscript: Development of a secondary prevention programme for female university students with Subclinical Eating Disorder.	p. 6
Figure 1: Cycles of participatory action research as adapted from Zuber-Skerritt (2002).	p. 48
Figure 2: The processes of participatory action research culminating in the WOW-programme content.	p. 49
Figure 3: An outline of the final WOW-programme content structured according to Prochaska's model (1984).	p. 50
SECTION 3: Article 2: A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation.	p. 51
3.1 Guidelines for authors: <i>South African Journal of Psychology</i>	p. 52
3.2 Manuscript: A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation.	p. 53
Table 1: Significance of pre-post test differences within Group 1.	p. 88
Table 1 continued.	p. 89
Table 2: Significance of pre-post test differences within Group 2.	p. 90
Table 2 continued.	p. 91
Table 3: Significance of pre-post test differences within Group 3.	p. 92
Table 4: Significance of post-assessment differences between groups.	p. 93
Table 4 continued.	p. 94
Table 5: Analysis of pre-post test covariance of differences between groups, corrected for pre-test counts.	p. 95
SECTION 4: Article 3: Lived experiences of Subclinical Eating Disorder: female students' perceptions.	p. 96

4.1	Guidelines for authors: South African Journal for Psychology	p. 97
4.2	Manuscript: Lived experiences of Subclinical Eating Disorder: female students' perceptions.	p. 98
	Figure 1: Illustration of main and subcategories regarding the lived experience of SED	p. 135
	Figure 2: Illustration of Personal Brokenness.	p. 136
	Figure 3: Illustration of Personal Shame.	p. 136
	Figure 4: Illustration of Illustration of Perceived Personal Inadequacy and Enslavement.	p. 137
	Figure 5: Illustration of Existential Vacuum.	p. 137
	Figure 6: Illustration of Perceived Social pressure	p. 138
	Figure 7: Illustration of Perceived Social Isolation.	p. 138
	Figure 8: Illustration of Body-image Dysfunction.	p. 139
	SECTION 5: Conclusions, implications and recommendations	p. 140
	SECTION 6: Complete reference list	p. 144

Summary

Subclinical Eating Disorder in female students: development and evaluation of a secondary prevention and well-being enhancement programme.

Key words:

body dissatisfaction; drive for thinness; Positive Psychology; psychological well-being; secondary prevention; self-objectification; Subclinical Eating Disorder.

The first aim of this study was to develop a research based, integrated, secondary prevention programme, called the Weight Over-concern and Well-being (WOW) programme, for the reduction of Subclinical Eating Disorder (SED) symptoms, associated traits and negative mood states, and the promotion of psychological well-being (PWB) in female students. Consequently the second aim was to determine the effectiveness of the WOW-programme on its own, in comparison with a combined Tomatis Method of sound stimulation (Tomatis, 1990) and WOW-programme, regarding the reduction of SED-symptoms, associated traits and negative mood states; the promotion of PWB; and outcome maintenance. The last aim was to obtain a deeper understanding and “insiders’ perspective” of the lived experience of SED, through an interpretative phenomenological inquiry (Smith & Osborn, 2003). The motivation for the current study is a need for research based, integrated, risk-protective, secondary prevention programmes from a social-developmental perspective for female university students (Garner, 2004; Phelps, Sapia, Nathanson & Nelson, 2000; Polivy & Herman, 2002), given their risk status (Edwards & Moldan, 2004; Senekal, Steyn, Mashego & Nel, 2001; Wassenaar, Le Grange, Winship & Lachenicht, 2000). Concurrently in-depth descriptions from an “insiders’ perspective” on the lived experience of SED are non-existent and require interpretative phenomenological study (Brocki & Wearden, 2006). Consequently this thesis consists of three articles, namely: (i) *Development of a secondary prevention programme for female university students with Subclinical Eating Disorder*; (ii) *A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation*; and (iii) *Lived experiences of Subclinical Eating Disorder: female students’ perceptions*. The research context comprised Subclinical Eating Disorder, secondary prevention and Positive Psychology.

The first article, *Development of a secondary prevention programme for female university students with Subclinical Eating Disorder* (Kirsten, Du Plessis & Du Toit, 2007a), is qualitative in nature, and narrates a process of participatory action research followed to develop the WOW-programme. This social process of knowledge construction, embedded in Social Constructivist theory (Koch, Selim & Kralik, 2002), gradually revealed best clinical practice, and in retrospect, evolved over four phases. Phase One comprised experiential learning based on personal experiences with SED as undergraduate student and interaction with “participant researchers” as scientist practitioner (Stricker, 2002), resulting in a provisional risk model of intervention. Phase Two, a formal pilot study (Du Plessis, Vermeulen & Kirsten, 2004), afforded an evaluation of ideas generated in Phase One through a three-group pre-post-test design. Outcomes of Phase Two informed Phase Three, an integration of prior learning with Positive Psychology theory and clinical practice, resulting in a risk-protective model of prevention. Theoretical assumptions previously constructed were integrated and operationalised during Phase Four, into the final 9-session WOW-programme. In conclusion the process of knowledge construction was rigorous, despite the small overall sample size ($n=28$), since data saturation occurred within that sample. Although the multitude of aims involved in each session of the WOW-programme could be seen as unrealistic, in some direct or indirect way, they were addressed by means of relevant interventions due to the integrative approach. Thus future refinement is essential. Finally, despite aforementioned concerns, the WOW-programme proved to be robust on its own in reducing SED-symptoms and associated traits and enhancing PWB, as described in the second article of this thesis.

The second article, *A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation* (Kirsten, Du Plessis & Du Toit, 2007b), describes the outcomes of the WOW-programme on its own, evaluated comparatively with a combined Tomatis sound stimulation and WOW-programme. In this article the research aims were to determine: (i) whether participation in the combined sound stimulation and WOW-programme (Group 1); and (ii) participation in a WOW-programme only (Group 2), would lead to statistically significant reductions in SED-symptoms, psychological traits associated with eating disorders and negative mood states, and enhancement of PWB; (iii) whether results of Groups 1 and 2 would exceed results of a non-intervention control group (Group 3) practically significantly; and (iv) whether programme outcomes for Groups 1 and 2 would be retained at four-month follow-up evaluation.

A mixed method design (Creswell, 2003; Morse, 2003) was used, including a three-group pre-post-test (n=45) and multiple case study (n=30) design. Various questionnaires measuring SED-symptoms, associated traits, negative mood states and PWB were completed. Qualitative data were obtained by means of metaphor drawings, letters to and from the “SED-problem”, focus group interviews, the researchers’ reflective field notes and individual semi-structured feedback questionnaires (Morse, 2003).

Participation in Groups 1 and 2 proved effective, since decreases in SED-symptoms, associated traits, most negative mood states, and increases in PWB differed practically significantly from the results of Group 3. Outcomes for Groups 1 and 2 were maintained at four-month follow-up evaluation. Qualitative findings provided depth, support and trustworthiness to quantitative findings in light of the small sample size, and highlighted the value of using a mixed method design in prevention programming. It was concluded that the WOW-programme on its own, was an effective secondary prevention programme, since it led to reduced SED-symptoms, associated psychological traits and enhanced PWB, with retention of gains at four-months follow-up evaluation. The combined programme involving Tomatis stimulation and WOW-intervention proved to be even more effective, thus the complimentary role of Tomatis stimulation was demonstrated. However, the cost-effectiveness and comparative brevity of the WOW-programme rendered it the programme of choice regarding individuals with SED. Findings showed that conceptually, pathogenic and salutogenic perspectives can be successfully combined into a risk-protective model of secondary prevention. Lastly, the WOW-programme may even prove useful as an enrichment programme for female students in general.

The third article, *Lived experiences of Subclinical Eating Disorder: female students’ perceptions* (Kirsten, Du Plessis & Du Toit, 2007c), provides a qualitative, in-depth perspective on the lived experience of SED of 30 white, undergraduate females, purposively sampled. In this interpretative phenomenological, multiple case study (Brocki & Wearden, 2006), Groups 1 and 2 of the aforementioned primary study in the second article were used, since they fitted the criteria of “good informants” and were able to answer the research question (Morse, 2003). Further sampling was deemed unnecessary since data saturation occurred within their written and verbal responses and no negative cases were found. Rich individual qualitative data, further clarified through focus groups, emerged from graphic colour representations of lived SED, explanatory written records and “correspondence” with and from their “SED problem” (Gilligan, 2000; Loock, Myburgh, & Poggenpoel, 2003; White & Epston, 1990).

Four main categories, characterised by serious intra-, interpersonal, existential and body image concerns were subdivided into seven subcategories, namely: Personal Brokenness, Personal Shame, Perceived Personal Inadequacy and Enslavement, Existential Vacuum, Perceived Social Pressure, Perceived Social Isolation and Body-image Dysfunction. Results were indicative of underestimation of SED-severity, its comprehensive detrimental impact on participants' PWB and high risk for escalation into full-blown eating disorders. It was concluded that the lived experiences of SED depicted the severity of SED-symptoms; descriptions resonated well with most of their pre-programme mean scores; and their risk status and need for contextually and developmentally relevant secondary prevention programmes were highlighted by the findings.

Opsomming

Subkliniese Eetversteuring in vroulike studente: ontwikkeling en evaluering van ‘n sekondêre voorkomings- en welsynsbevorderingsprogram.

Sleutelwoorde: drang om maer te wees; liggaamsontevredenheid; Positiewe Sielkunde; psigologiese welsyn; sekondêre voorkoming; self-objektivering; Subkliniese Eetversteuring.

Die eerste doel van hierdie studie was om ‘n navorsingsgebaseerde, geïntegreerde sekondêre voorkomingsprogram, genaamd die “Weight Over-concern en Well-being (WOW)” program, te ontwikkel, ter vermindering van simptome van Subkliniese Eetversteuring (SEV), geassosieerde psigologiese trekke en negatiewe gemoedstate; en ter bevordering van psigologiese welsyn in vroulike universiteitstudente. Gevolglik was die tweede doel om die effektiwiteit van die WOW-program afsonderlik, te vergelyk met die effek van ‘n gekombineerde program van Tomatis klankstimulasie (Tomatis, 1990) en die WOW-program, ten opsigte van die vermindering van SEV-simptome, geassosieerde psigologiese trekke en negatiewe gemoedstate; bevordering van psigologiese welsyn; en standhoudendheid van programuitkomste. Laastens is daar gepoog om ‘n in-diepte, “binnestaanders-perspektief” van die beleefde ervaring van SEV te verkry, deur middel van ‘n interpreterende fenomenologiese studie (Smith & Osborn, 2003). Die motivering vir die huidige studie spruit uit ‘n behoefte aan navorsingsgebaseerde, geïntegreerde, risiko-beskermings-, sekondêre voorkomingsprogramme vir vroulike universiteitstudente vanuit ‘n sosiale-ontwikkelingsperspektief (Garner, 2004; Phelps, Sapia, Nathanson & Nelson, 2000; Polivy & Herman, 2002), gegewe hul bewese hoë risikostatus (Edwards & Moldan, 2004; Senekal, Steyn, Mashego & Nel, 2001; Wassenaar, Le Grange, Winship & Lachenicht, 2000). Aangesien daar geen in-diepte beskrywings oor die beleefde ervaring van SEV in die literatuur bestaan nie, is interpreterende fenomenologiese studies noodsaaklik (Brocki & Wearden, 2004). Gevolglik bestaan hierdie proefskrif uit drie artikels, naamlik: (i) *Ontwikkeling van ‘n sekondêre voorkomingsprogram vir vroulike universiteitstudente met Subkliniese Eetversteuring*; (ii) *‘n Sekondêre voorkomingsprogram vir vroulike studente met Subkliniese Eetversteuring: ‘n vergelykende studie*;

en (iii) *Deurleefde ervarings van Subkliniese Eetversteuring: persepsies van vroulike studente*. Die navorsingskonteks het bestaan uit Subkliniese Eetversteuring, sekondêre voorkoming en Positiewe Sielkunde.

Die eerste artikel, *Ontwikkeling van 'n sekondêre voorkomingsprogram vir vroulike universiteitstudente met Subkliniese Eetversteuring* (Kirsten, Du Plessis & Du Toit, 2007a), is kwalitatief van aard en behels 'n proses van deelnemende aksienavorsing wat gevolg is ten einde die WOW-program te ontwikkel. Hierdie sosiale proses van kenniskonstruksie is teoreties in die Sosiale Konstruksionisme ingebed (Koch, Selim & Kralik, 2002), en het stelselmatig die beste kliniese benadering ten opsigte van SEV ontsluit. By terugskouing het die WOW-program oor vier duidelik onderskeibare fases heen ontwikkel. Gedurende Fase Een tree die navorser as “wetenskaplike praktisyn” (Stricker, 2002) op en identifiseer behoeftes en risikofaktore geassosieer met SEV, gegrond op haar persoonlike ervaring van SEV as voorgraadse student en kliniese interaksie met verskeie studente met kliniese- en subkliniese eetversteurings. Die resultaat van Fase Een is 'n voorlopige risiko-model van sekondêre voorkoming. Tydens Fase Twee, 'n formele loodsstudie (Du Plessis, Vermeulen & Kirsten, 2004), word die idees wat in Fase Een ontwikkel is, deur middel van 'n drie-groep, voor-natoets ontwerp geëvalueer. Uitkomst van Fase Twee begrond en verhelder die ontwikkeling van Fase Drie teoreties. Die integrasie van voorkennis uit Fases Een en Twee met aspekte van Positiewe Sielkunde teorie, lei tot 'n risiko-beskermingsmodel van voorkoming. Gedurende Fase Vier word vooraf gekonstrueerde teoretiese aannames geïntegreer en geoperasionaliseer in die finale 9-sessie WOW-program. Die gevolgtrekking is dat die proses van kenniskonstruksie, ten spyte van die klein steekproef ($n=28$), nougeset en waardevol was. Voorts, die meervoudige doelstellings voortspruitend uit die geïntegreerde aard van die WOW-program, is wel in die intervensies verreken, al sou hulle as onrealisties gesien kon word. Toekomstige programverfyning is derhalwe noodsaaklik. Laastens is gekonkludeer dat, ten spyte van bogenoemde kritiek, die WOW-program as effektief en kragtig in eie reg bewys is, ten einde SEV-simptome en geassosieerde psigologiese trekke te verminder en PWS te bevorder, soos beskryf in die tweede artikel van hierdie proefskrif.

Die tweede artikel, *A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation* (Kirsten, Du Plessis & Du Toit, 2007b), beskryf die uitkomst van die WOW-program op sy eie, in vergelyking met 'n kombinasie van Tomatis klankstimulasie en

die WOW-program. Die navorsingsdoelstellings was om te bepaal of: (i) deelname aan die gekombineerde Tomatis-stimulasie en WOW-program (Groep 1, n=15); (ii) asook deelname aan die WOW-program op sy eie (Groep 2, n=15), tot statisties beduidende vermindering in SEV-simptome, geassosieerde psigologiese trekke en negatiewe gemoedstate, asook vermeerdering in PSW sal lei; en (iii) uitkomst van Groep 1 en 2 dié van 'n nie-intervensie kontrolegroep (Groep 3, n=15) prakties beduidend sal oortref; en (iv) programuitkomst vir Groep 1 en 2 behoue sal bly tydens 'n vier-maande-opvolgevaluasie.

'n Gemengde-metode navorsingsontwerp is gebruik (Creswell, 2003; Morse, 2003), insluitend 'n drie-groep, voor-natoets ontwerp (n=45) en 'n kwalitatiewe, meervoudige gevallestudie (n=30). Kwantitatiewe data is met behulp van verskeie vraelyste wat SEV-simptome, geassosieerde trekke, negatiewe gemoedstate en psigologiese welsyn meet, ingesamel. Voorts is kwalitatiewe data ingesamel deur middel van metafoortekeninge, briewe aan en vanaf die "SEV-probleem", in-diepte fokusgroeponderhoude en individuele, semi-gestruktureerde terugvoervraelyste (Morse, 2003).

Deelname aan Groep 1 en 2 is as suksesvol bewys, aangesien toenames in psigologiese welsyn, vermindering van SEV-simptome en geassosieerde psigologiese trekke en meeste negatiewe gemoedstate prakties beduidend van dié van Groep 3 verskil het. Verder word uitkomst vir Groep 1 en 2 tydens 'n vier-maande-opvolg gehandhaaf. Die waarde van 'n gemengde metode ontwerp met klein groepies is aangetoon, aangesien kwalitatiewe data diepte en ondersteuning aan kwantitatiewe bevindinge verleen het en ook die betroubaarheid van resultate verhoog het ten spyte van die klein steekproefgrootte van die studie. Daar word gekonkludeer dat die WOW-program op sy eie 'n effektiewe en kragtige sekondêre voorkomingsprogram is, aangesien dit gelei het tot vermindering van SEV-simptome, geassosieerde psigologiese trekke en verhoogde psigologiese welsyn, met retensie van uitkomst tydens vier-maande-opvolg; dat die gekombineerde program, bestaande uit die Tomatis stimulasie en die WOW-program op grond van die biopsigososiale effek daarvan kragtiger is, maar dat die koste-effektiwiteit en relatiewe kort programduur van die WOW-program per sé dit die program van keuse maak vir individue met SEV. Laastens het die bevindinge getoon dat konseptuele patogene en salutogene perspektiewe gekombineer kan word in 'n risiko-beskermingsmodel van sekondêre voorkoming; en dat die WOW-program selfs bruikbaar mag wees as 'n verrykingsprogram vir vroulike studente in die algemeen.

Die derde artikel, *Lived experiences of Subclinical Eating Disorder: female students' perceptions* (Kirsten, Du Plessis & Du Toit, 2007c), verskaf 'n kwalitatiewe, in-diepte perspektief op die subjektiewe, deurleefde ervarings van SEV. Die ervarings van 30 blanke, vroulike voorgraadse studente, word in hierdie interpreterende fenomenologiese, meervoudige gevallestudie (Brocki & Wearden, 2004) ondersoek. Groepe 1 en 2 soos beskryf in die tweede artikel van hierdie proefskrif, is as steekproef gebruik, aangesien hulle as “teoretiese steekproef” aan die kriteria van goeie informante voldoen en die navorsingsvraag kon beantwoord weens hulle bewese SEV-status (Morse, 2003). Verdere steekproefneming was onnodig, aangesien dataversadiging binne die geskrewe en verbale response van hierdie 30 deelnemers, sonder enige uitskieters bereik is. Betekenisryke individueel verkreeë kwalitatiewe data, verder verhelder deur semi-gestruktureerde, in-diepte fokusgroep onderhoude, is verkry uit kleurvolle metafoor tekeninge van die subjektiewe ervaring van SEV, verklarende geskrewe rekords en korrespondensie aan en vanaf die “SEV-probleem” (Gilligan, 2000; Loock, Myburgh & Poggenpoel, 2003; White & Epston, 1990).

Vier hoofkategorieë wat na aanleiding van interpreterende fenomenologiese tematiese inhoudsanalise geïdentifiseer is, is ernstige intra-, interpersoonlike, eksistensiële en liggaamsbeeld kwellinge. Voorts is sewe ondersteunende kategorieë met subkategorieë van hul eie onderskei, naamlik: Persoonlike Gebrokenheid, Persoonlike Skaamte, Waargenome Persoonlike Ontoereikendheid en Verknegting, Eksistensiële Vakuum, Waargenome Sosiale Druk, Waargenome Sosiale Isolasië en Liggaamsbeelddisfunksie. Die resultate dui aan dat die erns en kompleksiteit van SEV onderskat word; dat SEV 'n beperkende effek op deelnemers se algehele funksionering en psigologiese welsyn het; en dat deelnemers 'n baie hoë risiko groep is vir die ontwikkeling van volwaardige eetversteurings. Daar word gekonkludeer dat betekenisryke en digte beskrywings van deurleefde SEV die erns van andersins onderskatte SEV-simptome en die studente se risiko-status verhelder het; die beskrywings meesal baie goed met hul voor-programtellings resoneer; en dat die noodsaaklikheid van kontekstueel- en ontwikkelingsrelevante sekondêre voorkomingsprogramme, gebaseer op risiko-beskermingsmodelle, deur hul beskrywings beklemtoon is.

Preface

- This thesis was prepared in article format as indicated in rule A.14.4.2 of the year book of the North-West University, Potchefstroom Campus.
- The first two of the three articles comprising this thesis were submitted for review to respectively the *Conference proceedings of the 2nd European Conference on Positive Psychology*, 1-4 July 2004, Verbania Pallanza, Italy; the 10th Anniversary Congress of the Psychological Society of South Africa (PSySSA), 20-23 September 2004, Durban, South Africa; the 3rd European Conference on Positive Psychology, 3-7 July 2006, Braga, Portugal; and the 1st South African Conference on Positive Psychology, 4-7 April 2006, Potchefstroom, South Africa.
- All three articles comprising this thesis are currently under review as they were submitted to the editor of the following journal: The *South African Journal of Psychology* (impact factor: 0.06000).
- All articles were formatted according to the style sheet of the American Psychological Association (APA). However, the guidelines for authors of the *South African Journal of Psychology* are included for purposes of examination.
- For purposes of this thesis, the articles were page numbered consecutively. However, each individual article was numbered starting from page 1 for submission to the *South African Journal of Psychology*.
- For purposes of examination, articles exceeded the prescribed article length proposed by the *Instructions to authors* of the *South African Journal of Psychology* and were shortened before submission to the journal.
- Attached, please find the letter of consent, signed by the co-authors, authorising me to use these articles for purposes of submission for a PhD degree.



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To whom it may concern

Permission is hereby granted that the following manuscripts:

- (i) Development of a secondary prevention programme for female university students with Subclinical Eating Disorder;
- (ii) A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation;
- (iii) The lived experiences of Subclinical Eating Disorder: female students' perceptions;

may be used by the first author, Doret Karen Kirsten, for purposes of obtaining a PhD degree.

Sincerely

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SECTION 1: Introduction

Globally body-image, dieting and dietary problems among children and adolescents appear to become increasingly common, suggesting that the prevalence of Subclinical Eating Disorder (SED) is grossly underestimated (O'Dea, 2004), whilst the prevalence of clinical eating disorders is still on the increase (Garner, 2004; Polivy & Herman, 2002). Recent reports concerning fear of fat, body dissatisfaction, overweight concerns, dieting, self-objectification and more severe cases of serious eating disorders, have been documented in children as young as seven years old (Riacciardelli & McCabe, 2001; Robinson, Chang, Haydel, & Killen, 2001). Furthermore, a recent study (Croll, Neumark-Sztainer, Story & Ireland, 2002) suggests that the prevalence of SED is also very high among early and late adolescent females (56%-57%) and males (28%-31%). In addition to the aforementioned, serious concern was raised by the high prevalence of eating disordered behaviours found amongst all races on South African campuses (Edwards & Moldan, 2004; Szabo, 1999; Szabo & Hollands, 1997). Additional to these findings, research conducted on college campuses abroad suggests that 20% to 25% of females, upon entering college, subsequently develop full-blown clinical eating disorders (Celio et al., 2000; Drewnowski, Yee, Kurth & Krahn, 1994). Thus, at the time of university entry, it is often already too late for primary prevention, which necessitates secondary prevention (Becker, Franko, Nussbaum & Herzog, 2004).

The need for controlled studies evaluating the efficacy of eating disorder prevention programmes was highlighted by Mussell, Binford and Fulkerson (2000) in their summary of empirical investigations evaluating the efficacy of eating disorder prevention programmes. They also found that, with a few exceptions, most programmes have failed to demonstrate efficacy in or prevention of eating-disordered behaviour. Unsuccessful programmes exclusively focused on risk factors and relied upon didactic presentations, thus lacking interactive approaches. Other limitations highlighted in the literature are poorly integrated approaches, non-empirically based programmes and absence of developmental and risk-protective perspectives (Janson, 2001; Mussell et al., 2000; Phelps, Sapia, Nathanson & Nelson, 2000). More recently, attempts in the US (Phelps, Sapia, Nathanson & Nelson, 2000; Winzelberg et al., 2000) and UK (Becker, Franko, Nussbaum & Herzog, 2004; Steiner et al., 2003) to develop research based primary prevention programmes in schools and colleges proved to be more successful. Since SED is contextualised within adolescence, secondary

prevention programmes should also be tailored to address the unique developmental needs of adolescents in a diverse and unique South African context. However, no such research based programmes known to the current researcher exist in the RSA. Concurrently, qualitative studies investigating the lived experience of SED could contribute to a deeper understanding of SED, and further programme refinement and development. Thus, an interpretative phenomenological study could be useful to this end.

This highlights and contextualises the contribution of this thesis, consisting of three articles, namely: (i) *Development of a secondary prevention programme for female university students with Subclinical Eating Disorder*; (ii) *A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation*; and (iii) *Lived experiences of Subclinical Eating Disorder: female students' perceptions*.

The aim of the first article was to narrate the process of participatory action research, embedded in Social Constructivist theory, followed to develop the WOW-programme. The first article was submitted to the *South African Journal of Psychology*, and is currently under review. It was also presented in an adapted version as a paper at the *Conference proceedings of the 10th Anniversary Congress of the Psychological Society of South Africa (PSySSA)*, 20-23 September 2004, Durban, South Africa; in an adapted version and in combination with outcomes of the second article as papers at both the *Conference proceedings of the 3rd European Conference on Positive Psychology*, 3-7 July 2006, Braga, Portugal and the *Conference proceedings of the 1st South African Conference on Positive Psychology*, 4-7 April 2006, Potchefstroom, South Africa.

The aim of the second article was to describe outcomes of the WOW-programme on its own, evaluated comparatively with a combined programme of Tomatis sound stimulation and the WOW-sessions. The research aims were to determine whether participation in the combined TM and WOW-programme, and participation in a WOW-programme only would lead to significant reductions in SED-symptoms, psychological traits associated with eating disorders and negative mood states, and enhancement of PWB. Further aims were to determine whether results of both experimental groups would exceed results of a non-intervention control group practically significantly; and whether programme gains would be retained at four-month follow-up evaluation. This article was submitted to the *South African Journal of Psychology*, and is currently under

review. It was also presented as a poster at the *Conference proceedings of the 2nd European Conference on Positive Psychology*, 1-4 July 2004, Verbania Pallanza, Italy; and in papers already mentioned above.

The aim of the third article was to examine the lived experiences of SED in female university students. This article was submitted to the *South African Journal of Psychology*, and is currently under review. It is also foreseen that it will be submitted for review to the *Conference proceedings of the 4th European Conference on Positive Psychology*, in July 2008, Croatia and the *Conference proceedings of the Annual Congress of the Psychological Society of South Africa (PSySSA)*, 2008, South Africa or any other international conference deemed appropriate.

The results, conclusions, implications and limitations of the study will be summarised and recommendations made in a concluding section.

SECTION 2: Article 1

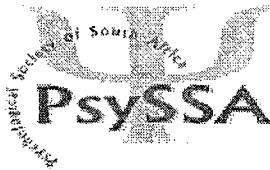
Development of a secondary prevention programme for female university students with Subclinical Eating Disorder

submitted to the

*Conference proceedings of the 10th Anniversary Congress of the Psychological Society of South
Africa (PSySSA), 20-23 September 2004, Durban, South Africa;*

*Conference proceedings of the 3rd European Conference on Positive Psychology, 3-7 July 2006,
Braga, Portugal;*

Panel of peer reviewers of the South African Journal of Psychology for review.



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Manuscript format

- The manuscript should be an MS Word document in 12-point Times Roman font with 1.5 line spacing. There should be no font changes, margin changes, hanging indents, or other unnecessarily complex formatting codes.
- American Psychological Association (APA) style guidelines and referencing format should be adhered to.
- Headings should start at the left margin, and should not be numbered. All headings should be in **bold**. Main headings should be in **CAPITAL LETTERS**.
- A line should be left open between paragraphs. The first line of a paragraph should not be indented.
- Use indents only for block quotes.
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Language

Manuscripts should be written in English. As the SAJP does not employ a full-time or dedicated language editor, authors are requested to send their manuscripts to an external language specialist for language editing before submission.

2.2 Manuscript

Development of a secondary prevention programme for female students with Subclinical Eating Disorder.

