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Is Beauty Really in The Eye of the Beholder?

**Exploring Positive Psychological Factors Associated with Adjustment to
Disfigurement and the Role of Attachment Styles, Interpersonal
Functioning and Emotion Dysregulation in relation to Body Image
Dissatisfaction and Perfectionism in Cosmetic Surgery Candidates**

By

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Doctorate in Clinical Psychology

The University of Edinburgh

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With An Acquired Visible Difference: A Systematic Review

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Attachment, Body Image and Perfectionism in People Seeking
Cosmetic Surgery: The Mediating Role of Emotion Regulation and
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Thesis

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With An Acquired Visible Difference: A Systematic Review

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Skye Blue and Black.

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I. Lay Summary

This thesis consists of two chapters. The first chapter contains a review of the literature and is looking at how adjustment is being talked about and understood in people who are adjusting to a disfigurement. The review also aimed to try and identify positive factors that help people adjust well to a life living with disfigurement/altered appearance. Literature was searched using several online data bases and key words to identify important articles that look at positive factors that have been shown to relate to adjustment to a disfigurement or altered appearance. Studies selected were evaluated against a quality criteria and found to be of moderate quality. There was a large variation in how adjustment was being defined in different types of disfigurement, from a lack of anxiety and depression to positive changes and good quality of life. Factors found to be related to positive adjustment included support from friends or family and self-belief. Different ways people cope with stressful situations was also found to be related to adjustment, for example, focussing on solving causes of problems or better managing emotions during stressful situations. Across the studies, there was a lot of other factors that could be affecting a person's adjustment, such as time since injury, pain and trauma. It is suggested that more research should look at positive adjustment to disfigurement but should take into account other difficulties a person with a disfigurement be experience that may affect the adjustment process.

The second chapter explores psychological factors that may influence individuals to seek cosmetic surgery to change a part of their body that they are unhappy with, even though this is not obvious to other people and they do not have a disfigurement. There is evidence to suggest that people's attachment style may make them more vulnerable to seeking cosmetic surgery. In other words, people who worry about being rejected or abandoned may feel a need to enhance or better their appearance as a way to maintain relationships and avoid rejection. These individuals are likely to be more worried about their appearance and have body image concerns. Such individuals may also be more perfectionistic as they don't like failing or letting themselves down out of a fear that they may be rejected or abandoned. Evidence also suggests that individuals who function well in relationships and are able to manage their emotions effectively would be less likely to experience difficulties with body image or perfectionism compared to those who have difficulties in relationships and find it difficult to regulate their emotions. This study therefore explored the link between these factors in a sample of 76 participants interested in having cosmetic surgery. The results suggest that participants who were more anxious about being rejected or neglected were more

concerned about their appearance and were more perfectionistic. Results also suggest individuals who are anxious about rejection/abandonment may develop body image concerns about specific aspects of appearance which may be indirectly related to how they function in relationship and regulate their emotions. Results also suggests that individuals who are anxious about rejection/abandonment may develop perfectionistic standards about their appearance which may indirectly related to how they regulate their emotions. This suggest improving an individual's ability to manage/cope with difficult relationships and strategies to better help understand and regulate emotions may indirectly reduce appearance related concerns and improve emotional wellbeing in patients seeking cosmetic surgery. The role of emotion regulation and how individuals function or relate to one another in relationships should be explored further in individuals seeking cosmetic surgery with a view to informing future interventions to reduce appearance related distress.

II. Thesis Abstracts

Chapter 1:

Objective: This systematic review explored how “adjustment” is generally defined in adults with an acquired visible difference (AVD) and what positive psychological factors have been evidence to be associated with positive coping and processes of adjustment in AVD.

Method: A systematic search for peer reviewed journal articles from 1980 to February 2016 was conducted using: PyschINFO, Medline, EMBASE and CINAHL. Studies were appraised according to eligibility criteria and evaluated against a quality criterion to assess risk of bias.

Results: Fourteen studies were included and were in the areas of head and neck cancer, burns and amputation. Selected studies demonstrated inconsistent conceptualisations of adjustment ranging from: lack of psychopathology, resilience, post-traumatic growth and quality of life. Psychological factors identified were; social functioning (social support, social self-efficacy), coping strategies (emotion, problem-focused, active coping) and dispositional optimism. Studies were considered to be of moderate methodological quality with weaknesses including; a lack of control/comparison groups, lack of measure sensitive to the unique challenges of living with AVD and minimal account for confounding variables. Results are discussed in the context of future research implications.

Chapter Two:

Objective: This study aimed to explore the relationship between two dimensions of attachment insecurity (avoidance and anxiety), body image dissatisfaction and perfectionism using theoretically driven multiple mediation models that included emotion dysregulation and interpersonal problems as hypothesised mediators.

Method: Fifty female outpatients seeking cosmetic surgery on the National Health Service (NHS) and 26 females interested in seeking cosmetic surgery within the public domain participated in this cross-sectional study (N=76). Participants completed measures of attachment avoidance and anxiety, body image dissatisfaction, perfectionism, emotion dysregulation and interpersonal problems.

Results: Attachment insecurity was significantly associated with body image dissatisfaction and perfectionism. Interpersonal problems and emotion dysregulation also significantly partially mediated the relationship between attachment insecurity and body image dissatisfaction, specifically satisfaction with discrete aspects of body parts. Emotion dysregulation was also found to significantly partially mediate the relationship between avoidant attachment and perfectionism, but not anxiety. The clinical implications of this research are discussed.

Chapter 1: Systematic Review

1.1. Journal Article Title Page

What are the Factors Associated with Positive Coping and Adjustment in
Adults with an Acquired Visible Difference? A Systematic Review

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Abstract

This systematic review explored how “adjustment” is generally defined in adults with an acquired visible difference (AVD) and what positive psychological factors have been evidence to be associated with positive coping and processes of adjustment in AVD. A systematic search for peer reviewed journal articles from 1980 to February 2016 was conducted using: PyschINFO, Medline, EMBASE and CINAHL. Studies were appraised according to eligibility criteria and evaluated against a quality criterion to assess risk of bias. Fourteen studies were included and were in the areas of head and neck cancer, burns and amputation. Selected studies demonstrated inconsistent conceptualisations of adjustment ranging from: lack of psychopathology, resilience, post-traumatic growth and quality of life. Psychological factors identified were; social functioning (social support, social self-efficacy), coping strategies (emotion, problem-focused, active coping) and dispositional optimism. Studies were considered to be of moderate methodological quality with weaknesses including; a lack of control/comparison groups, lack of measure sensitive to the unique challenges of living with AVD and minimal account for confounding variables. Results are discussed in the context of future research implications.

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Key words: Acquired Visible Difference, Visible Disfigurement, Altered Appearance, Adjustment, Coping

Highlights:

- Adjustment was vaguely defined and poorly operationalised within the context of challenges of adjusting to an acquired visible difference (AVD)
- A lack of psychopathology/negative affect/distress being used to measure adjustment despite the multi-dimensional nature of adjustment and reports of positive change/growth
- Social self-efficacy, perceived social support, support seeking, emotional support, problem solving and optimism associated with adjustment to an AVD
- Limited control of confounding variables unique to challenges of adjusting to an AVD (e.g. pain, trauma, loss of function) in statistical analysis
- Lack of measures sensitive to the unique challenges of adjusting to an AVD, including measures of disfigurement

1.2 Introduction

The term “visibly different” describes individuals who have an appearance that is generally perceived by the individual affected and society to be different to cultural and social norms (Rumsey and Harcourt, 2004; Thompson and Kent, 2001). Within the literature, a visible difference is often referred to as a “visible disfigurement” or “altered appearance” resulting from a congenital anomaly (e.g., craniofacial abnormalities, port wine stains or cleft lip palate), a skin condition (e.g., psoriasis, acne and vitiligo) acquired later in life resulting from injury (e.g., burns, scarring), disease process (e.g., cancer, stroke) and treatment effects or surgical interventions which have disfiguring consequences (e.g., treatment of head and neck cancer, mastectomy, amputations). Defining the degree of visible difference can be an arbitrary process leaving an affected person and society’s concept of a “normal appearance” vulnerable to subjective interpretations and opinions

heavily shaped by socio-cultural factors (Clarke, Thompson, Jenkinson, Rumsey and Newell, 2014a).

In a society obsessed by beauty ideals where an attractive appearance is highly valued and influenced heavily by the media, having a visible difference can pose significant challenges. Whether acquired at birth or later in life, people with a visible difference can experience numerous psychosocial difficulties adjusting to a visible difference (Rumsey and Harcourt, 2004). The difficulties experienced can be pervasive and distressing with adverse effects on body image (Newell and Marks, 2000), low self-esteem and poor quality of life (Thompson and Kent, 2001; Moss and Carr, 2004). Rumsey, Clarke, White, Wyn-Williams and Galik (2004) found that there is a higher level of distress in people with a visible disfigurement compared with normative values, with 30-50% of 650 individuals with a variety of visible differences reporting concerning levels of anxiety and depression, with the majority of difficulties related to problems experienced in social situations. Corroborated by qualitative and empirical evidence, complaints of social difficulties are the most commonly reported amongst disfigured individuals (MacGregor, 1974; Patridge, 1994; Rumsey, Bull and Gahagan, 1986). These include experiences of exclusion, being ignored by peers, receiving unwanted attention from strangers (e.g. staring, audible comments) intrusive questions and appearance teasing (Mcgregor, 1974; Rumsey *et al*, 2004; Rumsey and Harcourt, 2004). Such negative social experiences can lead to lowered self-esteem, depression and a preoccupation with appearance in anticipation of adverse reactions or rejection (MacGregor, 1974; Newall, 1999; Kent, 2000; Thompson and Kent, 2001). These all have an accumulative effect on appearance related distress and future social interactions with many finding it difficult to meet new people, make friends and develop intimate relationships often leading to a fear of social interactions and avoidant behaviours (Newell, 1999; Newell and Marks, 2000).

Nonetheless, a proportion of individuals describe adjusting positively and coping effectively with the psychosocial challenges encountered (Egan, Harcourt and Rumsey, 2011; Kent and Keohane, 2001; Rumsey, 2002a, 2002b; The Appearance Research Collaboration, 2014). Kalick, Goldwyn and Noe (1981) found that a sample of patients receiving laser treatment for port

wine stains did not display any emotional disturbances when compared to the normal population and, similarly, in one study exploring psychological well-being in adults with cleft-lip palate, 70% of people with a cleft lip palate reported positive consequences of their disfigurement (Cochrane and Slade, 1999). In a large sample of 1265 participants with a variety of disfigurements, average scores across all measures did not indicate high levels of distress, with levels of positive affect high and negative affect low when compared with normative data (The Appearance Research Collaboration, 2014). However, it was recognised that the variance in the sample was large with a significant number of participants reporting high levels of distress. Given the variation in adjustment in this population, recently the focus of visible difference research has shifted from factors associated with mal-adjustment to psychological factors that may buffer or promote positive adjustment, with a view to understanding the psychological processes at play that may be amenable to psychological intervention and increase psychological well-being (Clarke et al., 2014; The Appearance Research Collaboration, 2014; Rumsey and Harcourt, 2004).

It is becoming clear that there are a range of psycho-socio-cultural factors that are likely to play a role in an individual's variation in adjustment to disfigurement. Much attention has focused on potential socio-cognitive processes given the plethora of social difficulties that an individual with a visible difference can encounter (Newel and Marks, 2000). From this, it has been found that social support and increased social contact promotes adjustment (Clarke et al., 2014; Kleve, Rumsey, Wyn-Williams, and White, 2002; Robinson, Rumsey and Partridge, 1996), in which social skills training has been evidenced to enhance social interactions, reduce social anxiety, avoidance and appearance related distress (Robinson et al, 1996; Rumsey et al., 1986). Coping styles and behaviours such as emotion focussed versus problem focused coping and seeking emotional and practical social support have also been found to be associated with positive adjustment (Moss, 1997a). Additionally, subjective ratings of severity of disfigurement compared to observer ratings have been evidenced to be associated with psychological adjustment, with greater perceived severity as rated by the patient significantly predicting poorer adjustment (Moss, 2005; Ong et al., 2007). From this,

empirical studies exploring adjustment to disfigurement should include a standardised subjective measure of appearance (Ong et al., 2007).

Despite factors being associated with positive adjustment in visible difference, the term “adjustment” is a complex construct to define and poses challenges in its measurement. There has been a lack of universal consensus within visible difference literature regarding the conceptualisation of the term “adjustment” leading to substantial variations in its operationalisation and measurement. Within the literature, some researchers understand it to be an “end point” or “outcome” as measured by quality of life, subjective or emotional well-being (e.g., Altier, Malenfant, Forget, Choinere, 2002; Fauerbach, Heinberg and Lawrence, 2000; Fingeret, et al., 2011), a lack of psychopathology or lack of anxiety and/or depression (e.g., Islam, Cole, Walton, Diana and Hoffman, 2012; Donovan-Hall, Yardley and Watts, 2002), or reaching pre-morbid levels of functioning (Brennan, 2001). Other researchers define it as Post Traumatic Growth (PTG), where positive changes occur following adverse/traumatic life events where individuals report higher levels of functioning compared to pre-morbid levels of functioning (Linley and Joseph, 2004). It is also recognised within the literature that adjustment is not a stable permanent state to be achieved, but rather, it is ontogenetic and fluctuates over time and different situations (Luthar, Cicchetti, and Becker, 2000). Due to the dynamic interplay of variables, adjustment is therefore difficult to operationalise meaning the use of the term “adjustment” can be ambiguous and misleading.

It is clear that more recently, researchers within visible difference research view adjustment to be a multi-dimensional construct that is subject to dynamic interactions with an abundance of variables across physical and treatment related factors, socio-cultural and psychological domains (Clarke et al., 2014a; Moss, 2005; Thomson and Kent, 2001). Although cognitive behavioural models of body image (Cash and Pruzinsky, 2004), social anxiety (Newell and Clarke, 2000) and social phobia (Clarke and Wells, 1995) are used to help understand appearance-related distress experienced due to overlapping features, there is a distinct lack of models that represent the complexities of adjustment to a visible difference. A working framework of

adjustment to disfiguring conditions has recently been developed at ‘The Appearance Research Collaboration (2014)’ with a view to providing a comprehensive frame work to guide research and clinical practise by identifying factors contributing to resilience and positive adjustment. This conceptual framework is the first to employ an evidence-based multi-factorial model of adjustment to a visible difference and consists of a series of predisposing factors (e.g. age, gender and relationship), intervening cognitive processing (e.g. optimism, fear of negative evaluation and social support) and outcomes (e.g. social anxiety, avoidance, anxiety and depression; see Clarke et al., 2014a).

Nonetheless, debate continues in the literature concerning the role of aetiology in terms of congenital and AVD in terms of psychosocial adjustment. Some researchers argue that individuals born with a visible difference from birth will have had more exposure to social situations and thus be more able to predict negative reactions from others and develop effective coping strategies to manage appearance related distress (Newel, 1999). It has also been argued that individuals with a congenital visible difference may be subject to negative evaluation, rejection and appearance teasing, ultimately impacting on their attachment style and self-concept, consequently impeding positive adjustment to visible difference (Rumsey and Harcourt, 2004). However, adjustment to a visible difference acquired later in life may present more complex challenges as the individual has to adjust to the acquired visible difference in addition to potentially life changing consequences such as trauma (Islam et al., 2012), diseases (e.g. cancer) and loss of function (e.g. loss of limb, loss off ability to swallow, communicate), pain and loss of previous looks and changes to body image (Rumsey and Harcourt, 2014). This systematic review therefore aims to explore how adjustment is generally defined in adults with an AVD and what psychological factors have been evidenced to be associated with positive coping and processes of adjustment to an AVD.

1.2.1 Research Questions

The following questions were addressed, so far as is permitted by the literature reporting psychological factors associated with positive coping and adjustment in people with an AVD.

1. How is adjustment defined in the area of AVD?
2. What psychological factors have been evidenced to be associated with positive coping and/or adjustment in people with an AVD?
3. How satisfactorily are psychological factors being measured?
4. What is the methodological quality of the evidence?

1.3. Methods

1.3.1. Protocol and Registration

A research protocol was registered at Prospero (Centre for Research Development and Dissemination, York University) and was made accessible to the public in February 2016 (See Appendix A).

1.3.2. Inclusion and Exclusion Criteria

Table 1 outlines the adapted inclusion/exclusion search criteria. Studies that provided data on at least one psychological factor associated with positive coping and/or adjustment to AVD were included. Studies that investigate only negative factors associated with adjustment or where the primary focus or outcome was maladjustment were excluded. Due to the large overlap within the literature between adjusting to AVD, disease process, treatment or medical interventions, studies were only included if they specified that adjustment to an AVD constituted a main objective of the study. Studies investigating only short or long-term adjustment were excluded.

1.3.3. Primary Literature Search Strategy

The literature search was conducted in February 2016. Screening of literature via titles, abstracts and key words against the inclusion/exclusion criteria was conducted on the following databases: PsychINFO (1987-2016), EMBASE (1980-2016), MEDLINE (1946-2016) and CINHALL (1937-2016) with the time parameters of January 1980 to February 2016. Search terms and their combinations are presented in Table 2. The population search terms were derived from previous systematic reviews (Bessell and Moss, 2007; Jenkinson, Williamson, Byron-Daniel and Moss, 2015; Muftin and Thompson, 2013) and common key words from this area of literature.

1.3.4. *Secondary Literature Search Strategy*

Citation and reference list searching of obtained articles were also screened. In addition, authors were contacted to request articles either in press or conference abstracts. In total, 13 authors were contacted but no articles were received over a three-month period. Thereafter, full text articles were screened for papers meeting the criteria or where assessing eligibility via abstracts was insufficient by two independent reviewers against the inclusion/exclusion criteria

Table 1: Inclusion/Exclusion Criteria

Domain	Inclusion	Exclusion
Population	<p>Clinical and/or non-clinical samples of adults 18 years or older who have a visible difference that has been acquired as an adult through: injury (e.g. burn, scar, limb loss), treatment effects (e.g. surgery) or consequences of disease process (e.g. cancer/stroke)</p> <p>Heterogeneous samples of acquired visible differences</p> <p>Samples that compare adults with acquired visible differences to control groups</p> <p>Samples that include people with acquired visible differences, families and/or carers</p>	<p>Children and Adolescents (<18 years old)</p> <p>Visible Difference acquired during childhood/adolescence</p> <p>Adults with a Congenital Visible Difference (e.g. cleft lip palate, neurofibromatosis)</p>
Time period	Published between 1980 and 2016	
Publication Criteria	<p>Articles written in English language</p> <p>Articles in peer reviewed journals and/or unpublished theses</p>	
Study Design	<p>Quantitative Design, Mixed Methods</p> <p>Observational, cohort/cross-sectional, longitudinal</p>	Treatment Studies, Case studies, qualitative studies
Outcomes	<p>Main focus of study are psychological factors associated with positive coping and/or adjustment in adults with an acquired visible difference</p> <p>OR</p> <p>Quantifiable empirical data necessary to compute the strength and/or association of psychological factors related to positive coping</p> <p>OR</p> <p>Quantifiable empirical data necessary to compute the strength and or/association of psychological factors related to positive adjustment</p>	<p>Studies that investigate negative psychological sequelae, challenges/adverse effects associated with maladaptive coping strategies and/or adjustment</p> <p>OR</p> <p>Studies that measure coping/adjustment to disease/disease process or medical interventions (e.g. reconstructive surgery)</p> <p>OR</p> <p>Studies that measure anticipatory disfigurement (e.g. adults who do not currently have visible differences but are about to receive/develop a visible difference either due to disease process or surgical intervention)</p>

Table 2: Search terms and combinations of populations and variables, in title or abstract, used to identify studies

POPULATION			VARIABLES		
“visible difference” OR “visibly different” OR “visible disfigurement” OR “disfig*” OR “altered appearance	OR	“burns” OR “scar” OR “limb loss” OR “amputee”	OR	“facial injury” OR “facial trauma” OR facial paralysis” OR “facial palsy” OR “head and neck cancer”	adjustment” OR “psychosocial adjustment” OR “psychological adjustment” OR “positive adjustment” OR “resilience” OR “coping”

1.3.5. Assessment of Quality of Included Studies

Due to the heterogeneous group of study types within this systematic review, the quality criteria was designed to ensure that studies were assessed fairly. A quality criteria tool was therefore developed and included 14 criteria points as well as factors deemed relevant by authors for the purpose relating to the focus of the enquiry (e.g. constructs clearly operationalised, controls for relevant confounding variables such as trauma, loss of function, measures sensitive to acquired visible difference). The 14 criteria points were as follows:

- i) Psychological factors of interest related to coping or adjustment are clearly operationalised
- ii) The study aims to examine the association between psychological factors and/or associations of interest associated with coping and/or positive adjustment
- iii) Methodology of cohort selection was clearly stated and strong evidence of avoiding selection bias
- iv) A clear description of the sample is given including the type and acquirement of visible difference/s and sample demographics such as age/gender are clearly reported
- v) Sample is representative of wider population of AVD
- vi) Power analysis reported and sample size meets it
- vii) Outcome was accurately measured to minimize bias through use of objective or subjective measures similar across different groups and through use of blinding (where appropriate)

- viii) Study used measures that were developed specifically for appearance related concerns
- ix) Clear description of studies primary objectives substantiated by clear theoretical rationale. Study states specific objectives, including pre-specified hypotheses
- x) Study indicates how many people were asked to take part in the study did so in each of the groups being studied
- xi) Describes the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis or re-inclusions for analysis
- xii) Less than 10% attrition and adjustments made to avoid bias in analysis
- xiii) Details of missing data are clearly reported, including how missing data was handled in the analyses. If missing data was present and substantial, steps were taken to minimize bias (e.g. imputation)
- xiv) The study identifies and controls for confounding variables and effect modifiers (e.g. functional impairment, pain and trauma associated with acquired visible difference) and controls for them within data analysis

Each paper was rated on each item of the quality criteria in accordance with criteria ratings used in SIGN methodology guidelines against the following outcome ratings: “well covered” (3 points), “adequately covered” (2 points), “poorly addressed” (1 point) and “not reported (0 point)” or “not applicable”. To ensure reliability, quality assessments were conducted by two reviewers. Overall, there was a high degree of agreeability ($\kappa=0.91$, $p<0.001$, 95% CI: 0.89-0.94). Any discrepancies between scores were discussed to reach a mutually agreed rating (See Appendix B for full details of quality criteria).

