Doctorate in Clinical Psychology

Lancaster University

Self-Concept Clarity, Body Image and Restrictive Eating Disorders

Vicky Barnett

Academic Supervisor: Professor Bill Sellwood

Field Supervisor: Dr Ian Gill

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Statement of Word Count

	Text	Appendices *(including references, figures and tables)*	Total
Abstract	300	-	300
Literature Review	7974	12883	20857
Empirical Paper	7958	5223	13181
Critical Appraisal	3999	1683	5682
Ethics Section	5978	8803	14781
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Abstract

Eating disorders are considered to be persistent mental health difficulties, significantly impacting the health and wellbeing of those who experience them. Body image dissatisfaction is considered a key risk factor in the onset of eating disorders, however, the psychological mechanisms by which body dissatisfaction and eating disorders develop is not yet fully understood. Identity constructs such as Self-Concept Clarity (SCC) are being considered in relation to body image development and eating difficulties to further our understanding. SCC is defined as “the extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141), and is thought to play a role in psychological adjustment and wellbeing.

To date, there had been no systematic review addressing associations between SCC and body image. Thus, Chapter 1 of the thesis aims to identify systematically, appraise and synthesise all available peer reviewed literature, which explored an association between SCC and body image. The review includes 15 papers, which report on 17 individual studies, all of which explore a quantifiable relationship between SCC and body image. Strong evidence was found to support an association between SCC and body image in non-clinical populations.

Chapter two reports on the empirical paper which investigated the relationship between body dissatisfaction, SCC, and restrictive eating disorder symptoms, recruiting participants who identified as experiencing a restrictive eating disorder. Analysis revealed that body image dissatisfaction was associated with reduced SCC and increased eating disorder symptoms. Clinical implications are discussed and identified limitations of the current research are considered, offering recommendations for future research.

The homogeneity of participant samples was apparent throughout chapters one and two. Therefore, chapter three offers a critical appraisal and commentary on diversity in eating disorder research, exploring issues of representation and exclusion.

Keywords: Self-Concept Clarity (SCC), Eating Disorders, Body image, Body Dissatisfaction

Declaration

This thesis presents research undertaken for the Doctorate in Clinical Psychology program at the Faculty of Health and Medicine, Lancaster University, from January 2022 to August 2023. The work presented here is the author's own, except where due reference is made. The work has not been submitted for the award of a higher degree elsewhere.

Name: Vicky Barnett

Signature : [redacted]

Date : 14/08/2023

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Self-Concept Clarity and Body Image - A Systematic Review

Prepared in accordance with the author guidance for:

Body Image

(See author instructions in Appendix 1-D)

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Vicky Barnett

Doctorate in Clinical Psychology

Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT

v.barnett@lancaster.ac.uk

Abstract

Body image has a significant impact on wellbeing and research suggests that body dissatisfaction is a common experience (Grogan, 2017). The psychological mechanisms by which body dissatisfaction develops and is maintained are not yet fully understood. To enhance understanding, identity constructs such as Self-Concept Clarity (SCC) are being considered in relation to body image development. SCC is defined as “the extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141), and is thought to play a role in psychological adjustment and wellbeing (Bigler et al., 2001). The current systematic review aimed to identify, synthesise and appraise all peer-reviewed literature investigating the relationship between SCC and body image. Databases CINAHL, MEDLINE, PsycINFO and Web of Science were searched to identify literature. 15 papers met the inclusion criteria, reporting on 17 studies. All studies demonstrated significant associations between reduced SCC and increased body dissatisfaction, with some investigating this relationship in connection with additional factors, such as thin ideal internalisation and early adversity. Strengths and limitations of the review and evidence are discussed, along with directions for future research.

Introduction

Body image can be conceptualised as a “person’s perceptions, thoughts, and feelings about his or her body” (Grogan, 2017, p.4). This definition encapsulates different psychological aspects of how individuals perceive and experience their body, including positive and negative evaluations. Perception, judgement and expectation of one’s body can have a profound impact on how they view themselves and overall wellbeing (Grogan, 2017). Body dissatisfaction refers specifically to negative evaluations of the body in different aspects, such as shape and size, and is consistently linked to poorer psychological wellbeing (Vartanian & Hayward, 2017). Body image development is strongly influenced by our social experience. The Tripartite influence model (van den Berg et al., 2002) proposes that in society, body ideals are communicated through peer, media and parental influence, leading to internalisation of ideals and increased social comparison, causing body dissatisfaction. This model suggests that societal ideals often champion thin bodies for women and muscular bodies for men (Grogan, 2017). Social pressure around body ideals have intensified since the introduction and increasing popularity of social media (Saiphoo & Vahedi, 2019). Body image may significantly differ across cultures, depending on what communities value in terms of physical appearance, and the extent to which this value is placed on one’s body (Swami & Tovée, 2007).

Body dissatisfaction is thought to be highly prevalent for women, and increasingly men, in industrialised countries (Grogan, 2017). Swami et al. (2010) conducted a cross-cultural survey of body weight ideals and body dissatisfaction in 7000 individuals across 26 countries in 10 world regions. There were significant cross-regional differences in the ideal female figure and body dissatisfaction. The largest differences were observed within countries that varied in socioeconomic status (SES); low SES areas were more likely to positively appraise heavier bodies than higher SES areas. They also found that level of exposure to western media predicted body weight ideals based on lower body weight, and in turn body dissatisfaction. Swami et al. (2010) suggested westernised body ideals which value thinner bodies, particularly for women, have become widespread through globalisation of western media and values. This may mean that body dissatisfaction has become more prevalent, with significant negative consequences for body acceptance and overall wellbeing globally.

Body dissatisfaction is a robust risk factor for the development and maintenance of eating disorders (Barakat et al., 2023; Stice, 2002). Dissatisfaction may lead to extreme methods to achieve the desired body, regardless if this ideal is realistically attainable. This is pertinent given that research suggests that weight, body shape, and fat distribution have a significant heritable element, and interactions between genetic and environmental influences on body outcomes is poorly understood (Li & Qi, 2019). This means that attaining specific body ideals, commonly a thin or muscular ideal, is complex and not wholly under individuals' control. This may lead to more dangerous methods which compromise physical and psychological wellbeing (Palmeroni et al., 2020). In addition to eating disorders, body dissatisfaction also has implications for other psychological outcomes, such as anxiety and depression (Barnes et al., 2020) low self-esteem (Harrington & Overall, 2021) and quality of life (Mond et al., 2013). Although body dissatisfaction is a common occurrence, with some research suggesting that it impacts 61% of UK adults (House of Commons, 2020) most do not go on to develop a clinical eating disorder (Rosewall et al., 2018). This poses the question as to why some people's experience of body dissatisfaction makes them vulnerable to developing an eating disorder, when for others it does not.

The psychological mechanisms by which body dissatisfaction develops and is maintained are not fully understood. Several theories have emerged which suggest that a discrepancy between one's perceived and desired body is the likely basis for body dissatisfaction. In addition to the tripartite influence model, cognitive behavioural models of body image suggest a complex relationship between sociocultural, interpersonal, and psychological factors. Cash (2012) infers that these influence how or the extent someone places value on the shape or look of their body. Social, interpersonal and biological factors have been shown to influence body dissatisfaction, including appearance related bullying, early physical maturation, sexual abuse, low self-esteem, appearance comparisons and internalisation of a thin/muscular ideal (van den Berg et al., 2002).

Body dissatisfaction is thought to predict lower self-esteem (Vartanian & Hayward, 2017). Self-esteem, as an evaluative component of identity, has been the subject of a range of research in relation to body image. Additionally, other identity constructs have become topics of interest in body image literature, to understand further the mechanisms by which body dissatisfaction develops.