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Abstract

The high prevalence of Subclinical eating disorder (SED) comprising three strands, namely body dissatisfaction, self-objectification and drive for thinness, indicates that university females are at high risk of developing clinical eating disorders, and necessitates secondary prevention. Despite global and local escalation, no developmentally contextualised South African, secondary prevention programme exists. A multiphasic, qualitative research process is outlined which culminated in a secondary prevention programme, aimed at enhancing psychological well-being and reducing SED-symptoms and associated traits identified in female students. The participatory action research process, embedded in Social Constructivist theory, evolved over four phases of determining relevant interventions. An availability sample of altogether 28 university females were used across the first three phases. During Phase One, experiential learning mainly from clinical interaction with SED females, resulted in a provisional risk intervention model. Phase Two, a pilot study, involving a three group, pre-post design, afforded an empirical evaluation of ideas generated in Phase One. Outcomes informed Phase Three, an integration of prior learning with Positive Psychology theory, resulting in a risk-protective model of prevention. During Phase Four theoretical assumptions and interventions were integrated and operationalised into the nine-session Weight Over-concern and Well-being (WOW) programme.

Word count: 174

Key words: action learning; body dissatisfaction; drive for thinness; experiential learning; participatory action research; Positive Psychology; protective factors; psychological well-being; risk factors; scientist practitioner; secondary prevention; self-objectification; social constructionism; Subclinical Eating Disorder; Tomatis Method; weight over-concern.

Subclinical Eating Disorder (SED), a major global and local issue among adolescents and female students (Croll, Neumark-Sztainer, Story & Ireland, 2002; Edwards & Moldan, 2004; Muris, Meesters, Van de Blom & Mayer, 2005; O'Dea, 2004; Senekal, Steyn, Mashego & Nel, 2001), is conceived to be at an intermediate point on an eating disorder continuum. On this continuum, asymptomatic, unrestrained eating behaviour occurs at one end, milder forms of disturbed eating at an intermediate point, and clinical eating disorders at the other end (Mickley, 2004; Mintz, O'Halloran, Mulholland & Schneider, 1997). Various authors have found support for the validity of this continuum (Franco & Omari, 1999; Mazzeo & Espelage, 2002). In this study **SED-symptoms** are clustered into three main strands, namely *body dissatisfaction*, *self-objectification* and *a drive for thinness* (Garner, 2004; Fredrickson & Roberts, 1997). These strands reflect, although not as serious in eating disorders, associated psychological traits such as ineffectiveness, maturity fears, binge or emotional eating, interpersonal distrust, lack of interoceptive awareness and perfectionism (Garner, 2004; Leon, Fulkerson, Perry & Cudeck, 1993).

Body dissatisfaction and shame occur when individuals internalise culturally determined “thin” body ideals, and upon self-comparison perceive discrepancies between actual body size in relation to the “thin” ideal (Garner, 2004). Present body size and shape are consistently overestimated and devalued, whilst the importance of physical appearance over other physical and self-attributes are irrationally overemphasised (Geller, Zaitsoff & Srikameswaran, 2002).

Self-objectification occurs when persons internalise an observer's perspective on their physical selves, thus seeing themselves as objects to be looked at and evaluated. Self-objectification results in extreme self-consciousness, body shame, and obsessive and compulsive body surveillance behaviour, including bulimic binge-purging behaviour and emotional eating (Fredrickson & Roberts, 1997; Timmerman & Acton, 2001). Concomitant with self-objectification a fear of negative evaluation, social anxiety, interpersonal distrust and a lack of interoceptive awareness occur (Garner, 2004). Poor interoceptive awareness is a form of mindlessness, in that emotions occur outside awareness and drive behaviour before they can be acknowledged (Brown & Ryan, 2003). Although Fredrickson and Roberts (1997), and Muehlenkamp and Saris-Baglama (2002) disagree on how self-objectification interrupts internal awareness, they indicate a link.

Drive for thinness entails persistent weight over-concern, fear of fat, perceived fatness, irrational beliefs and risky dietary behaviours (Celio et al., 2000; Levitt, 2003). Females who conform to thinness standards and fail to meet them, experience feelings of ineffectiveness (Garner, 2004) since they perceive a lack of control over their external world, and a sense of inability to improve over time. Consequently maturity fears emerge since persons do not feel able to face life's challenges (Garner, 2004). Finally, a strong drive for thinness and over-concern with weight, combined with efforts to be thin, divert a person's focus away from development of positive goals and problem-solving behaviour (Polivy & Herman, 2002).

Since SED places at least 20-25% of female students at high risk of eventually developing clinical eating disorders (Celio et al., 2000), early prevention is crucial. The need for controlled studies evaluating efficacy of eating disorder prevention programmes was highlighted by Mussell, Binford and Fulkerson (2000) in their summary of empirical investigations evaluating the efficacy of such programmes. They reported that most programmes failed to demonstrate efficacy in or prevention of eating-disordered behaviour. Unsuccessful programmes relied upon didactic presentations, thus lacked interactive components; had poorly integrated approaches; were non-empirically based; and omitted developmental and risk-protective perspectives (Janson, 2001; Mussell et al., 2000; Phelps, Sapia, Nathanson & Nelson, 2000). More recently, attempts in the US (Phelps et al., 2000; Winzelberg et al., 2000) and Britain (Becker, Franko, Nussbaum & Hertzog, 2004; Steiner et al., 2003) to develop research based primary prevention programmes in schools and colleges proved to be more successful. However, by the time females enter university it is often too late for primary prevention, thus secondary prevention should become the focus of professionals working with at-risk groups such as university students (Mussell et al., 2000). Regretfully, no such research based programmes known to the current researcher exist in South Africa. This highlights the relevance of this study.

Conceptual framework underlying development of the WOW-programme

The current researcher's point of departure was framed by the principles of the post modern philosophy of Social Constructivism (Green & Gredler, 2002). This philosophy views humans as meaning-making beings who create their own realities or individual theories about themselves and the world around them, through their interaction with their social context (Furman, Jackson, Downey & Shears, 2003). It is thus acknowledged that people at any level can acquire knowledge,

and produce it through their own active search and “research”, by following a problem-solving process similar to that of specialist researchers (Stricker, 2002). This process is called action research, which couples scientific reasoning with critical self-reflection on learning experiences (Zuber-Skerritt, 2002); or participatory action research (PAR), when the individuals who are studied in conducting the investigation are actively engaged during the investigation (Koch, Selim & Kralik, 2002). Participants are thus regarded as co-researchers in the process of knowledge construction, and social intervention is permitted concurrent with ongoing research (Thomas, 2003). Social Constructivist philosophy thus stands in contrast to traditional (modernist/positivist) views on learning which assume that knowledge should be transmitted and received in the form of information, theories and research findings, which learners apply for their own purposes (Furman et al., 2003).

The PAR methodology used in this study was based on the action research spirals of Zuber-Skerritt (2002). It's cyclical nature required: continual problem identification and understanding from participants' perspectives; generation of ideas and hypotheses to improve practice; implementation of interventions; observation and evaluation of interventions and receiving participant feedback; reflecting on the process and participant feedback; and as a result, revising interventions. The last stage of PAR always produced new concrete experiences, hence new cycles or phases of PAR (see Figure 1). As a result the final WOW-programme and its application was the product of negotiation between the researcher (therapist) and researched (participants).

Figure 1 here.

In light of the above, in the current study, the researcher operated as scientist practitioner, functioning both as practitioner and scientist, using PAR to provide an informed basis for programme development and as a tool to discover “what works” in clinical practice with SED victims (Koch et al., 2002; Lambert, Hansen & Finch, 2001; Lampropoulos, Spengler, Dixon & Nicholas, 2002; Zuber-Skerritt, 2002). Conceptual demarcation of the four phases underlying the WOW-programme, which will be discussed next, occurred logically (see Figure 2). However,

consistent with the unpredictable flow of qualitative research, their distinction only dawned gradually.

Figure 2 here

Phase One

Participatory action research: a pathogenic perspective

The processes of PAR constituting Phase One, occurred during 2000, when the main researcher became aware of the dire need for secondary prevention of SED among female students at the Potchefstroom Campus of the North-West University, through her clinical and academic interaction with them. The processes of PAR formed a natural part of the main researcher's clinical practice and reflection as scientist practitioner. The researcher wished to determine what needs and risk factors associated with SED and eating disorders clients had in common, and which interventions would be most effective in reducing debilitating SED and/or eating disorder symptoms.

Females consulted during PAR, constituted a purposive, snowball sample, because of the relevance of participants to the research question and their ability to provide answers the researcher was looking for (Mason, 2003). Participants, also called participative "researchers", either personally reported to, or were referred to the main researcher by their parents, psychiatrists or medical practitioners, because of their "weight-issues". Because of aetiological similarities between eating disorders and SED, both types of clients were incorporated in Phase One. Seven (n=7) white, under- and post-graduate females initially participated, diagnosed by a psychiatrist and the researcher respectively with: Bulimia (n=2), Anorexia Nervosa (n=1), and SED (n=5). Ages ranged between 17-24 years, with mean onset at age 16 years. Histories of sexual abuse were reported by three, maternal neglect by one, maternal history of eating disorders by two and dysfunctional family system and poor self-esteem by all seven. One was involved in a steady relationship and the others were unmarried.

During Phase One data was collected by means of various semi-structured, in-depth individual interviews, conducted during and after individual therapeutic sessions with these 7 clients. Interviews aimed at identifying needs and risk factors which females with SED and eating disorders perceived as important, and at identifying which clinical approach "worked" best with them.

Evaluation was an ongoing process without distinguishing between evaluation and intervention (Thomas, 2003). Thematic analysis occurred during and after each therapeutic session and themes emerging across cases indicated directions for interventions. Although small, this snowball sample proved to be adequate, since data saturation occurred within these case studies, deeming further sampling unnecessary (Mason, 2003). To ensure trustworthiness of data, findings were grounded in literature and “recycled” with participants to check accuracy of researcher understanding, and self-reflections were discussed with a peer (Shenton, 2004).

The following emerging themes, identified by participative “researchers” as salient needs and risk factors to be addressed, were grounded in literature: low self-esteem and self-rejection, inadequate self-nurturing and emotional eating, lack of coping skills, ambivalence to change and meaninglessness in life (Cash, Thériault & Annis, 2004; Garner, 2004; Lindeman & Stark, 2001; Mazzeo & Espelage, 2002; Polivy & Herman, 2002). Other emerging themes on which risk models in the nineties mostly focused, and corroborating this sample, included: body dissatisfaction, drive for thinness, fear of fat, self-objectification/self-consciousness, perfectionism, emotional eating, depressive and anxiety symptoms, stress, lack of social support, relational difficulties, social anxiety, irrational beliefs, poor self-esteem, maturity fears and childhood loss or trauma (Geller et al., 2002; Levitt, 2003; Rosen, Compas & Tracy, 1993; Steiner et al., 2003).

As a result of the above, the researcher’s initial understanding of SED and its treatment during Phase One, was thus mainly conceptualised from a pathogenic perspective (Strümpfer, 1995), and secondary prevention, hence, was directed by a risk-model (Phelps et al., 2000). Interventions therefore focused on reduction of body dissatisfaction, drive for thinness, weight over-concern, self-objectification, negative mood states, as well as low self-esteem and irrational beliefs. Hence, an integrative, technical eclectic therapeutic approach was used, including techniques from Cognitive Behavioural Therapy (Beck & Weishaar, 1991), Rational Emotive Behavioural Therapy of Ellis (Ellis & McLaren, 2005), Transactional Analysis (Berne, 1992), Neuro Linguistic Programming (Andreas & Andreas, 1989), Narrative and Art Therapy (Eisdell, 2005; White & Epston, 1990) and Logotherapy (Crumbaugh, 1973). Incidentally some needs and interventions already reflected aspects of a Positive Psychology approach (Seligman & Csikszentmihalyi, 2000), but the researcher was still unfamiliar with its theoretical paradigm. Needs, risk factors and corresponding therapeutic techniques, including their rationales, identified during Phase One and included in the WOW-

programme because of their perceived effectiveness by participative “researchers”, are outlined next.

Low self-esteem and self-rejection

Low self-esteem was consistently reported by participants and is regarded as one of the best predictive risk factors for developing eating disorders (Polivy & Herman, 2002). The current researcher used two metaphors, combined with self-esteem exercises, to enhance realistic self-esteem and self-acceptance (Schiraldi, 2001). Both had food themes, one concerning an apple and the other broccoli, and both involved applications of Cognitive Behaviour Therapy (CBT) and Rational Emotive Behavior Therapy (REBT). The apple metaphor, see Phase Four, Session 4, consists of two parts. The first part explicates the human propensity to internalise expectations or criticism without reflection. The second part focuses on the importance of constructing realistic self-esteem through discovering one’s core worth; self-appreciation and unconditional self-acceptance; as well as identification and unlocking of personal strengths. The broccoli metaphor included in Phase Four, Session 5, illustrates the importance of evaluating criticism from others and from within rationally; challenging and reducing self-destructive thoughts, beliefs and criticism; and being realistic and having positive self-regard.

The rationale for a self-esteem focus is that enhanced self-esteem has been identified as essential in reducing body dissatisfaction and dysfunctional eating attitudes and behaviours (O’Dea & Abraham, 2000). The rationale for telling stories was derived from Narrative therapy (White & Epston, 1990), since stories secure clients’ attention and effectively communicate ideas to enhance motivation and change perceptions; whilst rationale for including CBT and REBT was because of their efficacy to reduce irrational thoughts and beliefs associated with self-depreciation (Beck & Weishaar, 1991; Ellis & McLaren, 2005).

Inadequate self-nurturing, emotional eating and a lack of coping skills

The researcher’s intrapersonal struggles with SED as a university student, participatory action research and contributions of Burgard (2001) confirmed the importance of focusing on emotional eating during intervention. Bingeing constitutes one form of dysfunctional coping (Polivy & Herman, 2002) and ineffective self-nurturing (Schneer, 2002). According to Schneer (2002), and Polivy and Herman (2002), one function of bingeing or over eating is to eliminate emotional

distress. As eating disordered patients often have histories of neglect and/or emotional, physical and/or sexual trauma, food becomes a concrete form of nurturing, nourishment and stress-relief (Schneer, 2002). Thus relaxation exercises, self-nurturing activities and coping skills were included in Phase Four, Sessions 6 and 7; the rationale thereof being their contribution towards self-control and nurturing (Bourne, 1995; Kleinke, 1991).

Transactional Analytic interventions (Berne, 1992) in the form of ego-state role plays were integrated with CBT and REBT interventions and coping skills in Phase Four, Session 6, the rationales being that they demonstrated how ego-states form part of irrational thoughts and beliefs associated with SED-symptoms; and adult ego-states demonstrate self-control, nurturance and adequate coping responses. Role-plays involved a real life eating session, with clients loudly expressing their thoughts regarding foods facing them. Ego-states and life positions (e.g., I'm OK, you're OK) were explained, concepts of self-nurturing and CBT (choosing what to think/believe) were emphasised and clients had to identify corresponding ego-states. The adult ego-state is afforded a self-regulating and nurturing role, with the motto: "I'm the leader and I'll say what we do/think/feel". Differences between real hunger and emotional hunger, as well as information about avoidance coping and forms of problem and emotion focused coping (Kleinke, 1991) were discussed. Finally the adult ego-state had to dispute irrational thoughts and beliefs, provide self-nurturing inner-dialogue and apply problem and emotion focused coping skills.

Lack of coping skills for stress and anxiety

Participants often struggled to cope effectively with anxiety (Polivy & Herman, 2002), thus relaxation techniques were required. Following a session with a bulimic client and consulting literature on biofeedback and related techniques for controlling anxiety and panic attacks (Bourne, 1995), the exercise of deep breathing introduced an interesting rationale for its ability to reduce bingeing. Firstly the researcher reasoned that the practice of focusing on deep-breathing, and not the emotional distress itself, possibly not only reversed the physical experience of a panic attack, but served a distraction purpose too. Secondly, while eating, one cannot breathe rapidly, but one has to breathe slowly and deeply or else choke on the food. Thus when eating, one's breathing has to slow down to a deeper form of breathing, which has a relaxation effect. Deep-breathing exercises (Bourne, 1995) were thus included in Phase Four Session 7, the rationale being that relaxation serves as an alternative to bingeing triggered by emotional upset or anxiety.

Ambivalence to change

Consistent with literature on change (Selekman, 1993), the researcher consistently observed ambivalence to change, despite participants' desire to. They reported internal conflict, marked by a sense of being torn in two: a part wanting to be thin versus another wanting to get better. The Six-step reframe method combined with the Resolving internal-conflict method, both Neuro Linguistic Programming techniques (Andreas & Andreas, 1989), were used to resolve ambivalence to change. The Resolving Inner-conflict Method is an adaptation of the empty chair Gestalt therapy technique (Paivio & Greenberg, 1995). The rationale for allowing inner parts to "converse" and separate positive intentions of the "problems" from problem behaviour, is to resolve inner conflict by reconstructing problems as solutions, consistent with Narrative (White & Epston, 1990) and Solution-Oriented Brief Therapy (Selekman, 1993). Hence these interventions were included in Phase Four, Session 2.

A search for meaning

Clinical observation showed that SED and eating disorders essentially reflected an existential crisis, since clients experienced SED as well as eating disordered behaviour as meaningless. This suggested the relevance of Logotherapeutic intervention, since two of four ultimate concerns emerging during existential crises according to May and Yalom (1991) were meaninglessness and death. According to existentialists meaning in life is necessary to validate *why we live*, yet also from a meaning schema we generate a hierarchy of values which tells us *how to live*. Internalisation of, as well as identification with values of the thinness culture, prescribes how one should live, thus depriving individuals of their freedom of choice of why and how to live. However, being able to choose one's own values entails freedom. Therefore meaningful value interventions from a Logotherapeutic perspective (Hutzel & Jenkins, 1995) were introduced weekly in the final WOW-programme. The rationale being that examining life values assist in gaining perspective of what is really meaningful in life and setting meaningful goals (Hutzel & Jenkins, 1995). Participative "researchers" reported its efficacy.

Furthermore, living to be thin exemplified a hedonic attitude, thus being happy for the moment without considering a future time-perspective (Ryan & Deci, 2001). Attending the funeral of a loved one during 1997 and reflecting on it, sensitised the current researcher to the importance of leading a meaningful life with meaningful values. Clearly body shape, size and past mistakes did not feature

in the deceased's obituary, as his core value as a human being and contributions to others' lives mattered most. Writing an obituary was introduced in Phase Four, Session 9, the rationale being that it provides a future time perspective and directs future behaviour into meaningful goals (Crumbaugh, 1973).

Reducing risk factors

Practical implications of focusing on the abovementioned themes entailed: fostering a critical evaluation of media content/stereotypes and socio-cultural mores/pressures of thinness; increasing body-esteem; changing core beliefs regarding body dissatisfaction, weight over-concern and self-objectification tendencies; challenging maturity fears, appearance control beliefs and unhealthy eating practices; and reducing individual acceptance and adherence to sociocultural mores of thinness (Austin, 2000; Cash & Hrabosky, 2003; Ghaderi, 2001). It also entailed reducing perfectionism and negative mood-states such as depression and anxiety through cognitive and behavioural strategies (Ghaderi, 2001). Cognitive interventions proved to be effective to change core beliefs manifesting in SED-symptoms, foster rationality and critical evaluation of stereotyped media content, and reduce acceptance of socio-cultural pressures of thinness (Nicolino, Martz & Curtin, 2001; Waller, Dickson & Ohanian, 2002). These were also found effective at reducing perfectionism, interpersonal distrust and ineffectiveness (O'Dea & Abraham, 2000), providing the rationale for including it in Phase Four, Sessions 4, 5, 6 and 7.

Social anxiety, self-consciousness and self-objectification

Females with SED often anticipated social rejection, and experienced social anxiety and extreme self-consciousness in social situations due to self-objectification tendencies (Muehlenkamp & Saris-Baglama, 2002; Striegel-Moore, Silberstein, & Rodin, 1993). Apart from using CBT and REBT with reduction of social anxiety, self-consciousness and self-objectification, a behavioural therapeutic, pro-active coping technique was suggested by these symptoms. Pro-active coping consists of efforts undertaken in advance of potentially stressful events to accumulate resources and skills not designed to address specific stressors but to prepare in general (Schwarzer & Taubert, 2002). Approach orientated strategies as defined by Nurmi, Salmela-Aro and Eronen (1996) provided the rationale for selecting an appropriate intervention. According to their findings, a strategy consisting of optimistic attitudes, success expectations, and construction of active ways of dealing with challenge, provides a basis for success in initiating meaningful, satisfying peer

relationships. The “As-if new behaviour generator”, an NLP-technique (Andreas & Andreas, 1989), seemed to best fit this description, since it combines all of the above aspects in a behavioural sequence that is activated by a person prior to entering a specific anticipated stressful social situation (see Phase Four, Session 9). The rationale of the “As-if new behaviour generator” is that it offers opportunities to change behaviour, and integrates what clients have learnt about CBT, REBT, self-esteem, self-nurturing, coping, and making positive and health enhancing choices in order to reduce social anxiety and self-objectification (Andreas & Andreas, 1989).

In summary, PAR conducted during Phase One, offered valuable contributions in compiling the final WOW-programme, as the co-construction of knowledge indicated specific risk factors and directions for “best practice” in reduction thereof. Findings of Phase One consequently informed Phase Two, narrated next.

Phase Two

A formal pilot study: transition to a Salutogenic perspective

During 2001, ideas generated during clinical work with SED students in Phase One were evaluated in a pilot study (Du Plessis, Vermeulen & Kirsten, 2004), involving a psycho-educational programme to reduce weight preoccupation in female students. To strengthen the unproven efficacy of a psycho-educational intervention with females who “tuned out” their internal and external awareness, due to trauma and/or emotional pain, it was augmented by sound stimulation via the Tomatis Method (TM). It was argued that listening and internal awareness are central to any therapeutic process. Due to participants’ characteristic poor internal/interoceptive awareness (Polivy & Herman, 2002), the TM was added to the programme, as it has been shown to enhance listening and communication (Tomatis, 1991, 1996). Thus it could facilitate openness for therapeutic input and personal growth (Thompson & Andrews, 2000) and enhance susceptibility for the psycho-education programme, tailored to issues underlying SED. Since the TM has been shown to facilitate psychological well-being in non SED samples (Du Plessis, Burger, Munro, Wissing & Nel, 2001), well-being measures were included in the pilot evaluation. Thus a Salutogenic focus, it is the origins of health (Strümpfer, 1995), was implicitly built into the pilot study.

Brief outline of the Tomatis Method

The “Tomatis Effect”, being the discovery of a feedback loop between the ears, brain and larynx, occurred during Alfred Tomatis’ experimentation with singers’ voice problems and attempts at voice recovery (Tomatis, 1990, 1996). The resulting method of sound stimulation proved highly fruitful in view of its ability to stimulate the rich interconnections between the ear and nervous system. It became known as the TM when the Electronic Ear was developed to assist the human ear to re-establish its full potential, namely the ability to listen. Generally persons attending the TM listen for two hours a day to Mozart music, delivered through the Electronic Ear. Forty half hours were deemed sufficient for the pilot study. Mozart music is used as input and the Electronic Ear delivers sound stimulation through special headphones that conduct sound through bone and air conduction. At least two of the four aspects of how the Electronic Ear operates are important to an explanation of the underlying theory of the TM (Thompson & Andrews, 2000). An electronic gating mechanism enables the ear to attune itself automatically and spontaneously for listening. Stimulation of the middle ear muscles is achieved by the alternating passage of sound from one channel (set to relax the middle ear muscles), to another channel (set to tense the muscles). Repetition of the gating action over time conditions the ear to operate more effectively, and high pitched sounds stimulate the cortex with energy. Secondly the timing delay of sound reception between bone and air conduction can be changed to slow down the processing of information internally and thus to awaken individuals to attend to incoming information (Tomatis, 1996; Gilmor, Madaule & Thompson, 1989). The delay is gradually changed to support rapid responses to incoming information (Neysmith-Roy, 2001; Thompson & Andrews, 1999), thus possibly enhancing and accelerating the effect of therapeutic communication.

The pilot study

Participants in the three group pre-post design (Du Plessis et al., 2004) comprised 21 weight over-concerned females, recruited from the North-West University who met inclusion criteria involving: repeated attempts to lose weight, signs of body dissatisfaction and drive for thinness; and not meeting DSM IV- criteria (American Psychiatric Association, 2000) for clinical eating or body dysmorphic disorders. On account of class schedules they were assigned, non randomly, to three groups: Group 1 (Tomatis stimulation and Psycho-education, n=7), Group 2 (Psycho-education only, n=7), and Group 3 (non-intervention control group, n=7). Logistical difficulties associated

with participants' class schedules necessitated a reduction of the original psycho-education programme from eight to four sessions, mainly aimed at challenging media portrayals of idealised female figures; reapportioning daily activities in terms of meaningful cognitive, physical, social and spiritual activities to focus away from themselves; irrational thoughts underlying negative self-worth and self-image; and teaching behavioural and cognitive skills associated with eating by means of ego state work/role play. The combined programme entailed attending 40 half hour sessions of Tomatis stimulation, followed by the brief Psycho-education programme.

Surprisingly both programmes resulted in significantly reduced weight over-concern and enhancement of aspects of psychological well-being, while negligible change occurred within the control group. Thus the psycho-education programme was effective on its own, presumably due to its interactive and cognitive focus. Self-reflection and participative researcher feedback indicated that Psycho-education programme weaknesses were: brevity as practicalities only permitted four sessions of psycho-education; a lack of adequate identity and self-esteem interventions, the necessity of a risk-protective model, a broader conceptualisation of psychological well-being, and follow-up of therapeutic effectiveness (Du Plessis et al., 2004). Tomatis stimulation weaknesses were: only 40 half hour sessions which proved too little to effect anticipated gains for Group 1 and a lack of follow up data. Thus it was decided that the final WOW-programme would also be conducted in a three group pre-post design (Kirsten, Du Plessis & Du Toit, 2007b, see article 2 of this PhD), to provide a reasonable opportunity to test its impact in combination with 60 sessions of Tomatis stimulation.

Phase Three

Further participatory action research: combining Salutogenic and Pathogenic perspectives

Post pilot study reflections during 2002 and 2003 informed Phase Three by producing several questions, e.g. Could a broader definition of psychological well-being, apart from sense of coherence and satisfaction with life be found which could serve as a working model for a programme?; What type of interventions are typically associated with Salutogenic perspectives such as e.g. Positive Psychology?; Is Positive Psychology a replacement for all therapeutic approaches?; Could a Positive Psychology perspective be integrated with more traditional interventions?; What protects some individuals from SED and eating disorders even though they are exposed as much to media pressures to be thin as others?; Could a programme be devised to work across the entire

illness-wellness continuum (Edelman & Mandel, 1994), namely from symptoms and signs to growth and optimal functioning, thus a programme with a risk-protective focus?; and Are some of the interventions indeed “deep strategies”, as Seligman (2005) calls them?

As a result of the above reflections and a thorough literature study, the focus of intervention areas was further refined to reflect a risk-protective focus, thus also incorporating a Positive Psychology perspective. Positive Psychology considers itself with origins of wellness or *Salutogenesis* (Strümpfer, 1995). It seeks to understand how/why individuals thrive despite adverse circumstances (Seligman & Csikszentmihalyi, 2000). It is not meant to replace other psychotherapies, and should, according to Seligman (2005, p.7), embrace *both healing what is weak and nurturing what is strong*. Around the time of completing the pilot study, Positive Psychology literature suggested that primary and secondary prevention programmes should have a risk-protective focus (Phelps et al., 2000). Accordingly effective prevention programmes are dependent upon identification of specific risk and protective factors that influence onset of particular disorders significantly. Therefore broad aims of risk-protective models of prevention research should include deterrence of specific disorders; reduction of risk status; and mental health promotion by focusing on protective factors and individual traits/strengths (Phelps et al., 2000). The goals of decreasing risk whilst increasing protection are therefore not mutually exclusive; the entire wellness continuum is thus still relevant. Phase One findings, namely risk factors, still proved relevant in informing Phase Three. Concepts such as psychological well-being and protective factors however deserve further clarification.

Psychological well-being (PWB) is broadly defined in terms of hedonic and eudaimonic theoretical perspectives. The hedonic approach focuses on happiness (Ryan & Deci, 2001), and defines well-being in terms of subjective well-being which consists of life satisfaction, the presence of positive moods and the absence of negative moods (Diener, 2000). The eudaimonic approach defines well-being much broader than the mere absence of unhappiness and in terms of the degree to which a person is fully functioning, and has operationalised the six dimensions of PWB according to Ryff and Keyes (1995), namely: Self-acceptance, Positive relations, Purpose in life, Environmental mastery, Personal growth and Autonomy.