1.4. Results

1.4.1. Summary of Literature Search

A total of 2973 studies were yielded from all databases. Following de-duplication (n=249) a further 2642 articles were removed after screening title and abstract. Out of the remaining 82 articles, 13 were conference abstracts and full articles which were requested from first authors to which there was no response. Four articles were in a foreign language and were excluded due

to lack of translation facilities. The remaining 65 full text articles were screened for suitability against the inclusion criteria and their reference lists were searched for further relevant studies. 53 of these articles failed to meet inclusion criteria and were excluded. Two articles were sourced from reference lists resulting in 14 identified studies for review (Please see Figure 1).

1.4.2. Synthesis of Results

Studies varied in design, population of interest, methodology, conceptualisation and measurement of primary and secondary outcomes. Therefore, a qualitative synthesis was deemed appropriate to synthesis findings. The characteristics and findings of the study are presented in Table 3. The studies are separated by type of AVD to allow ease of comparison between studies.

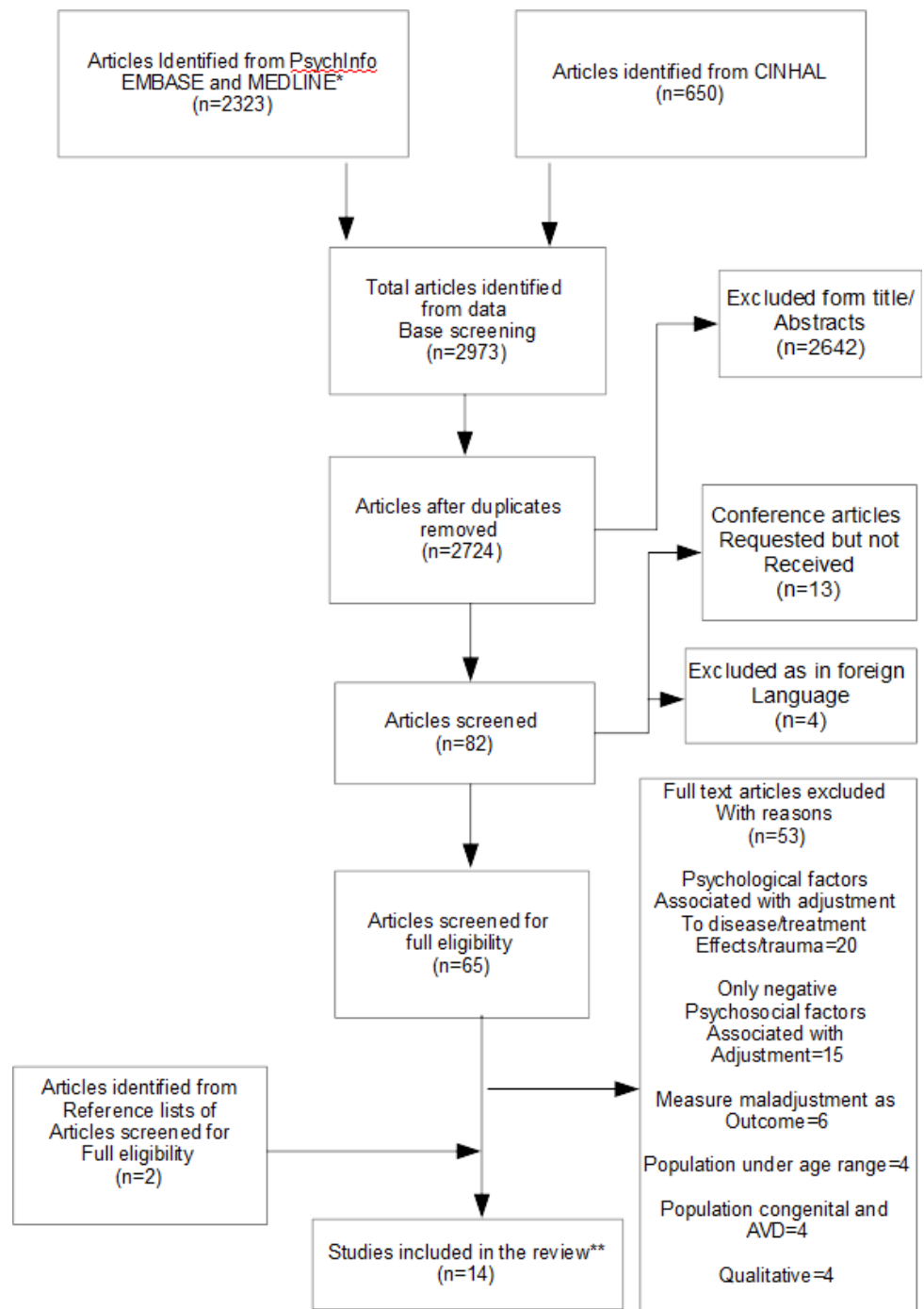


Figure 1: Literature search strategy

*Duplicates removed between PsychInfo, EMBASE and MEDLINE when searched

** Out of the 14 studies, 1 study included participants aged >15 (n=4) as deemed relevant to the review

1.4.3. Study Characteristics

Studies included participants with a variety of AVD's. Five studies evaluated factors associated with coping and/or adjustment in burns (Baillie, Sellwood and Wisely, 2014; Brown et al., 1988; Kilda, Willebrand, Andersson, Gerdin and Ekselius, 2005; Rosenbach and Renneberg, 2008 and Yang, Wang, Zhang, Zeng and Ma, 2014), five in limb loss (Coffey, Gallagher, Desmond and Ryall, 2014; Desmond and MachLachan, 2006; Livneh, Antonak and Gerhardt, 1999; Phelps, Williams, Raichle and Turner, 2008 and Unwin, Kacpersek, & Clarke, 2009) and four in head and neck cancer (HNC; Clarke, Newell, Thompson, Harcourt and Lindenmeyer, 2014b; Deno et al, 2012; Katz, Irish, Devins, Rodin and Gullane, 2003; Hagedoorn and Molleman, 2006). Studies recruited patients who had: previously received treatment for burns over a time period ranging from 3 months to 29 years (Brown et al, 1988, Kildal et al, 2005 and Rosenbach and Renneberg, 2008); were currently receiving or had had treatment for burns (Baillie et al, 2014); were hospitalised and receiving treatment for burns (Yang et al, 2014) or amputation (Phelps et al, 2008); had previously had treatment and were receiving follow-up input for HNC (Clarke et al, 2014b, Hagedoorn and Molleman, 2006; Katz et al, 2003; Deno et al, 2012), were in rehabilitation centres (Coeffy et al, 2014; Unwin et al., 2009) or community/charity support groups (Desmond and MachLachan, 2006; Livneh et al, 1999).

Across the studies, there was a total of 2246 participants and sample sizes were generally small (mean=103.57, range=49-260) with the exception of one anomalous study with a sample size of 796 of which all participants were male (Desmond and MachLachan, 2006). Participants age ranged from 15 to 91 years old (mean could not be calculated due to missing data). Ethnicity was only reported in three studies (Clarke et al., 2014b; Livneh et al., 1999; Phelps et al., 2008) and where reported, white Caucasian accounted for between 85.7% and 98% of the sample.

1.4.4. Appraisal of Study Quality

The methodological quality of each of the 14 studies is reported in Table 4. The majority of studies were of a moderate quality and a number of limitations were noted. Six studies were reported to have poor or adequate operationalisations

of key constructs meaning it was hard to identify if measures used were appropriate and demonstrated construct validity. Only two studies explicitly provided a clear definition of adjustment (Clarke et al., 2014b; Unwin et al., 2009). All studies provided a clear description of the sample but recruitment process was not always clear with regards to sampling strategy and inclusion/exclusion criteria with implications for replicability. The majority of studies did not account for selection bias with only one study using a randomisation sampling strategy (Brown et al., 1988). All other studies employed either consecutive (Hagedoorn and Mollemon, 2006; Rosenbach and Renneberg, 2008; Clarke et al., 2014b; Desmond and MacLachlan, 2006; Kildal et al., 2005; Phelps et al., 2008) or convenience sampling methods (Baillie et al., 2014; Katz et al., 2003; Yang et al., 2014), apart from one study where a lead consultant identified suitable participants, increasing selection bias (Coffey et al., 2014). No studies employed control or comparison group and only four assessed representativeness of sample against wider clinical norms (Clarke et al., 2014b) or non-participants (Coffey et al., 2014; Hagedoorn and Mollemon, 2006; Phelps et al., 2008).

All studies used multivariate analysis. Only two studies reported power calculations using an effect size estimate for guidance on required sample sizes and were therefore able to comment as to whether or not they were adequately or under powered (Coffey et al., 2014; Unwin et al., 2009). Amongst other studies, a lack of reported power analysis was problematic in determining whether the sample size was sufficient to detect an effect. Only seven studies made reference to missing data (Baillie et al., 2014; Clarke et al., 2014b; Coffey et al., 2014; Desmond and Machlachan, 2006; Deno et al., 2012; Livneh et al., 1999; Phelps et al., 2008) with only one providing adequate description on how missing data was handled in statistical analysis (Coffey et al., 2013). Although the majority of studies identified and measured potential confounders, only four provided explicit details regarding measurement and control of confounders in analysis (Brown et al., 1988; Coffey, 2014; Hagedoorn and Mollemon, 2006; Katz, 2003). These ranged from measuring and controlling for sociodemographic variables to covariates specific to type of AVD. For example; type of burn, time since burn and

Table 3: Main Findings and Outcomes for Selected Studies

Author	Primary Aim	Sample	Design	Measures of Psychological Factors Associated with Coping/Adjustment	Quality of Measure	Outcome Measure	Medical or Demographic Variables	Analysis of Association	Main Findings
Year		Type of AVD				Secondary Outcome Measure			
Country		Mean Age (SD)							
		Gender							
Baillie et al., 2014 UK	Examined social support, coping styles, functioning and dispositional optimism as predictors of PTG	74 patients or former patients Burn 45.67 (17.11) 42% male, 58% female	Cross-sectional	CBQ MSPSS LOT-R	** *** **	PTGI	Age, gender, TBSA, time since burn injury, location of burn on body, Trauma symptomatology	Pearson's Correlation Hierarchical linear (Stepwise) regression analysis	Association with PTG: Avoidant Coping (r=0.43, p<0.01), re-evaluation/adjustment coping (r=0.40, p<0.01), instrumental action coping (r=0.37, p<0.01), perceived social support (r=0.22, p<0.05). Dispositional optimism (r=0.04 p>0.05) and problem solving coping (r=0.03, p>0.05) not associated with PTG. Severity of burns (β=0.132, p=0.002), instrumental action coping (β=0.495, p<0.005) and social support (β=0.407, p<0.005) explained 51.7% of total variance in PTG (R ² =0.52, F(4,57)=15.24, p<0.001) controlling for trauma symptoms and overall functioning

Brown et al., 1988 CANADA	Examined burn severity, time since burn, functional disability, disfigurement, social resources and coping as predictors of psychosocial adjustment to burn injury and if they varied by gender	260 former patients Burns 40.43 (14.36) 209 males, 51 females	Historical Cohort Design	PSRAS SPS ICR	- ** *	PAIS	Age, marital status, employment status, functional disability, time since burn, TSBA	Step wise multiple regressions analysis	Males: less functional disability ($\beta=0.474$, $p<0.001$), less use of avoidance coping ($\beta=0.240$, $p<0.001$) increased recreational activities ($\beta=-0.253$, $p<0.01$), greater friend support ($\beta=0.234$, $p<0.010$) and more problem solving ($\beta=-0.167$, $p<0.001$) explained 55% of variance ($R=0.74$, $p<0.001$). Females: greater problem solving ($\beta=-.336$, $p<0.01$), less functional disability ($\beta=0.452$, $p<0.01$), greater family support ($\beta=0.290$, $p<0.01$) and more recreational activities ($\beta=-0.274$, $p<0.01$) explained 63% of variance ($R=0.79$, $p<0.001$)
Kilda et al., (2004) Sweden	Relationship between coping strategies, burn injury characteristics and positive psychosocial outcomes	161 former patients Burns 47.7 (14.2) 127 male, 34 female	Cross sectional	CBQ	**	BSHS-B	Age, time since injury, gender and TBSA burned.	Logistic regression analysis	Emotional Support significantly associated with Interpersonal Relationships ($R^2=13.9$, $p<0.001$) and total score of the BSHS-B ($r^2=9.8$, $p<0.001$).

Rosenbach and Renneberg (2008) Germany	Examined social support, health related quality of life, active and avoidant coping and emotional distress as correlates of PTG.	149 former patients 44 (14.4) 57% male, 43% females	Cross-sectional	CBQ-G (German version) F-sozU-14	** ***	PTGI-G	Age, gender, TSBA, time since burn	Pearson's Correlations Multiple Hierarchical Linear Regressions	Correlates of PTG: active coping (r=0.67, p<0.01), perceived social support (r=0.53, p<0.01). Predictors of PTG: Active coping (β=0.51, p<0.01) perceived social support (β=0.34, p<0.01) and gender (β=0.18, p<0.01) explained 57% of total variance in PTG.
Yang <i>et al.</i> , (2014) China	Examined social support, coping styles and demographic factors as predictors of resilience.	129 hospitalised patients Burns 34.22 (10.22) 105 male, 24 female	Cross sectional	SSRS (Chinese version) SCSQ (Chinese version)	*** ***	CD-RISC	Age, gender, marital status, educational level, occupation, monthly income, cause of burn, burn severity	Pearson's Correlations Multiple Regression Analysis	Correlates between social support and Resilience (Optimism subscale) (r=0.295, p<0.01). Correlates between positive coping and resilience subscales; : Tenacity (r= 0.444, p<0.01); Strength (r=0.443, p<0.01), Optimism (0.441, p<0.01) and resilience (r=0.490, p<0.01) Gender, marital status, education level, occupation, burn severity, positive coping and negative coping accounted for 56.2% of variance with resilience as dependant variable [insufficient reporting of data in text to quote effect sizes].
Clarke <i>et al.</i> , (2014b) UK	Examined dispositional optimism, social support and fear of negative evaluation as predictors of appearance-related adjustment	49 outpatients HNC 60.47 (11.50) 31 male, 18 female	Mixed Methods, Longitudinal 9 (month follow-up)	FNE LOT-R SSQ	*** ** ***	DAS-24 HADs	Age, gender, marital status, ethnic group, HNC type, treatment, prosthesis, primary area of appearance concer	Pearson's Correlations Multiple regression analysis	Correlates of adjustment at baseline (as measured by low DAS-24 scores): lower FNE scores (r=0.51, p<0.001), higher LOT-R scores (r=-0.51, p<0.001) and higher social support scores (r=-0.35, p<0.05). Follow-up not reported. Predictors of DAS-24 total scores: Baseline: FNE (β=0.60, P<0.001) and dispositional optimism (β=-0.37, P<0.001) accounting for 44% of total variance. At follow-up. DAS-24: Dispositional Optimism (β=-0.63, p<0.01), FNE (β=0.21, p>0.05) and social support β=0.09, >0.05) accounting for 55% of total variance.

Deno et al., (2012) Japan	To investigate if social support and social self-efficacy mediate the relationship between social and emotional distress	129 outpatients HNC 63.88 (12.48) 141 male, 81 female	Cross sectional	SSS (Japanese) SEAC (Japanese)	* **	SDS HADs	Age, gender, living with family, tobacco use, alcohol, surgical treatment, chemotherapy, radiotherapy	Structural Equation Modelling	Social distress: positively influenced by emotional distress ($\beta = 0.35, p < 0.001$) and negatively influenced by social support ($\beta = -0.29, p < 0.001$) and self-efficacy ($\beta = -0.39, p < 0.001$). Self-efficacy: negative influence on emotional distress ($\beta = -0.72, p < 0.001$). Social support: friends: positive effect on emotional distress ($\beta = 0.16, p < 0.05$); family members not related to social distress ($\beta = -0.08, p > 0.05$) or emotional distress ($\beta = 0.14, p > 0.05$).
Katz et al., (2003) Canada	To examine the role of social support and psychosocial adjustment and if this differs by gender.	82 patients HNC 58.8, (not reported) 57 male, 25 female	Cross sectional	MOSSS MSEI	*** **	CES-D BABS ALHR	Age, gender, diagnosis, type of surgery, radiation treatment, number of comorbidities and time since surgery.	Multiple Regression Analysis	Predictors of Psychological Well Being: social support ($\beta = 0.31, p < 0.01$). Individuals who reported higher levels of social support reported higher levels of well-being. Social support moderated the relationship between disfigurement and well-being among women, not men. [insufficient reporting of data in text to quote effect sizes] Predictors of Life Happiness: gender ($\beta = -0.21, p < 0.05$) and social support ($\beta = 0.32, p < 0.01$).

Hagedoorn and Molleman (2006) Netherlands	Investigated the moderating role of social self-efficacy between facial disfigurement and psychological and social functioning	76 out-patients HNC 58 (12.69) 44 male, 32 female	Cross sectional	SSE	-	STAI Distress in relation to other reactions (non validated questions) Social isolation (non validated questions)	Age, gender and education, tumour classification, time since symptoms experienced	Linear Regression Analysis	High social self-efficacy: patients reported lower psychological distress ($\beta=-0.43$, $p<0.01$), lower distress in reaction to others unpleasant behaviours ($\beta=-0.42$, $p<0.05$) and lower reported feelings of social isolation ($\beta=-0.24$, $p<0.05$).
Coffey et al., (2014) Ireland	Examined the relationship between tenacious goal pursuit (TGP) and flexible goal adjustment (FGA) to affective well being	98 participants from inpatient rehab program Limb Loss 62.59 (13.20) 79 male, 19 female	Cross sectional	TGP FGA	*** *	PANAS	Age, gender, education level, marital status, living situation, level and cause of amputation and pain	Bivariate correlations Hierarchical Regression Analysis	FGA positively correlated with Positive Affect ($r=0.28$, $p<0.01$); and FGA negatively associated with negative affect ($r=-0.40$, $p<0.01$). TGP: positively correlated with Positive Affect ($r=0.36$, $p<0.01$). No significant findings with negative affect. Predictors of Positive Affect; TGP only significant predictor of positive affect ($\beta=0.28$, <0.01) contributing to an additional 15% of the variance in positive affect in model with FGA, sociodemographic and clinical variables, which were not significant

Desmond and MachLachan (2006) UK	Examine the association of coping strategies to psychosocial adjustment	796 Ex-Service men Limb Loss 74.31 (12.06) All male	Cross-sectional	CSI	***	HADS TAPE	Age, time since amputation, amputation level and amputation aetiology (e.g. trauma/disease)	Hierarchical regression analysis	Greater use of problem solving predicted lower anxiety symptoms ($B=-0.14$, $p<=0.003$), related factors. Greater use of problem solving ($\beta=-0.211$, $p=0.003$) and social support ($\beta=-1.84$, $p=0.001$) associated with lower levels of depressive symptomatology. Less use of avoidance strategies accounts for more general adjustment ($\beta=-0.36$, $p<0.05$). After accounting for sociodemographic and disability related factors. Predictors of social adaptation: higher levels of seeking social support ($\beta=0.21$, $p<0.001$) and lower levels of avoidance ($\beta=-0.36$, $p<0.001$) were associated with increased levels of social adaptation. After accounting for sociodemographic and disability related factors.
Livneh et al., (1999) USA	Examined the role of sociodemographic variables, disability related factors and coping strategies as predictors of psychosocial adaptation	61 participants from charity outreach group Limb loss 54.7 (16.9) 36 male, 26 female	Cross sectional	COPE-I	**	RIDI ADS	Gender, age, marital status, education level, type of amputation, time since amputation	Hierarchical multiple regression analyses	Predictors of adjustment subscale of RIDI: active problem solving $\beta=0.30$, $p=0.03$) explaining an additional 33% of variance ($R^2=0.33$, $F(8, 44)=2.67$, $p<0.02$). Higher levels of active problem solving positively associated with increased levels of reported adjustment. Active problem solving ($\beta= 0.34$, $P=0.018$), and decrease use of emotion focused coping ($\beta=0.23$, $p=0.047$) contributed significantly to the explanation of variance in depression scores ($R^2=0.46$, $F(8,44),p<0.001$) and were linked to lower levels of depression.