One identity construct being investigated is Self-Concept Clarity (SCC). SCC refers to the structural aspect of the self, defined as the “extent to which the contents of an individual's self-concept (perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141). SCC is considered distinct from other self-related constructs such as self-esteem, an evaluative component of the self (Campbell, 1990). SCC refers to how the content (specific information about the self) is structured or organised (Binsale, 2017). An individual with high SCC feels sure about who they are and has stable beliefs across different contexts. Conversely, individuals with uncertain self-concepts may be more susceptible to, and influenced by, external stimuli (Campbell, 1990).

SCC is thought to develop during adolescence, in connection with identity formation and is considered an important aspect of healthy development in adolescence (Van Dijk et al., 2014). During this period, individuals embark on cognitive, biological and social challenges which allow them to explore and develop their identity, commonly influenced by parental relationships and the stability of parental self-concepts (Crocetti et al., 2016). Difficulties experienced during childhood and adolescence may prevent or disrupt the development of a strong and stable sense of self, resulting in an unclear self-concept. SCC remains relatively stable during young to mid adulthood. Some decline is noted in older adulthood, potentially connected to role changes, for example reaching retirement or developing age-related health concerns. Changes to or loss of meaningful roles might cause instability in an individual's sense of self, leading to a less clear self-concept (Lodi-Smith et al., 2017).

SCC may play a role in psychological adjustment and wellbeing (Bigler et al., 2001), with higher SCC being associated with increased psychological wellbeing. This has led to research into the links between SCC, psychological adjustment and mental health. Low SCC is strongly associated with a range of psychological difficulties including psychosis, anxiety, depression, post-traumatic stress disorder, personality disorders and eating disorders (Binsale, 2017). This suggests that low SCC may be a risk factor underlying general psychological wellbeing and high SCC may be protective against a range of mental health difficulties, as opposed to being condition specific (Lodi-Smith & DeMarree, 2018).

Concepts relating to the self are inherently complex, given that they attempt to develop and conceptualise the cognitive structures by which we organise our identity. To understand SCC further, it is important to recognise the similarities and differences between related theories. Self-esteem is strongly correlated with SCC and a causal relationship between them may be present. However, studies looking at SCC which also control for self-esteem have still found a significant, incremental effect of SCC above that which can be explained by self-esteem (Vartanian & Hayward, 2017). This suggests that although the concepts are closely related and significantly influence one another, there is utility in conceptualising them separately.

Body dissatisfaction may result from internalising societal standards of attractiveness through parental, peer and media influences (van den Berg et al., 2002). SCC development is likely influenced by feedback from others and the quality of close relationships during identity formation in adolescence. It therefore makes sense to investigate whether SCC plays a significant role in the development of body image. Campbell (1996), states that people with reduced SCC are more vulnerable to external sources of self-definition and exposure to idealised bodies is highly and increasingly prevalent in many societies. Messages about idealised bodies are communicated in numerous and pervasive ways, meaning that people with reduced SCC can easily access these sources, with which they can define themselves, leading to dissatisfaction with their own bodies (Vartanian & Hayward, 2017).

Rationale and aims

The question for the current review is ‘What is the nature of the relationship between Self-concept clarity and body image?’ To date, there have been no systematic reviews which focus on associations between SCC and body image. SCC is being increasingly linked to the onset and development of psychological difficulties and general wellbeing, and research has turned its focus to how SCC might impact body image and body dissatisfaction. The current review aims to investigate the presence, mechanisms and consistency of the relationship between SCC and body image and will therefore systematically identify, appraise and synthesise all available, peer-reviewed literature that explores the association between SCC and body image. Findings from this review could further our knowledge of how, and the extent to which, body dissatisfaction develops by identifying psychological traits that may influence an individual's vulnerability to negative evaluations of one’s body, enhancing understanding of the theoretical components of body image development. In addition to investigating if there is a direct relationship between SCC and body image dissatisfaction, the review also aims to explore whether SCC can account for associations between other variables and body image dissatisfaction, or if other variables can account for the relationship between body image dissatisfaction and SCC. Additionally, because body image is considered an important component of eating disorders and general psychological wellbeing, it is important to improve our understanding in order to advance psychological interventions.

Method

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement constituted the framework for the review (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021). A PRISMA flow diagram detailing the search strategy for the review can be found in Figure 1.

Search strategy

A literature search was conducted on 6th May 2023 using online databases CINAHL, MEDLINE, PsycINFO, and Web of Science. The search combined free text words and synonyms by applying either thesaurus (PsycINFO) or Medical Subject Headings (MeSH) (CINAHL and MEDLINE) to represent the two main variables being reviewed: Self-Concept Clarity and body image (see Appendix 1-A for the detailed search strategy). No date range was specified in the search strategy to ensure all available literature was collated. Table 1 summarises the subject terms used. Additional searching was conducted using forward and backward citation tracking of all included studies, and by searching the citation list of a key text (Vartanian & Hayward, 2017). This book was evaluated as a key text due to being the only publication to date which outlines a theoretical model explaining the possible relationship between SCC and body dissatisfaction. An information specialist was consulted to ensure the database searches were robust and accurate.

TABLE 1 HERE

Inclusion and Exclusion Criteria

The inclusion criteria are outlined in Table 2. Papers were excluded if they were not available in English.

One eligibility criterion was that a reliable and valid measure of body image was used. Body image was defined as the evaluative component of one's body, how one evaluates or appraises the value of their body or their perception of the way their body looks. This is distinguished from measures which identify general beliefs about how bodies should look, body objectification or importance placed on bodies appearing to be or actually being a particular way. For example, a measure of objectification may ask, "How important is it to look your best?" Whereas a measure of body image may ask, "How do you feel about your body?" All body image measures in this review pertain to the evaluative aspect of how people appraise their body. This decision was made because literature has shown that body ideals may differ across cultures or groups of people, meaning an attribute that causes dissatisfaction for one person may not for another (Swami & Tovée, 2007). This is why body dissatisfaction was measured by scales which aim to look at the evaluations of one's own body.

Another eligibility criterion was that a reliable and valid measure was employed to measure SCC as defined by Campbell (1996). The Self-Concept Clarity Scale (SCCS - (Campbell et al., 1996) was the only validated measure which uses this definition, and therefore all studies must have used this measure in order to be included. Studies that applied qualitative methodology were excluded because the inclusion criteria states that only reliable and valid measures of SCC be used, and the SCCS is a quantitative measure. This approach was adopted because the variable of concern (SCC) is a pre-defined theoretical concept requiring investigation of its association with body image. Qualitative research is unlikely to have ‘measured’ SCC and it is likely to be understood differently by participants.

TABLE 2 HERE

Study Selection

All titles and abstracts of the identified studies were screened. For studies deemed to be potentially eligible, the full texts were assessed.

Data Extraction

A data extraction tool was developed using Microsoft Excel to summarise relevant data and was piloted on 20% of studies. Following the pilot, the following descriptive data were extracted: author(s), clinical or non-clinical participant population, study design, sample size, sample population, mean age, gender (expressed as % female, if genders other than male or female were reported, this was also expressed as a percentage), whether a control group was used, measure of body image used and measure of SCC used. This extraction tool can be found in Table 3. A second data extraction table was created to extract the aims and main findings of each study (Table 4).

Quality Assessment

A standard quality appraisal tool for quantitative studies was used to appraise the quality of all studies (Kmet et al., 2004). This tool comprises of a 14-item checklist assessing the strength of various components of each study (see Appendix 1-B). The tool gives each assessment component a score out of 2 (2=Yes, 1=Partial, 0=No, N/A=Not applicable). An overall global rating was calculated for each study by totalling the score obtained across relevant items and dividing by the total possible score. This tool was used to develop an understanding of the quality of studies and identify any consistent areas of strength or weakness. The ratings were not used to exclude studies based on quality to ensure that the entire scope of literature available was included in the review. In addition, ratings were used to help weigh evidence from each study and critique findings. This tool was chosen as it can be used across a variety of quantitative designs and methodologies, has a high percentage of inter-rater agreement and has been widely used in health research.