Protective factors are associated with improved resilience, resistance and psychological well-being. Such factors, protecting against eating disorders, include: self-determination, self-regulation,

internal locus of control, positive self- and body-esteem, rationality, optimism, self and coping-efficacy, social competence, resistance to stress, spirituality and mindfulness (Brown & Ryan, 2003; O'Dea & Abraham, 2000; Paradise & Kernis, 2002; Pelletier, Dion & Levésque, 2004; Smith, Hardman, Richards & Fischer, 2003; Steiner, et al., 2003). Enhancement of individual strengths, positive affect, social support, self-nurturing, stress management and emotion regulation through effective coping strategies and problem solving skills in prevention programming are also advocated (Fredrickson, 2001; King, 2001; Littleton & Ollendick, 2003; Phelps et al., 2000; Seligman, 2005; Steck, Abrams & Phelps, 2004).

Above mentioned reflections and literature study informed the researcher's further therapeutic interventions and PAR with 1 Anorexic, 1 Bulimic and 5 females with SED. Ages ranged between 13-21 years, with demographic data comparable to those participants' in Phase One. Protective and well-being enhancing factors, to be outlined next, were included during therapeutic interventions with surprisingly good outcome according to participative "researchers": identity and personal strengths; mindfulness, mindful eating and self-regulation; enhancement of the six domains of PWB; pleasant activities and positive emotions; meaning, sense of coherence and reapportioning of time; and reinterpretation of problems.

Identity, self-esteem and personal strengths

Constructivist practice requires that therapists meet clients at their developmental level and prior knowledge (Furman et al., 2003). Female students are typically in an identity versus identity diffusion stage of development according to the theory of Erikson (Corey, 2005). Values, beliefs, goals, life's meaning and self-esteem form part of people's identities (Berzonsky, 2003). Apart from internalising thinness ideals (Polivy & Herman, 2002) clients with SED often present with false selves (Striegel-Moore et al., 1993), and irrational beliefs related to thinness ideals (Rieder & Ruderman, 2001; Waller et al., 2002). Authentic and independent identity construction is thus hampered, because females disregard their personalities, strengths, values and intelligence by focusing on physical appearance as sole source of identity instead. SED behaviours thus become a means of evading identity issues (Polivy & Herman, 2002; Wheeler, Adams & Keating, 2001). The need to focus broader than self-esteem, specifically in terms of a self-constructed identity (Furman et al., 2003), was clear. Berzonsky (2003) found an information orientated identity to be positively correlated to PWB. Information-orientated individuals deal with identity issues and personal

decisions by actively seeking out, processing and utilising identity-relevant information. This identity style is associated with personally-defined self-identity, independent judgement, openness to experience, rationality, engagement in problem-focused coping and setting meaningful goals.

Interventions aimed at facilitating independent identity construction in the final WOW-programme hence included ongoing Values exercises, letter writing and externalisation of “SED-problem” (Session 1); CBT and REBT (Sessions 4, 5 and 6); teaching problem and emotion focused coping skills (Session 7); self-esteem interventions and identification of personal strengths (Session 8 and 9); and writing an auto-obituary (Session 9). Intervention rationales are that interventions operationalise the identity traits described by Berzonsky (2003); and furthermore, letter writing as a means of “externalising” the problem is an effective Narrative therapy technique to assist people in separating their identity from the presenting problem behaviour and achieving genuine control of their lives, hence generating unique alternative outcomes to problems (White & Epston, 1990; Zimmerman & Shepard, 1993). The rationale of a self-esteem intervention called: “Viewing one-self through eyes of appreciation”, was to challenge self-objectification tendencies and focus on admirable personal traits identified by participants to reinforce information based identities. The rationale for identification of personal strengths by means of the Values In Action Signature Strengths Questionnaire (VIA) (Seligman & Peterson, 2002), was to reinforce self-esteem. Outcomes of all of the above exercises provided an information basis for Session 9, where an auto-obituary had to be written, of which the rationale (Crumbaugh, 1973) has already been provided in Phase One.

Mindfulness and mindful eating

Mindfulness is identified as a protective factor, related to and predictive of positive well-being (Brown & Ryan, 2003; Langer, 2005). Thus, the deep breathing relaxation technique was complemented with mindfulness and mindful eating exercises (Burgard, 2001) in Session 7, which entailed being fully present while experiencing emotions and while eating, and distinguishing differences between emotional and real hunger (Burgard, 2001). Emotional eating can be seen as a form of mindlessness, since individuals refuse to acknowledge or attend to a thought, emotion, perception or motive and cannot tolerate distress. Mindlessness is conceptually similar to poor interoceptive awareness (Garner, 2004). In less mindful states (e.g. during bingeing) emotions may occur outside of awareness or drive behaviour before one clearly acknowledges them, while in

contrast, mindfulness is characterised by clarity and vividness of current experience and functioning (Brown & Ryan, 2003). The rationales for including mindfulness: clarity about one's emotional state empowers one to respond to or cope with emotional states or psychological needs appropriately, instead of bingeing (Ryan & Deci, 2000); and makes one more likely to choose behaviours consistent with one's needs, values and interests (Brown & Ryan, 2003).

Drawing was another technique used to facilitate mindfulness, self-insight and emotional expression (Ikonen, 2003). During Session 1 clients were asked to draw a metaphor of their "SED-problem" and to explain it in writing on the back of the drawing. Rationale: as projective technique, drawing facilitates emotional expression (Zimmerman & Shepard, 1993); focuses the attention on a person's inner world, and gives meaning to it (Eisdell, 2005); and as non-threatening creative medium leads to more spontaneous expression of previously inaccessible inner experiences (Gilligan, 2000; Madden & Bloom, 2004).

Enhancing PWB, rationality and learned optimism

During Phase Three the aims of CBT and REBT interventions were elaborated to include concepts of *learned optimism* (Seligman, 2005), *self-regulation* and focusing on enhancing *rationality* in six domains of PWB of Ryff and Keyes (1995). Rationale: rationality, self-regulation and self-determination were identified by Positive Psychology theorists as well-being enhancing factors (Ryan & Deci, 2000; Witmer & Sweeney, 1992). In later work of Myers, Sweeney and Witmer (2000) the concept of self-regulation evolved into *self-direction*, entailing a sense of worth and control, realistic beliefs, emotional awareness and coping, problem solving and creativity, self-care, stress management, sense of humour, nutrition, exercise, and gender and cultural identity. Self-direction is positively correlated to dimensions of PWB such as self-acceptance, environmental mastery, autonomy and personal growth (Ryff & Keyes, 1995), thus providing the rationale for focussing CBT and REBT interventions upon Ryff's dimensions of PWB. At the time of reading Ryff's work, the researcher was not yet familiar with well-being therapy as implemented by Fava and Ruini (2003). Clients were thus trained to be cognisant of and dispute irrational thoughts and beliefs, whether those thoughts emerged during a well-being or troublesome moment in any relevant domain of PWB. They always had to ask themselves: *Is thinking this conducive to my PWB?* Rationale: to enhance domains of PWB. Sessions 4, 5, 6, and 7 of the final WOW-programme reflected these ideas.

Pleasant activities and positive emotions

Females with SED mostly display high levels of “ascetism” and global dissatisfaction with life (Garner, 2004). Ascetism implies seeking virtue through pursuit of strict self-discipline, self-restraint and control of bodily urges, and leads to ineffective psychological adjustment and social functioning. Hence, techniques aimed at increasing pleasant activities and positive emotions were included. Rationale: increased positive emotions may achieve psychological growth and improved well-being according to the broaden-and-build theory of Fredrickson (2001). People engage more adaptively with their environments because positive emotions enable them to approach problems directly, broaden their world view and enhance personal resources (Fredrickson & Losada, 2005). Experiences of positive emotions are also deemed essential in achieving affect balance and satisfaction with life (Diener, 2000), thus another rationale. All interventions in the final WOW-programme were aimed at enhancing positive emotions in order to enhance satisfaction with life.

Meaning, sense of coherence and reapportioning of time

Consistent with recent literature, meaning and sense of coherence as existential issues are identified as essential dimensions of PWB (Ryff & Keyes, 1995). Sense of coherence and PWB are enhanced when people view their lives as meaningful, manageable and comprehensible (Antonovsky, 1993). The researcher reasoned that Values exercises used during Phase One could assist participants in selecting meaningful, manageable goals, thus having broader purposes in life than merely being thin. The rationale is that a propensity to solve existential matters, such as a search for meaning, coherence and emotional fulfilment through a perfect body, would possibly be rendered ineffective (Polivy & Herman, 2002); and that teaching clients to reinterpret life events could possibly assist them in making life more comprehensible.

Additionally to the above, it was observed that clients with SED tended to generalise a lack of meaning and dissatisfaction in one area of their lives, to others (Rieder & Ruderman, 2001). It appeared that weight over-concern and body dissatisfaction, instead of being a part of their lives with which they were dissatisfied, “became” their entire life, resulting in generalised meaninglessness and dissatisfaction with life. An exercise called “You can have your cake and eat it” was devised with reference to the wheel of wellness proposed by Myers et al. (2000) (see Session 3). The objective of this exercise was to raise awareness of how exclusively focusing on

dissatisfying life aspects experienced as meaningless, could be over-generalised as global dissatisfaction with life and a sense of meaninglessness. Participants were alerted to life areas experienced as meaningful and challenged to focus on those areas of existing strength and well-being. The rationale, according to the broaden-and-build-theory of Fredrickson (2001), was that discovering and engaging meaningful aspects could offer hope and elicit positive emotions, resulting in more adaptive modes of thinking and acting.

Reinterpretation of problems

Ambivalence to change, viewed from a Positive Psychology perspective, can be reinterpreted as conflicting psychological needs. According to Ryan and Deci (2000), internal conflict and psychopathology may result when social contexts engender conflicts between basic needs (e.g. being thin versus being well). They argue that pursuit of intrinsic life goals such as the six dimensions of Ryff and Keyes (1995) will directly satisfy basic needs and enhance well-being, self-motivation and personal integration. However, focusing on extrinsic aspirations like being thin and pretty would only indirectly satisfy needs, as it is negatively related to well-being indicators, not lasting, and results in intrapersonal conflict (Ryan & Deci, 2000). SED clients unknowingly attempt to satisfy psychological needs requiring an intrinsic focus by means of extrinsic goals. When reinterpreted from this perspective, ambivalence to change is not a problem, but attempts to enhance their PWB. This is an example of *reinterpreting* a problem. Reinterpretation of problems is a technique often used in Positive Psychology practice (Seligman, 2005), a concept better known to Neuro-Linguistic Programming practitioners as *reframing* (Andreas & Andreas, 1989). Hence the “Resolving-inner-conflict” NLP-technique (Andreas & Andreas, 1989) was included in Session 2. Rationale: reinterpreting problems assist in inner conflict resolution and identification of intrinsic psychological needs.

Phase Four

WOW-programme content: a risk-protective model

Critical reflection on the prior three phases informed the final content of the WOW-programme during 2004. A nine-session, risk-protective WOW-programme was compiled, from an integrative, technical eclectic therapeutic approach, because the approach incorporates techniques that work independent of their theoretical underpinnings (Lazarus & Beutler, 2001). The therapeutic approaches mentioned in Phase One were supplemented by an adapted version of Well-being

Therapy (Fava & Ruini, 2003); Positive Psychology interventions, amongst others, identification of Values in Action (Seligman, 2005), pleasant activities and enhancement of positive emotions (Fredrickson, 2001), and mindfulness and mindful eating (Brown & Ryan, 2003; Burgard, 2001). Session duration was 90-120 minutes each. Catchy session titles reflected food themes, since constructivist principles to effective learning demanded language students were most comfortable with (Green & Gredler, 2002). Prochaska's (1984) transtheoretical therapeutic model was selected to guide the chronology of the WOW-programme, despite criticism by Brug et al. (2004), as it reflected an understanding of the importance of readiness for learning in stages and levels of change as indicated in Figure 3.

Figure 3 here

Stages of change (Prochaska, 1984) overlapped due to the integrated nature of the programme. Sessions 1-2 addressed the *contemplation stage* of change, Sessions 2-5 the *preparation for change* stage, Sessions 3-9 introduced the *action phase* of change, whereas during the *maintenance and termination phases* learning of Sessions 4-9 were applied repeatedly as homework. Three processes of change identified by Prochaska (1984), unfolded as follows: *awareness raising and self re-evaluation* during sessions 1-5; *self-liberation* in terms of behaviour, cognitive and affective change during Sessions 3-9; and *creating a supportive environment* throughout. Each participant received a WOW-manual containing information and written exercises discussed during sessions.

WOW-programme content

Since programme activity rationales had already been provided in Phases One and Three, it will not be mentioned again.

Session 1: What's cooking?

Objectives: To lay down group rules, introduce participants and facilitator and explore participants' programme expectations; reduce social isolation and interpersonal distrust, egocentrism and poor interoceptive awareness. To enhance positive personal relations; release of negative emotions and increased positive emotions; normalisation of personal experiences and emotions; and readiness for personal growth.

Activities: An ice-breaker is used to introduce participants and the facilitator to each other; whereafter group rules are negotiated orally and reflected in writing. Programme expectations are explored and acknowledged in a brief programme overview. Thereafter, participants are asked to draw a metaphor of what it was like to live with SED and explain it in words on the reverse side of the page. Individuals share metaphors and their meanings. The group and researcher/facilitator ask additional questions to clarify meanings. Confidentiality and respect for diverse individual experiences are encouraged. A group discussion follows regarding personal experiences of SED and their broader impact on participants' lives. Experiences and emotions are normalised and common experiences highlighted. The facilitator reflects on responses and paraphrases to facilitate emotional release.

Homework, Objectives: To identify the motivational drive of "the SED-problem"; reinterpret "the SED-problem"; separate and decentre identities from presenting problem behaviour; and increase interoceptive awareness and self-reflection.

Activities: In preparation for the next WOW-session participants have to write a "letter" to their "SED-problem" explaining how it is to live with "the SED-problem". They then have to write a "letter" in return to themselves from the "SED-problem's" perspective by using their non-dominant hands.

Data generated by graphic expressions of participants' lived experience of SED and verbal formulations yielded such rich qualitative data, supportive of the serious plight of females with SED, that they were systematised into a separate article (Kirsten, Du Plessis & Du Toit, 2007a, see article 1 of this PhD).

Session 2: Resolving inner conflict

Objectives: To reduce inner conflict and ambivalence to change; negative emotions and feelings of entrapment; and poor coping mechanisms. Furthermore, to facilitate and encourage separation and detachment of identities from presenting problem behaviour; reinterpretation of the "SED-problem"; creating alternative personal narratives with unique outcomes; growing personally and increasing self-regulation; environmental mastery through generation of alternative outcomes; autonomy by applying constructive, problem-focused coping strategies; enhanced positive emotions; and interoceptive awareness.

Activities: Participants share homework letters to and from their “SED-problems”. Individual differences are respected while highlighting similarities. They are encouraged to separate and differentiate their identities from the presenting problem behaviour by indicating that their problems do not personify themselves. Notions of blaming the “SED-problem”, rather than taking personal responsibility for seeking alternative and unique outcomes are emphasised. When the “SED-problem’s” reply to participants is shared, similarities are highlighted, especially motivational drives underlying problems and ambivalence to change. These notions are then reinterpreted as positive intentions. The Six-step reframe NLP-technique is explained, referring to a printed example in their WOW-manual. Participants are guided step-by-step to apply this new coping skill to resolve inner conflict and generate alternative outcomes congruent with the intrinsic motivational drive of their “SED-problem”. The group provides feedback on their experience with the technique and the new outcomes and alternatives generated to solve the “SED-problem”. Participants are congratulated on their courage and creativity, and encouraged to use this strategy to resolve further inner conflict.

Homework, Objectives: To reinforce and practise newly gained skills and attitudes of the previous session; test alternatives; and increase self-awareness by identifying current values. **Activities:** Participants test newly generated outcomes and re-apply the Six-step reframe in any situation in which they feel conflicted, thus practising a problem-focused coping strategy, and complete Values exercises of Week 1, identifying their current values.

Session 3: You can have your cake and eat it

Objectives: To reduce tendencies to over-generalise body dissatisfaction and negative mood states. Furthermore, enhancement of meaningfulness and satisfaction with life; rationality/perspective; self-determination; reapportioning effort and time to meaningful, enjoyable activities in their current contexts, thereby enhancing PWB through demonstrating effective environmental mastery, personal growth, autonomy and efforts to improve positive relations.

Activities: The ability to make choices and attain inner peace, wholeness, sense of meaning and life satisfaction are discussed. An exercise “You can have your cake and eat it” illustrates how exclusively focusing on dissatisfaction with body shape and size contributes to dissatisfaction with life and a generalised sense of meaninglessness. Participants divide a circle into pie-shaped wedges, to reflect the percentage of time spent on particular aspects of their lives, including academic work; leisure and personal time; over-concern with weight, shape and exercise; spirituality; community involvement; and personal relationships. On the outside of the circle they indicate the extent of

meaning and satisfaction they derive from particular wedges out of 100%. Thus they reflect on how much time they allow SED-issues to take up in their lives, at the expense of other meaningful “slices” of their lives. After reflecting on their circles, they reapportion their life circles to re-allocate more time to life aspects in which they already experience a sense of meaning and satisfaction. Specific plans on how they can henceforth spend their time are noted.

Homework, Objectives: To reinforce and implement outcomes of the reapportioning exercise and to enhance personal choice/self-direction and rationality. **Activities:** Participants select a specific area of life on which to focus regarding time allocation, implementation of plans and report its effect. They complete a CBT-sentence completion exercise highlighting personal choices, by completing at least 10 incomplete sentences: I can..., but I choose to... For example: I can go on risky diets, but I choose to be wise and follow a healthy lifestyle.

Session 4: Do you swallow apples whole?

Objectives: To explicate the notion of internalised irrational, self-defeating thoughts, self-criticisms and societal expectations for thinness; explicate, demonstrate and challenge existing perceptions and stereotypes regarding “being thin and overweight”, as well as the role of the media, others and own choices regarding weight and shape issues; foster a critical evaluation of media content/stereotypes and socio-cultural mores/pressures of thinness; challenge core beliefs regarding body dissatisfaction, weight over-concern and self-objectification tendencies; challenge appearance control beliefs and unhealthy eating practices; reduce irrationality and individual acceptance of and adherence to socio-cultural mores of thinness; reduce perfectionism and negative mood states such as depression and anxiety; and increase body-esteem.

Activities: The session, highly interactive throughout, begins with feedback on progress since the previous session. Group members share experiences and one example of how they reapportioned time. They are encouraged to continue reapportioning time to enhance meaningfulness and well-being. The first part of the apple metaphor is introduced. Participants imagine what it would feel like to be forced to swallow an entire apple. Group responses are elicited such as physical and mental distress. A parallel is drawn between mental pain and distress experienced when indiscriminately internalising thinness ideals, media expectations and stereotypes, as well as all kinds of automatic, self-destructive thoughts on the one hand and concomitant physical and mental distress when swallowing an entire apple on the other. Parallels are also drawn between dental care and flossing versus dental decay, as opposed to “mental flossing” and “mental care” versus “mental decay”. The

notion of mindfulness, self-regulation of thoughts, critical evaluation and challenging of irrational and self-destructive thoughts and beliefs are labelled “mental care and flossing”.

Having thus sensitised the group, the facilitator explains existing perceptions and stereotypes regarding “being thin and overweight”, as well as the role of the media, others and own choices in having issues with weight and shape, participating in unhealthy dietary practices, and self-rejection. Pictures of both thin and overweight people who are both well-known and unfamiliar to the group in a local and international context are shown. Pictures of foods are also shown, representing a range of foods usually being regarded as either being healthy/good and unhealthy/bad. Participants note spontaneous associations with each picture onto sticky labels and stick them next to each picture. Group responses are discussed, stereotypes challenged and a more realistic, rational approach is demonstrated. Photographs edited to look perfect, “fad” diets, facts about metabolism and myths about healthy foods are discussed.

Homework, Objectives: To reinforce apportioning of time and prepare participants for the next session by providing background information needed to acquire CBT and REBT skills. **Activities:** Participants have to read an introduction to automatic self-destructive thoughts and list at least 7 automatic, self-destructive thoughts, and complete the Values exercise of Week 2 in their WOW-manuals.

Session 5: Broccoli and mental flossing

Objectives: To commence teaching CBT and REBT skills in order to enhance learned optimism, rationality and positive affect; ability to rationally evaluate intra- and interpersonal criticism; personal growth, autonomy, environmental mastery, self-acceptance, positive relations and purpose in life; reduction of SED-symptoms (such as body dissatisfaction, body shame, drive for thinness, self-objectification, low self-esteem, maturity fears, interpersonal distrust and perfectionism); and reduction of negative affect.

Activities: The session is introduced with the “Broccoli metaphor”, emphasising that all forms of criticism, whether originating from others or within should be rationally evaluated. This process is labelled “criticising criticism”. The content of the metaphor demonstrate the process of rationally “criticising criticism”, which is similar to challenging and disputing irrational thoughts and beliefs. Participants are involved during the story-telling process by asking questions which require them to think critically about what had happened in the story. Through participation they learn to “criticise criticism”. The metaphor is explained to indicate how failure to “criticise criticism” robs people of

joy, and how constant negative and self-destructive thoughts prevent people from seeing the whole picture and constructing facts-based identities and self-esteem. Participants are asked to share some of their irrational, self-destructive, perfectionistic, self-critical thoughts regarding themselves, interpersonal relationships, body size and shape, weight and self-objectification, and maturity fears. The ABC theory of Ellis (Ellis & McLaren, 2005) and cognitive distortions of Beck and Weishaar (1991) are explained. Participants are encouraged to work in subgroups to identify and name irrational thoughts and mistaken beliefs, and how they interfere with their PWB, in terms of the six dimensions of Ryff and Keyes (1995) and their ability to address personal needs. Assistance to help each other identify mistaken beliefs is provided. The meaning of irrational thoughts and mistaken beliefs is discussed. The concept of a thought diary is demonstrated, and participants note their irrational thoughts and beliefs.

Homework, Objectives: To reinforce the topic of the previous session and increase sensitivity to irrational, self-destructive thoughts and beliefs. **Activities:** Keeping a thought diary of irrational thoughts and beliefs for the rest of the programme.

Session 6: I'm the leader and I'll say what we do!

Objectives: To further reduce SED-symptoms; to provide a framework to understand ego-states from which perfectionistic, self-defeating and irrational inner dialogue originates; to teach participants to develop a healthy "adult" ego-state to provide self-direction, challenge and dispute irrational thoughts and beliefs originating in critical "parent", adaptive and rebellious "child", as well as over-nurturing "parent" ego-states; to teach them to replace irrational thoughts and beliefs with realistic, well-being enhancing alternatives, to sensitise them to the concept of self-nurturing; in order to enhance PWB.

Activities: The session begins with an unannounced party, that provides the context of the Transactional Analytic-role play that commences afterwards. Participants are surprised with a beautifully laid table, packed with all kinds of food, snacks and drinks, e.g. a vegetable plate, pizza, cake, chocolate, snacks, beverages and fruit juice. As they enter the room the facilitator writes down their verbal and non-verbal comments when observing the food table, and asks for more immediate thoughts about the food. The Transactional Analytic theory of ego-states such as Critical and Nurturing Parent, Adult and Adaptive and Rebellious Child are explained, as well as four life-positions of "OK-ness". The concepts of self-nurturing and positive self-affirmation are introduced. The role of the adult ego-state is explained in terms of self-direction, rationality, self-nurturing and

self-affirmation. A motto “I’m the leader and I’ll say what we do” is afforded to the adult ego-state. A humorous explanation illustrates how each ego-state forms part of the inner dialogue of irrational thoughts and beliefs. Participants match comments about food with various ego-states, and are reminded of the Broccoli metaphor of learning to criticise criticism. The process of “mental-flossing” through challenging and disputing irrational thoughts and beliefs is demonstrated and more examples are provided from the WOW-manual. Rational responses and disputes to original comments about the food and also to some ideas listed in thought diaries are generated in small groups. Once they are more skilled in disputing, a Transactional Analytic-role play is initiated to demonstrate and practise new skills. One of five volunteers plays the role of adult ego-state in a person who wants to overcome SED, while the others role play the parent and child ego-states within a person. The remainder of the group also play the part of an adult ego-state and assist the main character, who starts dishing up and eating while other ego-states comment. The lead character challenges, disputes and engages the group of adult ego-states to provide additional ideas. It continues until the group members demonstrate that they are comfortable with their new skills.

Homework, Objectives: To reinforce learnt CBT and REBT skills and strengthen adult ego-states; enhance positive emotions; reduce SED-symptoms and negative emotions; and reflect on their values. **Activities:** Participants practise “mental flossing” by completing thought diaries daily. They increase the list of self-nurturing activities in the WOW-manual, and practise self-nurturing activities and complete the Values exercise of Week 3.

Session 7: What’s eating you while you are eating?

Objectives: To enhance interoceptive awareness, mindfulness and mindful eating; teach relaxation and coping skills; and increase capacity for joy to enhance PWB; and to reduce ascetism, tendencies to binge and over-eat and negative mood states.

Activities: Emotional and binge eating are discussed, and participants identify positive intentions of and emotions underlying urges to eat emotionally or binge. Characteristics of emotional hunger versus real hunger are discussed, and mindfulness and mindful eating are introduced. Specific coping strategies such as emotion and problem-focused strategies, and relaxation techniques are practised, e.g. progressive relaxation and deep breathing. More information on coping is provided in their WOW-manual.

Homework, Objectives: To practice mindfulness and mindful eating, enjoyable activities, self-reinforcement, as well as relaxation and coping exercises; and to reduce tendencies to binge and

over-eat. **Activities:** Participants practice mindfulness, mindful eating, and relaxation exercises, and maintain thought diaries and engage in pleasant activities daily.

Session 8: How many seeds does an apple have?

Objectives: To enhance self-esteem, identify and celebrate personal strengths, and reduce self-objectification and negative self-regard.

Activities: The facilitator shows an apple, and relates the apple metaphor. Themes of core worth, personal strengths, development of potential, self-nurturing, unconditional self-regard and self-acceptance, and taking responsibility for personal growth are highlighted. Participants are encouraged to provide examples of irrational thoughts and beliefs related to self-objectification, low self-esteem and lack of self-acceptance, which are challenged and disputed. A self-esteem exercise, “Appreciating oneself through the eyes of others” is introduced. It firstly entails listing positive traits and qualities admired in others, whereafter positive qualities and traits within the self are listed next to the first list. The two lists are compared, and participants expand their lists by adding qualities from the role models’ list to their own, if they or group members can confirm that they possess that admirable quality as well. After sharing lists, group members add to each person’s list by sharing what they appreciate or admire in that person, until everyone has had group feedback.

Homework, Objectives: To enhance self-esteem and self-acceptance by identifying and celebrating personal strengths; reflect on adapted values and set meaningful goals as identified in the Values exercise Week 4; maintain thought diaries. **Activities:** Participants have to complete the on-line Values In Action Strengths (VIA) questionnaire and note ways of using strengths to enhance self-esteem; complete the Values exercise of Week 4; and keep thought diaries.

Session 9: Taste it and enjoy it!

Objectives: To enhance appreciation and application of personal strengths; to focus on purpose in life; to set meaningful and purposeful life goals; to review integration and generalisation of rationality, self-nurturing, and pro-active coping; to reduce social anxiety and self-consciousness; and to conclude the WOW-sessions.

Activities: Results of the VIA-strengths questionnaire are discussed. Participants indicate ways in which they can use personal strengths and reduce SED-symptoms like social anxiety and self-consciousness. Outcomes of Values exercises are discussed. Differences between goals and values at beginning of the WOW-programme and current values and goals are discussed. The participants reflect on how they can operationalise current values and goals to live meaningful lives free from

SED. The “As-if new behaviour generator” as a form of pro-active coping is introduced. Participants create new behavioural strategies that include new values and goals, personal strengths, and clear multi-sensory pictures of themselves applying newly gained skills and beliefs in various anticipated social situations. The importance of rational, self-nurturing self-statements is emphasised. They are assisted in couples to complete their “As-if exercise”, whilst others write their auto-obituaries. The obituaries are reflections of experiences and personal qualities they would like to be remembered for at the end of their lives, which could serve as a guide for leading a purposeful life without SED. The group shares auto-obituaries and learning of the past 4 weeks is summarised.