Phelps et al., (2008) USA	Explored psychosocial outcomes (depression, PTSD and post traumatic growth) 6 and 12 months following amputation and explore potential predictive properties of cognitive processes	83 participants recruited from clinic with recent amputation 52.9 (14.4) 69 male, 14 female	Longitudinal (baseline, 6 and 12 month follow-up)	CPTS	***	PHQ-9 PTSD-CL PTGI	Age, gender, amputation aetiology	Correlational analyses Hierarchical Multiple Regression	Correlates of Post Traumatic Growth and Depression at 6 and 12 months: Positive cognitive processes significantly related to less depressive symptomatology at 6 ($r=-0.27$, $p<0.05$) and 12 months ($r=-.33$, $p<0.01$) and to levels of post traumatic growth ($r=-0.33$, $p<0.05$). Predictors of PTG: Cognitive processing accounted for 15% of the unique variance in posttraumatic growth at 12 months, with high levels of positive cognitive processing associated with greater report of growth ($\beta=0.42$, $p<0.01$).
Unwin et al., (2009) UK	To examine prospectively the influence of demographic, amputation and psychosocial variables on positive adjustment outcomes for lower limb amputees	99 outpatients with lower limb amputations 60.7 (13.3) 83 male, 16 female	Longitudinal (baseline and 6 month follow-up)	MSPSS HS	*** **	PANAS TAPES	Phantom pain, age, gender, level of amputation, cause of amputation	Multiple Regression Analysis	Hope only significant predictor of positive mood ($\beta=0.38$, $p<0.001$) in model with age, gender, level of amputation, cause, perceived social support accounting for 22% of variance. Predictors of General Adjustment (TAPES): Social support ($\beta=0.36$, $p<0.001$) and Hope ($\beta=0.29$, $p<0.01$) only significant predictors of adjustment above phantom pain intensity, age, gender, level and cause of amputation, accounting for 29% of variance in adjustment.

Psychosocial Factors: CBQ: Coping with Burns Questionnaire, CBQ-G (Coping with Burns Questionnaire-German version), COPE-I; Cope Inventory, CPTS; Cognitive Processing Of Trauma Scale, CSI; Coping Strategies Indicator, FNE; Fear of Negative Evaluation Scale, F-SozU014: Social Support Questionnaire, FGA; Flexible Goal Adjustment Scale, HS; Hope Scale, ICR; Indices of Coping Responses, LOT-R: Life Orientation Test-Revised (short form), MOSS; Medical Outcome Study Social Support, MSEI; Multidimensional Self-Esteem Inventory, MSPSS; Multidimensional Scale of Perceived Social Support, PARS; Participation in Social and Recreational Activities Scale SCSQ; Simplified Coping Styles Questionnaire, SEAC; Self Efficacy for Advanced Cancer Scale, SEE; Social Self Efficacy Scale, SF-14: Health Related Quality of Life, SSS; Social Support Scale, SSRS; Social Support Rating Scale (Chines version), SSQ; Social Support Questionnaire, SPS; Social Support Scale, TGP, Tenacious Goal Pursuit Scale; ***Good; ** Acceptable; *Poor; - Unacceptable
Primary/Secondary Outcomes: ADS; Acceptance of Disability Scale, ALHR; Athison Life Happiness Rating Scale, BABS; Affect Bias Scale, BSHS-B, The Burn Specific Health Scale Brief, CD-RISC; Connor Davidson Resilience Scale (Chinese version), CES-D; Centre for Epidemiological Status of Depression Scale, DAS-24; Derriford Appearance Scale, HADS; Anxiety and Depression Scale, PAIS; Psychological Adjustment to Illness Scale, PANAS; Positive Affect and Negative Affect Scale, PHQ-9; Patient Health Questionnaire; PTG; Post Traumatic Growth Inventory, PTG-G; Post Traumatic Growth Inventory-German; PTSD-CL; Post Traumatic Stress Disorder Check-List; RIDI; Reactions to Impairment and Disability Inventory, TAPES, Trinity Amputation and Prosthesis Scale

functional disability (Brown et al., 1988), level and cause of amputation, time since amputation (Coffey et al., 2014), type/location of HNC (Hagedoorn and Mollemon, 2006) and social desirability (Katz et al., 2003).

1.4.5. Conceptualisation and Measurement of Adjustment

Unwin et al. (2009) stated adjustment is “the presence of positive mood and a subjective rating of general adjustment to the amputation as opposed to the absence of anxiety or depression”. Clarke et al. (2014b) conceptualised adjustment explicitly within the context of appearance-related adjustment by outlining the multi-dimensional nature of the construct and the need to assess socio-cognitive variables as opposed to simply demographic or clinical factors related to appearance distress. Across all other studies, the conceptualisation of adjustment was ambiguous with studies reporting to be exploring adjustment as defined by “psychological adjustment”, “post traumatic growth”, “positive psychological adjustment” “psychosocial adjustment”, “positive change”, “positive psychological outcome”, “psychosocial adaptation” and “resilience” but utilising a variety of measures to assess a variety of different outcomes (See Table 3).

Primary measures of PTG and resilience were common outcomes explored in burn victims (Baillie et al., 2014; Rosenbach and Renneberg, 2008; Yang et al., 2014) and amputees (Phelps et al., 2008). Only one study employed an empirically validated measure of appearance distress (Clarke et al., 2014b). Quality of life measures were common for assessing adjustment with regards to wellbeing and life happiness (Katz et al., 2003) and health related quality of life specific to types of visible difference (Kildal et al., 2005; Phelps et al., 2008; Unwin et al., 2009). Two studies employed adjustment to disability and illness as an outcome of adjustment in coping with limb loss and burns (Browne et al., 1988; Livneh, 1999). Desmond and MachLachan (2006) used “general adjustment” and “social adjustment” subscales of adaptation to amputation scale to measure adjustment. Hagedoorn and Molleman (2006) assessed outcomes of social distress and social isolation by developing and using non-validated measures with no psychometric properties. Several studies employed measures of

anxiety/depression, positive and negative affect or psychological distress as secondary measures of adjustment (Clarke et al., 2014b; Coffey et al., 2014; Desmond and Machlachan, 2006; Deno et al., 2012; Hagedoorn and Mollemon, 2006; Phelps et al., 2008). Here, a lack of psychopathology was taken to indicate adjustment.

1.4.6. Coping Styles and Adjustment

Table 5 highlights all variables across all studies that were found to be significantly associated with adjustment. Emotional coping was significantly associated with interpersonal relationships and perceived health after burn injury, however, only accounted a small but significant proportion of variance when included in a regression model (Kildal et al., 2005). Coping styles were assessed retrospectively and quality of life and coping were measured two years apart, with mean time since burn injury being 9.2 years introducing an element of responding bias. Desmond and Machlachan (2006) found problem solving was negatively associated with depression and anxiety and seeking social support was a significant predictor of low levels of depression and increased social adaptation. However, effect size was small and the sample was composed of male amputees, the majority of whom had lost limbs during combat. Potentially confounding trauma symptomatology was assessed but not controlled for in regression analysis. These factors meant that findings could not be readily generalised to wider population. Similarly, Livneh et al. (1999) found that higher levels of active problem solving were positively associated with increased adjustment, increasing the predictive power from 19 to 33% over and above sociodemographic disability variables. Similarly, active and emotion focussed coping contributed significantly to the explanation of variance in depression scores, with increased active coping and decreased emotion focused coping explaining almost half (46%) the variance in depression over and above age and duration of amputation. This study had a small sample size and participants scored low on measures of anxiety and depression suggesting replication is required with more sensitive measure or a more diverse population.

1.4.7. Coping, Social Support and Adjustment

Three studies explored the role of both coping and social support. Yang et al. (2013) found social support was significantly correlated with optimism subscale of resilience and positive coping was significantly correlated with resilience in burns patients, however, effect sizes were low. Participants consisted of hospitalised burns patients and possible co-variates such as pain/trauma/side effects from medication were not measured or accounted for which could influence responding. Brown et al. (1988) found that recreational activity, perception of greater friend support, decreased avoidant and increased problem coping explained 55% of variance in adjustment to burn injury, having controlled for demographic and burn related variables (e.g. degree of burn). Rosenbach and Renneberg (2008) found that active coping and perceived social support were significantly positively correlated with PTG in burns and predicted PTG in hierarchical regression analysis, followed by social support and gender. There was a large range in time since burn injury in this study, with time since burn ranging from 3 months to 29 years, meaning other factors could contribute to adjustment that were not considered or controlled for. Katz et al. (2003) found a moderate effect for social support and its prediction of psychological wellbeing and life happiness. Further, social support moderated the relationship between disfigurement and well-being in women with HNC (Katz et al., 2003).

Study	i	ii	iii	iv	v	vi	vii	xiii	Ix	x	xi	xii	xiii	xiv
Baille et al., (2014)	WC	WC	AC	WC	NR	NR	WC	AC	WC	AC	NA	NA	PC	AC
Brown et al., (1988)	AC	WC	WC	WC	NR	NR	PC	PC	AC	WC	NA	NA	NR	WC
Clarke et al., (2014b)	WC	WC	AC	WC	WC	NR	WC	AC	WC	WC	PC	PC	NR	AC
Coffey et al., (2014)	WC	AC	PC	WC	AC	WC	AC	PC	WC	AC	NA	NA	WC	WC
Deno et al., (2012)	AC	AC	AC	WC	NR	NR	AC	WC	WC	WC	NA	NA	AC	AC
Desmond and MacLachan, (2006)	AC	WC	AC	WC	NR	NR	AC	AC	AC	WC	NA	NA	NR	AC
Hagedoorn and Molleman (2006)	AC	WC	AC	WC	WC	NR	PC	PC	AC	AC	NA	NA	NR	WC
Katz et al., (2003)	WC	WC	AC	WC	NR	NR	AC	PC	WC	WC	NA	NA	NR	WC
Kildal et al., (2005)	WC	WC	PC	WC	NR	NR	AC	AC	WC	WC	NA	NA	NR	NR
Livneh et al., (1999)	WC	AC	PC	WC	NR	NR	PC	PC	AC	WC	NA	NA	NR	AC
Phelps et al., (2008)	WC	WC	AC	WC	AC	NR	AC	PC	WC	WC	PC	PC	NR	AC
Rosenbach and Renneberg (2008)	PC	WC	AC	WC	NR	NR	WC	AC	PC	AC	NA	NA	NR	NR
Unwin et al., (2009)	WC	WC	AC	WC	AC	WC	WC	AC	WC	WC	WC	PC	NR	AC
Yang et al., (2014)	PC	AC	PC	WC	NR	NR	WC	PC	PC	AC	NA	NA	NR	AC

Table 4: Appraisal of Study Quality Criteria

Note: These ratings provide only a relative assessment of methodological quality and do not provide a standardised total summary; WC (Well Covered), AC (Adequately Covered), PC (Poorly Covered), NR (not reported), NA (Not applicable); *Quality Criterion:* i) Factors of interest clearly operationalised, ii) study aims to explore factors association with coping/adjustment, iii) recruitment process iv) sample characteristics v) sample representative, vi) power analysis, vii) reliable and valid measures, viii) measures specific for VD, ix) objectives/hypotheses, x) total number of participant's and opt-in's reported, xi) attrition rates, xii) attrition percentage, xiii) missing data, xiv) confounding variables

1.4.8 . Social Support, Optimism and Adjustment

Two studies explored the role of both social support and optimism. Clarke et al. (2014) found dispositional optimism remained the only significant predictor of appearance-related adjustment with a moderate effect size at a 6 and 12 month follow-up. Dispositional optimism remained the only unique predictor of appearance-related adjustment in a model with fear of negative evaluation and social support, accounting for 55 % of variance. Although this study has strengths, there was a small sample size and a high attrition rate (48%) which was not accounted or controlled for in the results. Unwin et al. (2009) found hope was the only predictor variable making a significant contribution to positive affect at 6 month follow up, followed by social support after controlling for pain, age, gender, type and cause of amputation within the model. However, almost half of the participants lost limbs due to vascular disorders and/or diabetes and current comorbid physical health difficulties were not assessed or controlled for.

1.4.9 Coping, Social Support, Optimism and Adjustment

Baillie et al. (2014) found avoidant coping in burns participants showed a moderate effect size with post traumatic growth compared to re-evaluation/adjustment, instrumental coping and perceived social support which demonstrated small but significant effect sizes. Instrumental action coping and social support were the strongest predictors of PTG after controlling for identified trauma symptomatology and sociodemographic covariates.

1.4.10 Social Self-Efficacy and Adjustment

Two studies found a buffering effect for social self-efficacy in adjustment to HNC. Hagedoon and Mollemon (2006) found medium effect sizes for the role of high levels of social self efficacy in predicting psychological distress, distress in relation to unpleasant reaction from others and social isolation. Participants did not perceive social isolation or experience distress from other people's reaction when self efficacy was high, regardless of disfigurement. The biggest effect was found for psychological distress and distress in reaction to others unpleasant behaviour. Similarly, Deno et al. (2012) found self-efficacy strongly buffered the negative effects of social distress on emotional

distress (depression and anxiety) and mediated the effects between social and emotional distress. A strong significant effect was noted for the effects of self efficacy and lower emotional distress with greater support from friends (as opposed to family) having positive influence on emotional distress, however, the effect was small.

1.4.11. Cognitive Factors and Adjustment

Two studies explored cognitive variables and their relationship with adjustment. Phelps et al. (2008) found a significant association between cognitive processes (e.g. benefit finding, cognitive restructuring, meaning making) to less depressive symptomatology and increased post traumatic growth. However, the effect sizes were small. Nonetheless, positive cognitive process accounted for 15% of the variance in post-traumatic growth at 12-month follow-up, with higher levels of cognitive processing associated with greater PTG. Coffey et al. (2014) explored the relationship between self-regulator strategies Tenacious Goal Pursuit (TGP) and Flexible Goal Pursuit (FGP) to positive and negative affect, finding only FGA positively correlated with negative affect. However, effect sizes were small. TGP was found to be the only significant predictor of positive affect and accounted for 15% of variance in model with FGP, sociodemographic and clinical variables.

1.4.12. Measures Employed to Assess Psychological Factors Associated with Adjustment

The quality of items used to assess psychological factors associated with coping/adjustment are presented in Table 3. In total, twenty-four different questionnaires were used to evaluate psychological factors associated with positive coping and/or adjustment that varied in psychometric properties. The variability of measures was related to the differences in research aims for each project and language, with three studies using Chinese (Yang et al., 2014), Japanese (Deno et al., 2012) and German (Rosnbach and Renneberg, 2012) versions of measures. Measures were assessed on the basis of their

Table 5: Variables Significantly Associated with Adjustment

Variables	Studies
<i>Coping Variables</i>	
Emotional Support	Kildal et al. (2005)
Active Coping	Rosenbach and Renneberg (2008)
Active Problem Solving	Livneh et al. (1999)
Problem Solving	Brown et al. (1988); Desmond and MachLachan(2006)
Decreased Emotion	Livney et al. 1999)
Focused Coping	
Positive Coping	Yang et al. (2014)
Avoidant Coping, re-evaluation and instrumental coping	Baille et al. 2014
<i>Social Variable's</i>	
Perceived Social Support	Rosenbach and Renneberg (2008); Baille et al. (2014)
Social Support	Yang et al. (2014); Clarke et al. (2014b); Deno et al. (2012); Katz et al. (2003); Desmond and Machlachan (2006); Unwin et al. (2009), Brown et al. (1988)
Seeking Social Support	Descmond and MachLachan (2006)
Social Self Efficacy	Deno et al. (2012); Hagedoorn and Molleman (2006)
Increased Recreational Activity	Brown et al. (1988)
<i>Dispositional Styles</i>	
Optimism/Hope	Clarke et al. (2014b); Unwin et al. (2009)
<i>Cognitive Variables</i>	
Positive Cognitive Processes	Phelps et al. (2008)
Tenacious Goal Pursuit	Coffey et al. (2014)

Note: All associations are positive. The variables identified are associated with increased adjustment

internal consistency and reliability ratings. The majority of measures used to assess coping were of good quality, with only the burns literature having measures of coping specific for this population, the Coping with Burns Questionnaire (Willebrand, Kildal, Ekselius, Gerdin and Andersson, 2001). Measures of social factors ranged from adequate to good quality. Measures of social self-efficacy were questionable with one study using a 12-item measure of social self-efficacy that had not been validated and had no psychometric properties (Hagedoorn and Molleman, 2006). Deno et al. (2012) assessed self-

efficacy using the Self-Efficacy for Advanced Cancer measure (Hirai and Tsuneto, 2001) to account for functional disabilities encountered by patients. No other measures used to assess factors associated with coping/adjustment were sensitive to difficulties individuals with AVD may encounter.

1.4.13. Measurement of Disfigurement

Across all studies, only five measured disfigurement. One study used non-validated subjective measures of disfigurement (Hagedoon and Mollemon, 2006), one study used presence of postoperative scars on the surface of the face or neck to indicate disfigurement (Deno et al., 2012). Two studies used clinician's objective ratings of appearance to measure disfigurement, one using a validated 9 point observer rating scale (Katz, 2003) and one using non validated clinical criteria (Brown et al., 1988). Only one study asked participants if they identified with having a visible difference (Clarke et al., 2014b). All other studies did not measure disfigurement or assess individual's perception of the degree of their disfigurement.

1.5 Discussion

1.5.1. How is Adjustment being defined?

From the papers reviewed, conceptualisations of adjustment varied and are inconsistent both within and across different populations with AVD. Despite more recent literature indicating that adjustment is a multi-dimensional construct, there was evidence that a lack of psychopathology or absence of psychological distress continues to be used as a common psychosocial outcome for assessing adjustment. This may reflect the lack of awareness of adjustment as a process within the medical literature. This is important considering Rosenbach and Renneberg (2008) reported high levels of distress and low levels of quality of life in a sample who simultaneously reported high degree of PTG. This suggests that negative psycho-social sequelae may not necessarily indicate mal-adjustment, but may co-exist with adjustment or form part of an adaptive process. This is in keeping with research in adjustment to ill health where the term "adjustment" is understood as a psychosocial developmental process, as opposed to an end state, where negative life experiences allow for "personal growth" as well as distress (Brenan, 2001). This suggests research within this area should not simply focus on the negative

psychological sequelae of an AVD, but rather focus on positive changes to inform the process of adjustment (Clarke et al., 2014a).