Data synthesis

A meta-analysis to assess the strength of the relationship between SCC and body image was considered. However, this was deemed inappropriate for a number of reasons, one being the variation in how body image was assessed. Some measures used a visual analogue scale, some looked at body appreciation, others looked at body dissatisfaction and appearance and weight concerns. Additionally, the variation in study designs and small number of studies meant that standard correlation meta-analysis methods would not be reliable (Field, 2001). Therefore, a narrative synthesis approach was used, which aims to use the text in studies to summarise and explain their findings.

Risk of bias

To reduce the risk of reporting bias, included papers were subject to data extraction before a quality appraisal was conducted, meaning that the reviewer was blind to study quality when deciding on which papers met the inclusion criteria (Boland et al., 2017).

Results

347 references were identified by the search strategy using electronic databases CINAHL (17), MEDLINE (185), PsycINFO (34) and Web of Science (111). Duplicates (n=97) were found and removed leaving 250 references. The titles and abstracts of identified papers were screened for relevance and a further 216 references were excluded. Full texts were read for the remaining 34 references to ascertain which papers met the inclusion criteria.

This left 15 papers. Two papers contained two studies, meaning the review included 17 studies overall. Manual forward and backward citation tracking was employed on all included papers to find other relevant papers. 13 references were found and full texts were obtained for review. Additionally, citation searching of a key book chapter on SCC and body dissatisfaction (Vartanian & Hayward, 2017) was conducted, from which 15 references were obtained. All references from citation tracking and key text searching were excluded due to not meeting the inclusion criteria. These additional references were not found in the initial search because the key terms in the search strategy did not appear in the title or abstracts of the additional texts. Citation tracking was conducted manually by the researcher and additional references were identified based on their potential to meet the inclusion criteria. If these papers were found to meet the inclusion criteria, the search strategy would have been amended to ensure these additional references and other potential papers would have been identified in the database search. However, these papers did not to meet the inclusion criteria and were therefore excluded. Figure 1 illustrates a detailed flowchart of the search results.

FIGURE 1 HERE

Quality Appraisal

A subsample of the included studies (n = 5, 29%) were rated blind by an independent rater to establish the degree of inter-rater agreement. To develop a concordant understanding of each item in the Kmet tool, both raters initially rated a set of 5 studies that were not related to the current review. Of the 70 co-rated items, 52 (74%) were in agreement. Discrepancies were then discussed until agreement between the ratings was reached. After this initial exercise, both raters assessed the quality of the subsample for the current review. Of the 70 co-rated items, 62 (88.6%) were in agreement. Items that differed between raters were discussed until an agreement was made. See Appendix 1-C for further detail. Of the included studies, the lowest overall rating received was 70% (n=1) and the highest overall rating received was 100% (n=1). Individual item ratings and the final global ratings for each of the included studies can be found in Table 3. There were no consistent omissions in terms of quality and most studies were rated highly. This meant that the researcher could be reasonably confident in the quality of the evidence presented in the papers. One limitation identified was that only two papers reported an a priori or post hoc power calculation to determine the participant sample size needed for appropriate statistical power. Although these studies may have calculated the sample size needed, or used estimates from previous research, as it is not reported it is potentially difficult to deduce whether studies had sufficient sample sizes to draw their conclusions.

TABLE 3 HERE

Characteristics of studies and populations

15 papers reporting on 17 studies were included. Study designs were either cohort (29%, n=5) or cross-sectional (71%, n=12). All studies used non-clinical samples (n=17, 100%).

The total sample across the studies was 6813 (range - 66-1127). Note that Study 1 reported in Durkin et al. (2007) was not included as the SCCS was not used to measure SCC, hence not being included in either Figure 1 or Table 3.

The mean age range was 13.14 - 26.33 years. One study did not report the mean age of their sample (Shahyad et al., 2018) and one study (Zhang et al., 2023) reported a median of 20 instead of a mean value. These studies were therefore omitted when calculating the mean age range for included studies. 11 studies used adult samples and six used an adolescent sample.

The mean gender split was 75% female. Seven studies used all female samples (Carter & Vartanian, 2022; Durkin et al., 2007; Farrar et al., 2015; Shahyad et al., 2018; Vartanian & Dey, 2013; Vartanian et al., 2016; Vartanian & Hayward, 2020). One study used an all-male sample (Humphreys & Paxton, 2004). Two studies reported on other genders: Vartanian et al. (2018) reported 0.3% of their sample identified as 'other' and Vartanian et al. (2023) reported that 2.3% of their sample identified as non-binary.

Studies were undertaken across seven countries. Durkin et al. (2007) had samples from both Australia and Italy and Vartanian et al. (2016) used samples from Australia and the USA. The remaining 15 studies took place across Australia (n=6), the USA (n=4), South Korea (n=2), China (n=1), Iran (n=1) and the UK (n=1). All studies took place between 2004-2023.

Descriptive characteristics of the studies are summarised in Table 4.

TABLE 4 HERE

TABLE 5 HERE

Self-Concept Clarity and Body Image measures

16 (94.1%) studies used the full version of the SCCS and one used an abbreviated 5-item version (5.9%). 11 measures of body image were used across the studies. A summary of the key findings of each study can be found in Table 5.

Results have been structured to offer a narrative synthesis of studies. Studies have been grouped depending on the context in which SCC was investigated. In seven studies SCC was investigated either as an independent variable or predictor of body image outcomes. In one study SCC was explored as a dependent variable or outcome of body image. One study looked at SCC as a moderator. Eight studies looked at SCC as a mediator in the relationship between another independent variable and body image. Five of these explored SCC context of a proposed model of body dissatisfaction, known as the identity disruption model.

Self-Concept Clarity as an independent variable or predictor.

Seven studies investigated SCC as an independent variable or predictor of body image dissatisfaction. One study found a significant direct association, where lower SCC was associated with higher body dissatisfaction. Three studies found significant direct and indirect associations between SCC and body dissatisfaction, through one or more mediating variables. Three studies found significant indirect paths, but non-significant direct paths from SCC to body dissatisfaction through a mediating variable, suggesting that SCC can affect body image either directly or indirectly, through other mediating variables.

Zhang et al. (2023) evaluated body appreciation (positive appraisal of the body) among Chinese nursing students. SCC was significantly positively correlated with body appreciation ($p < .01$) where higher SCC indicated more positive body appraisals. Body appreciation scores were separated into four groups (low, lower medium, upper medium and high). SCC was a significant predictor of the four profiles of body appreciation ($p < .05$). Those with lower SCC scores were more likely to fall into either the low body appreciation group ($B = -.087$, $SE = .023$, $p = .000$) or upper medium body appreciation group ($B= -0.059$, $SE= .020$, $p = .003$) rather than the high body appreciation group.

You and Shin (2019) investigated how the relationship between SCC and media, parents and peer influences are associated with internalisation of the thin ideal and body esteem in South Korean adolescents’. They found a significant positive correlation between SCC and body esteem in males (.57) and females (.23) although the path for males was stronger, meaning higher SCC is associated with higher body esteem. For females, SCC was significantly negatively correlated with internalisation of the thin ideal (.07) and internalisation was significantly negatively correlated with body esteem. In the male sample, SCC was significantly negatively correlated with internalisation of the thin ideal (.06), but there was no significant path between internalisation and body esteem. This suggests that SCC may be important for both male and female Korean adolescents, but the ways in which it influences body esteem are different. Their sample contained a relatively even male/female split (56.1% female) giving both models suitable statistical power.