Maintenance exercises, Objectives: To apply the As-if new behaviour generator in real life; and practice mental flossing. ***Maintenance activities:*** Use the new behaviour generator daily in social situations; and continue mental flossing until post-assessment.

CONCLUDING REFLECTIONS

The WOW-programme can be criticised as a compilation of activities obtained from individual interventions with a very small sample of participants, if not contextualised within a developmental and participatory action research perspective. The developmental process preceding and culminating in the WOW-programme was rigorous and data saturation occurred within the small sample, thus rendering further sampling unnecessary. Likewise the multitude of aims involved in each session of the programme can be seen as unrealistic, although in some direct or indirect way, they were touched upon by means of the relevant interventions due to the integrative approach. Clearly, however, future refinement is essential. Despite aforementioned, upon further investigation, the WOW-programme proved to be highly effective in reducing SED-symptoms and associated traits, and enhancing PWB, with outcomes lasting at four-month follow-up evaluation (Kirsten et al. 2007b).

Although the results cannot be generalised, it appears that the sample of white, undergraduate females participating during the developmental stages of the WOW-programme, (Phase One and Two, n=35), as well as those who attended the evaluation of the final WOW-programme (n=45) remain vulnerable to media pressures to thinness, as long as they are struggling to negotiate independently constructed identities, in the context of a volatile, post-modern, South Africa. Therefore, due to its developmental nature, it appears that the WOW-programme could, apart from

its effectiveness with clients with SED, also be evaluated as a general enrichment programme for languishing female university students.

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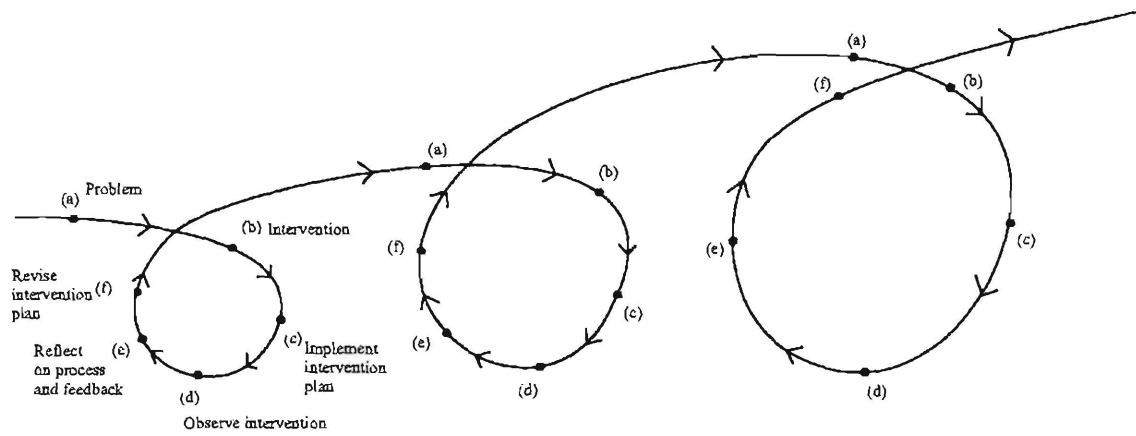
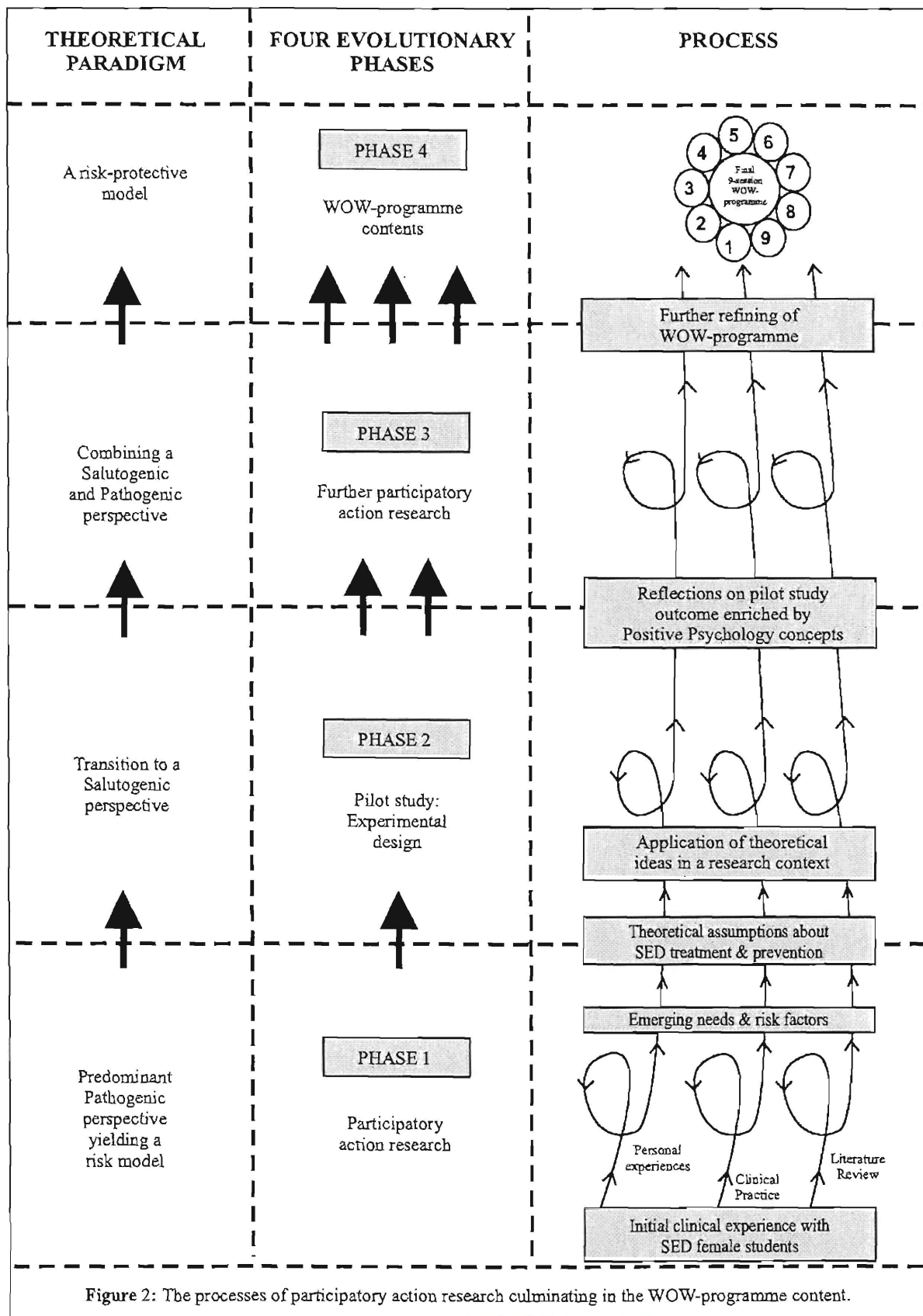


Figure 1 Cycles of participatory action research as adapted from Zuber-Skerritt (2002).



WOW-SESSIONS:	LEVELS OF CHANGE	INTERVENTIONS/ACTIVITIES	STAGES OF CHANGE (Prochaska, 1984)				
			Contemplation to change	Preparation for change	Action	Maintenance	Termination
1: Metaphor of problem	Symptom and situational level	Drawings and letters Group discussion	X				
2: Resolve inner conflict		Six-step reframe method Group discussion	X	X			
3: Choices, time, meaning		Reapportioning of meaning and time		X	X	X	X
4: Mistaken beliefs and media	Maladaptive cognitions and interpersonal conflicts	CBT and REBT group work Group discussion		X	X	X	X
5: Irrational thoughts, mental flossing		CBT and REBT group work Broccoli metaphor		X	X	X	X
6: Defeating self-destructive thoughts. Self-direction and self-nurturing		Ego-state role play: CBT, REBT and well-being therapy Group discussion Self-nurturing			X	X	X
7: Mindful eating, coping and celebrating life		Mindfulness and mindful eating Coping skills and relaxation exercises Increasing pleasant activities			X	X	X
8: Self-esteem, self-acceptance and personal strengths	Intra-personal conflicts	VIA-strengths questionnaire Self-esteem exercises Apple metaphor, Group work			X	X	X
9: As-if and obituary		Writing an auto-obituary, As-if behaviour generator, Group work			X	X	X
Values exercise	Systems conflicts	Values exercises & Group discussion	X	X	X	X	X
PROCESSES OF CHANGE		Awareness raising and self re-evaluation					
		Self-liberation: behaviour, cognitive and affective change					
		Supportive environment					

Figure 3: An outline of the final WOW-programme content structured according to Prochaska's model (1984).

SECTION 3: Article 2

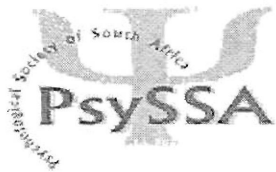
A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation

submitted to the

*Conference proceedings of the 2nd European Conference on Positive Psychology, July 2004,
Verbania Pallanza, Italy;*

*Conference proceedings of the 1st South African Conference on Positive Psychology, 4-7 April
2006, Potchefstroom, South Africa;*

Panel of peer reviewers of the South African Journal for Psychology for review.



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- The manuscript should be an MS Word document in 12-point Times Roman font with 1.5 line spacing. There should be no font changes, margin changes, hanging indents, or other unnecessarily complex formatting codes.
- American Psychological Association (APA) style guidelines and referencing format should be adhered to.
- Headings should start at the left margin, and should not be numbered. All headings should be in **bold**. Main headings should be in **CAPITAL LETTERS**.
- A line should be left open between paragraphs. The first line of a paragraph should not be indented.
- Use indents only for block quotes.
- In the reference list, a line should be left open above each reference. Do not use indents or hanging indents in the reference list.

Language

Manuscripts should be written in English. As the SAJP does not employ a full-time or dedicated language editor, authors are requested to send their manuscripts to an external language specialist for language editing before submission.

3.2 Manuscript

A secondary prevention programme for female students with Subclinical Eating Disorder: a comparative evaluation.

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Abstract

Despite rapid escalation of Subclinical Eating Disorder (SED) globally and locally, no South African programme, tailored to afflicted female students' needs exists. Prior to this study, four phases of participatory action learning, embedded in Social Constructivist theory, culminated in a comprehensive, nine session, risk-protective, Weight Over-concern and Well-being (WOW) programme. In this article its evaluation by means of a comparative investigation is reported. A mixed method design comprised: a three group, pre-post, follow up design, involving white female students (n=45) meeting criteria for SED, randomly assigned to: Group 1 (n=15) (Tomatis stimulation and WOW-programme), Group 2 (n=15) (WOW-programme only), and Group 3 (n=15) (non-intervention control group); and a multiple case study design involving qualitative participant post-programme responses (Groups 1 and 2). Post-test reduction of SED and associated traits and negative mood states in Groups 1 and 2 differed practically significantly from Group 3 results. Psychological well-being enhancement was also practically significantly higher than in Group 3, whilst four-month follow-up evaluation confirmed retention of gains. Accelerated, more intense relief, attributed to increased positive affect and communication enhancement by Tomatis stimulation, reflected the biopsychosocial efficacy of the combined programme. However, albeit slower attained, comparative positive outcomes, backed by qualitative participant comments in Group 2, confirmed the psychosocial efficacy of the WOW-programme per sé. Replication with multicultural samples, and modification, tailored to vulnerable female, adolescent learners is recommended.

Word count: 226

Key words: action learning; body dissatisfaction; drive for thinness; psycho-education; psychological well-being; risk-protective; secondary prevention; self-objectification; Subclinical Eating Disorder; weight over-concern.

Globally Subclinical Eating Disorder (SED) has escalated rapidly over the past two decades, as well as the ultimate risk of developing full-blown eating disorders. In the 1980's only 31% to 45% of American female respondents experienced low body esteem, weight over-concern and body dissatisfaction (Mintz & Betz, 1988). However, more recently 55% up to 75% and 80 % university females appear to suffer from SED-symptoms namely body dissatisfaction, weight over-concern, self-objectification, “yo-yo” dieting, use of laxatives, slimming medication, over-exercising and self-starvation (Croll, Neumark-Sztainer, Story & Ireland, 2002; Littleton & Ollendick, 2003; Thompson & Digby, 2004). Serious concerns were raised by Caradas, Lambert and Charlton (2001), since 17% to 21% of their South African ethnic adolescent females sample had possible eating pathology as indicated by abnormal eating attitudes and body-image issues. Findings of South African studies such as Le Grange, Tibbs and Selibowitz (1995), and Szabo and Hollands (1997) correspond with these proportions, as 15% to 22% female youths reported possible eating pathology, thus not merely SED. Furthermore, recent investigation into the prevalence of eating pathology in cross-ethnic female South African students, also showed significant eating pathology across ethnic diversity (Edwards & Moldan, 2004; Senekal, Steyn, Mashego & Nel, 2001; Wassenaar, Le Grange, Winship & Lachenicht, 2000). The at-risk status of especially on-campus females was thus underscored globally and nationally.

Subclinical Eating Disorder and associated traits

For purposes of this study SED is conceived to be at an intermediate point on an eating disorder continuum, where asymptomatic, unrestrained eating lies at one end, milder forms of disturbed eating at an intermediate point, and clinical eating disorders at the other extreme (Mintz, O'Halloran, Mulholland & Schneider, 1997). Various authors support the validity of this continuum (Mazzeo & Espelage, 2002). Subclinical eating disorder symptoms are clustered into three main strands: *body dissatisfaction*, *self-objectification* and *a drive for thinness* (Garner, 2004; Fredrickson & Roberts, 1997). These strands reflect, although not as serious in eating disorders, associated psychological traits such as ineffectiveness, maturity fears, binge or emotional eating, interpersonal distrust, lack of interoceptive awareness and perfectionism (Garner, 2004; Leon, Fulkerson, Perry & Cudeck, 1993).

Body dissatisfaction and *shame* occur when individuals perceive their body size and shape to be discrepant with internalised, culturally determined “thin” body ideals (Garner, 2004). Present body

size and shape are consistently overestimated and devalued, while the importance of physical appearance over other physical and self attributes are overemphasised (Geller, Zaitsoff & Srikameswaran, 2002). Body dissatisfaction and shame are positively correlated with *perfectionism* (Garner, 2004), which refers to the extent to which a person believes that only the highest standards of personal performance are acceptable and that others expect outstanding achievement (Garner, Olmstead & Polivy, 1983).

Self-objectification occurs when persons internalise observers' perspectives on their physical self, see themselves as objects to be looked at and evaluated, thus resulting in extreme self-consciousness, body shame and obsessive body surveillance (Fredrickson & Roberts, 1997). It is accompanied by social anxiety and *interpersonal distrust*, and associated with a *lack of interoceptive awareness* (Fredrickson & Roberts, 1997; Garner, 2004). *Interpersonal distrust* manifests in a general alienation from people and a reluctance to form close relationships and express thoughts or feelings to others (Garner, 2004). A *lack of interoceptive awareness* refers to confusion, apprehension and uncertainty in recognising and accurately responding to physical and emotional states (Garner, 2004). Although Fredrickson and Roberts (1997), Muehlenkamp and Saris-Baglama (2002) do not agree on how self-objectification interrupts internal awareness, they confirm a link.

Drive for thinness entails persistent weight over-concern, fear of fat, perceived fatness, irrational beliefs and preoccupation with dieting (Celio et al., 2000; Levitt, 2003). Those who fail to meet thinness and perfectionistic standards experience concomitant feelings of *ineffectiveness* (Garner, 2004). *Ineffectiveness* is associated with feelings of general inadequacy, insecurity, worthlessness and a lack of control over one's life (Garner, 2004). Concomitant *fear of maturity* reflects the desire to regress to the security of childhood to provide relief from adolescent turmoil and conflicts within the family (Garner, 2004).

In a South African study De Páz Francisco, Kirsten and Du Plessis (2007) found SED strands and associated traits to be negatively correlated with the six domains of *psychological well-being* (PWB) as defined by Ryff and Keyes (1995). They define PWB broadly in terms of how a person operationalises the domains of Autonomy, Self-acceptance, Personal growth, Purpose in life, Environmental mastery and Positive relations in their lives (Ryff & Keyes, 1995). Another construct associated with PWB, and used in this study, is *Sense of coherence* (Antonovsky, 1993). It is

indicative of a general sense of PWB and expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that life is meaningful, manageable and comprehensible. Diener (2000) also regards *Satisfaction with life* as a measure of PWB, and it reflects the cognitive appraisal of a general sense of subjective well-being.

A need for prevention programmes in South Africa

Despite attempts by international researchers to develop empirically based, primary prevention programmes in schools and colleges, for example American (Phelps, Sapia, Nathanson & Nelson, 2000; Sapia, 2001; Winzelberg et al., 2000) and British studies (Becker, Franko, Nussbaum & Hertzog, 2004; Steiner et al., 2003), no empirically based programmes known to the researcher exist in South Africa. However, since it is often too late for primary prevention when students enter university, professionals working with such at-risk groups then should focus on secondary prevention (Becker et al., 2004).

Since the at-risk status of South African students was already underscored by Szabo and Hollands (1997) and Senekal et al. (2001), and observed by the researcher as scientist practitioner, a secondary prevention programme, namely the Weight Over-concern and Well-being (WOW) programme was developed (Kirsten, Du Plessis & Du Toit, 2007a, see article 1 in this PhD). Scientist practitioners regularly consult and apply research findings in their practice in order to evaluate and improve their practice; they also conduct their own research following a scientific, methodological way of clinical thinking and practising; and communicate their findings (Beutler, Moliero & Talebi, 2002; Zuber-Skerritt, 2002). A detailed description of the programme development process is provided in Kirsten et al. (2007a).

The Weight Over-Concern and Well-being programme

Since the development of The WOW-programme and rationale of the Tomatis Method, have been outlined in Kirsten et al. (2007a), brief outlines will suffice. The WOW-programme resulted from a four phase participatory action research process (Thomas, 2003), embedded in Social Constructivist theory, and conducted in collaboration with students with SED, over a period of 5 years. Each new phase of participatory action research, consisting of various learning spirals, was informed by the previous phases (Koch, Selim & Kralik, 2002; Zuber-Skerritt, 2002). Phase One consisted of

experiential/action learning from personal experiences and interaction with participative researchers, resulting in a risk-model of intervention. In Phase Two, an on-campus pilot study, ideas generated in Phase One were formally tested through an experimental three-group pre-post-test design (Du Plessis, Vermeulen & Kirsten, 2004). In the pilot study the Tomatis Method (TM) of sound stimulation was combined with a psycho-educational programme, to reduce SED-symptoms and negative mood states, as well as to enhance general PWB. Findings partially supported the usefulness of the TM as a complement to a psycho-educational programme to reduce SED. Outcomes of Phase Two informed Phase Three, an integration of Positive Psychology theory with existing pathogenic approaches, resulting in a risk-protective model. During Phase Four ideas and theoretical assumptions constructed over time, resulted in the current WOW-programme.

Thus the WOW-programme is an empirically based, interactive, psycho-educational/therapeutic secondary prevention programme, based on developmental perspectives, and an integrative technically eclectic approach (Hansen, 2002). Prochaska's transtheoretical model (1984) was used to structure programme activities according to various stages, levels and change processes. Because the technical eclectic approach incorporates techniques that work independent of their theoretical underpinnings (Lazarus & Beutler, 2001) the WOW-programme included therapeutic techniques from Narrative and Art Therapy (Eisdell, 2005; White & Epston, 1990), Positive Psychology and Well-being Therapy (Fredrickson, 2001; Seligman, 2005; Fava & Ruini, 2003), Rational Emotive and Cognitive Behaviour Therapy (Beck & Weishaar, 1991; Ellis & McLaren, 2005), Neuro-Linguistic Programming (Andreas & Andreas, 1989), Gestalt Therapy (Paivio & Greenberg, 1995), Transactional Analysis (Berne, 1992), Logotherapy (Hutzel & Jenkins, 1995), and life skills training (Bourne, 1995). A detailed discussion of each WOW-session and its rationales are provided in Kirsten et al. (2007a). The focus was: Session 1: problem clarification and preparation for personal growth via enhancement of interoceptive awareness; Session 2: resolving inner ambivalence to change, reinterpretation of the "SED-problem" and re-authoring personal identity; Session 3: reapportioning of time to enhance meaningfulness; Session 4: enhancing rationality and critical attitudes towards media stereotypes and socio-cultural pressures of thinness, and core beliefs regarding SED-risk factors; Sessions 5, 6 and 7: enhancing PWB and reducing SED-symptoms by teaching cognitive and behavioural skills to enhance rationality, self-nurturing and regulation, mindfulness, positive emotions and effective coping; Session 8: identification and enhancement of

personal strengths and self-esteem; and Session 9: pro-active coping, integrating acquired skills in a comprehensive behavioural strategy and integrating meaningful values with self-esteem and purpose in life interventions.

The Tomatis Method

This method of sound stimulation which impacts hearing and listening, communication, brain and posture, was devised by a French ear-nose-throat specialist Alfred Tomatis (1991, 1996). Applied initially with singers, its impact on voice, posture and communication (Tomatis, 1991) lead to progressive extensions in terms of speech problems like stuttering (Van Jaarsveld & Du Plessis, 1988), learning difficulties (Tomatis, 1996), autism (Neysmith-Roy, 2001) and more.

Observations of its application in general clinical contexts suggest that persons become more open to external and internal stimuli and thus more receptive and responsive to therapeutic interventions. These observations are progressively corroborated by empirical findings. For instance, applied to non-eating disordered individuals, studies have shown positive outcomes for depressed young adults (Coetzee, 2001), student musicians from diverse cultural backgrounds (Du Plessis, Burger, Munro, Wissing & Nel, 2001), and young adults with perinatal complications (Tunmer, 2002).

Even with over-weight female students the application of the Tomatis Method (TM) in the context of a combined programme was useful (Van Wyk, 2003). In the wake of the Phase Two pilot study (Du Plessis et al., 2004), Van Wyk (2003) also investigated the effect of a combined programme on overweight young females. Participants in Group 1 of her three group pre-post experimental design, attended 60 half hours of Tomatis stimulation, combined with a life-style enhancement intervention, physical exercise, and dietary guidelines; Group 2 only attended the lifestyle intervention, exercises and dietary guidelines, while group 3 constituted a non-intervention control group. It resulted in reduced negative mood states, enhanced self-concept and psychological well-being in Groups 1 and 2, but without body Mass Index reduction. Self-concept improvement probably resulted in reduced motivation for weight reduction, whilst exercises probably increased muscle mass and thus no BMI changes. No improvement was noted in Group 3.

Highly similar outcomes for Groups 1 and 2 apparently confirmed that the TM did not contribute significantly. However, two Group 1 participants reported meaningful improvements associated

with enhanced creativity, positive emotions and interpersonal breakthroughs, consistent with attendance of the TM. It was therefore argued that if 20% of overweight, in fact pre-obese female students, responded so well to the combined programme, female students with SED would also be likely to benefit more from the combined programme. It was therefore decided to evaluate the WOW-programme with a similar three group design. Besides allowing a rigorous evaluation, quantitatively and qualitatively, it would also clarify anticipated contributions from the TM to outcomes of the combined programme.

In light of the above, the aims of the current study were to determine: (i) whether participation in the combined TM of sound stimulation and WOW-programme (Group 1); and (ii) participation in a WOW-programme only (Group 2), would lead to significant reductions in SED-symptoms, psychological traits associated with eating disorders and negative mood states, and enhancement of PWB; (iii) whether results of Groups 1 and 2 would exceed results of a non-intervention control group (Group 3) practically significantly; and (iv) whether programme outcomes for Groups 1 and 2 would be retained at four-month follow-up evaluation.

METHOD

Research design

A mixed method design was used, including quantitative and qualitative research methods (Morse, 2003). The quantitative method comprised a three group pre-post test design (Neuman, 2003) to compare outcomes of Groups 1 (n=15) and 2 (n=15) with one another and the control group (n=15). The qualitative method consisted of a multiple case study (n=30) to validate quantitative findings (Morse, 2003).

Participants

An availability sample of 60 female students was screened for inclusion, using criteria including normal to slightly overweight Body Mass Index of 20-26 (World Health Organization, 1995); presence of high degree of SED-symptoms such as self-objectification as measured by the Objectified Body Consciousness Scale (McKinley & Hyde, 1996), drive for thinness and body dissatisfaction as measured by the Eating Disorder Inventory 2 (Garner, Olmstead & Polivy, 1983); absence of clinical eating or body-dysmorphic disorder and moderate personality disorder traits (American Psychiatric Association, 2000). Those not meeting criteria were referred for individual

therapy. Anovas were used to determine pre-treatment equivalence across groups, and selected participants (n=45) were assigned randomly to Group 1 (TM and WOW, n=15); Group 2 (WOW only, n=15); and Group 3 (control group, n=15).

For the qualitative design a theoretical sample (n=30) was drawn from the quantitative sample, because inclusion criteria served the purpose of identifying “a good informant” (Morse, 2003). Sampling was thus purposive, because of the relevance of participants from Groups 1 and 2 to the research questions (Neuman, 2003), and adequate because data saturation occurred within their responses (Morse, Barrett, Mayan, Olson & Spiers, 2002).

Ethical considerations

Ethical approval was provided by the Ethics committee of the Faculty of Health Sciences, North-West University (project number: 06K25) and the National Research Foundation. Prior to programme commencement participants were informed orally and in writing of the aims of the study, and written informed consent was obtained.

Procedure

After the study had been introduced to residential females, written informed consent was obtained, whereafter screening, pre-assessment and random group assignment took place. Group 1 attended 64 half hour TM sessions (2 hours a day, 4 days a week, integrated with 9 WOW-sessions, 90 to 120 minutes each, twice weekly) over 4 weeks. Group 2 attended 9 WOW-sessions of 90 to 120 minutes each, twice weekly, over 4 weeks. Non-intervention Control Group 3, was offered participation afterwards, but declined. Post-assessment commenced 1 month post programme and follow up 4 months later.

Quantitative data gathering methods

SED-symptoms: *Drive for Thinness:* The *Drive for thinness* subscale of the Eating Disorder Inventory (EDI-2, Garner et al., 1983) specifically evaluates excessive concern with weight and dieting, and fear of weight gain, whereas the *Bulimia* subscale assesses tendencies to think about and engage in uncontrollable bouts of overeating. Higher scores on the EDI-2 reflect higher levels of pathology. Garner et al. (1983) reported a reliability of 0.90, and Erasmus (2006) obtained an alpha coefficient of 0.84 on the EDI. The *Appearance control beliefs* subscale of the Objectified Body

Consciousness Scale (OBCS, McKinley & Hyde, 1996) measures beliefs that one can control weight and appearance if trying hard enough. Higher scores reflect higher levels of drive for thinness. McKinley and Hyde (1996) reported a Cronbach Alpha of 0.72, similar to that obtained in this study.

Body dissatisfaction: The *Body dissatisfaction* subscale of the EDI-2 (Garner et al., 1983) measures dissatisfaction with overall body shape and size. The EDI-2 authors (1983) reported an alpha of 0.90, and Erasmus (2006) 0.84. The *Physical self* subscale of the Tennessee Self-Concept Scale (TSCS, Roid & Fitts, 1989) reflects an individual's body-esteem. Higher scores on the TSCS reflect well-being. A Cronbach alpha of 0.82 obtained by Erasmus (2006) compared favourably to the 0.81 of Roid and Fitts (1989).

Self-objectification: Self-objectification was measured by the *Body surveillance* (viewing the body as an outside observer) and *Body shame* (feeling shame when the body does not conform to cultural standards) subscales of the Objectified Body Consciousness Scale (OBCS, McKinley & Hyde, 1996). Higher scores reflect higher levels of pathology. Both subscales have demonstrated strong internal consistency, with alphas of 0.76-0.89 and 0.70-0.84 respectively (Mc Kinley & Hyde, 1996). In this study Cronbach alphas of 0.61 and 0.65 were obtained for the two subscales, and interpreted cautiously.