1.5.2. Factors Associated with Adjustment and their Measurement

Social factors were reported to be the most common in relation to adjustment to AVD. Social self-efficacy, perceived social support and social support seeking associated most strongly with adjustment. It also seems that factors associated with social support in part moderate the effect of disfigurement. This fits with fear avoidance model of visible difference (Newell and Marks, 2000) which proposes that a person's belief about their appearance and behaviour in social situations maintain high incidence of social anxiety within this population. Types of social support may also be influential in adjustment with differences in outcome for the role of social vs family support. Problem solving, seeking emotional support and active coping were the three styles of coping most strongly associated with adjustment. Interestingly, avoidant coping was associated with both negative affect (poor adjustment) and PTG. This corroborates with notion that negative psychosocial sequelae may have a role in facilitating adjustment. Optimism was also another factor found to be associated with adjustment, but could potentially serve as a factor associated with as well as an outcome of adjustment highlighting the complicated role of psychological factors that may be at play. These findings reflect initial results from The Appearance Research Collaboration's (2014) study to develop a working framework of adjustment where optimism, greater feelings of social acceptance and social support predicted positive adjustment.

Although social factors, coping style and optimism were evidenced to be associated with adjustment, it was challenging to draw comparison between the strength of relationships with adjustment given each study investigated these factors across different types of AVD populations, within different multi-variate theoretical frameworks, using different measures. Future research should continue to explore the role of these factors in different types of AVD or heterogeneous samples of AVD to develop a better understanding of the strength of their relationship with adjustment. Additionally, while psychological factors associated with coping/adjustment were clearly identified and explained within the majority of studies, the theoretical

rationale for their association with adjustment within the context of AVD was not very clear. This was compounded by the fact that adjustment tended to be vaguely described and poorly operationalised. Future research should select, justify and report decisions made to operationalise key constructs associated with adjustment (Luthar *et al*, 2000). As seen in this review, a failure to do results in a lack of clarity regarding underlying mechanisms at play, resulting in varying conclusions about what contributes to adjustment across different types of AVD.

1.5.3. Challenges of Defining/Measuring Factors Associated with Adjustment to AVD

It is clear from this review that there is a lack of measures sensitive to the unique challenges of adjusting to AVD. There is a tremendous amount of overlap between types of AVD and additional contributing factors that may affect adjustment. Future research needs to be more aware of confounding factors in order to measure and control for them within analyses. Interestingly, in some of the selected studies on burns and amputation literature, it was acknowledged that variables such as trauma symptomatology, loss of function, pain, extent of body burned/cause of amputation and time since burn/amputation could affect adjustment processes, which could then be assessed and controlled for. However, similar variables were not considered in HNC. In addition to disfigurement, HNC patients could equally experience loss of function (e.g. swallowing, taste and communication) and pain in addition to adjusting to post cancer treatment, the uncertainty of relapse and a potentially fatal illness (Clarke *et al*, 2014b; Katz *et al*, 2003). It is important that research start to consider such factors when assessing adjustment to AVD in HNC so as not to conflate findings with functional difficulties, pain or cancer treatment (Clarke *et al*, 2014a). It was also evident that there was a lack of measures selected that were sensitive to appearance related distress in AVD population (apart from Clarke *et al*, 2015). Using measures of adjustment to appearance-related distress, for example, the DAS-24 (Carr, Moss and Harris, 2005) within and across AVD populations will help develop a better understanding of adjustment process crucial for adjustment to AVD.

On a related note, it was also apparent throughout that poor strategies and measures were utilised to measure subjective ratings of disfigurement. Given the evidence base from Moss (2005) and Ong et al. (2007) that subjective ratings of distress are more important for assessing the perception of disfigurement than objective ratings of distress, it is alarming to see that this is not reflected in practise within this literature. This could potentially obscure findings associated with adjustment. If subjective ratings of distress are not actively obtained, then an individual may not identify themselves to have a visible difference or be distressed by their appearance, which will consequently impact on inferences made as they may not need to “adjust” to a visible difference. This highlights the importance for future research within this area to utilise subjective ratings of visible difference.

1.5.4. Issues of Timing

There was a huge variety in some of the samples in terms of when participants were assessed relative to the acquirement of their visible difference. It seems likely that this could potentially confound any findings regarding adjustment as individuals might adopt different coping strategies immediately after burn injury compared to twelve years later. For example, transitioning between avoidant coping and seeking social support over time (Attoe and Pounds-Cornish, 2015). Additionally, testing people at point of injury (e.g. hospitalised burns patients or patients who are in hospital following amputation) may confound results as they are likely to be distressed and perhaps be suffering from trauma symptoms or side effects from medication which may affect the validity of patient responding.

It is clear that given the multi-dimensional nature of adjustment and associated factors, the majority of studies within this review adopted a multivariate analysis to assess for relationships between factors associated with adjustment. However, the majority of studies were cross-sectional in design and therefore no inferences about causality can be made. Employing more longitudinal designs within this area of research is important considering adjustment related constructs, such as resilience, are not stable states and levels of adjustment are likely to fluctuate across time (Luthar *et al*, 2000). For example, there have been reports of deterioration in mental well-being

three years post amputation (Singh et al, 2009) as well as evidence to suggest the longer the time between a traumatic event and measurement of coping, the more likely coping styles will be influenced by selective memory processes (Suls and Harvey, 1996). Additionally, there may be changes in appearance-related adjustment following adaptation to functional disabilities and when treatment effects have been achieved. Longitudinal designs will therefore provide opportunities to address changes in adjustment in terms of life transitions and stress, potentially highlighting new vulnerabilities, strengths or moderator variables to be empirically tested.

1.5.5. Limitations

There are several limitations of this review which must be addressed. Firstly, a major problem experienced in conducting this review was the heterogeneity in measures used to assess psychological factors associated with adjustment, measures used to assess adjustment, sample characteristics and definitions of adjustment. A lack of consistency across the studies made it hard to compare and synthesise data. Secondly, four studies had to be excluded as they were in a foreign language. These studies explored body image following rhinectomy in nose cancer patients (Hernandez, Garcia, Aguilar and Onate-Ocana, 2015); spiritual and religious coping to quality of life in head and neck cancer patients (Guerrero, 2012); adjustment to head and neck cancer malignancies (Boryczko-Pater, Baron, Szaleniec, Gierowski and Skladzien, 2011) and adjustment to large oral cavity tumours (Kollbrunner, Zbaren and Quak, 2001). These studies could have provided a better understanding of factors associated with adjustment across different cultural domains. It is also of note that due to the parameters of this review, it was restricted to evaluating quantitative findings. It is recognised that qualitative studies are important to consider when assessing adjustment to AVD given it is often the subjective rating of disfigurement and experiences of the individual with regards to appearance related distress that can influence adjustment. Qualitative studies are therefore important in terms of guiding future directions of research within this area and highlight other psychological factors or mechanisms at play that may be important to assess in terms of positive coping and/or adjustment but may not be detected by questionnaires.

1.5.6. Conclusions

In conclusion, this review provides an evaluation of the current conceptualisation of adjustment within AVD and the factors that have been evidenced to be associated with it. This review has identified the need for future work regarding the assessment of adjustment in AVD, in particular with use of more measures that are sensitive to appearance related distress. This may involve developing and validating such measures that take into account various confounding factors associated with adjustment. It also highlights the need for more longitudinal research. Ultimately, collaboration is required between researchers to promote adjustment in AVD to further define and refine adjustment related constructs and their measurements.

1.6. Conflicts of interest

Non declared.

1.7. References For Systematic Review

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Chapter 2: Empirical Study

2.1. Journal Article Title Page

Attachment, Body Image Dissatisfaction and Perfectionism in Cosmetic Surgery Candidates: A mediating role for Interpersonal Functioning and Emotion Regulation

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Abstract

This study aimed to explore the relationship between two dimensions of attachment insecurity (avoidance and anxiety), body image dissatisfaction and perfectionism using theoretically driven multiple mediation models that included emotion dysregulation and interpersonal problems as hypothesised mediators. Fifty female outpatients seeking cosmetic surgery on the National Health Service (NHS) and 26 females interested in seeking cosmetic surgery within the public domain participated in this cross-sectional study (N=76). Participants completed measures of attachment avoidance and anxiety, body image dissatisfaction, perfectionism, emotion dysregulation and interpersonal problems. Results revealed that attachment insecurity was significantly associated with body image dissatisfaction and perfectionism. Interpersonal problems and emotion dysregulation also significantly partially mediated the relationship between attachment insecurity and body image dissatisfaction, specifically satisfaction with discrete aspects of body parts. Emotion

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dysregulation was also found to significantly partially mediate the relationship between avoidant attachment and perfectionism, but not anxiety. The clinical implications of this research are discussed.

Key Words: cosmetic surgery, body image, attachment, avoidance, anxiety, perfectionism, interpersonal problems, emotion dysregulation

Highlights:

- Insecure attachment, interpersonal functioning, emotion dysregulation, body image dissatisfaction and perfectionism were all found to be associated with each other in theoretically predictable ways
- Interpersonal functioning and emotion dysregulation were found to partially mediate the relationship between insecure attachment (anxious and avoidant) and body image dissatisfaction, specifically dissatisfaction with discrete aspects of appearance.
- Emotion dysregulation, was found to partially mediate the relationship between avoidant attachment and perfectionism

2.2 Introduction

Concern about appearance is increasingly recognised as a problem in the United Kingdom (UK), with 50,122 cosmetic surgeries performed in 2013, an annual rise of 16.5% (British Associations of Aesthetic Surgeons, 2014). Anecdotal evidence from surgeons and patients propose that cosmetic surgery interventions facilitate psychological wellbeing (Rankin, Borath and Wey, 1998), supported by empirical studies that suggest cosmetic surgery interventions improve body image, self-esteem, quality of life and alleviate psychological distress (Rogliani, Gentile, Labardi, Donfrancesco & Cervelli, 2009; von Soest, Kvalem, Roald & Skolleborg, 2009). However, evidence for the long-term effectiveness of cosmetic surgery interventions is weak and unconfirmed (Cook, Rosser, Meah, James, & Salmon, 2006; Moss and Harris, 2009). As demand for cosmetic surgery grows, it seems crucial to understand and identify psychosocial factors that predict poor or good psychological outcomes to inform clinical practise. This will contribute to a developing

working knowledge of the role of psychological mechanisms at play that may function as contraindications for surgery, are amenable to psychological intervention and/or inform the development of cosmetic surgery screening tools and assessment protocols (Paraskeva, Clarke and Rumsey, 2014).

“Body Image” refers to individuals’ perceptions of and attitudes towards their body and has significant importance in terms of psychological functioning and interpersonal relationships (Cash and Pruzinsky, 2002). Body image dissatisfaction (BID) has been evidenced as a primary motivating factor for individuals seeking cosmetic surgery (Sarwer, Wadden, Pertschunk, Whitaker and 1998; Sarwer et al, 2003; Solvi et al, 2010) with cosmetic surgery candidates displaying higher levels of BID for the particular body part they are considering for surgery compared to the general population (Sarwer et al, 2003). Perfectionism is another potentially influential characteristic in cosmetic surgery candidates (Hewitt, Sherry, Flett and Shick, 2003). Perfectionists are often dissatisfied with their bodies and frequently try to alter them to adhere to high unrealistic expectations and socio-cultural appearance ideals (Sherry, Hewitt, Lee-Baggely, Flett and Besser, 2003). An objective improvement in physical appearance is therefore unlikely to ameliorate a perfectionist’s sense of imperfection or deformity (Hewitt et al., 2003; Sherry et al., 2004). Despite the potential role of BID and perfectionism in people interested in seeking cosmetic surgery, few studies have explored the potential psycho-social characteristics related to their development as well as the relationship between BID and perfectionism within this population.

One variable that may be important to consider in the development of BID is adult attachment. Attachment refers to the way adults organize their connections to important others (Bowlby, 1969). Central to understanding adult attachment and its relationship with BID is the concept of internal working models of self and others (Bartholomew and Horowitz, 1991; Collins and Read, 1994). According to attachment theory, internal working models are developed in early childhood through caregiver-child interactions. When caregivers are consistently and reliably responsive to children’s emotional needs, the child develops a positive working model of the self as being valued and deserving of care and protection and a positive working model of others

as being caring and trustworthy (Batholomew and Horowitz, 1991; Collins and Read, 1990). If caregivers are inconsistently responsive or unresponsive to a child's emotional needs, the child develops a negative working model of the self as being unworthy of protection and care and a negative working model of others as being uncaring and undependable.

Positive or negative working models therefore influence beliefs about relationships which can effect social interactions in adulthood and can therefore be used to help better understand interpersonal experiences in relationships (Brenan and Shaver, 1995; Collins, 1996). Evidence also demonstrates attachment representations are central to understanding how individuals regulate emotions, with individual differences in attachment influencing the development of adaptive or maladaptive emotion regulation strategies (Frayley and Shaver, 2000; Mikulincer and Shaver, 2007). For example, through the use of hypoactivation or hyperactivation strategies (Mikulincer, Shaver and Pereg, 2003). From this perspective, attachment develops into complex affective, cognitive and interpersonal systems that may inform understanding regarding the development of BID in cosmetic surgery candidates.

One conceptualisation of attachment theory is that internal working models lie within two orthogonal dimensions (Mikulincer and Shaver, 2007). The avoidance dimension is characterised by a need to appear unassailable and self-sufficient as well as an uneasiness with interpersonal dependency and avoidance of closeness/intimacy (McKlay and Randa, 2005; Mikulincer and Shaver, 2007). The anxious dimension is characterised by a lack of self-worth/sense of lovability, increased sense of vulnerability and a sensitivity to and chronic fear of abandonment and/or rejection (McKinley and Randa, 2005; Mikulincer and Shaver, 2007). Secure attachment corresponds to low levels on both dimensions whereas high levels on one or both dimensions correspond to an insecure attachment with respect to romantic or general relationships (Brennan and Shaver, 1995).

Of these dimensions, attachment anxiety is of particular interest in the present study. Evidence highlights that attachment anxiety is a significant contributor

to BID, however, current evidence is limited to female biased samples of undergraduate students (Cash and Pruzinsky, 2002; Cheng and Malinkrodt, 2009) or community samples (McKinley and Randa, 2005). Crucially, this relationship has not been fully investigated in a cosmetic surgery population where body image dissatisfaction is a central characteristic. This connection has been further demonstrated indirectly through the association between attachment anxiety and body image dissatisfaction in eating psychopathology where body image disturbances share central characteristics (Troisi et al., 2006). Mounting evidence suggests attachment anxiety significantly predicts BID more strongly than attachment avoidance (Brennan and Shaver, 1995; Cash, Theriault and Annis, 2004; McKinley and Randa, 2005). This may be related to the fact that individuals with attachment avoidance do not seek approval/connectedness with others and are therefore not cued to enhance/maintain appearance (Cash et al., 2004).

Anxiously attached individuals may be at increased risk of developing BID due to vulnerability to a negative self-concept, increased expectation of social rejection/negative evaluations and consequent need for approval seeking and acceptance (Cash and Pruzinsky, 2002). Individuals high in attachment anxiety may be insecure about their physical worth or acceptability, believing they need to be attractive to be accepted and rely on gaining external affirmations of self-esteem in the form of positive reactions and approval from others (Cash and Pruzinsky, 2002). Such individuals may use cosmetic surgery to enhance or maintain appearance out of a fear of rejection/disapproval. To our knowledge, only one study has explored attachment in individuals who have had or are seeking cosmetic surgery. Davis and Vernon (2002) found a small but significant positive relationship between romantic attachment anxiety and the use of cosmetic procedures in a large mixed community sample. Individuals who had undergone cosmetic surgery were significantly higher in romantic attachment anxiety compared to those who had not or were not contemplating cosmetic surgery, particularly among females (Davis and Vernon, 2002). This suggests attachment anxiety may be a motivating factor for seeking cosmetic surgery and a key variable in cosmetic surgery candidates that merits further exploration.

The connection between attachment anxiety and perfectionism is well established (Anderson and Perris, 2000; Wei, Heppner, Russell and Young, 2006; Wei, Mallinckrodt, Russel and Abraham, 2004), however, few studies have explored or evidenced this relationship in people seeking cosmetic surgery. Evidence suggests that parental neglect, love withdrawal, controlling parenting, and shaming predispose the development of perfectionism, with individuals developing beliefs that they need to appear perfect, hide imperfections and/or avoid disclosing flaws/faults in order to be accepted or avoid rejection by others (Rice and Mirzadeh, 2000). Anecdotal reports and empirical studies suggest cosmetic surgery candidates display high levels of perfectionism (Sherry et al., 2004; Sherry et al, 2009). From this, it is expected that perfectionists are likely to have an anxious attachment that predisposes them to developing unrelenting self-criticism, an enduring disposition to dissatisfaction, unrealistic expectations, and fault finding tendencies, which may contribute to and exacerbate appearance-related distress (Hewitt et al., 2003; Sherry et al., 2009). BID (Sherry et al., 2009), social physique anxiety (Hasse, Prapavessis, Owens, 2002), drive for thinness in females (Ruggerio, Levi, Ciuna and Sassaroli, 2003) increased drive for muscle mass in men (Penkal, 2007) and body dysmorphic symptomatology (Hanstock and O'Mahony, 2002) have all been related to high levels of perfectionism. Individuals with high perfectionistic standards and body image concerns are also more likely to engage in unhelpful appearance enhancing behaviours such as body building (Davis, Karvinen, & McCreary, 2005; Davis and Scott-Robertson, 2000), disordered eating (Hasse et al., 2002) and excessive exercise (McGee, Hewitt, Sherry, Parkin and Flett, 2005). Perfectionists may therefore be more likely to seek cosmetic surgery as a means of ameliorating perceived flaws in appearance and associated distress by changing aspects of their bodies that cannot be achieved through diet/exercise (Hewitt et al., 2003; Sherry et al., 2004).

Several studies have found significant associations between body image disturbance and trait perfectionism (the need for self and others to achieve perfection; Bardone-cone et al., 2008; Bartsch, 2007; Hanstock and OMahony, 2002). However, more recent research has shifted to the role of perfectionistic self-presentation, the need to appear perfect to others by

promoting one's perceived perfections or hiding/concealing one's perceived imperfections from others (Hewitt et al., 2003). Perfectionistic self-presentation consists of three distinct dimensions: perfectionistic self-promotion (PROMO; promoting perceived perfection to others), non-display of imperfection (NDP; avoiding behavioural displays of perceived imperfections) and non-disclosure of imperfections (NDC; avoiding verbal disclosure of perceived imperfections). Evidence suggests strong associations between perfectionistic self-presentation and BID. Facets of the perfectionistic self-presentation scale have been found to be associated with BID (Penkal and Kurdeck, 2007), with PROMO and NDP being found to be strong predictors of BID (Sherry et al., 2009). Further, higher levels of PROMO and NDP have been significantly associated with thoughts about having cosmetic surgery (Sherry et al., 2004; Swami and Mammadova, 2006). This suggests higher levels of perfectionistic self-presentation are associated with body image disturbances, which may influence individuals to seek cosmetic surgery. However, to our knowledge, no study has explored the link between perfectionistic self-presentation and BID in individuals who are actively seeking cosmetic surgery.

Interpersonal functioning may be a potential mediator between attachment, BID and attachment and perfectionism and influence the desire for people to seek cosmetic surgery. Interpersonal functioning characterise difficulties related to interactions with peers, family and romantic relationships (Horowitz, Rosenberg, Bortholomew, 1993) and are influenced by attachment (Bartholomew and Horowitz, 1991; Horowitz et al., 1993). Interpersonal experiences shape the development of body image attitudes (Cash and Pruzinsky, 2002). Negative social feedback about appearance, such as appearance teasing or criticism, is likely to lead to greater concerns about appearance in social situations, contributing to low self-esteem and anxiety out of a fear of negative evaluation/rejection from others (Cash and Fleming, 2002). Meningaud, Benadiba and Servant (2001) found that patients awaiting assessment for suitability for cosmetic surgery were more socially anxious compared to the general population, specifically related to a preoccupation with appearance and what other people think of their appearance. Further, Honigman, Phillips and Castle (2004) found that relationship issues served as

a main predictive factor for people seeking cosmetic surgery, with individuals reporting beliefs that surgery would “save a relationship/s”. This suggests people may seek cosmetic surgery as a means of enhancing appearance to resolve difficulties in relationships. Interpersonal functioning has also been linked with perfectionism. Hewitt and Flett (2003) found the perfectionistic self-presentation scale facets are highly correlated with; self-consciousness, need for others approval, low social self-esteem and fear of negative evaluation from others. This suggests that individuals who are high on perfectionistic self-presentation require other people’s approval and feel the need to be seen as being perfect, a failure to do so resulting in anxiety and maladaptive social outcomes (Hewitt and Flett, 2003).