Durkin et al. (2007) proposed that psychological functioning (self-esteem, depression and SCC), body comparison tendency, internalisation of the thin ideal, body size, and stable body dissatisfaction would influence change in state body satisfaction following exposure to idealised female images in adolescent girls. It is important to note that because SCC was grouped within a variable labelled ‘psychological functioning,’ the role of SCC specifically cannot be identified. The authors cite their reason for this being the three variables were highly correlated and therefore could be represented as a single variable. However, Campbell et al. (1996) demonstrated that SCC and self-esteem, though highly correlated, are two distinct constructs which refer to different aspects of identity development. Therefore, it may have been valuable to separate these in order to gain a more nuanced understanding of the data. They found that a direct path between psychological functioning and stable or state body dissatisfaction was non-significant. However, when an indirect path between psychological functioning and changes in state body dissatisfaction was tested through internalisation of the thin ideal and body comparison tendency, the relationship was significant across both samples. Sample 2: psychological functioning to internalisation $r = .43$, internalisation to appearance comparison tendency $r = .39$, appearance comparison tendency to change in body dissatisfaction $r = -.27$. Sample 3: psychological functioning to internalisation r = .56 internalisation to body comparison tendency $r = .27$ body comparison tendency to change in body dissatisfaction $r = -.34$. Shahyad et al. (2018) examined relationships between psychological factors and body dissatisfaction in adolescent females, finding a negative, significant path between SCC, thin ideal internalisation and appearance based social comparisons (-.25). Thin-ideal internalisation and appearance social comparison were significantly, positively correlated with body dissatisfaction (.76 & .26 respectively).

Vartanian (2009) examined predictors of internalisation of societal standards of attractiveness and body image dissatisfaction in men and women. In the first study, they found women reported higher levels of body dissatisfaction. SCC was significantly negatively correlated with internalisation (-.37, $p < .01$) and body image and dieting concerns (-.43, $p < .01$) for women, but not men. Regression analysis showed a significant direct path between SCC and body image and dieting concerns (-.25, $p < .001$) and a significant, indirect path from SCC through internalisation to body image and dieting concerns (Sobel's $z = -5.16$, $p < .001$) for women. SCC did not predict any additional variance in body image and dieting concerns above internalisation of societal standards.

The second study further explored predictors of body image and dieting concerns. For men and women, SCC was a significant predictor of body image and dieting concerns. For women, internalisation by itself was a significant predictor of body image and dieting concerns, explaining 38% of the variance, $F(1, 113) = 69.53$, $p < .001$. For men, internalisation by itself was a significant predictor of body image and diet concerns, explaining 43% of the variance, $F(1, 46) = 34.42$, $p < .001$. For women, SCC was a significant predictor of internalisation (-.24, $p < .001$). However this became non-significant when either conformity to emulate others, or body weight contingency (if one bases their self-worth on their body weight) were added to the existing model. Contrastingly, when public self-consciousness was added the relationship between SCC and internalisation was still significant, but the effect was weaker. Mediation analysis for men and women showed that the path from internalisation to body image and dieting concerns through SCC was not significant. This suggests that there may be an indirect path between SCC and body image through internalisation and that this relationship may be unidirectional.

Vartanian and Dey (2013) examined the relationship between SCC, thin-ideal internalisation, appearance related social comparisons and body dissatisfaction in a sample of female university students. They defined appearance comparisons as the tendency to compare one's body to those seen as more desired (upward appearance comparisons) or less desired (downward appearance comparisons). SCC was negatively correlated with thin-ideal internalisation (-.25, $p < .001$), upward appearance comparisons (-.37, $p < .001$), downward appearance comparisons (-0.35, $p < .001$) and body dissatisfaction (-27, $p < .001$). SCC was negatively correlated with appearance comparison tendencies and thin-ideal internalisation. Also, thin-ideal internalisation mediated the association between SCC, and body dissatisfaction. The measured upward and downward appearance comparison tendencies mediated the association between SCC and thin-ideal internalisation.

Overall, there is mixed evidence for a significant, direct relationship between low SCC and body dissatisfaction. However, evidence presented in these studies suggests that an indirect relationship may be more likely, where low SCC predicts increased body dissatisfaction through mediating variables such as increased social comparisons and internalisation of the thin/muscular ideal.

Self-concept clarity as a dependent variable.

One study investigated SCC as a dependant variable. Farrar et al. (2015) investigated the impact of holding positive and negative self-images on body dissatisfaction in a group of female participants with high body dissatisfaction. Participants were asked to retrieve and describe either positive or negative self-images. There were no significant differences in SCC between the positive and negative imagery group before the imagery task. State-SCC significantly reduced after negative self-image retrieval (-2.83, $p < .008$, $r = .45$), but did not change after positive self-image retrieval, (1.55, p =.130, *r* = .26). State body satisfaction significantly increased after positive self-image retrieval, (-7.48, p < .001, *r* = .80) and decreased after negative self-image retrieval (8.29, p < .001, *r* = .83). This suggests that the relationship between SCC and body image is complex, where positive image retrieval can improve body image but not SCC, meaning other factors are likely to impact on this relationship.

Self-Concept Clarity as a moderator

One study tested SCC as a moderator in the path from image exposure to body dissatisfaction through appearance comparisons. Carter and Vartanian (2022) investigated whether females with reduced SCC are more likely to compare themselves to images of thin models, resulting in increased body dissatisfaction, when compared with a control group. Participants in the exposure group reported significantly higher levels of body dissatisfaction compared to the control group. There was also a significant moderated mediation path between exposure condition, appearance comparisons and body dissatisfaction. This was dependent on level of SCC. SCC was grouped into low, medium and high, where the indirect path was significant at all levels of SCC, but the degree of this indirect effect was greatest among those low in SCC (.68), and smallest among those high in SCC (.51). This suggests that SCC may influence the extent to which other variables impact body dissatisfaction.

Self-concept clarity as a mediator.

Eight studies looked at SCC as a mediating variable in the relationship between body image dissatisfaction and other variables. Two found SCC partially mediated the relationship between exposure to images of idealised bodies and body dissatisfaction, where impact of exposure is influenced by SCC. One study found SCC that partially mediated the relationship between media influence and body dissatisfaction. Five studies investigated SCC as a mediator in the relationship between early adversity and body image dissatisfaction, developing the identity disruption model of body dissatisfaction. All five studies found SCC partially mediated this relationship, either directly or through other mediators such as thin ideal internalisation.

Cahill and Mussap (2007) explored whether psychological traits mediated the relationship between exposure to images of idealised bodies and unhealthy body change attitudes in men and women. They found that exposure to idealised images decreased SCC and body satisfaction in both women (0.37 $p < .01$) and men (0.35, $p < .01$). SCC partially mediated the relationship between exposure and body dissatisfaction for women but not for men. Humphreys and Paxton (2004) investigated a similar construct in adolescent males, finding SCC significantly negatively correlated with body dissatisfaction (-.38, $p < .001$) and internalisation (-.37, $p < .001$).

Seo et al. (2020) explored whether SCC mediated the association between media influence and body image in a sample of university students in South Korea. Reduced SCC was significantly correlated with negative body image (0.25, $p < .01$) and SCC partially mediated the relationship between media influence and body image (.38, -.33). It is however, difficult to generalise the results of this study due to the homogeneity of the sample.

Self-concept clarity and the identity disruption model

Vartanian et al. (2016) examined the relationship between early family adversity, SCC, thin-ideal internalisation and body dissatisfaction in a sample of female university students and a community female sample. In both samples, low SCC was significantly correlated with early family adversity (-.32, $p < .001$), (-.34, $p < .001$) and high body dissatisfaction (-.26, $p < .001$), (-.32, $p < .001$). Both samples observed a significant indirect path from early family adversity to body dissatisfaction through SCC, and a significant indirect path from early family adversity to body dissatisfaction through both SCC and internalisation. When substituting the order of the mediators so that internalisation preceded SCC in the model, the indirect path was no longer significant for the student sample, but remained significant for the community sample, with a weaker effect. This indicates that the role of SCC in this model my relate to increased internalisation which in turn leads to body dissatisfaction.