Psychological traits associated with SED and eating disorders: The subscales *Ineffectiveness*, *Perfectionism*, *Interpersonal distrust*, *Lack of interoceptive awareness* and *Maturity fears* of the EDI-2 (Garner et al., 1983) were used. Higher scores reflect more pathology. EDI-2 authors (1983a,b) reported an alpha of 0.90, whereas Erasmus (2006) obtained an alpha coefficient of 0.84.

Negative mood states: The Profile of Mood States (POMS) is a 65 item checklist measuring various mood states including *Tension-Anxiety*, *Depression-Dejection*, *Anger-Hostility*, *Vigour*, *Fatigue and Confusion* (McNair, Lorr & Droppleman, 1992). Higher scores reflect more negative moods, except for the Vigour subscale. Alpha coefficients obtained by McNair et al., (1992) ranged from 0.78-0.93, and compare favourably with alphas ranging between 0.76-0.94 in this study.

Psychological well-being: *Sense of coherence* is measured by the *Antonovsky Orientation to Life Questionnaire* (SOC-29, Antonovsky, 1993). The SOC-29 is a 29 item, seven point scale, measuring a general sense of psychological well-being. A high score indicates a strong sense of coherence. In this study an alpha coefficient of 0.93 was obtained, similar to that reported by Antonovsky (1993). The SOC has shown construct validity in various South African samples (Wissing & Van Eeden, 2002).

Satisfaction with life was measured by the Satisfaction With Life Scale (SWL, Diener, Emmons, Larsen & Griffin, 1985). The SWL is a global measure of life satisfaction and consists of 5 items. Life satisfaction is one factor in the more general construct of subjective well-being, involving three components: positive affective appraisal, negative affective appraisal and life satisfaction. Diener et al., (1985) obtained an alpha coefficient of 0.86, which compares favourably with an alpha of 0.88 found in this study. The SWL has shown construct validity in South African samples (Wissing & van Eeden, 2002).

Domains of Psychological well-being were measured by the Scales of Psychological Well-Being (SPWB, Ryff, 1998). This is an 84-item scale, consisting of six subscales, 14 items each, namely *Autonomy*, *Environmental mastery*, *Personal growth*, *Positive relations*, *Purpose in life*, and *Self-acceptance*. Ryff (1998) found its internal consistency to be high, ranging between 0.83 and 0.91 for subscales. This compares favourably with Cronbach Alphas obtained by Erasmus (2006), namely: *Autonomy* (0,81), *Environmental mastery* (0,85), *Personal growth* (0,83), *Positive relations* (0,82), *Purpose in life* (0,85) and *Self-acceptance* (0,85).

Self-esteem components were measured by the Tennessee Self-concept Scale (TSCS) of Roid and Fitts (1989). Only the *Personal* and *Total self-concept* subscales were used to provide a finer breakdown of the Self-acceptance domain of Ryff (SPWB, 1998). Alpha coefficients of 0.85 and 0,92 were reported respectively (Roid & Fitts, 1989) and compare favourably with alphas of 0.81 and 0,88 obtained by Erasmus (2006).

Qualitative data-gathering methods

To further validate pre-post findings on measuring instruments, participants were asked, during the first and after the last WOW-group session, to draw a metaphor of how they experienced their “SED-problem”, and to explain it in writing on the reverse side of the drawing. Then they read and elaborated their written responses in an open-ended focus-group session. Oral responses were audio

taped, transcribed verbatim and supplemented by the researcher's field and self-reflexive notes. After the WOW-programme participants directed written comments to an independent interviewer, on how they perceived their "SED-problem" after the programme; their experience of the programme; and indicated interventions perceived as most useful, changes occurring as a result of programme participation; areas still needing attention; programme strengths and weaknesses; and recommendations for future programmes. Participants thus acted as participative researchers (Thomas, 2003). Verbal and written responses were triangulated with quantitative outcome data (Morse et al., 2002).

Data analysis

Final data analysis occurred after qualitative and quantitative were collected. A parallel mixed analysis of data was used as the results of each type of analysis were neither compared nor consolidated until both sets of data analysis had been completed (Neuman, 2003). Findings related to each research method were used to enhance theoretical completeness (Morse, 2003).

Statistical computation

The SAS System for Windows Release 9.1 TS Level 1MO (2002-2003) by the SAS Institute Inc. (1999), Cary, NC, USA was used for statistical analysis. Descriptive statistics and Cronbach Alpha reliability indices were computed for each scale and/or subscale where possible. Because of the small sample size ($n = 45$), the university's Statistical Consultation Service advised using Cronbach alphas obtained by Erasmus (2006) in a representative sample ($n = 274$) of females from the same campus where necessary. Anovas were used to determine pre-treatment group equivalence. All groups were equivalent, except that Groups 2 and 3 differed on Interoceptive Awareness (EDI), Environmental Mastery (SPWB) and Personal Self (TSCS). Covariance analyses were performed on these subscales to correct for differences between groups at pre-assessment. Paired t-tests were used to determine within group differences and Anovas were used to determine between-group differences. Pre-test scores were subtracted from post-test scores in all cases, and follow up test scores were subtracted from post-test scores to obtain mean differences both within and between groups. Tukey's intervals were calculated to determine inter-group differences. Effect sizes (d -values) were calculated to determine practical significance (Ellis & Steyn, 2003), with $d \geq 0.5$ indicating a moderate effect and $d \geq 0.8$ indicating large effect and practical significance. Anovas were used to determine post-testing and follow up differences.

Qualitative data analysis

Pre-programme metaphors of the “SED-problem” were firstly analysed with an inductive drive, employing the steps of interpretative phenomenological analysis (Brocki & Wearden, 2006; Smith & Osborn, 2003; Willig, 2001), to reflect their lived SED-experience (Kirsten, Du Plessis & Du Toit, 2007b; article 3 in this PhD). Thereafter pre-post programme metaphors, letters, verbal comments and written responses to the programmes were analysed by two independent interpreters, following a deductive drive, using open, axial and selective coding (Creswell, 2003), to support changes found in the measuring instruments and evaluate the WOW-programme. Qualitative findings were submitted for member checks (Morse et al., 2002).

Validity, reliability and trustworthiness in qualitative data

The process of ensuring reliability and validity, thus trustworthiness (rigour) in qualitative research, requires attention to processes of verification that ensure trustworthy findings, and direct the research process during its development and execution (Morse et al., 2002). Hence *investigator responsiveness; methodological coherence; theoretical sampling and sampling adequacy, an active analytic stance* and *data saturation* as methods to enhance rigour (Morse et al., 2002; Shenton, 2004) were employed. In addition, trustworthiness as originally conceptualized by Guba and Lincoln (1981), and defined in terms of *credibility, transferability, dependability* and *confirmability* (Koch, 2006; Lincoln & Guba, 1985) was ensured. *Credibility* was ensured by using method and data triangulation, multiple data analysis, reflexive journal keeping and member checks; *transferability* by providing descriptive data about the sample and context, and member checks; *dependability* by dense data description, using a process of cycling between observation, analysis and interpretation in order to enhance reliable understanding, sceptical peer review of coding, and using an audit trail; and *confirmability* by data triangulation and self-reflexivity.

RESULTS

Biographic information

Despite attempts to obtain a multi-cultural sample, only white, pre-graduate females (n=60) volunteered, of which 45 were selected. Mean age was 20.33 years (ranging between 18 years 6 months and 22 years), comprising Afrikaans (n=38) and English speaking (n=7) females. Mean height was 167.90 cm and mean weight 63.17 kg, resulting in a mean normal range Body Mass Index of 23.89 (World Health Organization, 1995). Maternal history of eating disorders was

reported by 26% (n=12), whereas 40% (n=18) experienced family pressures to be thin. Mean age at onset of SED was 15 years. Participants reported almost always feeling dissatisfied with their bodies, and spending approximately 45% to 65% personal time obsessing about it. A third (n=15) reported using laxatives or medication to lose weight, 24% (n=11) were continually dieting, 64% (n=29) regularly dieted, while 11% (n=5) sometimes dieted, reflecting their drive for thinness. Everybody reported unsuccessful attempts to overcome SED-symptoms and a strong desire to change.

Statistical findings

Only statistically significant findings and medium to large effect sizes were tabled. Consistent qualitative support for quantitative findings will be illustrated in the discussion. In Table 1 the significance of pre-post test differences within Group 1 is provided.

Table 1 here

Practically significant reductions occurred on the majority of subscales measuring SED-symptoms (EDI-2, OBCS), except for Appearance Control Beliefs (OBCS). Reduced Drive for Thinness (d=1.304), Bulimia (d=1.147), Body dissatisfaction (d=1.794) on the EDI-2, Body surveillance (d=1.079) and Body shame (d=0.888) on the OBCS, were all practically significant, as well as all subscales measuring psychological traits associated with eating disorders (EDI-2), namely Ineffectiveness (d=1.642), Perfectionism (d=1.143), Interpersonal distrust (d=1.236) and Maturity fears (d=1.145). Interoceptive awareness was practically significantly enhanced (d=1.136). Reductions in negative mood states on the POMS, such as Tension-Anxiety (d=0.950), Depression-Dejection (d=0.874), Anger-Hostility (d=0.717), Confusion (d=1.054) and Total score (d=0.903) were practically significant too. Increased Vigour (d=0.580) and reduced Fatigue (d=0.594) tended towards practical significance.

Increases on domains of PWB on the SPWB such as Autonomy (d=1.179), Environmental mastery (d=0.793), Positive relations (d=1.039), Purpose in life (d=0.880) and Self-acceptance (d=0.934), were practically significant, while Personal growth tended toward practical significance (d=0.612). Sense of coherence (SOC-29) (d=1.056), Physical self (d=0.958), Personal self (d=0.989) and Total

self-concept (TSCS) ($d=0.879$) were practically significantly enhanced, and Satisfaction with life (SWLS) tended toward practical enhancement ($d=0.729$).

In Table 2 the significance of pre-post test differences within Group 2 is provided.

Table 2 here

On the EDI-2 Drive for thinness ($d=1.360$), Bulimia ($d=0.834$) and Body dissatisfaction ($d=1.820$) showed practically significant reductions of SED-symptoms, and likewise Body surveillance ($d=1.242$) and Body shame ($d=1.177$) on the OBCS. Psychological traits associated with eating disorders (EDI-2) such as Ineffectiveness ($d=1.364$) and Interpersonal distrust ($d=1.109$) were practically significantly reduced, while Perfectionism ($d=0.782$) and Maturity fears ($d=0.645$) tended towards practical reduction.

Interoceptive awareness increased practically significantly ($d=0.976$). On the POMS only Tension-Anxiety was practically significantly reduced ($d=0.888$). Increases on domains of PWB on the SPWB, were practically significant for Environmental mastery ($d=0.846$) and Self-acceptance ($d=0.826$), whilst increases on Personal growth ($d=0.551$), Positive relations ($d=0.601$) and Purpose in life ($d=0.557$) showed tendencies towards practical significance. Satisfaction with life (SWL) increased practically significantly ($d=1.052$), along with Physical self ($d=1.318$), Personal self ($d=0.899$) and Total self-concept score ($d=1.114$) on the TSCS.

In Table 3 the significance of pre-post test differences within Group 3 is provided.

Table 3 here

No significant reductions in SED-symptoms (EDI-2, OBCS), psychological traits associated with eating disorders (EDI-2), negative mood states (POMS), nor enhancement of PWB (SPWB), sense of coherence (SOC-29), satisfaction with life (SWLS), nor any increases in sub-areas measuring self-concept (TSCS) were found on any of the subscales. In contrast to Groups 1 and 2, Group 3's functioning deteriorated, since their SED-symptoms increased significantly on some measures, namely: Bulimia (EDI-2) ($d=2.195$) and Tension-Anxiety (POMS) ($d=1.118$) were practically

significantly increased, while Fatigue ($d=0.597$) and Total scores ($d=0.645$) on the POMS tended to increase, and Vigour (POMS) ($d=0.691$) and Personal growth (SPWB) ($d=0.844$) tended towards reduction.

The significance of pre-post assessment differences between groups is illustrated in Table 4.

Table 4 here

Regarding PWB, Group 1 outcomes exceeded those of Group 2 practically significantly on Autonomy ($d=0.91$) (SPWB) only.

Group 1 outcomes exceeded all outcomes of Group 3 practically significantly on all measuring instruments, regarding reduced SED-symptoms on the EDI-2: Drive for thinness ($d=1.65$), Bulimia ($d=2.17$), Body dissatisfaction ($d=1.65$), Ineffectiveness ($d=2.09$), Perfectionism ($d=1.60$), Interpersonal distrust ($d=1.81$) and Maturity fears ($d=1.71$); on OBCS regarding reduced Body surveillance ($d=1.76$) and Body shame ($d=1.43$); regarding reduced negative mood states on the POMS, namely: Tension-Anxiety ($d=1.60$), Depression-Dejection ($d=1.27$), Anger-Hostility ($d=0.93$), Fatigue ($d=1.04$), Confusion ($d=1.41$), and Total POMS scores ($d=1.41$); increased Vigour (POMS) ($d=1.12$).

Group 1 exceeded Group 3 practically significantly on all subscales of SPWB, namely: Autonomy ($d=1.52$), Personal growth ($d=1.44$), Positive relations ($d=1.30$), Purpose in life ($d=1.19$), and Self-acceptance ($d=10.54$); Sense of coherence (SOC-29) ($d=1.39$); Satisfaction with life (SWLS) ($d=1.05$); self-esteem on the TSCS for Physical self ($d=1.19$) and Total self-concept scores ($d=13.32$).

Outcomes of Group 2 differed practically significantly from those within Group 3 on most measures, indicating the strength of the WOW-programme per sé. Reductions in SED-symptoms and psychological traits associated with SED in Group 2 practically significantly exceeded outcomes of Group 3 on all subscales of the EDI-2 and OBCS, namely: Drive for thinness ($d=1.17$), Bulimia ($d=1.36$), Body dissatisfaction ($d=1.64$), Ineffectiveness ($d=1.37$), Perfectionism ($d=1.03$),

Interpersonal distrust ($d=1.97$), Maturity fears ($d=0.99$), Body surveillance ($d=1.42$) and Body shame ($d=1.29$); and Tension-Anxiety ($d=1.24$) on the POMS.

Group 2 also practically significantly exceeded Group 3 regarding enhancement of PWB on the SPWB for Personal growth ($d=1.08$), Positive relations ($d=0.98$), and on TSCS, Physical self ($d=1.23$) and Total self-concept score ($d=12.38$).

No statistically significant differences were found between outcomes of Groups 2 and 3 for negative mood states such as Depression-Dejection, Anxiety-Hostility, Vigour, Fatigue, Confusion and Total scores on the POMS, Autonomy, Purpose in life and Self-acceptance on the SPWB, Sense of coherence (SOC-29) and Satisfaction with life (SWLS).

In Table 5 an analysis of pre-post covariance of differences between groups, corrected for pre-test scores, is provided.

Table 5 here

Increased subscale scores of the various measuring instruments, for Groups 1 and 2, exceeded outcomes of Group 3 practically significantly, regarding Interoceptive awareness (EDI-2) (Group 1, $d=2.95$; Group 2, $d=2.45$); Environmental mastery (SPWB) (Group 1, $d=1.71$; Group 2, $d=1.71$); and Personal self (TSCS) (Group 1, $d=1.39$; Group 2, $d=1.26$).

In line with aim (iv), no significant post-follow-up differences were found between Groups 1 and 2, thus confirming maintenance of outcomes for both groups, at four-month follow-up evaluation. The results have not been presented in table format in view of the lack of statistically significant differences. In Group 3 there were no statistically significant changes either at four-month follow-up evaluation.

DISCUSSION

Outcome-related differences between Groups 1 and 2

Although Groups 1 and 2 differed significantly only on Autonomy (SPWB), the combined programme led to quantitatively more changes than the WOW-programme per sé. More practically significant reductions of negative mood states, as well as practically significant enhancement of

PWB, occurred in Group 1, regarding Sense of coherence (SOC-29), Satisfaction with life (SWLS), Self-Acceptance and Purpose in life (SPWB). They highlighted the advantage of a combined programme, and suggested that Group 1 participants experienced relief much faster, broader, and possibly on a deeper level, than in Group 2. That the latter still was in an integration phase, was supported by observations during the process. Group 1 participants mastered CBT and RET skills much easier and faster than those in Group 2, and required less assistance with restructuring of irrational thoughts and mistaken beliefs. It thus appeared to be a more natural process for Group 1, than for Group 2.

The more rapid, in-depth improvement in Group 1 on *Autonomy, Sense of coherence, Satisfaction with life, Purpose in life* and *Self-acceptance*, could be explained in terms of effects of the TM, and the Broaden-and-build theory of positive emotions (Fredrickson, 2001). The TM is known to accelerate processing of incoming information, namely improved listening, thus rendering openness to therapeutic input and personal growth (Thompson & Andrews, 1999, 2000), expanded thinking and enhanced interoceptive awareness (Du Plessis et al., 2004). Enhanced responsiveness and openness, as well as broadened thinking facilitated recognition of irrational inner dialogue and internalised, mistaken beliefs, and disputation thereof. This was reflected by practically significant reductions in all SED-symptoms, traits associated with eating disorders, negative mood states, as well as increases across all domains of PWB and self-esteem. Apparently the TM induced a rapid relaxation response, combined with rapidly increased positive mood states. In this regard a Group 1 participant said:

“Listening to the music was pleasant and relaxing...It was really nice...It helped me at that moment to stop running away from things ...The listening sessions were an opportunity to relax, obtain perspective...look inside and do soul-searching...”

According to the Broaden-and-build theory, positive emotions broaden individuals' momentary thought-action repertoires, prompting them to pursue wider ranges of thoughts, perceptions and actions than typical (Fredrickson & Branigan, 2005). This is evident in increased Autonomy, Sense of coherence, Satisfaction with life, Purpose in life and Self-acceptance, since these constructs require stepping back and obtaining a broader perspective of life, life's problems and oneself. Indeed, Fredrickson and Joiner (2002) found reciprocal influences between positive emotions and

broadened thinking and upward spirals of better coping and appreciable increases in well-being. This was illustrated by the following comment in Group 1:

“It is unbelievable how one’s mind-set can change. It is wonderful how the music combined with the exercises can force your thoughts to go into a new direction...It is wonderful to come out of the process a stronger person, whole and new...”

Furthermore, apart from inducing positive emotions and broadened thinking, the combined programme also coupled the TM with mastery of specific coping skills. Fredrickson and Joiner (2002, p. 175) have found that “clinicians who induce positive emotions, or who time skill-based interventions to correspond to patients’ positive moods, may increase both the chances that patients fully learn therapy-based skills and the speed with which they do so”. This lends further credence for the rapid, in-depth changes in Group 1.

Beyond symptom reduction, interpersonal and psychological well-being gains, only Group 1 participants experienced reduced Fatigue (POMS) and enhanced Vigour (POMS), practically significantly higher than in Group 3; consistent with the energising effect of the TM on the cerebral cortex, resulting in reduced fatigue and increased vigour (Tomatis, 1996), signifying its biopsychosocial impact. A participant stated:

“I feel happier because I have more energy to focus on the things which are important in my life, rather than being preoccupied with weight issues.”

In summary, the TM proved to be a viable supplement to the WOW-programme, since the combined programme clearly offered advantages for females struggling with recalcitrant SED-symptoms.

Corresponding Group 1 and 2 outcomes: reduced SED-symptoms and associated traits

Stice’s (2001) postulation that reduced drive for thinness and fear of fat would directly reduce body dissatisfaction and risk of bulimia (Stice & Agras, 1998), clearly occurred in this study. Practically significant reductions in *Drive for Thinness* (EDI-2) for Groups 1 and 2 implied neither over-concern with dieting, nor fear of fat. A more flexible approach to weight maintenance, possibly a result of more flexible, self-nurturing adult ego-states emerged:

“Before the programme I was on a new diet every month. It just ruined my body and I don’t need it any more. I have to take care of my body” (Group 1 member).

“My behaviour is totally opposite to what it was before the WOW-programme. I no longer think about diets. There are much nicer and more important things to do, and I exercise when I feel like it” (Group 2 member).

“Before the programme I measured myself daily to check that I did not gain centimeters. I also used to over-exercise. I do not diet at all now, and I do “spinning” three times a week to stay healthy” (Group 2 member).

Practically significantly reduced *Body dissatisfaction* (EDI-2), *Self-objectification* (OBCS), and increased *Physical self* (TSCS) reflect that Groups 1 and 2 participants now think more about what their bodies can do (e.g. being healthy) and are less concerned about how their appearances are judged (Mc Kinley & Hyde, 1996). A Group 1 member wrote:

“It really does not matter what others think, as long as I feel good about myself”.

Practically significant reductions in *Body surveillance* and *Body shame* (OBCS) in Groups 1 and 2 further indicate that participants no longer view their bodies like outside observers, nor do they obsessively observe their appearance. Concurrently Tiggemann and Lynch (2001) found that self-accepting individuals evaluate their bodies according to own criteria and are less susceptible to self-objectification and external pressures to be thin. Reductions in self-objectification indicate that the thinness ideal is no longer internalised and that participants are less vulnerable to pressures to be thin (McKinley & Hyde, 1996). Participants commented:

“I am no longer so severely critical of myself and I really couldn’t bother what others think of my appearance. Self-acceptance makes things easier” (Group 1 member).

“I actually went to the coffee shop with my friends for the first time the other day. It was so nice. I realised that nobody was watching me and what I was eating in the past. It was all just in my mind” (Group 2).

No significant reductions occurred on *Appearance control beliefs* (OBCS), indicating that participants still believe they should monitor their appearance. A healthier appearance monitoring was however observed, in terms of personal grooming, unique hairstyles and personalised ways of dressing. A female in Group 2 said:

“I would rather be healthy and well-groomed than too skinny”.

Reductions in psychological traits associated with SED

Practically significant reductions in *Ineffectiveness* and *Maturity fears* (EDI-2) reflect that participants in Groups 1 and 2 are ready to function as autonomous individuals with a unique sense of identity and competence. Enhanced global sense of control and self-efficacy are regarded as important pathways to enhanced well-being (Myers, Sweeney & Witmer, 2000), while reductions in *Maturity fears* are seen as one of the best indicators of good prognosis in recovering from eating disorders (Garner, 2004). Results suggest that the desire to return to the security of childhood has been replaced by healthy self-nurturing behaviour and multiple demands of late adolescence no longer seem overwhelming. Thus, rigid preoccupation with food and eating, an illusion of control and competence, is rendered unnecessary (Steiner, et al., 2003). Reduced ineffectiveness and maturity fears are also manifested in practically significantly increased *Environmental mastery* (SPWB), suggesting empowerment and control over critical decisions about their lives (Ryff & Keyes, 1995), and thus important pathways to wellness. The effectiveness of including coping and problem-solving skills in the WOW-programme is shown by a Group 1 comment:

“The exercises were really practical and gave me tools to help change my problems. Furthermore it is also applicable to other problems in life. It is very useful and something I have used every day since the programme.”

Practically significant increases in *Interoceptive awareness* (EDI-2) and reductions in *Bulimia* (EDI-2) and *Confusion-Bewilderment* (POMS), as well as maintenance thereof at four-month follow-up evaluation, reflect that participants in Groups 1 and 2 are more competent to accurately recognise and respond to their own emotional needs and bodily states than before. Participants thus have clarity about their emotional states and external experiences and are more in touch with their bodily and intra-psychoic sensations (Garner et al., 1983). It is thus no longer necessary to utilise automatic, mindless bulimic behaviour, such as emotional eating or bingeing to regulate, cope with and numb out confusing negative affect (Polivy & Herman, 2002) or to obtain emotional relief (Lindeman & Stark, 2001). These findings are consistent with those of Schneer (2002), Brown and Ryan (2003), as increased interoceptive awareness, possibly a form of mindfulness, is associated with decreased bulimic behaviour. Mindfulness was shown to relate to and predict more positive well-being, less cognitive and emotional disturbance, and serves an important self-regulation function (Brown & Ryan, 2003). A Group 2 participant said:

“Since I have the ability to pin-point what I am feeling I no longer go on a binge...I just know what is bugging me and I can get up and do something about it. Since I have figured this out I have stopped bingeing completely...that “I am the leader” thingy just stuck in my head and it really helps me to take care of myself.”

Furthermore reductions in Bulimia (EDI-2) could possibly be supported by practically significant reductions in negative mood states such as *Tension-Anxiety* (POMS), and a *Drive for thinness* (EDI-2). According to Pelletier, Dion and Levesque (2004), dietary restraint and negative affect are hypothesised to increase binge eating and bulimia nervosa onset. The opposite thus also seems true in this case.

Reduced *Perfectionism* (EDI-2) reflects significantly decreased irrational beliefs that only highest standards of personal performance and perfection are acceptable (Garner et al., 1983). According to Garner (2004) perfectionism is an important component in determining depth of commitment toward achieving a thinner shape and drive for thinness. Once perfectionism and irrational beliefs are reduced, drive for thinness is also reduced. Practically significantly enhanced *self-esteem* as indicated on the *Personal self* and *Total self* scores on the TSCS, support reduced perfectionism, as high self-esteem moderates perfectionism (Polivy & Herman, 2002). Reduced perfectionism could further reduce several cognitive distortions including: obsessive thoughts, inaccurate judgments and rigid thinking patterns (Beck & Weishaar, 1991; Ellis & McLaren, 2005; Polivy & Herman, 2002). It clearly increased realism and learnt optimism, suggesting buffering and protective effects against pathology (Seligman, 2005). Comments from Groups 1 and 2 members highlight this point:

“I am a great deal more self-contented and I have accepted myself. I feel happier, richer and more complete. My entire future can benefit from this programme.” (Group 1).

“I feel substantially more positive and loving towards myself...that deep dark valley of depression that I used to visit so often has disappeared from my life destiny list – I refuse to ever again put myself down that much” (Group 2).

“The WOW-programme has empowered me to experience the essence of being me and to really become the person that I want to be” (Group 2).

Reductions in *Interpersonal distrust* (EDI-2) for both experimental groups are in line with practically significantly enhanced *Positive relations* (SPWB) and reflect that participants feel less

alienated from others, are less reluctant to form close relationships and express their thoughts/feelings to others. Practically significantly enhanced self-esteem and effectiveness, as well as improved body-image support the findings, as low self-esteem and a negative body-image entail greater interpersonal discomfort and concerns about approval and acceptance in social relationships (Cash, Thériault & Annis, 2004). In this regard a Group 2 member wrote:

“My self-esteem has improved; I can now communicate much better with other people”.

Enhanced interoceptive awareness also facilitated participants’ willingness to confide in others, especially in WOW-group sessions. A Group 1 member said:

“I am more open to experiences and I no longer withdraw. There are more people around me and I no longer keep them at a distanceI have actually made a few good friends during this programme”.

Enhancement of PWB

Enhanced *Personal growth* (SPWB) for both experimental groups imply that participants are more open to new experiences and have developed new attitudes and behaviours towards themselves and life (Ryff & Keyes, 1995). They are thus practically significantly less prone to internalise socio-cultural ideals of thinness and female beauty. A Group 2 member and her friend said:

“I am much more peaceful and open to new experiences. I am emotionally more responsive and my thought patterns have changed.”

“I have undergone an internal metamorphosis and have changed. I feel more in control and no longer negative towards myself.”

Self-acceptance (PWB) and *self-esteem* (Personal and Total self of the TSCS) entail more positive attitudes towards self and acceptance of self, whether good or bad. Changed attitudes and beliefs towards self are also reflected in decreased body dissatisfaction and self-objectification. Geller et al. (2002) found that self-esteem based on other things than appearance and weight, served as protective factor against developing eating disorders. Positive self-esteem is also conducive to reducing internalisation of socio-cultural mores of thinness and facilitates rejection of skeletal bodies and enhances PWB (Paradise & Kernis, 2002; Phelps, Johnston & Augustyniak, 1999; Steiner et al., 2003). One Group 2 female commented:

“I have ruled the weight-issues out of my life. My self-image and self-acceptance have improved, although I still have to work on self-confidence. Luckily the As-if process helps me with that. My attitude is way more positive.”

Another commented:

“I have more self-confidence; I look people in the eye, whether I talk to them or whether I merely pass strangers. This is a huge milestone for me!”

Finally, regarding *maintenance of outcomes* at four-month follow-up evaluation, the following quote illustrates the strength of the WOW-programme:

“Participating in the WOW-programme was a life-changing experience and something I will never forget.”