Emotion dysregulation may also function as a mediator between attachment, BID and attachment and perfectionism. Emotion regulation refers to process by which emotional experiences are evaluated, monitored, maintained and modified (Gratz and Roemer, 2004). Evidence to date suggests emotion regulation difficulties are present in individuals diagnosed with eating disorders, which share key features of insecure attachment (Ward, Ramsey and Treasure, 2000; Zachrisson and Skaorderud, 2010) and body image disturbances (Troisi et al., 2006). Here, dysregulated eating behaviours are believed to facilitate emotion regulation by influencing, changing or controlling negative emotional states (Merwin, 2011). From this, it could be argued that individuals with body image concerns who are anxiously attached may struggle with emotion regulation and engage in social withdrawal, body concealment, appearance fixing and reassurance seeking behaviours as a means of reducing, avoiding or escaping negative emotions to regulate body image discomfort (Cash and Pruzinsky, 2002). There is also evidence to suggest perfectionistic individuals may have difficulty regulating emotions due to a tendency to being self-critical and self-evaluative regarding high and unrealistic standards (Aldea and Rice, 2006). Perfectionistic individuals may therefore be more likely to experience negative emotions such as shame, guilt, embarrassment and have difficulty regulating such negative states due to engaging in unhelpful cognitive coping strategies such as catastrophising, self-blame, rumination and lack of positive appraisal (Rudolph, Flett and Hewitt, 2007).

2.2.1. Aims and Hypotheses

This study's objective was to explore the relationship between attachment, emotion dysregulation, interpersonal functioning, perfectionism and BID in individuals actively seeking or interested in cosmetic surgery. No study to date has explored the relationship between these variables in a cosmetic surgery population.

The study aimed to explore whether insecure attachment dimensions are indirectly associated with BID and perfectionistic self-presentation through mediation by emotion dysregulation and/or interpersonal functioning and whether these variables play a different role in BID and perfectionistic self-presentation as conceptualised within two theoretically informed multiple-mediation models (See Figure 1 and 2). It was hypothesised that:

1. Interpersonal functioning and emotion dysregulation will mediate the relationship between attachment insecurity (anxious and avoidant) and BID.
2. Interpersonal problems and emotion dysregulation will mediate the relationship between attachment insecurity (anxious and avoidant) and perfectionistic self-presentation.

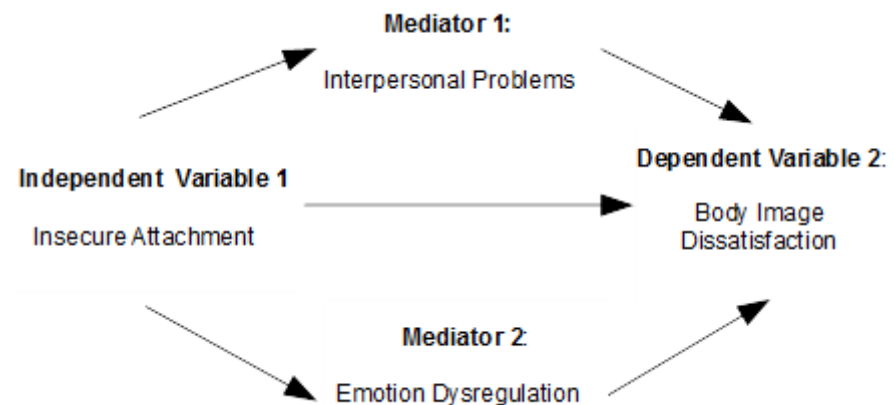


Figure 1: Conceptual representation of mediation model with Body Image Dissatisfaction as dependant variable

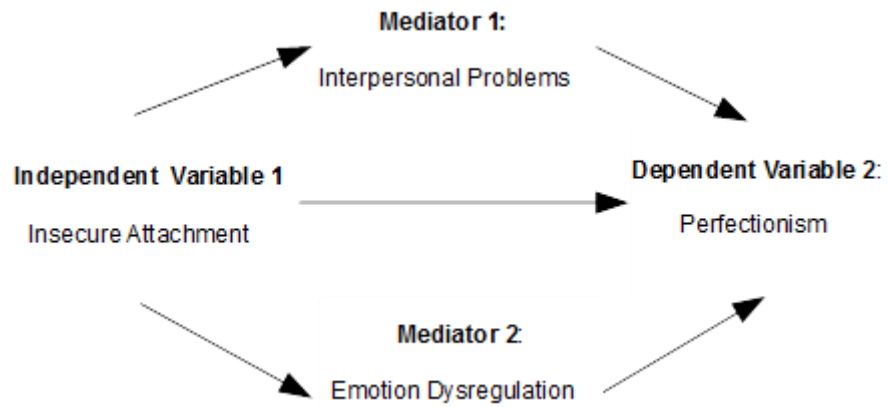


Figure 2: Conceptual representation of mediation model with Perfectionism as dependent variable

2.3. Methods

2.3.1. Study Design

This study used a cross sectional design recruiting participants from: routine NHS cosmetic surgery pathway and an online survey. Ethical approval was granted by The East of Scotland Research Ethics Committee and The University of Edinburgh (See Appendix C, D and E).

2.3.2. Participants

Clinical Sample: Over an 8-month period, all (N=127) patients referred for Clinical Psychology screening were invited to participate with 59 patients opting into the study, an overall uptake rate of 46%. One participant reported they did not participate because they felt their ability to consent was compromised. Three cases were excluded due to incompleteness of measures and one case was excluded as under the age of 18, leaving a total of 55 participants. Participants' age range was 18-65 years (M=32.22, SD=13.38) of which 50 (90.9%) were female. Twenty-four (43.6%) of the sample were "in a relationship", 14 (25.4%) were "married", 15 (27.3%) were "single" and two did not report relationship status. All participants identified as being "White British".

Online Sample: Over a six-week period, 43 participants voluntarily completed an online survey. Eighteen (41%) were interested in seeking cosmetic surgery out of which 4 (11.6%) had previously had cosmetic surgery and 3 (6.9%) were under the care of a plastic surgeon. Out of the remaining 25 participants,

9 (2%) reported having previous cosmetic surgery but were not interested in having further cosmetic surgery and 16 (37%) were not currently interested in having cosmetic surgery and had not had cosmetic surgery in the past. These 16 cases were therefore excluded from further analysis, leaving a total of 27 participants. Participants' age range was 22-61 years ($M=31.81$, $SD=9.5$) of which 26 (96%) were female. Relationship status was not reported. Twenty (74%) of the online sample identified as being "White British", 2 identified as being White American (7,4%) and White Australian (7.4%), with the remainder identified as being White New Zealand ($N=1$, 3.7%), White European ($N=1$, 3.7%) and Asian British ($N=1$, 3.7%).

2.3.3. Procedure

Clinical Sample: Consecutive referrals made to the NHS Adult Exceptional Aesthetic Referrals (AEARS) pathway for Clinical Psychology Screening were invited to participate (See Appendix F). By consenting to participate, participants provided permission for the Chief Investigator to access four out of nine measures routinely used in the AEARP pathway, in addition to completing the Experience in Close Relationship Scale-Revised questionnaire (Fraley, 2005). Patients were included if they were aged 18 years or older, fluent in understanding and speaking English, able to provide informed consent and were seeking procedures available on the AEARP protocol. Patients were excluded from the study if they were; actively psychotic or actively abusing substances.

Clinicians who conducted the psychological screening were instructed to exclude patients from partaking in the study where the primary aim was medically indicated and not purely cosmetic (e.g. the removal of excess skin post weight loss or rhinoplasty for deviated septum and consequent breathing problems). For female patients seeking breast reduction surgery, clinicians were instructed to assess for any medical reasons (e.g. diagnosis of macromastia leading to back/neck pain or stasis ulcers) and exclude patients for seeking breast reduction surgery for medical as opposed to cosmetic reasons (e.g. a desire to have smaller breasts).

Online Sample: An online survey was developed using Bristol Online Survey Tool and was posted on cosmetic surgery forum websites, Facebook pages and Twitter. Out of 16 cosmetic surgery forum and Facebook pages approached, only 3 agreed to host the online survey and included: Sofeminine, Cosmetic Surgery Forum UK and MYA Cosmetic Surgery. Individuals were invited to participate if they were seriously considering and/or actively pursuing cosmetic surgery, with a chance to win one of two £50 Amazon vouchers.

2.3.4. Power Analysis

Fritz and Mackinnon (2007) provide guidance for estimating required sample sizes for mediation analyses and recommend that, with a medium effect size, a sample size of at least 71 participants is necessary to achieve a power of 0.80 using a bias-corrected bootstrapping method (MacKinnon, Lockwood, Hoffman, West, & Sheets 2002; Preacher and Hayes, 2004). This study therefore aimed to recruit a minimum of 71 participants, which was met.

2.3.5. Measures

Multidimensional Body Self Relations Questionnaire-Appearance Scales (MBRSQ; Brown, Cash & Maikulka, 1990; Cash, 2000)

The MBRSQ-AS is a 34-item self-report measure of body image and contains five sub scales: appearance evaluation, appearance orientation, overweight preoccupation, self-classified weight and the body area satisfaction scale. For the purposes of the current study, the appearance evaluation, appearance orientation and body area satisfaction subscales were used. The appearance evaluation has 7 items and assesses feelings of physical attractiveness or unattractiveness (sample item: “I like my looks just the way they are”). The appearance orientation subscale has 12 items that assess the extent to which individuals invest in appearance (sample items: “I am careful to buy clothes that will make me look my best”). For the appearance evaluation and appearance orientation subscales, respondents rate how much each item applies to them on a scale of “1” (Definitely Disagree) to “5” (Definitely Agree), with lower scores on the appearance evaluation subscale indicating a general unhappiness with appearance and higher scores on the appearance orientation indicating more investment in appearance. The body area

satisfaction scale is a 9-item subscale that assesses satisfaction with discrete aspects of one's appearance (e.g. face, lower torso, height, overall appearance). Respondents rate their satisfaction with discrete aspects of appearance on a scale ranging from "1" (Very Dissatisfied) to "5" (Very Satisfied), with lower scores indicating greater dissatisfaction. In this study, the appearance evaluation, appearance orientation and body area satisfaction scales served as indicators of BID. The MBRSQ-AS demonstrates strong internal consistency (Cronbach's Alpha ranging from 0.73-0.88) and test-retest reliability (Cronbach's Alpha ranging from 0.74-0.91) across subscales. In this study, internal consistencies were as follows: appearance evaluation; 0.85, appearance orientation, 0.85 and body area satisfaction; 0.81.

Perfectionistic Self Presentation Scale (PSPS; Hewitt et al., 2003)

The PSPS is a 27-item self-report measure of Perfectionistic Self-Presentation and consists of three subscales: Perfectionistic Self-Promotion (PROMO)-the desire to present oneself as perfect to others, (sample item: "I must always appear perfect to others"); Non-Display of Imperfection (NDP)-the desire not to appear less than perfect to others (sample item: "It would be awful to make a fool of myself in front of others"); Non-Disclosure of Imperfection (NDC)-the need to avoid public admission of imperfections/failures (sample item: "I should solve my problems on my own rather than admit them to others".) Subjects rate their agreement with items on a 7-point scale ranging from "1" (Disagree Strongly) to "7" (Agree strongly). For the purposes of this study, the NDC subscale was excluded as neither theory nor evidence (Hewitt et al., 2003) suggests it is related to seeking cosmetic surgery (Sherry et al., 2004). Higher scores indicate higher levels of perfectionism for the corresponding subscale with a maximum score of 70 for both PROMO and NDP subscales. The Perfectionistic Self-Presentation has good test-retest reliability, construct validity and internal consistency (Hewitt and Flett, 2003). In this study, internal consistencies were as follows: PROMO; 0.89, NDP; 0.92.

Difficulty in Emotion Dysregulation Scale (DERS; Gratz and Roemer, 2004)

The DERS is a 36-item self-report measure that assess difficulties in regulating emotions. The DERS contains 6 subscales (Non-acceptance; Goals; Impulse; Awareness; Clarity and Strategies) with respondents rating how often each item applies to them on a scale ranging from “1” (almost never) to “5” (almost always). The sum of all DERS response scores provides a continuous total score of overall emotion dysregulation difficulties, with higher scores indicating increased impairments in emotion dysregulation strategies. For the purpose of this study, the total scale was used to assess emotion dysregulation. The DERS demonstrates high internal consistency (Cronbach’s alpha =0.93) and satisfactory construct and predictive validity (Gratz and Roemer, 2004). In this study, internal consistency was 0.96.

Inventory of Interpersonal Problems-32 (IIP-32; Barkham, Hardy and Start-up, 1996)

The IIP-32 is a 32 item self-report measure designed to assess a range of interpersonal problems adults typically experience in relationships (Barkham et al., 1996). The IIP-32 consists of 8 subscales: Domineering/Controlling, Vindictive/Self-Centred, Cold/Distant, Socially Inhibited, Non-Assertive, Overly Accommodating, Self-Sacrificing and Intrusive/Needy. The items assess interpersonal skills that people may find hard to do (sample items; “hard for me to join a group”, “say no to other people”) or do too much of (sample items “I open up to people too much”, “I try to control other people too much”). Respondents rate how much items apply to them on a 5-point rating scale ranging from “0” (Not at all) to “4” (Extremely). The sum of all IIP-32 subscales provide a continuous total score. For the purpose of this study, the total score was used. The IIP-32 total score has strong test-retest reliability, validity and internal consistency (Cronbach’s alpha=0.93, Barkham et al, 1996). In this study, the internal consistency was 0.93.

Experience in Close Relationships Questionnaire Revised (ECR-R; Fraley, 2005)

The ECR-R is a 36 item self-report assessment of adult attachment on two orthogonal dimensions of anxiety and avoidance. The 36 items are rated on a

7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Eighteen items load onto the avoidant dimension which measures discomfort with closeness/dependency on others (sample item: “I don’t feel comfortable opening up to others”) and 18 items load on to the anxious dimension which measures fear of rejection and abandonment (sample item: “I’m afraid I will lose others/my partners love”). The wording of the ECR-R measure can be altered to assess either general (“other, friends”) or romantic (“partner”) attachment (Fraley *et al.*, (2005). For the purpose of this study general attachment was assessed. The ECR-R is widely used to measure attachment with both dimensions demonstrating high sound temporal stability and internal consistencies (anxiety: 0.94, avoidant: 0.93; Sibley and Lui, 2004). The internal consistency for this study was as follows: anxious attachment: 0.96 and avoidant attachment: 0.94.

2.3.6. Data Analyses

Analysis were conducted using Statistical Package for Social Sciences (SPSS, version 22). Missing data analysis revealed that less than 3.5% of responses to all items were missing and the items were found to be missing completely at random according to Little’s MCAR Test ($\chi^2=103.16$, $df=1702$, $p=1.00$; Little and Rubin, 2002). Case mean substitution was used to account for missing data where missing values were replaced with the case mean for the corresponding total scale/subscale (Fox-Wasylyshyn and El-Masri, 2005) if the subscale scores represented item averages. For subscales where participant scores represented item sums, sample mean imputation was used instead.

Kolmogorov-Smirnov tests of normality and inspection of histograms revealed inconsistent results for skewness and kurtosis for the IIP, DERS, NDP and ECR-R (Anxious). Z-scores were therefore calculated for each measure, revealing no note-worthy departures from normality on any variables. A series of parametric tests were therefore used. In order to compare any differences between gender, Clinical and Online Sample, t-tests were used for continuous variables and chi-squares tests were used for categorical variables. Pearson’s Bivariate correlations were used to examine the relationship between all variables.

The macro “PROCESS” (downloadable from: <http://www.processmacro.org/download.html>) was used to conduct multiple mediation analysis. MacKinnon, Lockwood, Hoffman, West, & Sheets (2002) highlight that the distribution of mediation effects may not be normal, especially with small sample sizes. The bootstrapping method was therefore used in this study (with 5000 samples) as it makes no assumptions about the characteristics of the distribution, does not require a specific sample size and has been recommended for computing confidence intervals for mediation effects (MacKinnon et al., 2002; Preacher and Hayes, 2004). In the mediation analysis, Bootstrapped values of the 95% confidence interval that do not contain zero between their lower and upper limits were considered to be significant mediators (Preacher and Hayes, 2004).

2.4. Results

2.4.1. Exploratory Analysis:

Exploration between the clinical and online group showed females were significantly more perfectionistic ($M=44.29$, $SD=14.43$) compared to males ($M=33.83$, $SD=12.64$, $t(80) = 1.72$, $p<0.05$) and were significantly more concerned about their appearance ($M=2.84$, $SD=0.67$) compared to males ($M=3.65$, $SD=0.41$, $t(80) = -2.86$, $p<0.05$). Males were therefore removed from the remainder of the analysis. No significant differences were found between age. Relationship status between groups was not explored due to missing data.

2.4.2. Sample Profile:

In the Clinical Sample ($N=50$), the most common type of cosmetic surgery being sought through the NHS was breast reduction ($N=18$, 32.7%), followed by abdominoplasty ($N=9$, 18%), and labiaplasty ($N=7$, 12.7%). In the Online Sample ($N=26$), the most common types of cosmetic surgery participants were interested in was body contouring ($N=4$, 14.8%), facelift ($N=3$, 11.1%) and breast augmentation ($N=3$, 11.1%). In the Online Sample there was a greater interest in seeking more than one type of cosmetic surgery. Types of interest in cosmetic surgery are presented in Figure 3.

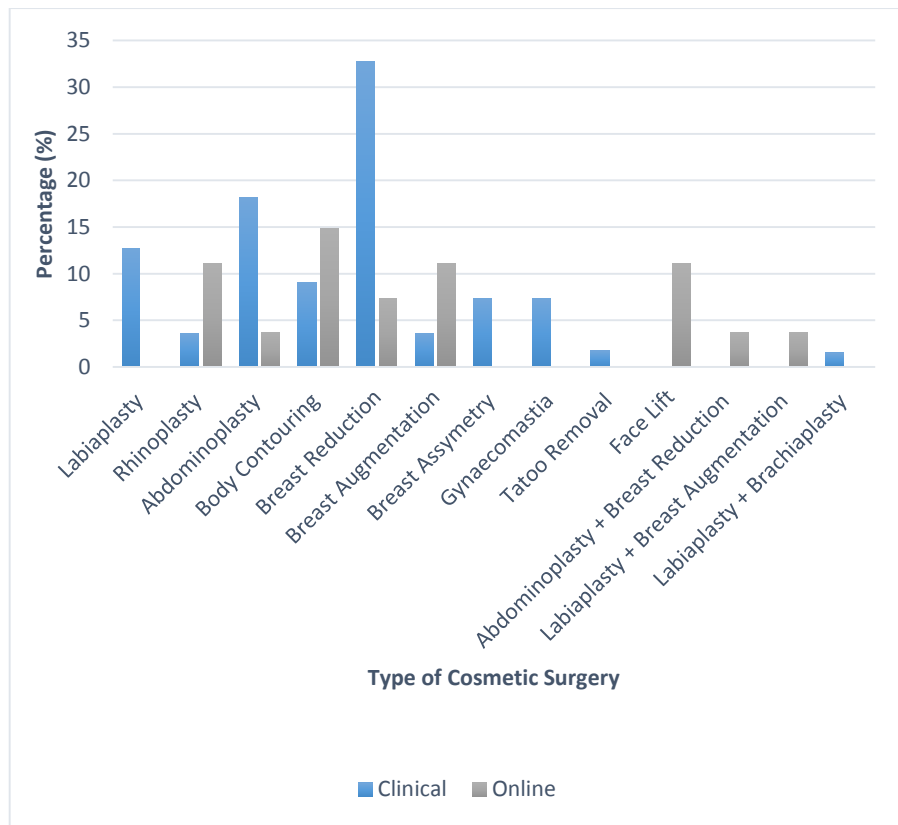


Figure 3: Types of cosmetic surgery of interest across clinical and online samples

2.4.3. Clinical and Online Sample Performance across Measures

Table 1 shows the means, standard deviations and range of the clinical and online sample's performance across measures. The clinical sample scored higher across all measures, except the body area satisfaction where both clinical and online average scores were the same. Exploration of these variables revealed no significant differences across all measures between the clinical and online group, with the exception of appearance evaluation and avoidant attachment, where the clinical sample were significantly more concerned with appearance ($M=2.22$, $SD=0.86$), compared with the online sample ($M=2.71$, $SD=0.81$; $t(74)= -2.40$, $p<0.05$) and were significantly higher in avoidant attachment ($M=3.56$, $SD=1.20$) compared to online sample ($M=2.75$, $SD= 1.36$; $t(74)=2.64$, $p<0.05$).