Following this study, Vartanian et al. (2018) developed the identity disruption model, to link early adversity to body dissatisfaction via internalisation and appearance comparisons in a sample of US residents. They similarly found that that early adversity was significantly negatively correlated with SCC and SCC was negatively correlated with internalisation, appearance comparison, body dissatisfaction, and disordered eating.

Vartanian and Hayward (2020) furthered this work by examining how distinct aspects of internalisation (awareness, endorsement, or internalisation) may be relevant to the identity disruption model. In a female sample, SCC was significantly negatively correlated with internalisation ($r = -.45$, $p < .001$) but not with awareness ($r = -.05$) or endorsement ($r = -.11$). They demonstrated a significant indirect path from early adversity to SCC to internalisation to body dissatisfaction, whereas the indirect paths through awareness and endorsement were not significant. This suggests that lower SCC is specifically associated with taking on societal standards as personally meaningful beliefs, and differs from awareness of, or agreement with, those standards.

Vartanian et al. (2023) tested the Identity Disruption Model in adolescents. Study 1 recruited all genders in an online sample. Early adversity was significantly negatively correlated with SCC (-.21). SCC significantly negatively correlated with internalisation of the thin ideal (-.32), but not muscular ideal in males; and negatively correlated with appearance comparisons (-.43). Internalisation and appearance comparison were significantly positively correlated with body dissatisfaction (.48 & .46 respectively). The model explained 4% of variance in SCC, 18% of the variance in internalisation, 18% of the variance in appearance comparisons and 80% of the variance in body dissatisfaction.

Study 2 attempted to recruit all genders via schools. Early adversity was significantly negatively correlated with SCC (-.34). SCC significantly negatively correlated with internalisation of both thin and muscular ideals (-.44); and with appearance comparisons (-.42). Internalisation and appearance comparison were significantly positively correlated with body dissatisfaction (.34 & .35 respectively). The model explained 12% of variance in SCC, 19% of variance in internalisation, 18% of variance in appearance comparisons, and 48% of variance in body dissatisfaction. In study 2, body image measures were adapted to fit male ideal body types, such as the ‘muscular’ ideal, and had a more even gender split (42.9% female) than study one (77.9% female and 2.3% non-binary).

These studies suggests that SCC may not have a direct predictive relationship to body image, but may influence it through mediators such as thin ideal internalisation or body comparisons. They also suggest that SCC partially mediates the relationship between early adversity and body dissatisfaction, where early adversity may lead to body dissatisfaction through reduced SCC. When considered together, the studies in this review suggest the relationship between SCC and body dissatisfaction is complex. Evidence demonstrates an indirect relationship where reduced SCC leads to body dissatisfaction, or perhaps sensitivity to body image through other mediating variables such as thin ideal internalisation and appearance comparisons. The identity disruption model presented in a subsection of the papers further suggests that reduced SCC may develop as a result of childhood adversity. Some gender differences in how SCC may influence one’s body image were explored. However, it is difficult to draw conclusions as most studies have focused largely on female samples and non-significant relationships found in male samples have not yet been explored further in order to investigate gender differences. It is also important to consider that all of the effect sizes presented are small to medium, meaning that the results hold some practical application in considering the impact of SCC in body dissatisfaction but cannot be used to fully explain the mechanism by which one becomes dissatisfied with their body or how this is maintained.

Discussion

The present review aimed to examine literature investigating the relationship between SCC and body image using systematic searching. SCC was consistently linked to body image in all 17 studies, suggesting a significant observable relationship exists between them.

Several studies focused on SCC, body image and exposure to idealised images, self-imagery or media influence. These demonstrated the impact of exposure to these variables increased body dissatisfaction and that this effect was partially dependent on SCC. Farrar et al. (2015) presented evidence that could suggest a bidirectional relationship between body image and SCC. When participants were asked to visualise negative images of themselves, body dissatisfaction increased and SCC decreased in post condition measures. However, during the positive imagery condition, although participants' body dissatisfaction decreased, no change in SCC was found, suggesting that thinking about oneself positively is not sufficient to improve SCC. This accords with literature suggesting SCC is consistent across time (Lodi-Smith et al., 2017). This also suggests that in order to improve SCC, repeated longer term intervention may be required.

A group of studies focused on how media exposure may influence body dissatisfaction. Thin ideal internalisation was investigated as a variable that increases body dissatisfaction. All demonstrated that internalisation of the thin/muscular ideal significantly predicted body dissatisfaction in women and men. Furthermore, internalisation was discussed as a function of low SCC, where low SCC increases vulnerability to internalisation, meaning that low SCC may indirectly lead to body dissatisfaction through internalisation. Vartanian and Dey (2013) also discussed body comparisons as a significant mediator between SCC and body dissatisfaction, however this relationship was not identified as consistently as thin ideal internalisation throughout the literature. Carter and Vartanian (2022) found a strong relationship between SCC, thin ideal internalisation and body dissatisfaction whereby increased body comparisons resulted from internalisation. Mixed evidence was found to support increased body comparisons being directly related to SCC.

Vartanian and Hayward (2017) explored this idea further by proposing the identity disruption model, which proposes early adversity may make individuals more vulnerable to low SCC, leading to thin ideal internalisation and in turn body dissatisfaction. All studies focusing on the identity disruption model found strong evidence of this directional relationship. However, as studies are cross-sectional it is difficult to determine if this relationship is one directional or bidirectional.

Strengths and Limitations

This review used thorough and robust methodology, meaning it can be easily replicated. The search strategy systematically identified all studies included in the review. Additional papers were sought through forward and backward citation searching (n=13) and searching the reference list of a key text (n=15), however none of these met the inclusion criteria and were therefore excluded, suggesting the search strategy used was effective. Selection bias was reduced by conducting a quality assessment on studies after data extraction, and papers were not excluded based on quality assessment. However, this review did not mitigate the risk of publication bias, as an inclusion criterion dictated that studies had be to peer-reviewed, meaning grey literature could not be included and existing literature that has not been peer reviewed may have been missed. One paper identified through forward citation tracking, was not peer reviewed and therefore excluded, despite the topic being of relevant to this review (Kelly, 2022). Additionally, two papers were excluded due to not being available in English, however the abstracts suggested that they may have been relevant (Choi, 2016; Lee, 2015). Time and resource constraints meant that studies not available in English could not be translated.

A number of limitations identified in the literature were also identified. First, seven studies used all female samples compared to one study that used an all-male sample, and the average gender split across all studies was 75% female. Nine studies included male and female participants, where four reported a relatively even split and five reported over 70% female respondents. This trend is seen across a significant proportion of body image literature (Quittkat et al., 2019), indicating that reported effects may not be as generalisable for men as for women. Two studies reported on other genders, however it is unclear if the remaining seven studies allowed participants to report such gender identities. Additionally, some studies reported that body image measures asked questions that may be more relevant to females than males. For example, measures that ask specifically about the desire to lose weight, or change body shape to be thinner. Some studies reported that their measures were adjusted to make them more relevant to fit a muscular ideal rather than a thin ideal, or that they used measures which appeared to ask more gender neutral questions.

Another limitation is that none of the studies reported on samples above the age of 30. While this fits with literature that suggests body dissatisfaction is more prevalent in younger people, there is also evidence to suggest that body dissatisfaction, particularly in women, can persist across the lifespan (Quittkat et al., 2019). Additionally, while much research on SCC suggests that it develops during adolescence and young adulthood, evidence also exists to suggest that SCC can decline at significant age related periods in late adulthood (Lodi-Smith et al., 2017) and so it would be useful to think about how these two constructs may relate to each other in later stages of life.

A significant number of studies recruited samples from a high SES. Humphreys and Paxton (2004) and Vartanian et al. (2023) both used samples recruited from fee paying schools, and Durkin et al. (2007) report that they recruited from schools in middle to high SES areas. Seven studies report recruiting students from university or higher education intuitions, increasing the likelihood that a significant proportion of the overall sample reviewed came from a high SES and were educated to a level higher than the average for that community. This may decrease the generalisability of the results as there is evidence to suggest that higher SES may be related to thinner body types being idealised (Swami et al., 2010).