CONCLUSIONS

An overall conclusion is that the WOW-programme, on its own, was found to be an effective psychosocial intervention in the management of females with SED, since it led to reduced SED-symptoms, traits associated with eating disorders and enhanced PWB. Its impact in the context of a relatively brief time span, with retention of gains at four-month follow-up, is proof of its efficacy as a clinical intervention with white female students in a peri-urban environment.

A second conclusion is that the combined programme involving Tomatis stimulation and WOW intervention proved to have a biopsychosocial effect, in view of its concomitant positive physiological impact on fatigue and vigour. Its further ability to accelerate therapeutic effects and ground Group 1 participants in levels of Autonomy, significantly higher than attained in Group 2 and 3 participants, confirms its robustness. As such its compatibility and complementary role within the context of a psychosocial intervention was demonstrated. However, the cost-effectiveness and comparative brevity of the WOW-programme renders it the programme of choice regarding individuals with SED.

Thirdly, the findings have shown that conceptually, pathogenic and salutogenic perspectives can be successfully combined into a risk-protective model of secondary prevention, which may possibly even be useful as an enrichment programme for female students in general.

LIMITATIONS AND RECOMMENDATIONS

Failure to attract multicultural participants, despite repeated invitations in various residences, is a limitation, as the WOW-programme was then designed from an individualistic Westernized perspective. Adaptations and application with multicultural groups is thus indicated, as well as with female adolescents at secondary school level. Although symptom reduction and well-being enhancement has been proved, non-measurement of the impact of specific techniques is another limitation. However, positive qualitative participant feedback indicated their effectiveness. Further refinement of the WOW-programme necessitates in-depth evaluation of the contribution of each intervention.

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Table 1: Significance of pre-post test differences within Group 1 ($n = 15$)

Variable	M-pre	SD	M-post	SD	M-diff	SD-diff	p	d
EDI-2:								
Drive for thinness	25.33	5.136	15.60	5.791	-9.73	1.065	0.0002*	1.304***
Bulimia	32.66	5.052	25.00	8.177	-7.00	0.954	0.0006*	1.147***
Body dissatisfaction	27.33	7.528	16.06	6.638	-11.27	0.697	<.0001*	1.794***
Ineffectiveness	45.40	5.705	34.53	6.937	-10.87	0.661	<.0001*	1.642***
Perfectionism	22.13	5.939	17.73	4.802	-4.40	0.641	0.0006*	1.143***
Interpersonal distrust	29.96	5.009	24.00	6.513	-5.96	0.689	0.0003*	1.236***
Lack interoceptive awareness	45.33	5.821	34.53	10.246	-10.80	0.950	0.0006*	1.136***
Maturity fears	36.93	6.386	31.20	5.894	-5.73	0.625	0.0006*	1.145***
OBCS:								
Body surveillance	39.47	4.453	30.46	5.218	-9.01	8.349	0.0009*	1.079***
Body shame	39.11	8.073	29.18	10.645	-10.01	11.265	0.0040*	0.888***
POMS:								
Tension-Anxiety	19.73	8.438	12.40	7.872	-7.33	7.715	0.0025*	0.950***
Depression-Dejection	25.60	13.162	13.27	12.062	-12.33	14.094	0.0044*	0.874***
Anger-Hostility	17.60	9.500	9.73	6.496	-7.87	10.960	0.0148*	0.717***
Vigour	13.00	6.948	18.33	6.148	5.33	9.193	0.0413*	0.580Δ
Fatigue	14.10	4.629	9.67	5.789	-4.43	7.456	0.0372*	0.594Δ
Confusion	12.66	4.336	7.02	4.567	-5.64	5.353	0.0011*	1.054***
Total POMS	76.70	39.935	33.76	37.209	-42.94	47.515	0.0035*	0.903***

Note:

M-pre: mean pre-test, **SD:** standard deviation; **M-post:** mean post-test; **M-diff:** Mean difference; **SD-diff:** standard deviation of difference; **p:** statistical significance, **d:** practical significance; **EDI-2:** Eating Disorder Inventory-2; **OBCS:** Objectified Body Consciousness Scale; **POMS:** Profile of Mood States; $p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant; $d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance

Table 1 continued: Significance of pre-post test differences within Group 1 ($n = 15$)

Variable	M-pre	SD	M-post	SD	M-diff	SD-diff	p	d
SPWB:								
Autonomy	51.27	13.630	61.80	8.570	10.53	8.927	0.0004*	1.179***
Environmental mastery	53.24	7.211	61.09	8.486	7.85	9.900	0.0083*	0.793***
Personal growth	62.20	11.638	69.16	10.509	6.96	11.378	0.0327*	0.612Δ
Positive relations	56.40	10.182	64.27	12.646	7.87	7.567	0.0013*	1.039***
Purpose in life	55.93	10.003	63.40	8.838	7.47	8.484	0.0042*	0.880***
Self-acceptance	47.07	13.941	58.87	12.223	11.80	12.621	0.0028*	0.934***
SOC-29:	120.47	21.256	139.87	18.969	19.40	18.376	0.0011*	1.056***
SWLS:	19.87	6.501	24.67	6.747	4.80	6.581	0.0135*	0.729Δ
TSCS:								
Physical self	54.93	9.467	63.33	6.564	8.40	8.765	0.0023*	0.958***
Moral ethical self	67.87	14.217	72.60	10.055	4.73	6.111	0.0096*	0.775***
Personal self	57.95	10.863	66.47	7.586	8.52	8.618	0.0018*	0.989***
Total self-concept	304.61	51.200	334.53	33.273	29.92	34.044	0.0043*	0.879***

Note:

M-pre: mean pre-test, **SD:** standard deviation; **M-post:** mean post-test; **M-diff:** Mean difference; **SD-diff:** standard deviation of difference; **p:** statistical significance, **d:** practical significance; **SPWB:** Scales of Psychological Well-Being; **SOC-29:** Orientation to Life Questionnaire; **SWLS:** Satisfaction with Life Scale; **TSCS:** Tennessee Self-Concept Scale.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 2: Significance of pre-post test differences within Group 2 ($n = 15$)

Variable	M- pre	SD	M-post	SD	M-diff	SD-diff	p	d
EDI-2:								
Drive for thinness	27.60	7.538	20.46	7.453	-7.13	0.749	0.0001*	1.360***
Bulimia	33.53	6.046	29.80	6.992	-3.73	0.639	0.0061*	0.834***
Body dissatisfaction	31.88	8.868	20.66	7.898	-11.21	0.684	<.0001*	1.820***
Ineffectiveness	43.80	5.684	37.12	9.331	-6.68	0.489	0.0001*	1.364***
Perfectionism	24.46	5.718	21.97	5.452	-2.49	0.531	0.0090*	0.782Δ
Interpersonal distrust	30.20	5.894	27.06	3.14	-3.14	0.403	0.0007*	1.109***
Lack interoceptive awareness	44.56	7.862	38.33	9.271	-6.23	0.637	0.0020*	0.976***
Maturity fears	33.93	8.233	31.33	9.240	-2.60	0.504	0.0256*	0.645Δ
OBCS:								
Body surveillance	37.73	6.850	30.82	5.859	-6.91	5.561	0.0003*	1.242***
Body shame	37.13	6.022	28.16	7.373	-8.98	7.625	0.0004*	1.177***
POMS:								
Tension-Anxiety	17.13	8.887	11.87	8.069	-5.27	5.933	0.0040	0.888***

Note:

M-pre: mean pre-test, **SD:** standard deviation; **M-post:** mean post-test; **M-diff:** Mean difference; **SD-diff:** standard deviation of difference; **p:** statistical significance, **d:** practical significance; **EDI-2:** Eating Disorder Inventory-2; **OBCS:** Objectified Body Consciousness Scale; **POMS:** Profile of Mood States; **SPWB:** Scales of Psychological Well-Being; **SWLS:** Satisfaction with Life Scale; **TSCS:** Tennessee Self-Concept Scale.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 2 continued: Significance of pre-post test differences within Group 2 ($n = 15$)

Variable	M-pre	SD	M-post	SD	M-diff	SD-diff	p	d
SPWB:								
Environmental mastery	59.20	10.988	64.42	8.968	5.22	6.171	0.0055*	0.846***
Personal growth	67.54	11.709	71.42	8.960	3.88	7.043	0.0511	0.551Δ
Positive relations	60.19	11.652	65.62	12.319	5.43	9.024	0.0354*	0.601Δ
Purpose in life	61.33	10.594	65.74	7.633	4.41	7.912	0.0487*	0.557Δ
Self-acceptance	56.64	12.830	64.87	8.887	8.23	9.956	0.0064*	0.826***
SWLS:	23.67	10.000	26.93	5.297	3.27	3.104	0.0011*	1.052***
TSCS:								
Physical self	58.47	6.728	67.13	8.773	8.67	6.575	0.0002*	1.318***
Personal self	63.87	9.905	69.93	7.768	6.07	6.745	0.0037*	0.899***
Total self-concept	323.99	35.878	351.75	31.768	27.76	24.913	0.0007*	1.114***

Note:

M-pre: mean pre-test, **SD:** standard deviation; **M-post:** mean post-test; **M-diff:** Mean difference; **SD-diff:** standard deviation of difference; **p:** statistical significance, **d:** practical significance; **EDI-2:** Eating Disorder Inventory-2; **OBCS:** Objectified Body Consciousness Scale; **POMS:** Profile of Mood States; **SPWB:** Scales of Psychological Well-Being; **SWLS:** Satisfaction with Life Scale; **TSCS:** Tennessee Self-Concept Scale.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 3: Significance of pre-post test differences within Group 3 ($n = 15$)

Variable	M-pre	SD	M-post	SD	M-diff	SD-diff	p	d
EDI-2:								
Bulimia	23.06	5.663	26.00	6.59	2.94	0.368	0.0006*	2.195***
POMS:								
Tension-Anxiety	20.07	8.128	21.87	7.209	1.80	1.612	0.0007	1.118***
Vigour	14.47	5.462	13.20	4.585	-1.27	1.830	0.0180	0.691Δ
Fatigue	13.73	7.075	15.00	6.676	1.27	2.120	0.0364	0.597Δ
Total POMS	82.46	46.912	69.70	40.655	7.24	11.226	0.0256	0.645Δ
SPWB:								
Personal growth	62.27	10.491	56.80	7.073	-5.47	6.479	0.0056	0.844***

Note:

M-pre: mean pre-test, **SD:** standard deviation; **M-post:** mean post-test; **M-diff:** Mean difference; **SD-diff:** standard deviation of difference; **p:** statistical significance, **d:** practical significance; **EDI-2:** Eating Disorder Inventory; **B:** Bulimia; **POMS:** Profile of Mood States; **T-A:** Tension-Anxiety; **V:** Vigour; **F:** Fatigue; **SPWB:** Scales of Psychological Well-Being.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 4: Significance of post-assessment differences between groups ($n = 45$).

Variable	(n=15)	(n=15)	(n=15)						
	M-diff	M-diff	M-diff	T[1;2]	T[1;3]	T[3;2]	d[1;2]	d[1;3]	d[3;2]
EDI-2:									
Drive for thinness	0.3714	1.2841	-0.9127	-	*	*	-	1.65***	1.17***
Bulimia	0.5619	1.5143	-0.9524	-	*	*	-	2.17***	1.36***
Body dissatisfaction	0.0065	1.1037	-1.0972	-	*	*	-	1.65***	1.64***
Ineffectiveness	0.4193	1.2170	-0.7978	-	*	*	-	2.09***	1.37***
Perfectionism	0.3178	0.8756	-0.5578	-	*	*	-	1.60***	1.03***
Interpersonal distrust	0.04048	0.9667	-0.5619	-	*	*	-	1.81***	1.97***
Maturity fears	0.3917	0.9214	-0.5298	-	*	*	-	1.71***	0.99***
OBCS:									
Body surveillance	-2.100	-10.811	8.711	-	*	*	-	1.76***	1.42***
Body shame	-1.035	-11.546	10.511	-	*	*	-	1.43***	1.29***
POMS:									
Tension-Anxiety	-2.067	-9.133	7.067	-	*	*	-	1.60***	1.24***
Depression-Dejection	-6.824	-14.571	7.748	-	*	-	-	1.27***	-
Anger-Hostility	-5.800	-8.267	2.467	-	*	-	-	0.93***	-
Vigour	4.133	6.600	-2.467	-	*	-	-	1.12***	-
Fatigue	-1.900	-5.700	3.800	-	*	-	-	1.04***	-
Confusion	-3.667	-5.911	2.244	-	*	-	-	1.41***	-
Total POMS	-24.39	-50.18	25.79	-	*	-	-	1.41***	-

Note:

M-diff: mean of differences; **T[1;2]:** Tukey's intervals between Group 1 and 2 ; **T[1;3]:** Tukey's intervals between Group 1 and 3; **T[2;3]:** Tukey's intervals between Group 2 and 3; **d[1;2]:** practical significance of differences between Group 1 and 2; **d[1;3]:** practical significance of differences between Group 1 and 3; **d[2;3]:** practical significance of differences between Group 3 and 2; **EDI-2:** Eating Disorder Inventory-2; **OBCS:** Objectified Body Consciousness Scale; **POMS:** Profile of Mood States.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 4 continued: Significance of post-assessment differences between groups ($n = 45$).

Variable	(n=15) M-diff [1;2]	(n=15) M-diff [1;3]	(n=15) M-diff [3;2]	T[1;2]	T[1;3]	T[3;2]	d[1;2]	d[1;3]	d[3;2]
SPWB:									
Autonomy	7.415	12.287	-4.873	*	*	-	0.91***	1.52***	-
Personal growth	3.085	12.431	-9.345	-	*	*	-	1.44***	1.08***
Positive relations	2.441	9.862	-7.421	-	*	*	-	1.30***	0.98***
Purpose in life	3.056	10.574	-7.518	-	*	-	-	1.19***	-
Self-acceptance	3.574	11.600	-8.026	-	*	-	-	10.54***	-
SOC-29:	11.200	21.588	-10.388	-	*	-	-	1.39***	-
SWLS:	1.533	4.467	-2.933	-	*	-	-	1.05***	-
TSCS:									
Physical self	0.267	7.333	-8.000	-	*	*-	-	1.19***	1.23***
Total self-concept	2.160	30.520	-28.360	-	*	*	-	13.32***	12.38***

Note:

M-diff: mean of differences; **T[1;2]:** Tukey's intervals between Group 1 and 2 ; **T[1;3]:** Tukey's intervals between Group 1 and 3; **T[2;3]:** Tukey's intervals between Group 2 and 3; **d[1;2]:** practical significance of differences between Group 1 and 2; **d[1;3]:** practical significance of differences between Group 1 and 3; **d[2;3]:** practical significance of differences between Group 3 and 2; **SPWB:** Scales of Psychological Well-Being; **SOC-29:** Orientation to Life Questionnaire; **SWLS:** Satisfaction with Life Scale; **TSCS:** Tennessee Self-Concept Scale.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

Table 5: Analysis of pre-post covariance of differences between groups, corrected for pre-test counts ($n = 45$).

Variable	Grp 1 (n=15) Adj M-diff	Grp 2 (n=15) Adj M-diff	Grp 3 (n=15) Adj M-diff	p[1;2]	p[1;3]	p[3;2]	d[1;2]	d[1;3]	d[3;2]
EDI-2:									
LIA	1.10	0.83	-0.46	0.3708	< 0.0001*	< 0.0001*	-	2.95***	2.45***
SPWB:									
EM	7.76	7.75	-4.42	1.000	0.0001*	0.0004*	-	1.71***	1.71***
TSCS:									
PerS	8.36	7.20	-3.71	0.9326	0.0014*	0.0072*	-	1.39***	1.26***

Note:

Adj M-diff: adjusted mean difference; **p[1;2]:** statistical significance of differences between Group 1 and 2; **p[1;3]:** statistical significance of differences between Group 1 and 3; **p[3;3]:** statistical significance of differences between Group 3 and 2; **d[1;2]:** practical significance of differences between Group 1 and 2; **d[1;3]:** practical significance of differences between Group 1 and 3; **d[2;3]:** practical significance of differences between Group 3 and 2; **EDI-2:** Eating Disorder Inventory-2; **LIA:** Lack Interoceptive Awareness; **SPWB:** Scales of Psychological Well-being; **EM:** Environmental Mastery; **TSCS:** Tennessee Self-Concept Scale; **PerS:** Personal Self.

$p \leq 0.05 = *$ Statistically significant; $p \leq 0.01 = **$ Highly statistically significant

$d = 0.5 = \Delta$ Medium effect size; $d \geq 0.8 = ***$ Practical significance.

SECTION 4: Article 3

**Lived experiences of Subclinical Eating Disorder: female students’
perceptions.**

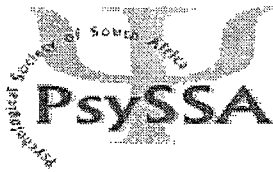
submitted to the

Panel of peer viewers of the South African Journal for Psychology for review;

and will be submitted to the

*Conference proceedings of the 4th European Conference on Positive Psychology, 1-4 July 2008,
Croatia;*

*Conference proceedings of the Annual Congress of the Psychological Society of South Africa
(PSySSA), 2008.*



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- **First page:** The full title of the manuscript, the name(s) of the author(s) together with their affiliations, and the name, address, and e-mail address of the author to whom correspondence should be sent.
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- **Concluding pages:** A reference list, followed by tables and figures (if any). Each table or figure should be on a separate page. Tables and figures should be numbered consecutively and their appropriate positions in the text indicated. Each table or figure should be provided with a title (e.g., Figure 1. Frequency distribution of critical incidents). The title should be placed at the top for tables and at the bottom for figures.

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- Use indents only for block quotes.
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Manuscripts should be written in English. As the SAJP does not employ a full-time or dedicated language editor, authors are requested to send their manuscripts to an external language specialist for language editing before submission.

4.2 Manuscript

Lived experiences of Subclinical Eating Disorder: female students' perceptions.

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Abstract

In contrast to substantial quantitative studies concerning Subclinical Eating Disorder (SED), “insiders’ perspectives” are non-existent. Thus, the lived experiences of 30 white, undergraduate females, purposively sampled, were examined in this phenomenological, multiple case study. Rich qualitative data, further clarified through focus groups, emerged from graphic colour representations of lived SED, explanatory written records and “correspondence” with and from their “SED problem”. Findings yielded from constant comparative analysis were grounded in relevant theory. Four main categories emerged, reflecting serious intra-, interpersonal, existential and body-image concerns. Results were indicative of underestimation of SED-severity, its detrimental impact on participants’ psychological well-being and high risk for escalation into full-blown eating disorders. The necessity for an integrated, risk-protective model of secondary prevention, contextualised within psycho-social developmental perspectives, was highlighted, while participant perceptions contributed to programme structuring.

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Key words:

body dissatisfaction; case study; drive for thinness; interpretative phenomenological analysis; psychological well-being; qualitative research; self-objectification; Subclinical Eating Disorder; subjective experience; weight over-concern.

Body-image and dietary problems among children and adolescents have become so common, that the prevalence of Subclinical Eating Disorder (SED) may be grossly underestimated (O'Dea, 2004). Eating disturbances not meeting formal diagnostic criteria, thus SED, are also called Eating Disorders Not Otherwise Specified in the DSM-IV-TR (American Psychiatric Association, 2000; Franco & Omari, 1999). They are conceived to be at an intermediate point on an eating disorder continuum, with asymptomatic, unrestrained eating at one end, milder forms of disturbed eating at an intermediate point, and clinical eating disorders at the other extreme (Mintz, O'Halloran, Mulholland & Schneider, 1997). The validity of this continuum is supported in recent publications (Franco & Omari, 1999; Mazzeo & Espelage, 2002).

Hence, SED-symptoms are clustered into three strands in this study: body dissatisfaction and shame, self-objectification and drive for thinness (Garner, 2004; Fredrickson & Roberts, 1997). *Body dissatisfaction and shame* occur when individuals perceive their body size and shape to be discrepant with internalised, culturally determined "thin" body ideals (Garner, 2004). *Self-objectification* occurs when persons internalize observers' perspectives on their physical self, thus seeing themselves as objects to be looked at and evaluated, and experiencing extreme self-consciousness, body shame and obsessive body surveillance (Fredrickson & Roberts, 1997). *Drive for thinness* entails persistent weight over-concern, fear of fat, perceived fatness, irrational beliefs and preoccupation with dieting (Celio et al., 2000; Levitt, 2003). These three strands have consistently been identified as best predictors of clinical eating disorder onset (Muehlenkamp & Saris-Baglama, 2002; Polivy & Herman, 2004; Stice, 2001), and harmful physical and psychological well-being effects (Mussell, Binford & Fulkerson, 2000; Stice & Bearman, 2001).

Recent reports concerning fear of fat, body dissatisfaction, weight-concerns, dieting, self-objectification and more severe cases of serious eating disorders, have been documented in children as young as seven years (Riacciardelli & McCabe, 2001; Robinson, Chang, Haydel, & Killen, 2001). Furthermore, a recent study (Croll, Neumark-Sztainer, Story & Ireland, 2002) suggests that the prevalence of SED is also very high during early adolescence. This developmental stage has consistently been identified as a very vulnerable stage for development of eating disorders, since crucial psycho-social developmental tasks such as formation of an integrated sense of identity, selection of important life goals and developing adequate coping strategies have not yet been

successfully negotiated (Berzonsky, 1992; Mussell et al., 2000; Polivy & Herman, 2002). Furthermore, body dissatisfaction and self-objectification impede successful negotiation of psychosocial developmental tasks. Females who are dissatisfied with their bodies, separate their person from their bodies and regard their bodies as representing themselves, thus basing their sense of self-worth on body-image (Muehlenkamp & Saris-Baglama, 2002; Polivy & Herman, 2004; Rieder & Ruderman, 2001). Additionally, research on tertiary campuses suggests that many females with SED, develop full-blown clinical eating disorders on entry (Drewnowski, Yee, Kurth & Krahn, 1994). Thus, at that stage it is often too late for primary prevention, which necessitates secondary prevention (Becker, Franko, Nussbaum & Herzog, 2004). Since SED is contextualised within adolescence, secondary prevention programmes should also be tailored to address unique developmental needs of adolescents (Mussell et al., 2000).

A substantial body of recent quantitative research has been devoted to the study of SED-symptoms such as body-image concerns, body dissatisfaction, weight over-concern and self-objectification (Cash, Theriault & Annis, 2004; Garner, 2004; Geller, Zaitsoff & Srikameswaran, 2002; Ghaderi, 2001; Littleton & Ollendick, 2003; Mussell et al., 2000; Polivy & Herman, 2002; Rieder & Ruderman, 2001; Tiggemann & Lynch, 2001; Tiggemann & McGill, 2004). These clinicians spent vast resources from an “outsider’s perspective” developing explanatory models, finding predictors, risk and protective factors. In contrast, “insiders” or phenomenological perspectives (Brocki & Wearden, 2006), describing subjective experiences of SED-symptoms are non-existent. Phenomenologists are concerned with understanding and describing social and psychological phenomena from the perspectives of people involved (Lopez & Willis, 2004). No qualitative studies of this nature could be found, except qualitative studies examining clinical eating disorders, namely patients’ descriptions of bulimia or binge eating (Abraham & Beaumont, 1982); perspectives on grappling with eating disorders (D’Abundo & Chally, 2004); and recovery journeys from anorexia (Weaver, Wuest & Ciliska, 2005).

Interpretative phenomenological analysis (IPA) is a post-modern, qualitative research approach, its philosophy originally developed by Husserl, in protest against dehumanisation in Psychology (Wertz, 2005). Husserl’s philosophical writings were complemented by, amongst others, Heidegger, Merleau-Ponty and Derrida (Dowling, 2007). Eventually, however, the school of IPA emerged,

reflecting the influence of Van Manen (Dowling, 2007). In essence IPA looks beyond diagnostic and quantifiable outcomes (Willig, 2001), and involves detailed examination of participants' life world. It attempts to explore personal experience and is concerned with an individual's personal perception or account of an event or object, as opposed to an attempt to produce an objective statement of the event or object (Dowling, 2007; Lopez & Willis, 2004; Smith & Osborn, 2003). At the same time IPA emphasises that research is a dynamic process, with the researcher playing an active role. Interpretative phenomenological analysis thus involves a two-way interpretation process (Brocki & Wearden, 2006; Dowling, 2007), in that whilst participants are trying to make sense of their world experiences, "the researcher is trying to make sense of the participants' trying to make sense of their experiences" (Smith & Osborn, 2003, p.51).

Since life experiences and beliefs of females with SED are difficult to quantify, IPA offers ways to explore and interpret their lived experiences (Brocki & Wearden, 2006). Ultimately, comprehension of subclinical pathology and efforts to alleviate it should culminate in promotion of psychological well-being and prevention of full-blown pathology (Ryff & Singer, 1998). To this end, interpretative phenomenologists are interested in being empowered through their awareness of new meanings of lived experiences (Brocki & Wearden, 2006; Maggs-Rapport, 2000). Hence, an "inside perspective" can provide information to direct development and refinement of secondary prevention programmes according to contextual and developmental needs of SED-clients. It highlights the potential value of this interpretative phenomenological study, which was aimed at exploring the subjective experiences of SED in female students.

METHOD

Design

An interpretative phenomenological (Brocki & Wearden, 2006), multiple case study design, was incorporated into a three group pre-post test design, thus forming part of a larger mixed-method design (Kirsten, Du Plessis & Du Toit, 2007b, see article 2 in this PhD). Mixed-method designs are used when strategies that do not normally form part of a particular research method, are incorporated into a single project (Morse, 2003). In the primary study (Kirsten et al., 2007b), outcomes of two secondary prevention programmes, namely the Weight Over-concern and Well-being (WOW) programme on its own (Group 2), and a combined intervention, sound stimulation by

means of the Tomatis Method and WOW-programme (Group 1), were compared to a control group (Group 3). This multiple case study was firstly used with an inductive drive (Morse, 2003) during Sessions 1 and 2 of both programmes, to obtain subjective descriptions of experiencing SED. Thereafter the same data, combined with post-treatment qualitative data, were used deductively to further validate quantitative findings of the primary study.

Participants

A purposive sample (n=30) involving two of the experimental groups (Groups 1 and 2) from the original three group pre-post-test design (n = 45) of the WOW-programme (Kirsten et al., 2007b), was drawn. Sampling was purposive since participants fitted the criteria of “good informants” and could best answer the research questions, thus enhancing rigour (Mason, 2003; Morse, Barrett, Mayan, Olson & Spiers, 2002). Only Groups 1 and 2 were used, since data saturation occurred within responses of these two experimental groups, deeming further sampling unnecessary (Morse, 2003; Neuman, 2003). Despite efforts to obtain a multi-cultural sample, only white, pre-graduate females volunteered. Mean age for Groups 1 and 2 was 20.33 years (ages ranging between 18 years 6 months and 22 years), comprising Afrikaans (n = 27) and English speaking (n = 3) females. Mean height was 166.23 cm and mean weight 62.98 kg, resulting in normal mean Body Mass Index of 23.96 (World Health Organization, 1995). Maternal histories of eating disorders were reported by 36.66 % (n = 11), whereas 46.66 % (n = 14) experienced family pressures to be thin. Mean age at onset of SED was 16 years 1 month. Participants reported that they almost always felt dissatisfied with their bodies, and spent approximately 45% to 65% of their time obsessing about them. More than a third reported laxative or medication use to lose weight, 20% were constantly dieting, 30% regularly dieted, whilst 50% sometimes dieted, reflecting their drive for thinness and SED status. Unsuccessful attempts to overcome SED-symptoms and a strong desire to change were unanimously reported.

Ethical considerations

Ethical approval was obtained from the Ethics committee of the Faculty of Health Sciences, North-West University (project 06K25) and ethical considerations were addressed as described by Walker (2007). Prior to programme commencement (Kirsten et al., 2007b) participants were informed of the aims of the study orally and in writing, and written informed consent obtained. Anonymity and

confidentiality were ensured by using fictitious names* when quoting responses. Participants were free to omit answering questions which evoked discomfort. They could withdraw from the study without explanation, but no harm was foreseen from any therapeutic technique or research questions.