Table 1: Mean, Standard Deviation, Range and Comparative Tests between Clinical and Online Sample

	<u>Clinical Sample</u>		<u>Online Sample</u>		t-test
	Means (SD)	Range	Means (SD)	Range	
Age	32.20 (12.90)	18-63	32.04 (9.57)	22-61	ns
Anxious	3.65 (1.70)	1-6.61	3.25 (1.52)	1-6	ns
Avoidant	3.56 (1.20)	1-5.83	2.75 (1.36)	1-6.56	0.01
AE^a	2.22 (0.86)	1-4.14	2.71 (0.81)	1-4.29	0.02
AO	3.75 (0.59)	2.08-5	3.55 (0.68)	2-4.75	ns
BASS^a	2.83 (0.71)	1.22-4.56	2.87 (0.68)	1.56-4	ns
PROMO	41.38 (12.76)	14-69	37.54(12.73)	10-64	ns
NDP	45.16 (14.52)	12-70	42.62 (14.38)	10-66	ns
DERS	85.46 (30.16)	41-142	82.35 (26.35)	49-131	ns
IIP-32	40.38 (22.62)	4-83	40.65 (18.50)	14-76	ns

Note: Anxious=Anxious Attachment, Avoidant= Avoidant Attachment, AE=Appearance Evaluation, AO= Appearance Orientation, BASS= Body Area Satisfaction Scale, PROMO= Perfectionistic Self Promotion, NDP=Non Display of Imperfection, IIP=Interpersonal Problems, DERS= Difficulties in Emotion Regulation, ns=non-significant

^a low scores on these measures indicate greater body image dissatisfaction

2.4.4. Combined Sample Compared with NHS AEARP Clinic Norms and Wider Normative Data

The online and clinical sample were combined and compared to the wider clinical norms for female patients on the NHS AEARP pathway. The measures from the combined sample were compared with 55 female patients who sought cosmetic surgery on the NHS over the same 8-month time period (See Table 2). Exploration of variables revealed no significant differences between age and no significant differences across all measures, with the exception of non-display of perfection, where the combined clinical sample were more perfectionistic (M=44.29, SD=14.33) compared to the wider AEARP clinical norms (M=36.93, SD=12.84; $t(129)=3.02, p<0.05$). Anxious and avoidant attachment could not be compared to NHS AEARP clinic norms as the ECR-R was not routinely used practice. As the clinical and online samples did not

differ significantly across the majority of measures, they were amalgamated for the remainder of the analyses. The final sample therefore consisted of 76 female participants.

Table 2: Mean, Standard Deviation and Comparative Test between Combined Sample and NHS AEARP Clinic Norms:

	<u>Combined</u>		<u>AEARP Norms</u>		Chi-square/t-test
	Mean (SD)	Range	Mean (SD)	Range	
Age	32.14 (11.83)	18-63	32.89 (12.31)	16-54	ns
Anxious	3.52 (1.65)	1-6.61	*	*	*
Avoidant	3.28 (1.36)	1-6.56	*	*	*
AE^a	2.39 (0.87)	1-4.29	2.32 (0.84)	1-4.71	ns
AO	3.68 (0.62)	2-5	3.66 (0.59)	2.42-4.92	ns
BASS^a	2.84 (0.67)	1.22-4.56	3.01 (0.71)	1.22-4.56	ns
PROMO	39.85 (12.64)	10-69	36.65 (10.62)	16-61	ns
NDP	44.29 (14.43)	10-70	36.93 (12.84)	3-60	0.003
DERS Total	84.56 (27.49)	41-142	78.65 (31.07)	38-165	ns
IIP-32 Total	40.48 (21.15)	4-83	33.89 (20.69)	1-74	ns

Note: Anxious= Anxious Attachment, Avoidant=Avoidant Attachment, AE=Appearance Evaluation, AO= Appearance Orientation, BASS= Body Area Satisfaction Scale, PROMO= Perfectionistic Self Promotion, NDP=Non Display of Imperfection, IIP=Interpersonal Problems, DERS= Difficulties in Emotion Regulation; ns=non-significant

^a low scores on these measures indicate greater body image dissatisfaction

*No data available for NHS AEAPR Clinic Norm

When compared to wider normative data, the combined sample revealed higher levels of avoidant attachment (M=3.28, SD=1.36) when compared to norms for female population (M=2.92, SD=1.21) but near expected level of

anxious attachment (M=3.52, SD= 1.65) compared to norms for female population (M=3.56, SD=1.13; Frayely *et al.* 2000). For body image, appearance evaluation and body area satisfaction subscales were lower compared to female normative data, suggesting the combined sample has higher levels of BID compared to females in general population (Cash and Fleming, 2002).

2.4.5. *Prevalence of Body Image Dissatisfaction and Perfectionistic Self-Presentation*

The means, standard deviations and percentages of BID and perfectionistic self-presentation are presented in Table 3. There was a high percentage of the sample with high levels of appearance evaluation and appearance orientation compared to body area satisfaction. There was a relatively low percentage of individuals with perfectionistic self-presentation in this sample, particularly perfectionistic self-promotion. The means and standard deviations for both perfectionistic self-promotion and non-display of imperfection are lower than reported in a similar study using the same cut off scores (PROMO; M=50.25, SD=13.80; NDP; M=48.13, SD=12.33; Sherry *et al.*, 2007).

Table 3: Combined Sample Means, Standard Deviations and Percentages of with Body Image and Perfectionism levels above clinic cut-offs

<u>BID</u>			
	Mean	SD	Percent with BID (%)¹
AE	2.4	0.9	75
AO	3.7	0.62	86.8
BASS	2.8	0.67	61.8
<u>Perfectionism</u>			
	Mean	SD	Percent with high perfectionism (%)²
PROMO	40.06	12.8	15.8
NDP	44.3	14.4	38

¹Refers to percentage of respondents whose mean score on the AE, AO and BASS subscales were in the correct direction relative to 3 (mid-point) on the 1-5 response scale for each corresponding subscales (e.g. <3 on AE and BASS and >3 on AO; See Cash and Henry, 1995).

²Refers to percentage of respondents whose score on the PROMO and NDP subscales of the PSPS were in the upper quartile range (e.g. score >52 on both subscales; See Sherry *et al.*, 2007).

2.4.6. *Bivariate Correlations*

To establish relations between variables, partial correlations were conducted. Of particular interest is the finding that anxious attachment and avoidant attachment demonstrate a strong positive relationship ($r=0.71$) that is higher than expected compared to normative data ($r=0.4$; Frayley *et al*, 2000). Anxious attachment was moderately negatively correlated with appearance evaluation and body area satisfaction, indicating anxious attachment is associated with general unhappiness with appearance and discrete aspects of appearance. Anxious attachment was positively correlated with perfectionistic self-promotion and non-display of imperfection and was positively associated with interpersonal functioning and emotion dysregulation. Avoidant attachment shared the same pattern and direction of relationship with appearance evaluation, perfectionistic self-promotion, non-display of imperfection, interpersonal problems and emotion dysregulation, but the strength of these correlations was weak, particularly for subscales of perfectionism. Emotion regulation was moderately positively correlated with non-display of imperfection, appearance evaluation and body area satisfaction. Interpersonal problems shared the same pattern and direction of relationship with non-display of imperfection, appearance evaluation and body area satisfaction, although the strength of these correlations was weaker. Anxious attachment, avoidant attachment, interpersonal problems and emotion dysregulation were positively correlated with appearance orientation, however, all associations were weak, with low and non-significant correlations with interpersonal problems and emotion dysregulation. No correlations were strong enough to suggest issues with multi-collinearity ($r>0.80$). There was no evidence of multi-collinearity across all variables when explored further using Tolerance (<0.2) and Variance of Inflation Factors (>5 ; Field, 2009; Miles, 2005; O'Brien, 2007).

Table 4: Bivariate Correlations among Variables

	Anxious	Avoidant	AE	AO	BASS	PROMO	NDP	IIP
Avoidant	0.72***	-						
AE	-0.53***	-0.51***	-					
AO	0.34*	0.28**	-0.46***	-				
BASS	-0.60***	0.52***	0.75***	-0.45***	-			
PROMO	0.53***	0.34***	-0.43***	0.61***	-0.54***	-		
NDP	0.63***	0.34***	-0.44***	0.50***	-0.59***	0.78***	-	
IIP	0.61***	0.45***	-0.48***	0.25	-0.56***	0.42***	0.42***	-
DERS	0.77***	0.62***	-0.52***	0.56	-0.61***	0.48***	0.51***	0.67***

*p<0.05, ** p<0.01, *** p<0.001

Note: ECR-R (Anxious)= Anxious Attachment, ECR-R (Avoidant)= Avoidant Attachment, AE=Appearance Evaluation, AO= Appearance Orientation, BASS= Body Area Satisfaction Scale, PROMO= Perfectionistic Self Promotion, NDP=Non Display of Imperfection, IIP=Interpersonal Functioning, DERS= Difficulties in Emotion Regulation

2.4.7. Mediation Analysis

To examine any mediating effects of interpersonal functioning and emotion dysregulation on the relationship between insecure attachment, body image dissatisfaction and perfectionism variables, multiple mediation analyses were conducted. According to Barron and Kenny (1996), variables included in a mediation model should be inter-correlated. Significant correlations were noted across all variables with the exception of appearance orientation, which did not correlate significantly or strongly with interpersonal problem or emotion dysregulation. A decision was therefore made to remove this from the mediation analysis.

2.4.7.1. Hypothesis 1: Interpersonal functioning and emotion dysregulation will mediate the relationship between insecure attachment and body image dissatisfaction

The first analysis explored the mediatory effect of interpersonal problems and emotion dysregulation between anxious attachment and body area satisfaction. Multiple mediation analysis indicated that interpersonal functioning and emotion dysregulation partially mediated the relationship between anxious attachment and body area satisfaction (See Table 5). The mediation model accounted for 35% of the amount of variance in the model ($R^2=0.35$, $F(3, 72)=13.17$, $p<0.001$). This relationship is depicted in Figure 4. A second mediation analysis did not find a significant mediational role of interpersonal problems or emotion dysregulation on the relationship between anxious attachment and appearance evaluation.

Table 5: Bootstrapped total, direct and indirect effects of insecure attachment of body area satisfaction through mediators

Description of Model	B coefficient	SE	Bootstrapped Confidence Intervals (95%)	
			Lower	Upper
Predictor: Anxious Attachment				
Outcome: Body Area Satisfaction				
Total Effect	-0.24	0.04	-0.32	-0.18
Direct Effect	-0.08	0.06	-0.19	0.03
Indirect Effect (via IIP and DERS):				
IIP	-0.06	0.03	-0.14	-0.01
DERS	-0.09	0.04	-0.19	-0.01
Predictor: Avoidant Attachment				
Outcome: Body Area Satisfaction				
Total Effect	-0.26	0.05	-0.35	-0.02
Direct Effect	-0.09	0.05	-0.11	0.01
Indirect Effect (via IIP and DERS)				
IIP	-0.06	0.03	-0.15	-0.01
DERS	-0.10	0.04	-0.19	-0.03

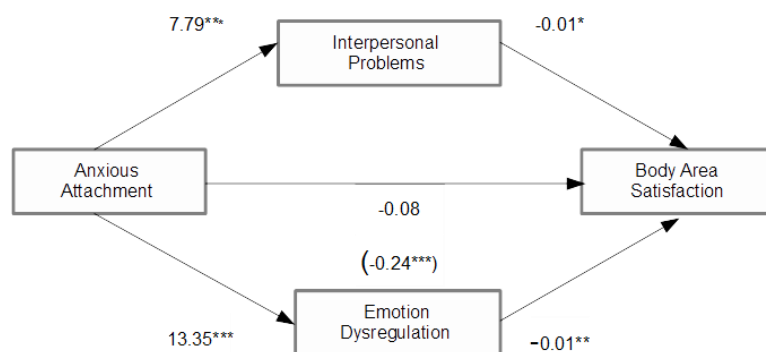


Figure 4: Mediation model of the pathway between Anxious Attachment, Interpersonal Problems, Emotion Dysregulation and Body Area Satisfaction. Beta-coefficients and associated *p*-values (*is $p < 0.05$, ** is $p < 0.01$, *** is $p < 0.001$) are presented in diagram. Data in parentheses are paths prior to the proposed mediators.

The third mediation analysis examined the mediating effect of interpersonal functioning and emotion dysregulation on the relationship between avoidant attachment and body area satisfaction. Multiple mediation analysis indicated that interpersonal problems and emotion dysregulation partially mediated the relationship between avoidant attachment and body area satisfaction (See Table 5). The mediation model accounted for 48% of the amount of variance ($R^2 = 0.48$, $F(3, 72) = 22.09$, $p < 0.001$). This relationship is depicted in Figure 5. A fourth mediation analysis did not observe any significant effects for the mediating role of interpersonal problems or emotion dysregulation on the relationship between avoidant attachment and appearance evaluation.

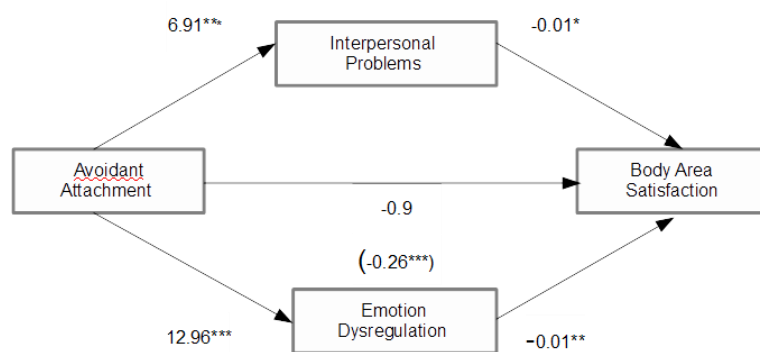


Figure 5: Mediation model of the pathway between Avoidant Attachment, Interpersonal Problems, Emotion Dysregulation and Body Area Satisfaction. Beta-coefficients and associated p -values (* is $p < 0.05$, ** is $p < 0.01$, *** is $p < 0.001$) are presented in diagram. Data in parentheses are paths prior to the proposed mediators.

2.4.7.2. Hypothesis 2: Interpersonal functioning and emotion dysregulation will mediate the relationship between insecure attachment and perfectionistic self-presentation

In a further two separate multiple mediation models exploring the mediating effect of interpersonal problems between anxious attachment and perfectionistic self-promotion and anxious attachment and non-display of imperfection, no significant mediating effects were observed.

Subsequent multiple mediation analysis examined the mediating role of interpersonal problems and emotion dysregulation on the relationship between avoidant attachment and perfectionistic self-promotion indicating emotion dysregulation partially mediated the relationship between avoidant attachment

and perfectionistic self-promotion whereas interpersonal problems did not (See Table 6). This accounted for 25% of the variance in the model ($R^2=0.25$, $F(3,72) = 8.09$, $p < 0.001$) and is depicted in Figure 6. Finally, multiple mediation analysis indicated the relationship between avoidant attachment and non-display of imperfection was also partially mediated by emotion dysregulation and not interpersonal problems (See Table 6). This accounted for 35% of the variance in the model ($R^2=0.35$, $F(3,72) = 13.07$, $p < 0.001$) and is depicted in Figure 7.

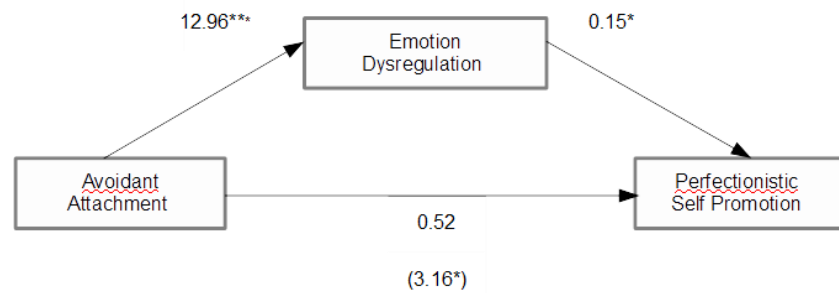


Figure 6: Mediation model of the pathway between Avoidant Attachment, Emotion Dysregulation and Perfectionistic Self-Promotion. Beta-coefficients and associated p -values (*is $p < 0.05$, ** is $p < 0.01$, *** is $p < 0.001$) are presented in diagram. Data in parentheses are paths prior to the proposed mediators.

Table 6: Bootstrapped total, direct and indirect effects of insecure attachment on perfectionistic self-promotion and non-display of imperfection via mediators

Description of Model	B coefficient	SE	Bootstrapped Confidence Intervals (95%)	
			Lower	Upper
Predictor: Avoidant Attachment				
Outcome: Perfectionistic Self Promotion				
Total Effect	3.17	1.02	1.13	5.21
Direct Effect	0.52	1.21	-1.98	2.94
Indirect Effect (via IIP and DERS):				
IIP	0.65	0.72	-0.68	2.36
DERS	2.00	0.85	0.58	4.06
Predictor: Avoidant Attachment				
Outcome: Non Display of Imperfection				
Total Effect	3.59	1.15	1.30	5.89
Direct Effect	-0.42	1.27	-2.95	2.10
Indirect Effect (via IIP and DERS)				
IIP	0.18	0.74	-0.98	2.10
DERS	3.83	0.98	2.16	6.06

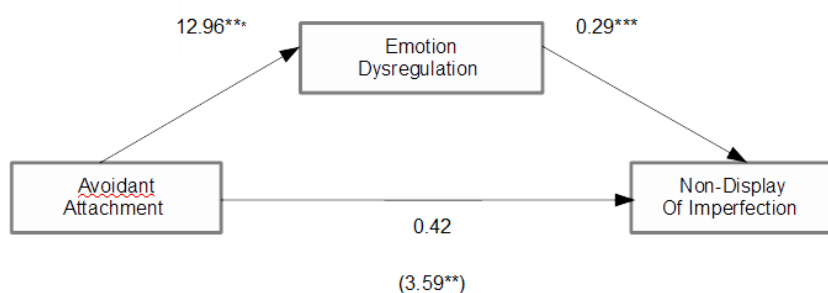


Figure 7: Mediation model of the pathway between Avoidant Attachment, Emotion Dysregulation and Non-Display of Imperfection. Beta-coefficients and associated p -value $p < 0.05$, ** is $p < 0.01$, *** is $p < 0.001$) are presented in diagram. Data in parentheses are paths prior to the proposed mediators

2.5. Discussion

2.5.1. Summary of Main Findings

The current study was the first to demonstrate that insecure attachment dimensions are related to body image dissatisfaction and perfectionism in patients seeking cosmetic surgery. Results from correlational analyses indicate that insecure attachment dimensions, interpersonal problems, emotion dysregulation, body image dissatisfaction and perfectionistic self-presentation were found to be associated with each other in theoretically predictable ways. Significant negative moderate associations were found between insecure attachment dimensions and body image dissatisfaction and significant positive moderate associations were found between insecure attachment and perfectionistic self-presentation. This is with the exception of the avoidant dimension which showed a small but significant relationship with both subscales of perfectionistic self-presentation. Significant moderate associations were also found between subscales of perfectionistic self-presentation and body image dissatisfaction. Interpersonal functioning and emotion dysregulation all had moderate significant associations with both dependent and independent variables in the expected direction.

The hypotheses that interpersonal functioning and emotion dysregulation would mediate the relationship between insecure attachment and body image dissatisfaction is only partially supported as a weak mediating effect was found for the subscale body area satisfaction but not appearance evaluation. It is surprising that interpersonal problems and emotion dysregulation demonstrated a mediating effect on the relationship between both anxious and

avoidant attachment and body image dissatisfaction given previous evidence suggests only anxious attachment would be associated with body image dissatisfaction (Brenan and Saver, 1995; Cash et al., 2004, Mckinley and Randa, 2005). This suggests that insecure attachment (both anxious and avoidant) plays an important role in the development of body image dissatisfaction, particularly unhappiness with discrete aspects of appearance, in cosmetic surgery candidates. It is also interesting that an effect was only found for body area satisfaction and not appearance evaluation. This may relate to the fact that evidence suggests cosmetic surgery candidates are disproportionately dissatisfied with discrete aspects of appearance (as measured by body area dissatisfaction) as opposed to an overall general dissatisfaction with their appearance (as measured by appearance evaluation (Sarwer *et al*, 2003)).