A further limitation of the studies is the omission of how or whether required sample sizes, based upon power, were calculated. It is also important to consider the effect sizes reported in all of these studies, which range from low to medium. This means that caution must be taken when drawing conclusions on the impact of SCC in body dissatisfaction, acknowledging that the evidence presented in this paper cannot be used to explain fully the mechanism by which one becomes dissatisfied with their body or how this is maintained.

Future directions

The current review suggests there is value in exploring the directional relationship between SCC and body image and how it develops. Longitudinal research would support researchers in developing a more nuanced understanding of this relationship, as all studies included in this review adopted cohort and cross-sectional designs. Additionally, studies focused on participants with a limited age range (13-29), indicating a gap in the literature where the effect of age has not yet been explored. It is important that future research include a wider age range, to explore how demonstrated changes in SCC across the lifespan may influence body dissatisfaction.

Moreover, papers contained largely female samples with only 25% of the overall sample across studies focusing on males. Well documented differences in societal expectations exist for different genders in terms of appearance and body shape, and the way these expectations are communicated (Grogan, 2017). Thus, one cannot confidently comment on how this impacts males and whether there is a significant difference in how SCC develops and functions in relation to body image. For example, the identity disruption model uses thin ideal internalisation, a concept thought to impact largely females so one cannot say if the same effect would be found if a muscular ideal in men were investigated using the same model. Furthermore, this dataset lacks the perspective of other genders, meaning those who do not identify as male or female are not represented in SCC and body image research. Those who experience distress around their gender identity are likely to experience body dissatisfaction (Tabaac et al., 2018), so enhancing our understanding of how gender identity may influence overall identity development and how this might impact on the relationship between body image and SCC is important to explore.

Another future direction for research is to use our current knowledge of how SCC can impact on body image and overall psychological wellbeing to develop prevention and intervention strategies that may support the development of SCC, protecting against internalising unattainable body shape standards on an individual and community level. This is particularly important given that body dissatisfaction is a key aspect of certain eating disorders (Solmi et al., 2020), and that current recommended psychological interventions have clear limitations in outcomes (Solmi et al., 2021). All participant samples used in the studies in this review were described as non-clinical, meaning they were not considered to have a particular mental health diagnosis. Body dissatisfaction is widespread and not considered only in relation to specific mental health difficulties, but as a general component for psychological wellbeing (Grogan, 2017). It is not measured on a clinical continuum, therefore no score on measures of body dissatisfaction would be considered above a ‘clinical’ threshold for body dissatisfaction. However, because body dissatisfaction has been identified as an aetiological component of eating disorders, it might raise the question of the clinical salience in the relationship between body dissatisfaction and eating distress.

Conclusion

This review provides some evidence suggesting that SCC may play a distinct role in the development and maintenance of body dissatisfaction. However, the specifics of that role can be determined only after further studies, particularly using follow-up designs, can be undertaken. All studies reported a significant relationship between reduced SCC and increased body dissatisfaction, and this relationship was demonstrated in different contexts with direct and indirect associations. Evidence presented in this review suggests that low SCC may contribute to body dissatisfaction by making individuals more likely to turn to outward sources by which to define themselves. Many industrialised countries communicate specific expectations of body ideals, such as a thin or muscular ideal. Individuals with low SCC are more likely to internalise these messages, and through this internalisation and comparing their bodies to desired others, can become dissatisfied with their own bodies. Evidence from this review suggests that people with higher SCC may be protected from internalising messages of appearance expectations. Research focusing on demographic groups not covered in the literature is needed to further our understanding of the relationship between SCC and body dissatisfaction and how this may impact different groups.

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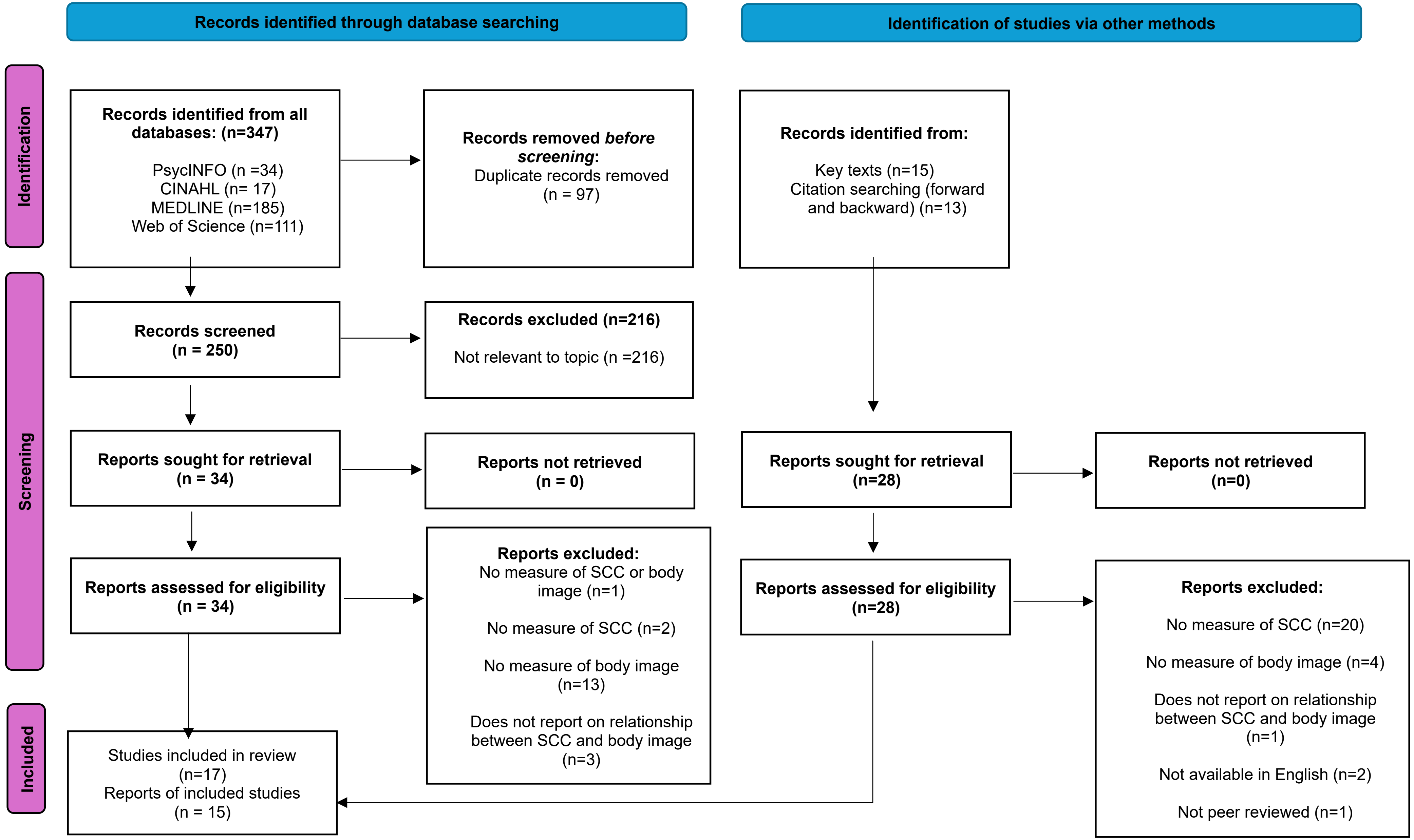
Figures

Figure 1

PRISMA diagram of inclusion



Tables

Table 1

Summary of search terms used in for CINAHL, MEDLINE, PsycINFO and Web of Science

Term	**Subject search terms**
Self-Concept Clarity	Self-Concept clarity OR Self concept clarity OR SCC OR Clarity of Self-Concept OR Clarity of Self-concept OR Self-Concept Clarity Scale OR Self concept clarity scale OR SCCS
Body image	Body image OR body image dissatisfaction OR body dissatisfaction OR body image perception OR body perception OR body image awareness OR body awareness OR body image appreciation OR body appreciation OR body image esteem OR body esteem

Table 2

Inclusion and Exclusion Criteria used to Identify Relevant Papers.