Method of data collection

Rigour and methodological integrity and congruence were ensured by using multiple methods consistent with interpretative phenomenological studies such as open-ended, in-depth focus group interviews, drawings, letter-writing, and self-reflective researcher field notes (Brocki & Wearden, 2006; Franklin, 2000; Guillemin, 2004; Morse, 2003; Morse et al., 2002; Willig, 2001). Since metaphor drawings, letters to the “SED-problem”, and in-depth focus group interviews revolved around the same research questions, it was argued that data sources would reflect corresponding themes and thus rich descriptions of lived experiences of SED and data triangulation (Shenton, 2004).

The research questions were: What is it like to live with this “problem”?; Could you express your experience by means of drawing a metaphor?; and Could you write a letter to your “problem” explaining to “it” what it is like to have “it” in your life? The “SED-problem” was briefly explained to participants in terms of the three strands of SED, thus a prevailing yet disturbing sense of body dissatisfaction, weight over-concern and self-consciousness.

Qualitative data collection was conducted separately for Groups 1 and 2, and commenced during Sessions 1 and 2 of the two secondary prevention programmes (Kirsten et al., 2007b). It was argued that the Tomatis Method of sound stimulation (Tomatis, 1996) would not yet have a discernable therapeutic effect on Group 1 between Sessions 1 and 2, since by then they had only been listening for two hours. Hence comparable data was assumed. During Sessions 1, participants were requested to draw a metaphor which portrayed their experience of SED, and to explain it in writing on the reverse side. Metaphor meanings were discussed during in-depth focus group interviews. The rationale for drawings and their written explanations was that they facilitate awareness and self-insight (Ikonen, 2003), and as technique is known to be effective in expressing emotions which are difficult to verbalise (Franklin, 2000; Guillemin, 2004). It draws attention to a person’s inner world

and experiences (Eisdell, 2005), and indicates how a person gives meaning to her own context and life world (Loock, Myburgh & Poggenpoel, 2003). As creative medium it is non-threatening, hence it leads to more spontaneous expression of inner experiences (Gilligan, 2000), and assists in expressing emotions and thoughts that were previously inaccessible (Madden & Bloom, 2004).

In preparation for Session 2, participants wrote a letter to their “SED-problem” explaining to “it” what it was like to experience “it”. Then the “problem” had to respond to their letter. The rationale for letter-writing is that it encourages people to describe their own stories as they exist now (Goldberg, 2000). It also separates the writers’ identity from the problem, thus they can take a less defensive and shame-ridden stance when describing their lived experiences (White & Epston, 1990; Zimmerman & Shepard, 1993).

Participants discussed their written documents in open-ended, in-depth focus groups. The researcher demonstrated investigator responsiveness by using prompts and clarifying meanings, namely: “What do you mean by that?”; “Can you give an example?”; and “So you are saying... that ... am I right?” to enhance reliable understanding and rigour (Morse et al., 2002; Shenton, 2004). Focus group sessions were audio taped and verbatimly transcribed afterwards. Original data were obtained in Afrikaans and translated into English, and every effort was made to ensure preservation of original response meanings.

Data analysis

Qualitative data analysis of Sessions 1 and 2 of the primary study was completed prior to analysing quantitative data, to avoid bias during coding (Morrissette, 1999). Two independent interpreters, both psychologists, analysed all transcripts and written documents, before meeting to obtain consensus on their findings. Interpretative phenomenological analysis was employed (Brocki & Wearden, 2006; Smith & Osborn, 2003; Willig, 2001), beginning with naïve reading and re-reading of transcripts and written documents, categorising each data set into fairly broad themes, by using a number of readings for each data set. Data sets of Groups 1 and 2 were firstly read separately, whereafter themes across data sets were compared, providing insight into those areas where responses and perceptions were fairly consistent, whilst also seeking possible negative cases. None was found. Broad themes were refined into specific categories, main and subthemes were indicated

and a summary table was produced. Emerging themes were peer reviewed by a co-coder, and findings submitted for a member check (Koch, 2006; Morse et al., 2002).

Validity, reliability and trustworthiness

The process of ensuring reliability and validity, thus trustworthiness (rigour) in qualitative research, requires that researchers pay attention to processes of verification that not only ensure trustworthy findings, but also shape and direct the entire research process during its development and execution (Morse et al., 2002). Hence *investigator responsiveness, methodological coherence, theoretical sampling and sampling adequacy, an active analytic stance and data saturation* as methods to enhance rigour (Morse et al., 2002) were employed and referred to in the aforementioned sections. In addition, trustworthiness as originally conceptualized by Guba and Lincoln (1981), and defined in terms of *credibility, transferability, dependability and conformability* (Koch, 2006; Lincoln & Guba, 1985) was ensured. *Credibility* was ensured by using method and data triangulation, multiple data analysts, reflexive journal keeping and member checks; *transferability* by providing descriptive data about the sample and context, and offering results to participants to determine whether they corresponded with their own experiences; *dependability* by dense data description, using a process of cycling between observation, analysis and interpretation in order to enhance reliable understanding, skeptical peer review of coding, and using an audit trail; and *confirmability* by data triangulation and self-reflexivity.

RESULTS

Perceptions of living with SED as experienced by this female sample were clustered into four main categories, namely intra-, interpersonal, existential and body-image concerns, with subcategories being: Personal Brokenness, Personal Shame, Perceived Personal Inadequacy and Enslavement, Existential Vacuum, Perceived Social Pressure, Perceived Social Isolation and Body-image Dysfunction. Main and subcategories were organised according to their prominence and illustrated in a mind-map in Figure 1. Although interrelated, themes will be discussed separately.

Figure 1 here

Intrapersonal Concerns

Personal Brokenness

In Figure 2 a metaphor of a flower with a broken stem depicts personal brokenness, which manifested in a sense of incompleteness, emotional despair, immature ego-boundaries, and feeling out of contact with herself. Other drawings in this category were of flowers broken in a storm.

Figure 2 here

Tess* described her drawing as follows:

“This is a flower standing in a deep dark valley of depression, while a hail storm is raging on and on...(crying). The flower’s stem is already broken. Each leaf of the flower has a separate colour, representing the various negative emotions that I am experiencing towards myself and life. The thorns are symbolic of negativism directed towards myself and others.”

Emotional despair, associated with personal brokenness, was reflected by participants experiencing varying levels of emotional distress directly related to weight and appearance issues. They reported frequent mood swings and a variety of negative emotions such as depression, anxiety, hopelessness and an overall negative outlook on life and the self. Belle* said:

“One moment I feel happy and great about myself, but, the next moment I am uncertain, depressed and unhappy, because I feel fat and self-conscious.”

Negative emotions appeared to be internalised, and were reported to generate reciprocal negative affect spirals in intra- and interpersonal domains. *Ida wrote to her problem:

“I know that everybody has his/her ups and downs, but you give me more downs than ups and make me feel depressed, resulting in a vicious cycle....when I feel depressed I push other people away from me, and then I feel alone because nobody wants to be with someone who is always negative.”

Inner conflict, a prominent experience, was described by participants as a state of feeling stuck between getting better and maintaining the problem. Thus they experienced a lack of personal integration and felt a distinct sense of being torn in two. Mary* said:

“It is like a battle between right and wrong, you want to be skinny and then you diet and drink pills to be thin, whilst you know that it is wrong, but you just can’t let it go. On the other hand you want to be healthy, it’s good, but you don’t get that right either.”

Participants could not understand the underlying function and meaning of their SED-symptoms and inner conflict. They thought that the conflict existed because the conflicting parts within themselves pursued conflicting aims. However, further exploration confirmed that aims of “being healthy and getting better” versus “being thin and maintaining the problem” were similar, namely to be happy, and feel good about themselves. Since they did not realise this, they were being torn between positive benefits and negative outcomes of SED. Negative outcomes appeared to indirectly address core psychological needs e.g. recognition, self-esteem. Since core needs were only indirectly addressed, their good feelings could not last and they felt obliged to increase or continue their SED-behaviour. Tess*, who reported substantial SED-related weight loss, wrote:

“I hate you and I love you. I love you because I am now noticed in a different way other than just by my academic achievements and it makes me feel great. Yet I HATE YOU because you torture me until there is nothing left of me and because nothing I accomplish is ever good enough for you.”

Immature ego-boundaries manifested in inadequate ego-strength and personal integration, since effective and internalised self-regulation, compassion and rationality featured insufficiently. The “SED-problem” appeared to regulate their personality and “protect” them from undesirable behaviours and reality, thus fulfilling the role of the ego. Apparently, SED-symptoms “protected” them from peer pressure and getting involved in undesirable activities such as drug abuse, drinking and promiscuity. Belle* wrote:

“You keep me from social meetings where I just might lose myself - such as getting involved with drugs or with a guy who might sexually abuse me or even abuse alcohol. I rather choose to stay in my room when I feel self-conscious. In the end I study, rather than never taking up my books.”

Furthermore, SED appeared to “assist” in being good to others, by not being vain and respecting others by not looking down on them. Sadly, this stance was not reciprocated in their relationship with themselves, which revealed a lack of self-compassion. Carry* wrote:

“I have to admit that at least you sometimes make me feel guilty for a reason. If it had not been for my guilt there would be no stopping me. So, Problem, at least you keep me humble and in my place. Hence, I have no reason to look down on others and I do not think that I am better than they are.”

Participants also reported fears of maturity and avoided coping with life’s challenges. Nicky* said:

“In a strange way you help me to maintain some kind of balance...you ensure that I will never feel up to doing things that I might not be able to cope with.”

Lack of interoceptive awareness and mindfulness were demonstrated by participants being disconnected from themselves emotionally and to some extent physically, since they were not clear about, and often not aware of, their thoughts, emotions and bodily sensations. Consequently they reported difficulties resolving emotional turmoil, engaged in compulsive behaviour and applied inadequate coping skills. Mariska* said:

“I suddenly get this urge to eat, I don’t know why. Initially I might decide to eat something small and healthy, but eventually I do not feel better and that is when I just want to eat a whole packet of chips. It feels as if I just have to do it, I can’t stop it. I don’t know if it is linked to emotions, I really can’t say. But once you start eating you feel better for just that one second...then you start feeling bad all over again, and you don’t know why.”

Personal Shame

In Figure 3 the sense of personal shame is illustrated by a drawing of a girl hiding herself underneath a bucket. Shame is the result of judging oneself against perceived standards of others and not meeting them. It entails a harsh, degrading, non-empathic attitude towards oneself. Other drawings included a girl with a paper bag over her head and a hippopotamus hiding beneath water with only its ears sticking out.

Figure 3 here

Mia* explained Figure 3 as follows:

“I am standing underneath a bucket so that nobody can see me. When I look better the bucket can perhaps be lifted.”

Self-rejection was experienced by all participants, since they felt unable to accept themselves and did not take pride in their uniqueness as individuals. Self-rejection was accompanied by negative self-esteem, perceived inferiority, self-disgust and a lack of self-compassion, reflecting distorted self-perceptions and beliefs, tainted by perfectionism. It seemed as if their self-worth was determined by their experience of SED. Lynn* wrote:

“You really make me feel inferior. You are so persistent that I have lost my self-esteem somewhere. You make me believe that if I’m not skinny enough, I’m not good enough.”

Furthermore, personal failures to overcome SED and past traumas were irrationally personalised and over-generalised, and seen as reflections of who they really were. Such irrational self-perceptions of “being bad”, “wrong” and “dirty” seemed to add to further personal shame as well as identity confusion. Mary* wrote:

“You confuse me. You make me doubt right from wrong. Do you know what a bad person that makes me? I cannot accept a compliment – I have zero self-esteem – I think that you pollute me!”

Vera’s * statement depicted a lack of self-compassion and nurturance, and a notion to not derive pleasure from positive experiences:

“The worst part of this is, that even if someone tells me ten million times how pretty I am, I won’t believe it!”

Self-rejection also included an inability to accept the past and work through unresolved matters. Bea* explained:

“This claw represents the past that still has a hold on me.”

Perfectionism appeared to be an ultimate life goal, reflecting the belief that only highest standards of personal performance were acceptable and that others, especially parents, expected them to achieve outstandingly. Participants thus had unrealistic goals, which exhausted them. They were also tortured by constant perfectionistic parental demands. Failure to achieve perfection left them despondent and inferior, since they did not grant themselves positive appraisal. Being perfectionistic meant that they derived no sense of personal worth and esteem from their personal value as human beings, but only from their accomplished weight loss. Tess* wrote:

“I am tired of climbing onto that ugly scale and to know that I will never be good enough. That even after losing 14kg I still crave to be perfect, despite having received so many

compliments...I hate you and I love you Perfectionist, this is what you do in my life...you torture me until there is nothing left of me, and because nothing I ever do or achieve is good enough for you...you do not know how to stop and when to allow me to rest.”

Projecting a *False self* was a prominent subtheme, and participants tried to project an image that would be more acceptable to others than their true selves. It appeared to be strongly related to self-rejection, since denying one’s true self implied being ashamed of oneself. Projecting a false self implied denying one’s true self, and to that end even one’s strengths and realistic self-knowledge. Sadly their false or ideal selves appeared to hinder the synthesis of integrated identities, since they differed too much from their real selves. Sue* said:

“I can’t be myself because I do not know who I am! I just want to cry, but I can’t, because I have presented a false image to the world...and you and I both know being like that is not the real me.”

Liza* continued: “Everyday you hold me back from being who I really am. Because of you I do not know who I am! You are my mask, I hide behind you so that people won’t see the real me...”

Perceived Personal Inadequacy and Enslavement

This category refers to the perception that one is a victim and incapable of effectively coping with life’s demands or growing personally. It refers to the experience of being inwardly “stuck”, trapped and helpless. Participants believed that they were unable to change or support themselves and appeared to be unaware of their own part in creating this condition. Figure 4 depicts this category. Other drawings depicting comparable themes were: a mini-bus taxi having to parallel park, without the driver knowing how to do it; a sunflower trapped behind bars; a person being pushed down by a heavy load; a ten-ton weight; and a girl being trapped in a thunderstorm on one side of a hill while the sun is shining on its other side.

Figure 4 here

Mandy* described Figure 4:

“I am only one person, but it feels as if I must be able to be at 20 different places at once, and that I must be able to cope with everybody: my mom, dad, friends, family and my studies...the

past. Sometimes these expectations just become too much for one brain and two hands to handle (becoming tearful). So many things are expected of me, but I cannot do all of them due to a lack of time, space, competencies and sometimes even a lack of knowledge of knowing how to. That is why I have two pairs of hands and feet, yet I still cannot cope with everything.”

Restricted personal growth. Participants felt unable to change or to develop new attitudes and beliefs, since “the problem” seemed to be constantly with them, trapping them. It became clear that the problem and/or victim identity had been internalised since early adolescence, as they did not experience symptomatic improvement. This casts SED a chronic state that exercises a negative impact on quality of life.

Lee* complained:

“You have been a part of my life for such a long time now, that I can’t remember what has happened that you came into my life and still remain part of my life. You are with me twenty-four-seven.”

Their self-consciousness and perceived inadequacy contributed to withdrawal from life and life’s opportunities, thus inhibiting them from growing personally and developing their full potential. Carry* described her drawing as follows:

“I am the shining sun, but I feel self-conscious and then I become red with shame, which causes me to become trapped behind these bars, and then I cannot reach my potential.”

Personal weakness and victimhood reflect the notion that participants were unaware of their own part in maintaining their “SED-problem” and their internal power to resolve it. They admitted their victimhood and felt inadequate, anxious and ashamed because of their perceived inability to overcome the “problem” independently. They felt they needed external assistance. Joy* said:

“You are the only problem ever that I couldn’t overcome...You enter my life at the most impossible times – you are like a stumbling block at my feet ...and after all these years I still fall over you! It is as if you will always be with me and just don’t want to leave me alone to do my own thing.”

Interestingly, when the “SED-problem” responded to participants’ letters, it became apparent that the “problem’s” power was overestimated and that it was quite willing to depart. The “problem’s”

response underlined the pivotal role of personal choice and taking personal responsibility to author their own lives in resolving SED. Ilze's* "SED-problem" responded:

"I am sorry for the negative manner in which I have influenced your life, but you have to realise that it is due to your own doing that I am here. I am not as strong as you think... You are much stronger than I am - the choice is yours! If you allow me to dominate your life, I will, and won't even think about it twice! If you decided upon a day that I must be out of your life, I will. It is all your choice!"

Inadequate coping skills refer to difficulties participants experienced to cope with life challenges and to create contexts that would address psychological needs and enhance psychological well-being. The relative absence of broad positive coping processes and a denial or belittling of their personal strengths were clear. Participants felt overwhelmed by life's challenges and especially experienced difficulties in coping with developmental, parental, academic and peer group demands. Other difficulties were time and stress management; obtaining or utilising support networks; modifying their cognitive processes; problem solving behaviour and taking responsibility for problems that were not theirs. Nine participants were unhappy with their present living arrangements, and eight were unhappy about family conditions and quality of familial relationships.

Compensation mechanisms were used to mask their perceived weaknesses, to attempt to overcome perceived limitations and insecurities and to prove themselves. Joy* said:

"You (the "problem") give me the energy to do something that will make me excel and that will force people to temporarily forget about my embarrassments. You are the only certain thing in my life that helped me to see other problems as challenges."

Participants felt that SED helped them to develop positive traits, and regulate their behaviour, to which end Lee* said:

"Without you I would probably think too much of myself and wouldn't care what others think of me. Without you I would perhaps become a "tart" and wear "slutty" clothes because I would like my body too much. Maybe a rapist would then use the opportunity. So thanks for keeping me in place."

Existential Concerns

Existential Vacuum

An existential vacuum, according to Frankl (1969) is the emptiness and hollowness people experience when their experiential world becomes meaningless and life has no purpose. It seemed that the values participants subscribed to were unsuitable to address their psychological needs. SED tainted their sense of spirituality since their source of inner peace, meaning and happiness culminated in their appearance, and not a higher power. A drawing of a spiral depicted the existential vacuum in Figure 5. Other drawings were of churning black holes and of a ghost screaming.

Figure 5 here

Ilze* explained her SED-metaphor as follows:

“It feels like a spiral, a never ending circle, a deep, dark hole that is constantly growing bigger... You cannot get out of it, it takes over your life and eventually it is all you think about, it prevents you from having a full life!”

Life Dissatisfaction and meaninglessness refer to a tendency to generalise feelings of meaninglessness and dissatisfaction experienced in one area in life to other life areas (Rieder & Ruderman, 2001). Apart from areas of success, participants seemed unable to value those life areas, nor allowed themselves to experience associated positive emotions. Their dissatisfaction implied that they did not experience their lives as well lived. Apparently SED-symptoms implied a lack of personal fulfilment and satisfaction, and difficulties to resolve existential issues. Cindy* wrote:

“I live half a life and do not optimise my time... I have to live! I am young only once. Yet I haven't started living and experiencing the enjoyable, nice part of life, the ice-cream in the cone... Thanks to you I don't want to live my life... you make me feel old and tired.”

Ascetism was suggested through participants' withholding themselves from joy and pleasure in life, thus withdrawing from authentic engagement in life and placing rigid restrictions upon themselves. They lived ascetic lives since they underutilised environmental opportunities, and did not actively pursue activities and goals that provide meaning, value and purpose to life. They experienced

missed opportunities as a loss and felt depressed, experiencing life as meaningless. Ruth* explained it as follows:

“It feels as if you are withholding me from opportunities. You steal my guts [c] and cause me to lose out on opportunities. Sometimes I would love to engage in activities, but you prevent me. I have already missed out on such a lot of stuff [c]...”

Diane* said:

“Inside the house I feel safe and happy, but the minute that I go outside I am uncomfortable, while there are so many beautiful things to experience such as the flowers. I look through the window and see all the pretty things in life but never really experience them...because I am inside the house and the door is very small!”

Identity crisis refers to participants’ failure to develop congruent identities as a result of succumbing to significant others’ skewed expectations and media thinness ideals, and the need to discover their real identities. Venus* clarified it as follows:

“I am like a closed book, I am stuck in my cocoon and I am searching for my identity... You have been part of my life now for so long that I cannot remember what has happened that you came into my life and that you are still a part of my life. Because of you I do not know who I am. I struggle to express myself. I know that I am able to achieve and be more than I am, but you disable me. I never feel that I am good enough. I always am someone I am not. I am so tired – I just want to be myself, but it is as if I do not know how! I do not know how to relax and be myself because you are always there.”

Desire for wholeness reflects another existential issue, namely the need for personal integration by being free from SED. It also reflects some form of ego-strength, but a lack of knowledge in applying it. Margo* wrote:

“I want to be a new, free, human being without issues! And more importantly: I want to be able to love myself! I want you out of my life! You have to get out of my life.”

Interpersonal Concerns

Perceived Social Pressure

Participants had the perception that others were pressurising and expecting them to behave in a certain manner, and to conform to certain values according to which they would be judged. They tried to escape and protected themselves from social pressure, however not always successfully, since they neither applied personal strengths nor relied on constructive coping mechanisms. Figure 6, a drawing of lightning bolts striking from the sky, depicts this theme. Other drawings included thunderbolts originating from the eyes and mouths of parents and other people; thunderbolts striking from the sky; and people being stared at disapprovingly.

Figure 6 here

Tina* explained Figure 6 as follows:

“I think that the thunder and lightning reflect my life because I associate those thunderbolts with my dad – he pressurises me a lot with diets. He always says: “Men do not like girls who are overweight. Our family tends to be fat, just look at your sisters, you must be careful” (crying). This is my umbrella under which I feel safe, but it is not always with me.”

Family and peer pressure were illustrated by a propensity to conform to norms and conventions of thinness as participants felt compelled to adhere to family and peer expectations of the thin ideal. Significantly family and peer pressures to control weight featured more prominently than media pressures in their responses. Alice* said:

“The weight onslaughts of my parents are always questions and things they have to say about my weight, or exercise and diet pills, and things about myself. My mother always expects the perfect appearance and my father the perfect weight. “

Self-objectification was reflected by participants perceiving themselves as objects to be judged, and constantly relied on the judgment of others and their approval (Muehlenkamp & Saris-Baglama, 2002). They did not evaluate themselves by personal standards, and reported internalised observers’ perspectives on their physical selves. Despite having a desire to accept themselves, their longing for approval and fear of rejection from others seemed to be stronger. Lynn* wrote:

“You (the problem) have succeeded masterly in teaching me to be very critical of myself...the result is that I constantly feel other people’s eyes on me. You make me ashamed and make me

wish that everybody around me could be blind. Then nobody would “measure” me in terms of body size and how much I am eating... You convinced me that other pretty, skinny girls evaluate me.“

Perceived Social Isolation

Social isolation refers to a perceived sense of aloneness participants experienced as part of withdrawing from social interaction. Figure 7 illustrated this main theme and the difficulties participants experienced to tolerate themselves when being alone.

Figure 7 here

Ruth* wrote on the reverse side of her drawing:

“During the day there are many people around me. However, the problem goes with me everywhere I go. The people around me are so pretty, skinny and happy. In the meanwhile I carry THIS everywhere. I go with a smile, in case people start asking questions. At night it is only my problem and I, then I no longer have to pretend.”

Interpersonal distrust, reflected beliefs that others would hurt one and were not to be trusted, hence one could not form warm and trusting relationships or engage in the reciprocity thereof. Ruth* wrote:

“You cause me to push away even those people with whom I used to be friends... Why are you constantly telling me that I cannot trust people? Why do you make me feel that I am not good enough to socialise with them or that they will laugh at me and gossip about me?”

Participants wanted to go out with friends, but at the same time felt too self-conscious to do so, since they perceived themselves as not meeting social criteria of being thin and acceptable. Violet* wrote:

“You make a very pleasant thing such as going to the coffee shop with my friends an issue... I am so tired of making excuses when my friends want to go out.”

Furthermore, participants felt trapped and doomed to everlasting loneliness as long as they had the problem. Lee* complained:

“You make me feel as if I am not good enough to make new friends, especially with guys...”

They described a vicious downward spiral of feeling bad about themselves, avoiding people, feeling lonely, feeling even worse about themselves and withdrawing even more socially. Liza* said:

“I already feel so lonely...because the more unhappy and uncomfortable I feel, the further I push people away...I’m going to be lonely forever... just you and me.”

Loneliness, one of the most distressful emerging subthemes, refers to the perception that one is alone in the world. However, participants realised their fear of loneliness was a result of their own choice to withdraw from and not invest in social interactions. Their fear of rejection, self-doubt and self-rejection however maintained their isolation. Violet* wrote:

“I am isolated, even though I have many people and friends around me. It is as if I have so much love and caring to share with others, but I close myself off. It is as if everybody around me is happy and likes one another. I know that other people also like me, but it is as if I do not have enough self-confidence and am not willing to show others who I really am.”

Body-image Concerns

Body-image Dysfunction

Body-image dysfunction is argued to consist of an erroneous estimate of one’s own body size, defined as perceptual body size distortion, and of body dissatisfaction which is a negative evaluation of one’s own body (Benninghoven, Jürgens, Mohr, Heberlein, Kunzendorf et al., 2006). Body-image dysfunction is the result of distorted beliefs regarding eating, shape and weight (Rieder, & Ruderman, 2001; Shafran & Robinson, 2004), and is depicted in Figure 8, where a normal weight girl is looking in a mirror and seeing an over-weight version of herself. Other drawings included mirrors distorting reality; houses with everything built into the wrong places; and a pig covered with mud.

Figure 8 here

Sue* explained her drawing as follows:

“When I look in the mirror I see a whale instead of myself. It is terrible to walk around with this issue all day. I want to be a new, free person, without issues.”

Perceived fatness as a perceptual body size distortion, along with self-objectification and other subthemes in this category, demonstrate the adolescent notion of an imagined audience. Margo* said:

“I am constantly aware of myself and how unacceptable and fat I look...I want to judge myself constantly and do not see my true mirror reflection.”

Excessive body dissatisfaction with concomitant shame was portrayed by participants’ measuring of their self-worth against thinness, and internalising drive for thinness and cultural and media messages that only thin and beautiful bodies were valued and loved. Lynn* said:

“For such a long time I have felt huge, fat, ugly and disgusting, that I became a very unpleasant person. You and your helpers (SED) were successful in making me believe an illusion namely that I am not good enough, not pretty enough.”

Fear of fat as a cognitive distortion, although not as severe as in eating disordered individuals, reflected guilt, distorted beliefs about food, weight over-concern and compulsive appearance control behaviour, upon which Zaria* commented:

“I measure myself daily. I only eat salads, otherwise I will become fat and my agent won’t cast me when I’m fat.”

Unconditional and unquestioning adherence to beliefs about food and fat resulted in feelings of guilt about natural bodily needs. Tess* elaborated:

“I am so tired, tired of always still feeling hungry after I have eaten, and tired of always feeling guilty because I have actually eaten.”

DISCUSSION

The researcher was struck by participants’ frank disclosures of their SED-related miseries in drawings, associated writings and verbalisations. Despite their victimhood since mid-adolescence, they were evidently ready for any intervention which could enhance the quality of their restricted lives. Portrayal of lived experiences of SED, depicted the condition to be much more severe than originally anticipated. Moreover, these findings were further validated by the high degree of “fit” between qualitative and quantitative data concerning SED, obtained in the main study (Kirsten et al., 2007b). Pre-test mean scores on the Eating Disorder Inventory-2 (EDI-2, Garner, Olmstead &

Polivy, 1983), confirm that about 60% of participants experienced Drive for Thinness, Body Dissatisfaction, Bulimic Behaviours and Maturity Fears for the larger part of the time, for example they struggled almost continually with primary SED issues as graphically depicted by their metaphors and explanations.

Such high levels of SED-strands and symptoms clearly reflected the high risk status of this group, as they have been consistently identified as the most significant predictors of eating disorder onset (Croll et al., 2002; Ghaderi, 2001; Mussel et al., 2000; Polivy & Herman, 2002). However, the risk need not only be restricted to eating disorders development, since there were clear indicators that SED could contribute to further intra- and interpersonal, existential, familial and possibly academic disruption.