Although there may be many motives to enhance appearance, this study suggests that insecurely attached individuals concern about approval/acceptance and fears of negative evaluation or rejection drive apprehensions about physical worth and acceptability (Cash and Pruzinsky, 2002). Here, investing in and enhancing appearance may be a way of obtaining and maintaining social approval in relationships in order to avoid negative evaluations/rejections or avoid intimacy/dependency to feel accepted.

Due to the cross-sectional design of the study, causal assumptions cannot be made about the relationship between insecure attachment and body image dissatisfaction. However, it is unlikely that insecure attachment is a consequence of body image dissatisfaction given that attachment is regarded as a personality factor that develops early in life through child-parent interactions and remains relatively stable across the life span (Picardi, *et al*, 2005). Thus, it is likely that early life attachment experiences influence subjective evaluations of physical appearance and that the development of insecure attachment could become a risk factor for negative body image perceptions/evaluations.

Interpersonal problems were found to be a weak but significant mediator between the relationship of insecure attachment and body area satisfaction. This highlights insecure attachment is important for understanding body image dissatisfaction within an interpersonal context (Cash *et al*, 2004) and

suggests that individuals who have poor experiences within interpersonal relationships are more likely to develop body image concerns regarding discrete and specific aspects of their appearance. This could be understood in the context of “negative view of self” a central characteristic of insecure attachment dimensions (Batholomew and Horowitz, 1991; Collins and Read, 1990; Troisi *et al*, 2006). It is likely that individuals with insecure attachment develop body image dissatisfaction due to a decrease in sense of self-worth and increased expectation of rejection by others which may make such individuals more susceptible to interpersonal problems in that they may be more dependent on gaining acceptance from others and develop an increased sensitivity to cultural and societal appearance related messages (Cash *et al*, 2002; Troisi *et al*, 2006).

Emotion dysregulation was also found to be a weak but significant mediator on the relationship between insecure attachment and body image dissatisfaction. Evidence suggests individuals with insecure attachment adopt maladaptive emotion regulation strategies (Frayley and Shaver, 2000; Mikulincer and Shaver, 2007) and that anxious and avoidantly attached individuals differ in their emotion regulation strategies (Van Buer, 2002). For example, individuals with an avoidant attachment may adopt hypoactive regulation strategies that maintain a low activation of the attachment system (Caldwell and Shaver, 2013; Frayley and Shaver, 2000). This may result in a failure to focus on feelings and an inability to self-disclose in order to prevent revealing internal emotional states. This is in contrast to anxious attachment where individuals may be more likely to use hyperactivation emotion regulation strategies to exaggerate negative emotional responses such as fear and anger and engage in inappropriate disclosure of emotions (Frayley and Shaver, 2000; Mikulincer and Shaver, 2007).

In this sense, emotion regulation strategies may exacerbate body image concerns as opposed to lead to appearance fixing/concealing behaviours as a mechanism to regulate emotions related to body image dissatisfaction (Merwin, 2011). However, limited research has explored the role of emotion dysregulation in the cosmetic surgery population, particularly hypo and hyper activation strategies to positive and negative emotions. Given the role of insecure attachment and its links with emotion dysregulation and body image

dissatisfaction, as well as evidence to suggest the role of emotion dysregulation in eating disorder literature of which insecure attachment and body image are also central features, the role of emotion regulation strategies, particularly hypoactivation and hyperactivation to both positive and negative emotions, merits further exploration within this clinical population. This is especially important considering evidence-based therapeutic interventions could alleviate emotion dysregulation difficulties (Berking et al., 2008).

The hypothesis that interpersonal functioning and emotion dysregulation would mediate the relationship between insecure attachment and perfectionistic self-presentation is also only partially supported as there was only a significant mediating effect of emotion dysregulation on the relationship between avoidant attachment and subscales of perfectionistic self-presentation. Given the theoretical support for a link between anxious attachment and perfectionistic self-presentation (Rice and Mirzadeh, 2000; Rice, Lopez and Vergara, 2005; Wei *et al*, 2004), it was surprising that no mediating effects were found between anxious attachment, interpersonal problems and perfectionistic self-presentation and anxious attachment, emotion dysregulation and perfectionistic self-presentation. This may relate to evidence suggesting avoidant and anxiously attached individuals cope with distress differently (Gnilka, Ashby, and Noble, 2011). There is evidence to suggest individuals who are avoidant are more self-critical and have an increased pre-occupation with the self to focus on achievement and success (Blatt and Levy, 2003). It may be avoidant individuals use hypoactivation strategies to cope with a threatened view of the self in order to appear perfect and independent and maintain a positive view of the self (Gnilka *et al*, 2011). This fits well with the conceptual view of perfectionistic self-promotion (the desire to present oneself as perfect to others) and non-display of imperfection (the desire not to appear less than perfect to others), especially with regards to promoting perfections and hiding/concealing imperfections.

2.5.2 Clinical Implications

Assessing attachment, in particular screening for insecure attachment could potentially alert clinicians to possible difficulties with interpersonal style, emotion dysregulation, perfectionism and body image concerns, which may interfere with their ability to benefit from cosmetic surgery interventions. It

may also facilitate assessment and formulation with cosmetic surgery candidates who present with body image concerns (Tasca, Ritchie and Balfour, 2011).

Our results highlight that negative view of self is an appropriate target for intervention in people with body image dissatisfaction. However, given that these results should be interpreted within an attachment framework, which includes views of others as well as self, simply focusing interventions on the self may not be enough.

Including measures of interpersonal functioning may therefore enhance the clinicians understanding of how relationship difficulties may fit within the wider context of a patient's presentation, especially related to insecure attachment dimensions and appearance anxiety (Cash and Pruzinsky, 2002). Interventions such as Interpersonal Therapy aimed to help patients identify and change interpersonal problems and enhance relationships by reduction fear so loss and abandonment may indirectly weaken concerns regarding appearance and perfectionistic standards (Tasca *et al*, 2011).

Assessing emotion dysregulation could also be of benefit for clinicians, particularly identifying unhelpful emotion regulation strategies (e.g. hyper or hypo active strategies) to better help understand how individuals react to and cope with negative emotions associated with body image concerns and perfectionism. Interventions developed to target emotion regulation difficulties may be valuable (Berking *et al.*, 2008).

2.5.3 *Limitations*

An exploratory analysis found a gender effect where females were found to be more perfectionistic and have increased body image concerns compared to males. This is not entirely unexpected given previous reports of gender effect within previous studies in body image (Cash and Henry, 1995; Pertschuk, 1998). We hypothesised that the gender effect may be related to a greater inclination amongst females to invest in their appearance compared to males. Consequently, the sample in this study was composed of female participants which limits the generalisability of the findings. Given that the literature on psychological characteristics of cosmetic surgery is limited to

female participants, replicating this study with heterogeneous samples in cosmetic surgery will help to inform future research in this area.

Although this sample was adequately powered for simple mediation analysis (Fritz and MacKinnon, 2007), a larger sample size would have reduced the possibility of type 2 errors, especially within the context of multivariate analyses. Thorough comparisons between online and clinical, combined and wider AEARP data were conducted to ensure that this sample was representative of the wider clinical population. However, it is possible that participants from the clinical sample were more susceptible to social desirability bias when responding to the questionnaires as patients were aware that the questionnaires corroborate clinical decision making as to whether or not they were acceptable for surgery. This may in part account for higher correlations between insecure attachment dimensions compared to normative data (Frayley *et al*, 2000) as the face validity of the items of the ECR-R are quite transparent which may have influenced individual's subjective ratings of the items. Furthermore, it is likely that individuals with more extreme body image concerns and associated psychopathology (e.g. body dysmorphic disorder, obsessive compulsive disorder, eating disorders) would have been screened out at the Vetting Panel prior to being referred to Clinical Psychology. This may restrict the generalisability of results of this research to wider samples of people seeking cosmetic surgery. Additionally, due to the heterogeneity of different types of surgery, results are not generalizable to specific types of cosmetic surgery.

With regards to the online sample, there was a high attrition rate due to individuals completing the survey who were not interested in or never had cosmetic surgery. Measures of cosmetic surgery were only assessed by a two questions: "Are you seriously considering having cosmetic surgery" and "Are you currently under the care of/on the wait list of a plastic surgeon?". Future research using a similar design within this clinical population should use a validated measure of consideration of cosmetic surgery (e.g. Acceptance of Cosmetic Surgery Scale, Henderson-King & Henderson-King, 2005). Finally, due to the cross sectional nature of this study, causality of associations cannot be inferred. For example, it is possible that body image dissatisfaction predisposes interpersonal difficulties or emotion dysregulation. Repetition of

this project within a longitudinal design is necessary to allow a better understanding of the role of interpersonal functioning, emotion dysregulation and insecure attachment in the development of body image dissatisfaction and perfectionism over time.

2.5.4. Strengths

To our knowledge, this study is the first to explore theoretically linked variables of insecure attachment, interpersonal functioning, emotion dysregulation, body image dissatisfaction and perfectionism within the cosmetic surgery population. The findings of this study contribute to a limited evidence base on the role of attachment to body image dissatisfaction in individuals interested in cosmetic surgery (Cash et al., 2004, Harditt and Hanuum, 2012; Mckinley and Randa, 2005). Our results further expand upon Davis and Vernon's (2002) findings that general, as well as romantic attachments contribute to body image dissatisfaction in individuals actively seeking cosmetic surgery. Future research should therefore further explore the role of different attachment styles (e.g. romantic, general) within this clinical population.

2.5.5. Conclusions

Overall, the current study highlights the important role of insecure attachment, interpersonal functioning emotion dysregulation and their association with body image dissatisfaction and perfectionistic self-presentation, in patients actively seeking or interested in seeking cosmetic surgery. The majority of cosmetic surgery literature seems focuses on the motivations for seeking surgery and the prevalence of psychopathology within cosmetic surgery populations by exploring linear bivariate relationships. This study further contributes to the literature by using a theoretically informed multivariate analysis with a view to identifying potential psychological mechanisms that may be amenable to intervention or inform the assessment process. Future research should develop theoretically informed research questions to address gaps within the cosmetic surgery literature, particularly with regards to psychological factors associated with good outcomes within multivariate models to gain insight into specific mechanisms by which anxious attachment affects body image dissatisfaction and perfectionism in patients seeking cosmetic surgery.

2.6. Conflicts of Interest

None declared.

2.7. References For Empirical Study

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4.1. Appendices

4.1.1. Appendix A: Systematic Review Research Protocol (PROSPERO, University of York)



UNIVERSITY *of York*
Centre for Reviews and Dissemination

PROSPERO International prospective register of systematic reviews

Review title and timescale

1 Review title

Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.

What are the factors associated with positive coping and adjustment in adults who have an acquired visible difference? A systematic review

2 Original language title

For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

3 Anticipated or actual start date

Give the date when the systematic review commenced, or is expected to commence. *08/02/2016*

4 Anticipated completion date

Give the date by which the review is expected to be completed. *01/05/2016*

5 Stage of review at time of this submission

Indicate the stage of progress of the review by ticking the relevant boxes. Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. This field should be updated when any amendments are made to a published record.

The review has not yet started

Review stage	Started	Completed
Preliminary searches	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Yes

Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here.

Review team details

6 Named contact

The named contact acts as the guarantor for the accuracy of the information presented in the register record. [Miss Couper](#)

7 Named contact email

Enter the electronic mail address of the named contact. s.couper@nhs.net

8 Named contact address

Enter the full postal address for the named contact.

[PH1 1NX](#)

9 Named contact phone number

Enter the telephone number for the named contact, including international dialing code. [\(+44\) 01738 473986](#)

10 Organisational affiliation of the review

Full title of the organisational affiliations for this review, and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

[NHS and The University of Edinburgh](#)

Website address:

11 Review team members and their organisational affiliations

Give the title, first name and last name of all members of the team working directly on the review. Give the organisational affiliations of each member of the review team.

Title	First name	Last name	Affiliation
Miss	Sara-Louise	Couper	NHS Tayside /The University of Edinburgh
Dr	Emily	Taylor	The University of Edinburgh
Professor	Kevin	Power	NHS Tayside
Dr	Stuart	Moulton	NHS Tayside

12 Funding sources/sponsors

Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Any unique identification numbers assigned to the review by the individuals or bodies listed should be included. NHS Tayside and The University of Edinburgh

13 Conflicts of interest

List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.

Are there any actual or potential conflicts of interest?

None known

14 Collaborators

Give the name, affiliation and role of any individuals or organisations who are working on the review but who are not listed as review team members.

Title First name Last name Organisation details

Review methods

15 Review question(s)

State the question(s) to be addressed / review objectives. Please complete a separate box for each question. What are the factors associated with positive coping and adjustment in adults who have an acquired visible difference? A systematic review.

16 Searches

Give details of the sources to be searched, and any restrictions (e.g. language or publication period). The full search strategy is not required, but may be supplied as a link or attachment.

Databases to be searched include: PsycINFO, EMBASE, MEDLINE and CINAHL. These databases and grey literature will be searched. The author also plans to contact researchers in the area as well as hand searching the reference lists of key papers. Web searches will be conducted to capture additional unpublished theses which may not be available through university websites. Web searches will also be conducted to capture unpublished data from conferences. Key journals within this area will also be searched. The databases will be searched using the key words. Population terms will include: "visible difference", "visible disfigurement", "visibly different", "disfigurement", "visible deformity", "and altered appearance", "burn", "scar", "limb loss", "amputee", "facial injury", "facial trauma", "facial palsy", "facial paralysis", "head and neck cancer", "cancer and disfigurement". Psychological factors will include: "adjustment", "positive adjustment", "psychosocial adjustment", "coping" and

"resilience". The search strategy will be amended appropriately for each database. A University Librarian will be consulted to help give advice/guidance on the search process.

17 URL to search strategy

If you have one, give the link to your search strategy here. Alternatively you can e-mail this to PROSPERO and we will store and link to it.

I give permission for this file to be made publicly available

Yes

18 Condition or domain being studied

Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Factors associated with positive coping and adjustment in adults with an acquired visible difference

19 Participants/population

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

Inclusion Criteria: Adults over 18 years of age, clinical and non clinical samples of adults who have a visible difference that has been acquired as an adult through: injury (E.g. burn, scar, limb loss), treatment effects (e.g. surgery) or consequences of disease process (e.g. stroke). Heterogeneous samples of acquired visible differences, samples that compare people with acquired visible differences to control groups, samples that include people with acquired visible differences, families and/or carers. Exclusion Criteria: Children/adolescents, samples that look at anticipated disfigurement (e.g. people who are due to undergo appearance altering surgery and/or treatment), studies that investigate factors related to coping/adjustment to disease process/recovery from trauma and/or rehabilitation where there has been an acquired visible difference

20 Intervention(s), exposure(s)

Give full and clear descriptions of the nature of the interventions or the exposures to be reviewed **Not applicable**.

21 Comparator(s)/control

Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group).

The reviewer will consider studies that utilise both clinical and non clinical comparison groups.

22 Types of study to be included

Give details of the study designs to be included in the review. If there are no restrictions on the types of study design eligible for inclusion, this should be stated.

Inclusion: Quantitative, cohort, cross-sectional, longitudinal, observational.

Exclusion: Qualitative studies, case controls, intervention studies and studies where the primary objective is to validate questionnaires.

23 Context

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

Not applicable.

24 Primary outcome(s)

Give the most important outcomes.

Factors associated with positive coping and adjustment. This review will take an exploratory approach and investigate what factors have been evidenced to be associated with positive coping and adjustment in people who have an acquired visible difference.

Give information on timing and effect measures, as appropriate.

25 Secondary outcomes

List any additional outcomes that will be addressed. If there are no secondary outcomes enter None.

This review will also take into account measures that have been used to assess positive coping and adjustment in people with an acquired visible difference.

Give information on timing and effect measures, as appropriate.

26 Data extraction (selection and coding)

Give the procedure for selecting studies for the review and extracting data, including the number of researchers involved and how discrepancies will be resolved. List the data to be extracted.

The first author and a second reviewer will screen and select studies based on the title and abstract in line with the inclusion/exclusion criteria. Full articles will also be reviewed if necessary to further clarify eligibility. Any disagreement between researchers will be discussed until an agreement has been reached. Studies that assess factors associated with positive coping and adjustment in people with acquired visible difference will be included in the review. Data on the author, year of publication, country, study design, participant characteristics (age range, gender, type of visible

difference), sample size, factors being assessed, measures of factors and coping/adjustment, strength of association between factors examined coping/adjustment will be extracted. A data extraction form will be developed to facilitate consistency within this process and to assess quality of studies.

27 Risk of bias (quality) assessment

State whether and how risk of bias will be assessed, how the quality of individual studies will be assessed, and whether and how this will influence the planned synthesis.

Studies that meet the inclusion criteria will be rated by two researchers. The first author and a second researcher will assess all the studies on their quality and risk of bias (quality criteria yet to be designed). Any disagreements will be discussed between researchers until an agreement has been reached.

28 Strategy for data synthesis

Give the planned general approach to be used, for example whether the data to be used will be aggregate or at the level of individual participants, and whether a quantitative or narrative (descriptive) synthesis is planned. Where appropriate a brief outline of analytic approach should be given.

Extracted data will be summarised in a table. A qualitative synthesis will be conducted with data grouped in to various categories to be discussed (e.g. self-esteem, social support, quality of life).

29 Analysis of subgroups or subsets

Give any planned exploration of subgroups or subsets within the review. 'None planned' is a valid response if no subgroup analyses are planned.

None planned

Review general information

30 Type and method of review

Select the type of review and the review method from the drop down list.

Diagnostic, Epidemiologic, Systematic review

Exploratory

31 Language

Select the language(s) in which the review is being written and will be made available, from the drop down list. Use the control key to select more than one language. English

Will a summary/abstract be made available in English? Yes

32 Country

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved. Use the control key to select more than one country. Scotland

33 Other registration details

Give the name of any organisation where the systematic review title or protocol is registered together with any unique identification number assigned. If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. [The University of Edinburgh, NHS Tayside](#)

34 Reference and/or URL for published protocol

Give the citation for the published protocol, if there is one.

Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in pdf format.

I give permission for this file to be made publicly available

[Yes](#)

35 Dissemination plans

Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

[The completed systematic review will be published in a peer review journal. This review is in part fulfilment of the Doctorate of Clinical Psychology at The University of Edinburgh and will therefore be available on the University Thesis Database.](#)

Do you intend to publish the review on completion? [Yes](#)

36 Keywords

Give words or phrases that best describe the review. (One word per box, create a new box for each term) [visible difference](#) [visible disfigurement](#)
[altered appearance](#) [adjustment](#) [coping](#) [resilience](#)

37 Details of any existing review of the same topic by the same authors

Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

38 Current review status

Review status should be updated when the review is completed and when it is published. [Ongoing](#)

39 Any additional information

Provide any further information the review team consider relevant to the registration of the review.

Being competed in part fulfilment of The Doctorate of Clinical Psychology
(The University of Edinburgh)

40 Details of final report/publication(s)

This field should be left empty until details of the completed review are available. Give the full citation for the final report or publication of the systematic review. Give the URL where available

4.1.2. Appendix B: Systematic Review Quality Criteria

THEORETICAL RATIONALE:

1. -Constructs of interest related to coping and adjustment clearly operationalised

3 points: Psychological factors of interest related to coping and /or positive adjustment are clearly operationalised

2 point: Psychological factors of interest related to coping and/or positive adjustment are adequately operationalised

1 point: Psychological factors of interest related to coping and/or positive adjustment poorly operationalised

0 point: Not addressed/ Not reported

RELATEDNESS:

2. Directedness of evidence

3 points: the study aims to examine the association between psychological factors and/or processes of interest associated with coping and/or positive adjustment

2 point: the study does not primarily aim to examine the relationship between psychological factors and/or processes of interest associated with coping and/or positive adjustment but it does so in the results

1 points: The study aims to examine the relationship between psychological factors/processes of interest associated with coping and or positive adjustment but does not adequately do so

0 point: Not addressed/ Not reported

METHODS:

3. Was the recruitment process clear?

3 points: Study gave eligibility criteria, source and methods of selecting participants (including follow-up) and showed evidence of avoiding selection bias

2 point: study gives adequate information about eligibility criteria, sources and methods of selecting participants (including follow-up) and some evidence of avoiding selection bias

1point: Recruitment process is poorly addressed and showed little (if any) evidence of avoiding selection bias

0 point: Not addressed/ Not reported:

4. Were the main characteristics of the cohort clearly stated?

3 points: A clear description of the sample is given including type and acquirement of visible difference/s and sample demographics, age and gender clearly reported

2 point: Description of the type and acquirement of visible difference/s is adequate. Some of the samples demographics, age and gender is provided but some information is missing

1 point: Poor description of the type and acquirement of visible difference/s and limited information surrounding demographics, age and gender of sample is provided.