Inclusion criteria	**Exclusion criteria**
Reliable and valid measures were used to measure SCC as defined by Campbell (1996) (e.g. the Self-Concept Clarity Scale (SCCS) (Campbell, 1996)	Studies that used qualitative methodology.
Body image construct/variable is measured using a valid and psychometrically sound measure.	Studies not available in English language.
The study investigated a quantifiable relationship between the variables SCC and body image.	
Peer-reviewed journals only.	
Papers published in English language.	

Table 3

Total ratings to appraise quality of studies using the Kmet checklist for assessing the quality of quantitative studies. *(Kmet, L., Cook, L., & Lee, R. 2004)*

Item No.	***(Cahill & Mussap, 2007)***	***(Carter & Vartanian, 2022)***	***(Durkin et al., 2007)***	***(Farrar et al., 2015)***	***(Humphreys & Paxton, 2004)***	***(Seo et al., 2020)***	***(Shahyad et al., 2018)***	***(Vartanian, 2009) Study 1***	***(Vartanian, 2009) Study 2***	***(Vartanian & Dey, 2013)***	***(Vartanian et al., 2016)***	***(Vartanian & Hayward, 2020)***	***(Vartanian et al., 2018)***	***(Vartanian et al., 2023) Study 1***	***(Vartanian et al., 2023) Study 2***	***(You & Shin, 2019)***	***(Zhang et al., 2023)***
1	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*P*	*Y*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
2	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
3	*Y*	*Y*	*Y*	*Y*	*P*	*Y*	*P*	*P*	*P*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*Y*	*Y*
4	*P*	*Y*	*P*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*Y*	*P*	*Y*
5	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
6	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
7	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
8	*Y*	*Y*	*Y*	*Y*	*P*	*Y*	*P*	*P*	*P*	*Y*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
9	*Y*	*Y*	*Y*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*P*	*P*	*Y*	*Y*
10	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
11	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
12	*NA*	*P*	*P*	*P*	*P*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
13	*Y*	*Y*	*Y*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*P*	*P*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
14	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Total global Rating (%)	***85***	***95.5***	***90.9***	***90.9***	***86.4***	***90***	***70***	***90***	***85***	***90***	***80***	***90***	***95***	***95***	***95***	***95***	***100***

**Y – Yes, N- No, P – Partial, NA – Not-Applicable*

Table 4:

Summary of Descriptive Characteristics for Included Studies

Study no.	**Author**	**Country**	**Clinical/non clinical**	**Study design**	**Sample size**	**Sample population**	**Mean age**	**Gender (% female)**	**Control group?**	**Body image measure**	**Self-concept Clarity measure**
1	**Cahill and Mussap (2007)**	Australia	NC	Cohort	226	University students	22.42	58.8	N	Body dissatisfaction subscale of Eating Disorder Inventory-2. 3 items from Body Image and Body Change Inventory and 1 Visual Analogue Scale item	Self-concept Clarity Scale
2	**Carter and Vartanian (2022)**	Australia	NC	Cohort	489 (*Idealised image group 246)* *(Control group 243)*	White females aged 18-25 via online participant recruitment service	22.2	100	Y	Three items from the Body Image State Scale	Self-concept Clarity Scale
3	**Durkin, Paxton and Sorbello (2007)**	Australia & Italy	NC	Cohort	295 *Sample 2: 124 (65 in experimental group, 59 in control group)* *Sample 3: 171 (83 in experimental group, 88 in control group*	Females in school grade 10 in Australia and Italy recruited via their schools	Sample 2: 15.47 Sample 3: 15.35	100	Y	Body Attitudes Questionnaire–Feeling Fat subscale & 1 Change in state body satisfaction Visual Analogue Scale item	Self-concept Clarity Scale

4	**Farrar, Stopa and Turner (2015)**	UK	NC	Cohort	66 *(33 in positive imagery group)* *(33 in negative imagery group)*	Female university students with high body dissatisfaction	Positive imagery group: 20.18 Negative imagery group: 19.73	100	N	Body Shape Questionnaire	State Self-concept Clarity Scale
5	**Humphreys and Paxton (2004)**	Australia	NC	Cohort	106 *(53 in experimental group)* *(53 in control group)*	Males in school grades 9 & 10 recruited via their schools	15.6	0	Y	Body Image and Body Change Inventory -Body Dissatisfaction subscale & 3 Visual Analogue Scale items	Self-concept Clarity Scale
6	**Seo, Lee and Wesbecher (2020)**	South Korea	NC	Cross-sectional	275	University students	21.49	71.6	N	Body Esteem Scale for Adolescents and Adults (Korean version)	Self-concept Clarity Scale(translated to Korean)
7	**Shahyad, Pakdaman, Shokri and Saadat (2018)**	Iran	NC	Cross-sectional	477	Female high school students aged 15-17 recruited via their schools	Not reported	100	N	Multidimensional body-self relations questionnaire – Appearance evaluation subscale	Self-concept Clarity Scale(translated to Farsi)
8	**Vartanian (2009). *Study 1***	USA	NC	Cross-sectional	322	Online participant pool recruited via Social Psychology Network	24.8	73.7	N	Eating Disorder Inventory-Body Dissatisfaction subscale	Self-concept Clarity Scale
9	***Study 2***	USA	NC	Cross-sectional	175	University students recruited online	20.6	70.9	N	Eating Disorder Inventory-Body Dissatisfaction subscale	Self-concept Clarity Scale

10	**Vartanian and Dey (2013)**	Australia	NC	Cross-sectional	278	Female psychology undergraduate students	19.7	100	N	Eating Disorder Inventory-Body Dissatisfaction subscale	Self-concept Clarity Scale
11	**Vartanian, Froreich and Smyth (2016).**	Australia & USA	NC	Cross-sectional	694 *Australian Undergraduate sample: 323* *USA community sample: 371*	Australian Undergraduate females recruited via online participant pool. Females living in the USA recruited via Amazon MTurk	Undergraduate sample 19.61 Community sample 29.75	100	N	Eating Disorder Inventory-Body Dissatisfaction subscale	Self-concept Clarity Scale
12	**Vartanian and Hayward (2020)**	USA	NC	Cross-sectional	278	Females aged 18-30 living in the USA recruited via Amazon Mturk	26.06	100	N	Eating Disorder Examination Questionnaire - Shape and weight concerns subscales	Self-concept Clarity Scale
13	**Vartanian, Hayward, Smyth, Paxton and Touyz (2018)**	USA	NC	Cross-sectional	1023	USA residents aged 18-30 recruited via Amazon Mturk	26.33	51.7 (0.3 identified as "other")	N	Eating Disorder Examination Questionnaire - Shape and weight concerns subscales	Self-concept Clarity Scale
14	**Vartanian, Nicholls and Fardouly (2023) *Study 1***	Australia	NC	Cross-sectional	213	Australian adolescents aged 13-17 recruited via social media	15.69	77.9. (2.3 identified as Non-binary)	N	Eating Disorder Examination Questionnaire - Shape and weight concerns subscales & Body Esteem Scale for Adolescents and Adults	Self-concept Clarity Scale

										appearance and weight subscales	
15	***Study 2***	Australia	NC	Cross-sectional	228	Australian adolescents in grades 7 - 10 recruited via their schools	13.84	42.9	N	Body Esteem Scale for Adolescents and Adults appearance esteem subscale	Self-concept Clarity Scale
16	**You and Shin (2019).**	South Korea	NC	Cross-sectional	1127	Korean students grades 7-9 recruited via their schools	13.14	56	N	Body Esteem Scale for Adolescents and Adults (Korean version)	Self-concept Clarity Scale(translated to Korean)
17	**Zhang, Su, Li, Yang and Li (2023)**	China	NC	Cross-sectional	541	Nursing students in China aged 17-25	Mean not reported (Median 20)	72.3	N	Body Appreciation Scale-2 (Chinese version)	Self-concept Clarity Scale (Chinese version)