A specific intrapersonal concern was participants' average to below average mean pre-test scores on the Self-acceptance subscale of the Scales of Psychological Well-being (Ryff, 1998), as low self-esteem, associated with low self-acceptance, has consistently been a significant predictor of clinical eating disorders (Garner, 2004; O'Dea, 2004). Other intrapersonal concerns included inadequate personal integration, in terms of inner conflict, self-rejection and lack of personal growth. Inner conflict is manifested in a lack of psychological integration and according to Ryan and Deci (2000) inhibits persons from utilising their inherent growth tendencies and personality integration. Lived experiences of SED as described, thus seem to create contexts that engender conflict between basic needs and therefore set up the conditions for ill-being (Ryan & Deci, 2001). Alternatively, positive self-esteem and self-acceptance are regarded as protective factors (O'Dea, 2004; Paradise & Kernis, 2002; Steck, Abrams & Phelps, 2004) and positively correlated with psychological well-being (Ryff & Keyes, 1995). Self-acceptance was also negatively correlated with SED-symptoms and associated traits such as low self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation and asceticism (De Páz Francisco, Kirsten & Du Plessis, 2007). Notably, Pelletier, Dion and Lévesque (2004) suggested that females with a positive attitude towards the self would less likely derive self-esteem from physical appearance only. Hence the importance of "finding oneself" as a prerequisite to recovery was highlighted by healed anorexics (Weaver et al., 2005).

Interpersonal relationships/social well-being, the ability to have warm and trusting relationships, is regarded as one of the core features of quality living across cultures and time (Keyes, 2002; Ryff & Singer, 2000) and has been endorsed from early psycho-social developmental perspectives as essential to human thriving (Erikson, 1959). Sadly participants in the current study found it difficult to form and maintain multiple positive relations, reflected unstable and fragile feelings of self-worth in relation to others, and reported less optimistic beliefs and attitudes towards them. Consistent with findings by Garner (2004) participants in the current study experienced difficulty to form and maintain multiple positive relations, reflected unstable and fragile feelings of self-worth in relation to others, and reported less optimistic beliefs and attitudes towards them, as well as mentioned the debilitating effect caused by interpersonal distrust. These difficulties also concur with findings by Paradise and Kernis (2002) that people with unstable self-esteem constantly feel that their self-worth is at stake and therefore adopt a defensive orientation leading to inhibition of interpersonal relationships. Predictably, the relational difficulties of participants in this study were supported by high scores on the Interpersonal distrust subscale of the EDI-2 (Kirsten et al., 2007b), indicative of the debilitating effect of distrust.

Interpersonal difficulties are further compounded by body-image concerns associated with perceived fatness, excessive body dissatisfaction and fear of fat. Especially in a context of campus life, with its exaggerated emphasis on successful heterosexual relationships, profound interpersonal difficulties are inevitable. Deepening of SED conflicts into existential concerns, especially a sense of meaninglessness, is neither surprising. A vicious downward spiral appears to be developing unless SED-symptoms can be reduced.

In light of the above qualitatively determined constraints associated with SED, the remaining crucial issue is whether participants' quantitative pre-programme mean scores also reflect negatively on their level of psychological well-being. Mere consideration of their pre-programme mean scores on four subscales of the Scales of Psychological well-being, namely Environmental Mastery, Purpose in Life, Positive Relations and Personal Growth, may suggest that their psychological well-being status is not at risk, because of intermediate and slightly above average ranges of psychological well-being. Possibly participants wished to create a positive impression because of social

desirability considerations, and possibly were more honest in conducting colour drawings with wax crayons, given that colour drawings are perceived to penetrate through defences more effectively.

Nevertheless, those scores do not reflect the severity of intra-, interpersonal and existential concerns as graphically depicted and confirmed by participants. It would thus appear that only Self-acceptance and Autonomy, on which Groups 1 and 2 obtained the lowest pre-programme mean scores, corresponded with the lived experience of SED as they reflected crucial dimensions in which participants were severely handicapped. Overall, interpersonal distrust, internalisation of the thinness ideal, a sense of personal weakness, inadequate coping and need for compensation mechanisms also reflect a lack of autonomy, relatedness and competence in terms of self-determination as defined by Ryan and Deci (2000). In view of the grave, multifaceted ramifications of SED as outlined, participants are clearly not ready or competent enough to face life's challenges, more so because their expressed fear of maturity is one of the strongest negative predictive factors in recovery from eating disorders (Garner, 2004).

In light of the above levels of pathology, inadequate manifestation of psychological well-being and substantial high risk status of this sample, the need for secondary prevention is imperative. The core psycho-social developmental crisis that needs to be resolved at this lifetime according to Erikson (1959) is identity consolidation in terms of self-acceptance, positive self and body-esteem, values, beliefs and life goals. Thus emerging intra- and interpersonal, existential and body-image concerns need to be contextualised within a psycho-social developmental perspective. Emerging categories also have counterparts in a Salutogenic perspective (Strümpfer, 1995) of which self-acceptance, positive relations, mindfulness, self-reflection, self-regulation, meaning and purpose in life, spirituality and positive emotions are but a few (Brown & Ryan, 2003; Fredrickson & Losada, 2005; Hoyer & Klein, 2000; Ryff & Keyes, 1995; Smith, Hardman, Richards & Fischer, 2003).

Beyond the need for an integrated programme, the importance of understanding SED from psycho-social developmental, socio-cultural (Garner, 2004; Polivy & Herman, 2002) and risk-protective perspectives (Phelps, Sapia, Nathanson & Nelson, 2000; Steck et al., 2004) emerged, as well as a need to combine Salutogenic and Pathogenic perspectives and techniques (Seligman, 2005; Strümpfer, 1995) in a secondary prevention programme. In this regard the Weight-over-concern and Well-being (WOW) programme was developed (Kirsten, Du Plessis & Du Toit, 2007a) and

evaluated (Kirsten et al., 2007b) on 45 females. Outcomes were advantageous in terms of practically significant reduction of SED-symptoms and enhancement of psychological well-being, as post-programme follow-up after four-month interval confirmed benefit retention.

CONCLUSIONS

Participants' perceptions of their lived experiences of SED depicted the severity of their SED-symptoms, since major aspects of their existence were inhibited by their long-standing body dissatisfaction and shame, weight over-concern and self-objectification. The compelling qualitative portrayals of SED victimhood resonated well with their quantitative pre-programme mean scores on SED-strands which confirmed their preoccupation with SED-symptoms. It also confirmed that the lived experiences of SED cannot be adequately quantified. Their risk status for development of full-blown eating disorders is thus very high in light of their symptom severity. Consequently the need for contextually and developmentally relevant secondary prevention programmes is evident.

LIMITATIONS AND RECOMMENDATIONS

Although all efforts were made to recruit females from collectivist cultures, no volunteers emerged. The results thus mainly reflect individualistic, not collectivist, constructions of the self and psychological well-being (Markus & Kitayama, 1991). No in-depth individual interviews were conducted after in-depth focus-group interviews, since data saturation occurred within the various data sets, and drawings and letters reflected individual perspectives. Furthermore, possible response bias resulting from information about SED strands given to participants prior to drawings, letters and group discussion needs to be acknowledged, although it was only vaguely outlined. Arguably it opened them up to freely express themselves in terms of their SED-related preoccupations. Future studies also need to control for social desirability, given the responses on the Scales of Psychological Well-being (Ryff, 1998). Since this is a qualitative study, results will only be applicable within this specific community of females with SED and females with SED in similar contexts (Cresswell, 2003).

Furthermore, since eating disorders are increasingly more prevalent amongst white adolescent males and females and other cultural groups, in South Africa too (Caradas, Lambert & Charlton, 2001; Edwards & Moldan, 2004; Muris, Meesters, Van de Blom & Mayer, 2005; Senekal, Steyn, Mashego

& Nel, 2001; Szabo, 1999), future investigations into the lived experience of SED in such groups are warranted. Possible similarities and differences, and secondary prevention programming implications need investigation. Validation studies on the Scales of Psychological Well-being (Ryff, 1995) in South African adolescent samples are also imperative to obtain a more refined measurement of the impact of SED on psychological well-being.

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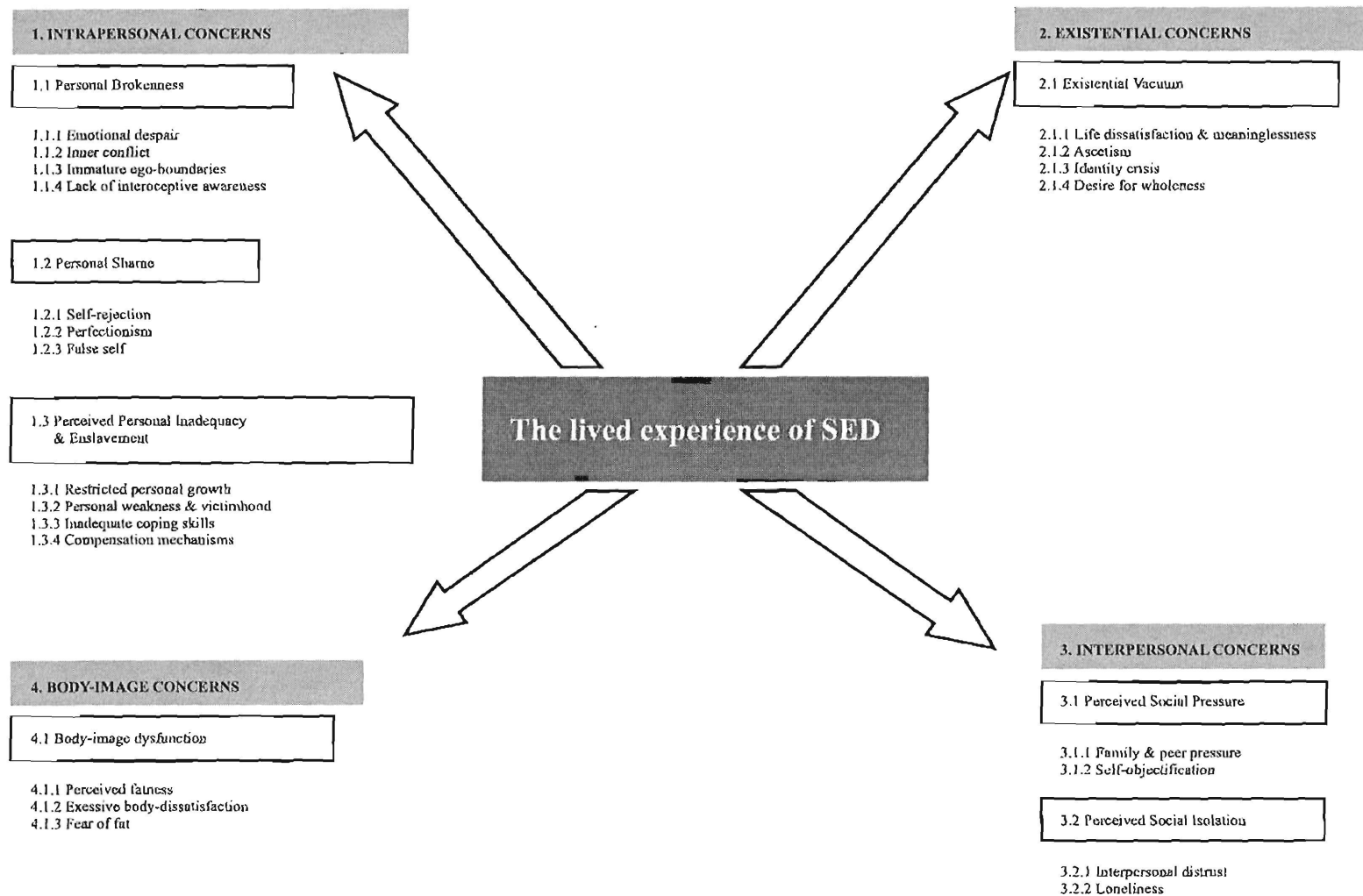


Figure 1: Illustration of main and subcategories regarding the lived experience of SED).

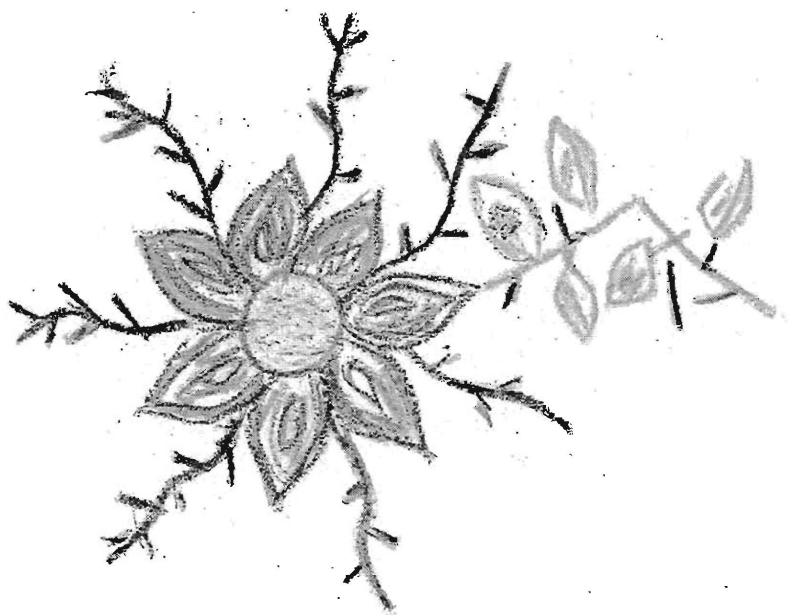


Figure 2: Illustration of Personal Brokenness

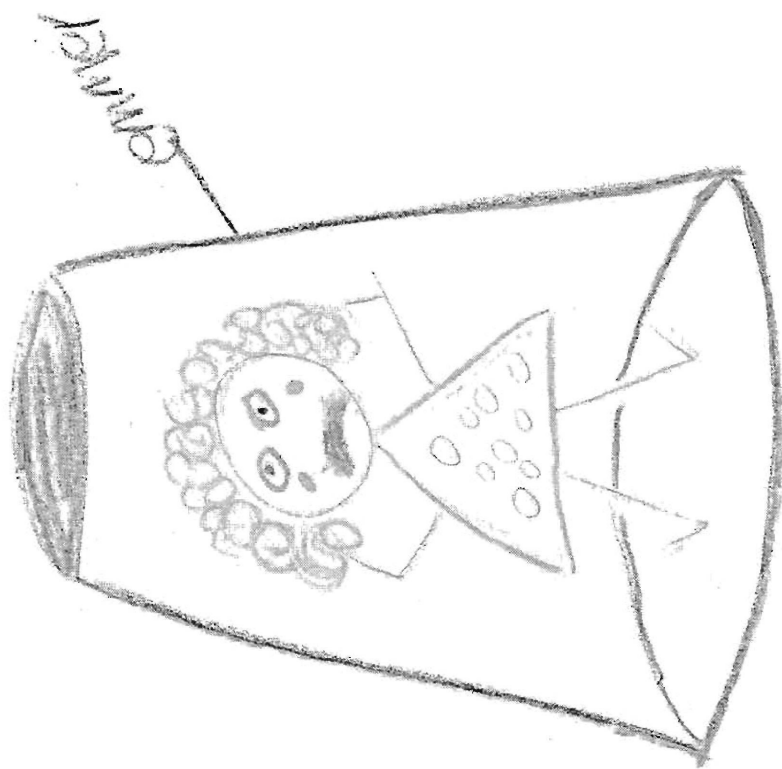


Figure 3: Illustration of Personal Shame



Figure 4: Illustration of Perceived Personal Inadequacy and Enslavement

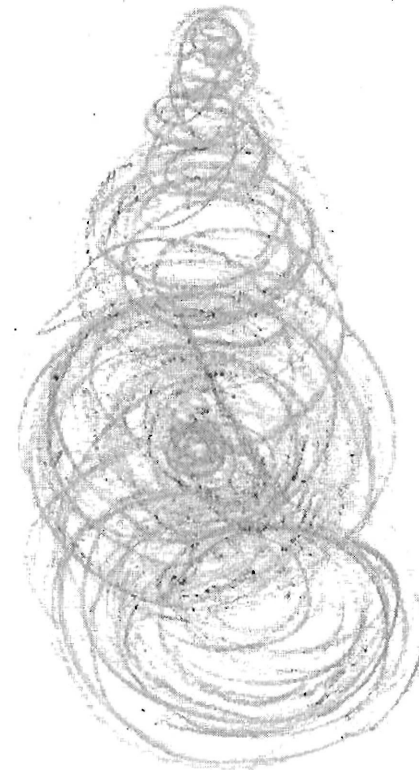


Figure 5: Illustration of Existential Vacuum

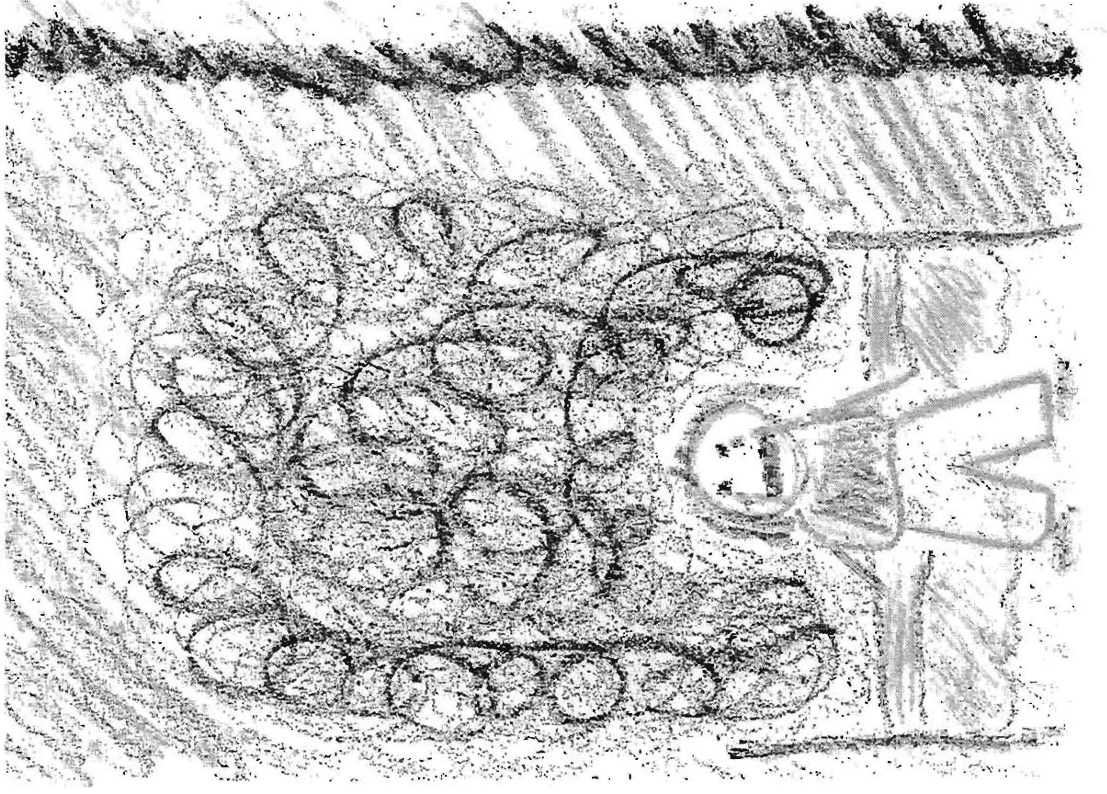


Figure 7: Illustration of Perceived Social Isolation



Figure 6: Illustration of Perceived Social Pressure

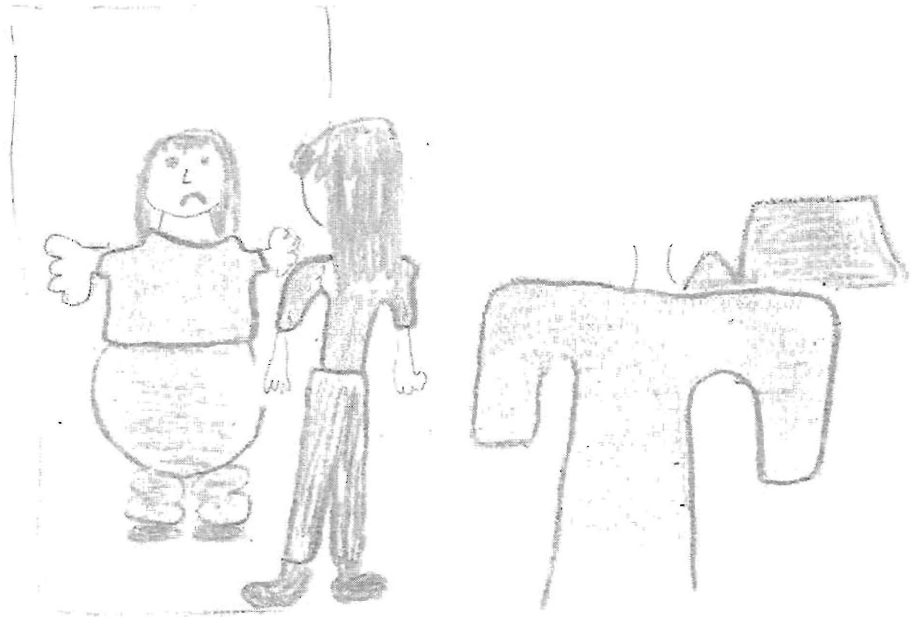


Figure 8: Illustration of Body-image Dysfunction

SECTION 5: Results, conclusions, implications, limitations and recommendations

The aims of this study were to develop and evaluate an integrated, secondary prevention programme, based on a risk-protective model for female university students with SED, in order to enhance their PWB and reduce SED-symptoms, associated psychological traits and negative mood states. Furthermore the study was aimed at obtaining an in-depth, “insiders’ perspective” on lived experiences of SED. Consequently three articles, addressing the above three aims, were written.

Results

The participative action research process (Stricker, 2002; Thomas, 2003), described in the first article (Kirsten et al., 2007a), resulted in the 9-session, Weight Over-concern and Well-being (WOW) secondary prevention programme. Programme development processes were embedded in the theory of social constructivism (Furman, Jackson, Downey & Shears, 2003; Green & Gredler, 2002), and guided by principles of participatory action research. These processes created various spirals of learning with feedback loops, which on its own again informed new learning phases (Beutler, Moliero & Talebi, 2002; Lambert, Hansen & Finch, 2001; Stricker, 2002; Zuber-Skerritt, 2002a). In retrospect four distinct phases of learning emerged. During the four phases of programme development cognisance was taken of “participant researchers’ perspectives”, and identified limitations and recommendations of unsuccessful and partially successful primary and secondary prevention programmes in the literature as well as the pilot study (Du Plessis et al., 2004). Such limitations, accounted for in the WOW-programme, included an exclusive focus on risk factors, relying upon didactic and not interactive presentations, poorly integrated approaches, non-empirically based programmes, not enough focus on self-esteem, or the absence of developmental and risk-protective perspectives (Becker et al., 2004; Janson, 2001; Mussell et al., 2000; Phelps et al., 2000; Sapia, 2001; Steiner, et al., 2003; Winzelberg et al., 2000).

In the second article (Kirsten et al., 2007b), the outcomes of the WOW-programme on its own (Group 2), evaluated comparatively with a combination of Tomatis sound stimulation and the WOW-programme (Group 1) were described. Consistent with the research aims, participation in the

WOW-programme on its own, and the combination of Tomatis stimulation and the WOW-programme, proved to be highly effective, since both led to practically significant reductions in all SED-symptoms, psychological traits associated with eating disorders and enhanced PWB, exceeding outcomes of the control group (Group 3), practically significantly. Furthermore, all outcomes proved to have been maintained at four-months follow-up evaluation. It can thus be concluded that the WOW-programme is robust on its own, since Group 1 outcomes only exceeded Autonomy practically significantly, and outcomes still lasted at four-months follow-up evaluation, without Group 2 having the added advantage of the Tomatis Method. It was further concluded that the combined programme was even more successful, and proved Tomatis sound stimulation to be an effective biopsychosocial supplement to the WOW-programme. Outcomes further demonstrated that Pathogenic and Salutogenic perspectives were conceptually combined into successful, evidence based, risk-protective secondary prevention programme.

Finally, the lived experiences of SED were explored and described through an interpretative phenomenological study (Kirsten et al., 2007c). Descriptions of lived experiences of SED and their impact, provided insights that could not be adequately quantified. Severe intra-, interpersonal, existential and body-image concerns emerged, manifesting in Personal Brokenness, Personal Shame, Perceived Personal Inadequacy and Enslavement, Existential Vacuum, Perceived Social Pressure, Perceived Social Isolation and Body-image Dysfunction. The findings underscored the often underestimated impact of SED on all life domains and PWB, and the risk of this group of developing full-blown eating disorders. Lastly results emphasised the need for an integrated programme, and highlighted the importance of understanding SED from psycho-social developmental, socio-cultural (Garner, 2004; Polivy & Herman, 2002) and risk-protective perspectives (Phelps et al., 2000; Steck et al., 2004).

Conclusions

The literature corroborates that SED is a substantial problem, since globally it is still on the increase, especially amongst white female adolescents, young males and contrary to former belief, females of other ethnic groups. Concurrently, the researcher's therapeutic work with on-campus university females sensitised her to how general and even "normative" the prevalence of SED is, and how necessary it was to develop a secondary prevention programme, since no such on-campus

programmes existed in South Africa. In this regard the qualitative research process of participatory action research, embedded in Social constructivist theory, was an especially useful tool enabling the researcher to investigate SED in depth, and to develop and evaluate a meaningful, brief secondary prevention programme across four different phases. Consequently, an evaluation of the outcomes of the WOW-programme confirmed that it was indeed effective in the reduction of SED-symptoms and associated traits, and the stimulation of enhanced PWB. Furthermore, Tomatis sound stimulation proved to be a viable and powerful supplement to the WOW-programme. Finally the study of the lived experiences of SED confirmed that it was not limited to external factors such as body shape, size and weight, but had far-reaching negative implications on intrapersonal, interpersonal, existential and psychological well-being levels. The relevance of a risk-protective focus and increasingly incorporating a Positive Psychology focus in this field, was thus also highlighted.

Contribution of study

The unique contribution of this study is that, finally, the WOW-programme is an integrated, developmentally appropriate, research based, interactive programme, based upon a risk-protective model of secondary prevention. To date no similar on-campus programmes, combining Pathogenic and Salutogenic perspectives (Strümpfer, 1995), and addressing limitations indicated in the literature exist in South Africa. This study thus contributes to broadening the field of scientific psychological knowledge, and has already stimulated discussions amongst scientific peers since the content and outcomes of the WOW-programme have already been presented extensively at both international and national peer-reviewed conferences. Secondly, the proven efficacy of the WOW-programme per sé at four-months follow-up evaluation, adds to the knowledge base of evidence based research regarding secondary prevention of SED. Knowledge gained in light of the outcomes of the WOW, the combined programme, and lived experiences of SED, can be applied in theory formation to stimulate further refinement of secondary prevention programmes in this field. Lastly, “insiders’ perspectives” on the lived experiences of SED, contributed to an almost non-existing qualitative knowledge base in this field.

Implications and recommendations

The implications of SED are wide-ranging. *Clinical implications* are the high risk for development

of clinical eating and other mood disorders, especially if no secondary prevention programmes are offered. At the same time, it should also be acknowledged that some females, especially in the context of understanding and supportive social networks and intrapersonal protective factors, would not necessarily become victims of eating disorders. *Academic implications* initially appear positive since the need for perfectionism may ensure academic dedication. However, in the long term academic failure may result since the “SED-problem” arrests their thoughts and emotions so intensely. Hence *implications for prevention* involve, over and above offering participation in on-campus prevention programmes, informal social talks on the campus radio station, in male and female residences, local high schools and parent guidance groups; availability of internet data; distribution of information pamphlets; distribution of information and research findings to popular female, male and youth magazines; and possibly writing a popular psychology book. Ultimately the study of SED and the existing WOW-programme imply various *research possibilities*, namely: the effect of each specific intervention included in the WOW-programme should be evaluated in future studies; it should be further refined and evaluated as a general enrichment programme for on-campus female and even male students; it should be evaluated amongst a multi-cultural population and adapted accordingly; and the lived experiences of SED amongst on-campus males and females of other ethnic groups should be investigated.

Limitations

The WOW-programme was not developed, nor evaluated from the perspectives of a multi-cultural population. Its impact was evaluated only globally in terms of symptoms of SED, associated psychological traits and PWB, and not specifically in terms of an in-depth evaluation of each technique. Such knowledge could have contributed to further refinement of programme content and intervention techniques. The sample size, although adequate for qualitative research, still remains small to perform more complex quantitative statistical calculations. If it had been larger, specific questionnaires measuring constructs such as mindfulness, self-regulation, coping and rationality could have been included to further substantiate the specific effect of the programme.

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