0 point: Not addressed/ Not reported

5. Sample is representative of wider population of interest

3 points: sample is representative of the wider population and comparisons with population of interest norms have been addressed.

2 points: Sample is representative of wider population but comparisons with population of interest norms have not been addressed

1 point: Sample poorly represents the wider population of interest

0: not addressed/not reported

6. Were the studies analysed adequately powered?

3 points: the power analysis is reported and sample size meets it or acknowledged that doesn't meet it.

2 point: power analyses not reported but samples size is estimated to meet the requirements of the analyses

1 point: Power analyses is not reported. Sample size highlights it is likely to be insufficient to power analyses and this is acknowledged.

0: Not addressed/ Not reported

7. Are measures used reliable and valid?

3 points: measures used to assess factors associated with coping/adjustment and outcome measures are reliable and valid

2 points: measures used to assess factors associated with coping/adjustment and outcome measures have adequate reliability/validity

1 point: Measures used to assess factors associated with coping/adjustment and outcome measures have poor reliability/validity

0 point: Not addressed/Not reported

8. Are measures used constructed specifically for VD population or VD of interest? (e.g. adapted and validated for use in burns, amputation)

3 points: all measures used are designed for VD population/people with appearance related distress

2 point: some measures used are designed for VD populations/people with appearance related distress

1 point: no measures are designed for VD populations/ people with appearance related distress

0: Not addressed/ Not reported

STUDY DESIGN:

9. The study addresses an appropriate and clear question

3 points: Clear description of studies primary objectives substantiated by clear theoretical rationale. Study states specific objectives, including clear pre-specified hypotheses

2 point: Adequate description of studies primary objectives and unclear theoretical rationale. Hypotheses stated but a poor description given.

1 point: Poor description of studies primary objectives and poor theoretical rationale. There is no clear research question/insufficient information to all an assessment to be made. Elements of research question are present in text.

0: Not addressed/Not reported

RESULTS:

10. Study indicates total number of people approached to participate

3 points: Study indicates how many people in total were asked to take part in the study in each of the groups being studied as well as how many people opted into study

2 points: Study is unclear about how many people in total were asked to participate in the study but clear about how many people opted into the study

1 point: Study is unclear about how many people in total were asked to participate in the study and how many people opted into the study.

0 point: Not addressed/Not reported

11. Attrition

3 points: Provides attrition rates and provides clear explanations regarding reasons for attrition

2 point: Provides attrition rates but provides poor information regarding reasons for attrition

1 point: Does not report attrition rates

Not applicable

12. Attrition rates

3 points: Less than 10% attrition and adjustments made to avoid bias in analysis

2 point: Less than 10% attrition or adjustments made to avoid bias in analysis

1 point: More than 10% and no adjustment made to avoid bias in analysis

0: Not addressed/not reported

13. Adequate handling of missing data:

3 points: Details of missing data are clearly reported, including how missing data was handled in the analyses. If missing data was present and substantial, steps were taken to minimize bias (e.g. imputation)

2 point: Details of missing data are reported but unclear as to how missing data was handled in the analysis. Some evidence that steps were taken to minimise bias in analysis.

1 point: Details of missing data are not reported and no evidence that steps were taken to minimise bias in analysis.

0: not reported/not addressed

14. Analysis controls for confounding variables:

3 points: the study identifies, measures and controls for confounding variables and effect modifier (e.g. functional impairment, pain and trauma associated with acquired visible difference) and controls for them within data analysis

2 point: the study identifies confounding variables and effect modifiers and shows some evidence of controlling for them in data analysis

1 point: the study does identify confounding variables and effect modifiers and shows no evidence of controlling for them in data analysis.

0: not addressed/not reported

**4.1.3.. Appendix C: Ethical Approval; East of Scotland Research Ethics
Committee**



East of Scotland Research Ethics Service (EoSRES)

Research Ethics Service
Tayside medical
Science Centre
Residency
Block Level 3
George Pirie Way
Ninewells
Hospital and Medical School
Dundee DD1 9SY

Miss Sara-Louise Couper

Date:
20 July 2015
Your Ref:

Trainee Clinical Psychologist

Our Ref:
DL/15/ES/0087

NHS Tayside

es to:
Dundee Adult Psychological Therapies Service

Enquiri
Mrs Diane Leonard
Direct Line:
01382 383871
Email:
eosres.tayside@nhs.net

7 Dudhope Terrace
Dundee, DD3 6HG

Dear Miss Couper

Study title: An exploratory analysis of the mediating role of Emotion Regulation and Interpersonal Difficulties in the relationship between Insecure Attachment, Body Image Dissatisfaction and Perfectionism in Aesthetic Surgery Patients.

REC reference: 15/ES/0087

IRAS project ID: 178091

Thank you for your letter of 17 July 2015, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the Assistant Co-ordinator, Mrs Diane Leonard, eosres.tayside@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from NRES. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Covering letter on headed paper		
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Employer's Liability Insurance]		
Document	Version	Date
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		08 August 2014
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		16 June 2014
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Professional Indemnity Insurance]		11 August 2014
IRAS Checklist XML [Checklist_13052015]		13 May 2015
IRAS Checklist XML [Checklist_17072015]		17 July 2015
Letter from sponsor [Sponsor Letter]		13 May 2015
Participant information sheet (PIS) [Research Pack (Information Sheet, Consent Form, Chief Investigators Contact Details and ECT)]	5	17 July 2015
REC Application Form [REC_Form_17072015]		17 July 2015

Research protocol or project proposal	4	06 May 2015
Summary CV for Chief Investigator (CI) [CV Chief Investigator]		06 May 2015
Summary CV for supervisor (student research) [Academic Supervisor CV]		06 May 2015

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document “*After ethical review – guidance for researchers*” gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the

feedback form available on the HRA website:

<http://www.hra.nhs.uk/about-the-hra/governance/qualityassurance/>

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

**15/ES/0087
correspondence**

Please quote this number on all

Yours sincerely



for Dr Carol MacMillan Chair

E-mail: eosres.tayside@nhs.net

Enclosures: "After ethical review – guidance for researchers"

Copy to: Mrs Jo-Anne Robertson, University of Edinburgh
NHS Tayside R&D Office

4.1.4. Appendix D: Ethical Approval; Research and Development



Tayside

30 July 2015

Miss Sara-Louise Couper
Dundee Adult Psychological Therapies Service
7 Dudhope Terrace
Dundee
Scotland
DD3 6HG

Dear Miss Couper,

R & D MANAGEMENT APPROVAL - TAYSIDE

Title: An exploratory analysis of the mediating role of Emotion Regulation and Interpersonal Difficulties in the relationship between Insecure Attachment, Body Image Dissatisfaction and Perfectionism in Aesthetic Surgery Patients.

Chief Investigator: Sara-Louise Couper

Principal Investigator: Sara-Louise Couper

Tayside Ref: 2015PZ03

NRS Ref: N/A

REC Ref: 15/ES/0087

EudraCT Ref: N/A

CTA Ref: N/A

Sponsor(s): University of Edinburgh

Funder(s): Unfunded

Many thanks for your application to carry out the above project here in NHS Tayside. I am pleased to confirm that the project documentation (as outlined below) has been reviewed, registered and Management Approval has been granted for the study to proceed locally in Tayside.

Approval is granted on the following conditions:-

- ALL Research must be carried out in compliance with the Research Governance Framework for Health & Community Care, Health & Safety Regulations, data protection principles, statutory legislation and in accordance with Good Clinical Practice (GCP).
- All amendments to be notified to TASC R & D Office.
- All local researchers must hold either a Substantive Contract, Honorary Research Contract, Honorary Clinical Contract or Letter of Access with NHS Tayside where required (http://www.nihr.ac.uk/systems/Pages/systems_research_passports.aspx).
- TASC R & D Office to be informed of change in Principal Investigator, Chief Investigator or any additional research personnel locally.
- Notification to TASC R & D Office of any change in funding.
- As custodian of the information collated during this research project you are responsible for ensuring the security of all personal information collected in line with NHS Scotland IT Security Policies, until destruction of this data.
-
- All eligible studies will be added to the UKCRN Portfolio <http://public.ukcrn.org.uk/>. Recruitment figures for eligible studies must be recorded onto the Portfolio every month: This is the responsibility of the lead UK site. If you are the lead, or only, UK site, we can provide help or advice with this. For information, contact Sarah Auld (01382) 383822 – sarah.auld@nhs.net or Liz Livingstone — (013 82) 383872 — elivingstone@nhs.net.
- Annual reports are required to be submitted to TASC R & D Office with the first report due 12 months from date of issue of this management approval letter and at yearly intervals until completion of the study.
- Notification of early termination within 15 days or End of Trial within 90 days followed by End of Trial Report within 1 year to TASC R & D Office.
- You may be required to assist with and provide information in regard to audit and monitoring of study.

Please note you are required to adhere to the conditions, if not, NHS management approval may be withdrawn for the study.

Approved Documents

Document	Version	Date
Protocol	4	06/05/15
IRAS R & D Form		
SSI Form		
ms	5	17/07/15
Consent Form	5	17/07/15
Chief investors contact details	5	17/07/15
EC -R	5	17/07/15
Insurance letter 1		16/06/14
Insurance letter 2		11/08/14
Insurance letter 3		
Insurance letter 4		08/08/14
REC favourable opinion		20/07/15
CV — Sara-Louise Couer		
CV — Stuart Moulton		24/07/15
Emil Talor		

May I take this opportunity to wish you every success with your project. Please do not hesitate to contact TASC R & D Office should you require further assistance.

Yours sincerely,



Elizabeth Coote
R&D Manager
Tayside medical Science Centre (TASC)
Ninewells Hospital & Medical School
TASC Research & Development Office
Residency Block, Level 3
George Pirie Way
Dundee DD1 9SY
Email: liz.coote@nhs.net
Tel: 01382 383876 Fax: 01382 740122
c.c.
Nikki Gribben
Jo-Anne Robertson
Liz Livingstone

4.1.5. Appendix E: Ethical Approval; The University of Edinburgh



SCHOOL of HEALTH IN SOCIAL SCIENCE

CLINICAL AND HEALTH PSYCHOLOGY

CLINI

University of Edinburgh

The

Sara-Louise Couper
Trainee Clinical Psychologist

Doorway 6, Teviot Place Medical School
Edinburgh EH8 9AG

Older People Psychological Therapies Service Telephone 0131 651 3969

Fax 0131 650 3891

Susan Carnegie Centre
Stracathro Hospital

Email submitting.ethics@ed.ac.uk

Brechin

DD9 7QA

23 October 2015

Dear Sara-Louise,

Application for Level 1 Ethical Approval

Project Title: Review of the Referral Pathway from General and Specific Hospital Paediatric Clinics to Child and Adolescent Mental Health Services
Supervisor: Kevin Power

Thank you for submitting the above research project for review by the Department of Clinical and Health Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 20th October 2015.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Administrator
Clinical Psychology

4.1.6. Appendix F; Empirical Study Participant Information Sheet

Participant Information Sheet:

“An exploratory analysis of the mediating role of Emotion Regulation and Interpersonal Difficulties in the relationship between Insecure Attachment, Body Image Dissatisfaction and Perfectionism in patients seeking Aesthetic Surgery”

My name is Sara-Louise Couper and I am required to undertake a project as part of my course (Doctorate of Clinical Psychology) and invite you to take part in the following study. However, before you decide to do so, I need to be sure that you understand firstly why I am doing it, and secondly what it would involve if you agreed. I am therefore providing you with the following information. Please read it carefully and be sure to ask any questions you might have and, if you want, discuss it with others including your friends and family. I will do my best to explain the project to you and provide you with any further information you may ask for now or later.

You are being invited to participate in a research project conducted between NHS Tayside and The University of Edinburgh. The research project aims to explore psychological aspects of people who seek elective aesthetic surgery. This will enable a better understanding of people who seek aesthetic surgery and therefore ensure the appropriate support is in place for people pursuing aesthetic surgery.

Why have I been invited?

You have been invited to participate because you have been referred to the Adult Exceptional Aesthetic Referral Pathway for a psychology assessment.

What will I have to do?

Before you decide to participate in this study, it is important for you to know what is involved. If you choose to participate in this study, you are simply being asked to:

- 1) Provide your permission for the Chief Investigator to access some of the data from the questionnaires you have completed for your Clinical Psychology Screening Appointment. All the data gathered from the questionnaires will be anonymised. Therefore, no identifiable information will be collected for the purposes of this research project.
- 2) Complete one additional questionnaire at your Clinical Health Psychology appointment. This questionnaire asks you about your experience in relationships. It is relatively brief and should only take 5-10 minutes to complete. You will be given time to complete this questionnaire during a routine 15 minute break in your appointment.

Please note: this is an external research project and does not form part of the routine assessment process for the Clinical Psychology Screening appointment.

If I choose to participate?:

If you choose to participate in the project, please read and sign the accompanying Consent form. Once you have completed the consent form, please **bring the completed consent form to your Clinical Psychology Screening Appointment**. The clinicians you meet with at your appointment will collect the Consent form from you and give you one additional research questionnaire to complete during a routine 15 minute break at your appointment.

All data collected in this project will be **anonymised and therefore non-identifiable**. Anonymised data gathered will be stored securely on NHS premises.

Do I have to participate?:

No. You do not have to participate. If you do not wish to participate in the project, you do **not** need to complete this sign the accompanying consent form. **Participation is voluntary and participating in this research project will have no influence on any decisions made about your suitability for aesthetic surgery following your Clinical Psychology Screening appointment or any future care you will receive.**

What are the possible disadvantages and risks of taking part?:

There are no risks of taking part in this research project.

What are the possible benefits of taking part?:

There are no direct benefits to yourself in taking part in this study, however, the outcomes of this research project will provide a better understanding of people who seek aesthetic surgery and will therefore ensure that the appropriate support is in place for individuals seeking aesthetic surgery in the future.

Your right to withdraw:

You can decide to stop participating at any time by not completing or returning any incomplete or partially completed questionnaires at you Clinical Psychology Screening Appointment. Once you submit the research questionnaire to your clinician, the data will be anonymised and there will be no further opportunity to withdraw.

Who has Reviewed This Study?:

The East of Scotland Research Ethics Service REC 1, which has responsibility for scrutinising all proposals for medical research on humans has examined the proposal and has raised no objections from the point of view of medical ethics. It is a requirement that your records in this research, together with any relevant medical records, be made available for scrutiny by monitors from The University of Edinburgh (who sponsor the research project) and NHS Tayside, whose role is to check that research is properly conducted and the interests of those taking part are adequately protected.

Accessing the results of the study:

If you are interested in finding out the results of the study, a copy of the results will be available if requested. Should you wish to obtain a copy of the results, please contact the Chief Investigator of the study whose contact details are provided on the following page.

Complaints Procedure:

If you believe that you have been harmed in any way by taking part in this study, you have the right to pursue a complaint and seek any resulting compensation through The University of Edinburgh who are acting as the research sponsor. Details about this are available from the research team. Also, as a patient of the NHS, you have the right to pursue a complaint through the usual NHS process. To do so, you can submit a written complaint to the Patient Liaison Manager, Complaints Office, Ninewells Hospital Dundee, DD1 9SY7 (Free phone: 0800 027 5507). Note that the NHS has no legal liability for non-negligent harm. However, if you are harmed and this is due to someone's negligence, you may have grounds for a legal action against NHS Tayside but you may have to pay your legal costs.'

Thank you for taking the time to read this information sheet and considering taking part in this study.

Sara-Louise Couper

Chief Investigator's Contact Details:

I am Sara-Louise Couper and I am the Chief Investigator for this research project. I am currently a Trainee Clinical Psychologist and I am completing my Doctorate of Clinical Psychology at The University of Edinburgh. I work in NHS Tayside and will be spending my final year in Clinical Health Psychology and will be working in the Adult Exceptional Aesthetic Referral Pathway.



If you have any questions or concerns about participating in the research project, I will be happy to answer any questions at any time. My contact details are provided below:

Sara-Louise Couper Ryehill Medical Practice
St Peter Street
Telephone: 01382 644 466 Dundee,
DD1 4JH

Email: s.couper@nhs.net



Should you have any enquiries that you would like to make independently of contacting the Chief Investigator, please contact Dr Emily Taylor who is the Academic Supervisor for this research project. Emily's contact details are:

Dr Emily Taylor School of Health in Social Science
University of Edinburgh
Tel: 0131 650 3892 Teviot Place
Edinburgh, EH8 9AG
Email: Emily.Taylor@ed.ac.uk

If you wish to speak to somebody out with the research team, please contact:

Dr Linda Graham
Consultant Clinical Psychologist
Deputy Head of Psychological Therapies
NHS Tayside
Telephone: 01382 808 10

Consent Form:

You are being invited to participate in a research project conducted with both NHS Tayside and The University of Edinburgh. The research project aims to explore psychological aspects of people who seek aesthetic surgery.

Please complete the table and sign the form below if you are agreeing to participate in the project.

s

**Please place your initials
in each box provided
beside each statement
below to show you have
read and understood the
statements of consent**

I have read and understood the Participant Information Sheet(V5_Psychological_Concerns_In_Aesthetic_Surgery_09.07.2015).

I understand that participation in this project is entirely voluntary.

I understand that I will be participating in an external research project and that participation will have no influence on the outcome of my Clinical Psychology Screening appointment or any future care I will receive.

I agree to take part in this study

I agree to complete an additional research questionnaire at my Clinical Psychology Screening Appointment

I understand that by signing this form and providing consent I will be providing permission for the Chief Investigator to access some of the measures I completed in the standard Clinical Psychology Screening pack.

I understand that all data gathered will be anonymised and therefore non-identifiable.

I understand that relevant sections of data collected during the study may be looked at by individuals from the Sponsor (University of Edinburgh) or other authorities, where it is relevant to my taking part in this research. I give permission for these individuals to have access to this data.

Participant's Name (Printed)

Participant's signature

Date

4.1.7. Appendix G: Authors Guidelines

BODY IMAGE

An International Journal of Research

AUTHOR INFORMATION PACK

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- **Abstracting and Indexing** p.2
- **Editorial Board** p.2
- **Guide for Authors** p.4

ISSN: 1740-1445

DESCRIPTION

Body Image is an international, peer-reviewed journal that publishes high-quality, scientific articles on **body image** and human **physical appearance**. Body image is a multi-faceted concept that refers to persons' perceptions and attitudes about their own body, particularly but not exclusively its appearance. The journal invites contributions from a broad range of disciplines - psychological science, other social and behavioral sciences, and medical and health sciences. The journal publishes original research articles, brief research reports, theoretical and review papers, and science-based practitioner reports of interest. The journal gives an annual award for the best doctoral dissertation in this field.

Suitable topics for [submission](#) of manuscripts include:

- The effects of body image and physical characteristics (e.g., body size, attractiveness, physical disfigurements or disorders) on **psychological functioning**, interpersonal processes, and quality of life;
- Body image and physical appearance in the full range of medical and allied health contexts;

- Body image and physical appearance in diverse cultural contexts;
- Validation of assessments of the multidimensional body image construct;
- Factors that influence positive and negative body image development;
- Adaptive and maladaptive body image processes and their clinically relevant consequences on **psychosocial** functioning and quality of life;
- Relationship of body image to **behavioral** variables (e.g., exercise and other physical activity, eating and weight-control behaviors, grooming and appearance-modifying behaviors, and social behaviors); •Scientific evaluation of interventions to promote positive body image or to prevent or treat body image difficulties and disorders. **Benefits to authors**

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CINAHL

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Scopus

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GUIDE FOR AUTHORS

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The journal publishes original research articles, brief research reports, theoretical and review papers, and science-based practitioner reports of interest. The journal also gives an annual award for the best doctoral dissertation in this field.

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The Seymour Fisher Outstanding Body Image Dissertation Annual Award

The journal gives an annual award for the best doctoral dissertation in this field. [Click here](#) for more information.

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experimentation with human subjects. The privacy rights of human subjects must always be observed.

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Declaration of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. [More information.](#)

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Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the [English Language Editing service](#) available from Elsevier's WebShop.

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To prepare for blind review, authors should make every effort to remove any identifying information from the manuscript and references. All information pertaining to identification, title, institutional affiliation, etc. should be included on the title page; only the title of the manuscript, the abstract and keywords should appear on the first page of the manuscript.

Preparation

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