Table 5

Summary of the main aims and significant findings for the included studies

Study no.	Author	Aims	Main findings
1	**Cahill and Mussap (2007)**	To explore how changes in emotional states following exposure to images of idealised bodies predict unhealthy body change attitudes and behaviours in women and men, and whether particular psychological traits mediate these effects.	T-tests revealed that exposure to idealised bodies significantly decreased body satisfaction in women t-3.27 (p = .01) and men t-2.45 (p = .05). Increased body dissatisfaction was positively correlated with increased identity confusion as measured by the Self-concept Clarity Scale for women r = .37 (p = .01) and men, r = .35(p= .01). Self-concept clarity partially mediated the relationship between exposure and body dissatisfaction for women but not for men.
2	**Carter and Vartanian (2022)**	To determine whether Self-concept clarity moderated the effect of exposure to idealised images on young women's appearance comparisons and body dissatisfaction.	T-tests revealed group exposure to idealised images reported significantly increased body dissatisfaction t-7.90 (p = .001) compared to the control group t-1.10 (p = 2.73). Self-concept clarity was significantly negatively correlated with increased body dissatisfaction -0.53 (p = .001).There was a significant interaction between exposure condition and SCC on appearance comparisons, *b* = −0.38, *SE* = 0.14, 95% *CI* [− 0.65, − 0.11], *p* = .006. The indirect effect of exposure condition on body satisfaction, via appearance comparison, was also conditional on level of SCC (index of moderated mediation = −0.18, SE = 0.07, 95% CI [−0.32, −0.05]).
3	**Durkin, Paxton and Sorbello (2007)**	To investigate the influence of psychological functioning (a variable which comprises of self-concept clarity, self-esteem and depression) on the impact of exposure to idealised images on body image dissatisfaction in a group of Adolescent girls.	A direct relationship between psychological functioning and change in body dissatisfaction was non-significant. An indirect relationship between psychological functioning and change in body dissatisfaction following exposure was significant through the variables of internalisation of the thin ideal and body comparison tendency for both included samples. Sample 2: psychological functioning to internalisation r = .43 (p = < 0.05) internalisation to appearance comparison tendency r = .39 (p = < .5) appearance comparison tendency to change in body dissatisfaction r=-.27 (p = < .5). Sample 3: psychological functioning to internalisation r = 0.56 (p = < .5) internalisation to body comparison tendency r = .27 (p = < .05) body comparison tendency to change in body dissatisfaction r = -0.34 (p = < .05).
4	**Farrar, Stopa and Turner (2015)**	To explore the impact of positive and negative self-imagery on implicit and explicit self-esteem and self-concept clarity in individuals with high body dissatisfaction.	State-self-concept clarity significantly reduced after negative self-image retrieval, r=0.45, (p = < .008) but did not change after positive self-image retrieval r = .26 (p =.130). State body satisfaction significantly increased after positive self-image retrieval, r = .80 (p = < .001) and decreased after negative self-image retrieval r = .83 (p = < .001).

5	**Humphreys, and Paxton (2004)**	To identify how individual predictors would impact change in body dissatisfaction following exposure to idealised bodies in adolescent boys.	A significant correlation between high body dissatisfaction and low self-concept clarity was observed r = -.38 (p = < .001). Significant correlations were also observed between low self-concept clarity and internalisation, r = -.37 (p = < .001), body comparison r = -.22 (p = < .05), depression, r = -.53 (p = < .001) and self-esteem, r = -.61 (p = < .001). There was no significant correlation between self-concept clarity and image appeal.
6	**Seo, Lee and Wesbecher (2020)**	To examine the association among media, parental influence, self-concept clarity, body image, and depression	Reduced self-concept clarity was significantly correlated with negative body image (0.25, p < .01). Self-concept clarity partially mediated the relationship between media influence and body image (.38, -.33).
7	**Shahyad, Pakdaman, Shokri and Saadat (2018)**	To examine causal relationships between psychological and social factors and body image dissatisfaction and symptoms of eating disorders through the mediation of social comparison and thin- ideal internalisation.	75% of the distribution of body dissatisfaction scores was expressed through psychological, socio-cultural variables, social comparison and thin-ideal internalisation. There was a negative, significant correlation between self-concept clarity and thin ideal internalisation (-.36 and appearance based social comparisons (-.25). Body dissatisfaction was significantly positively correlated with thin-ideal internalisation (.76) and appearance social comparison (.26).

8	**Vartanian (2009)** ***Study 1***	To explore self-esteem and SCC as protective factors against internalisation of the thin-ideal	Self-concept clarity was significantly negatively correlated with internalisation r = -.37 (p= < .01) and body image and dieting concerns r = -.43 (p= < .01) for women, but not men. There was a significant direct path between self-concept clarity and body image and dieting concerns r = -.25 (p = < .001) and a significant, indirect path from self-concept clarity through internalisation to body image and dieting concerns. Sobel's z = -5.16,(p = < .001) for women. The direct path between SCC and body image and dieting concerns remained highly significant β = -.25, (p = < .001). For men, negative correlation between SCC and body image and dieting concerns was only marginally significant (p = .09). Internalisation by itself was a significant predictor of body image and dieting concerns, F(1, 71) = 7.75, p = .007, explaining 10% of the variance. Adding self-esteem and SCC to the model explained an additional 10% of the variance (p = .02). Internalisation remained a significant predictor of body image and dieting concerns, and self-esteem was also a significant predictor, but SCC was not.
9	***Study 2***	To explore conformity, public self-consciousness, and body weight contingency of self-worth as mediators of the association between self-concept clarity and internalisation of societal standards of attractiveness.	For women, internalisation was a significant predictor of body image and dieting concerns, explaining 38% of the variance, F(1, 113) = 69.53, p < .001. SCC did not add anymore predictive power to the model. For men, internalisation by itself was a significant predictor of body image and diet concerns, explaining 43% of the variance, F(1, 46) = 34.42, p < .001. SCC did not add anymore predictive power to the model

10	**Vartanian and Dey (2013)**	To explore the associations among SCC, thin-ideal internalisation, appearance- related social comparison tendencies, and body dissatisfaction	Self-concept clarity was significantly negatively correlated with body dissatisfaction r = -.27(p = < .01) internalisation of the thin ideal r = -.25(p = < .001) upward appearance comparisons (r = -.37(p = < .001) and downward appearance comparisons r = .35(p = < .001) Body dissatisfaction was significantly positively correlated with internalisation r = .45(p = < .001) upward appearance comparisons r = .36 (p = < .001) and downward appearance comparisons r = .23(p = < .001).
11	**Vartanian, Froreich and Smyth (2016)**	To explore the associations among early family adversity, SCC, thin-ideal internalisation, and body dissatisfaction	**Student Sample:** Self-concept clarity was significantly negatively correlated with early adversity r = -.32(p = < .001) and internalisation of the thin ideal r = -.19(p = < .01). Body dissatisfaction was significantly positively correlated with internalisation r = .52(p = < .001). A mediation path from early adversity through self-concept clarity and internalisation to body dissatisfaction was significant. Standardised indirect effect was 0.07 where confidence intervals do not cross 0. **Community Sample:** Self-concept clarity was significantly negatively correlated with early adversity r = -.34(p = < .001) and internalisation of the thin ideal r = -.23(p = < .001). Body dissatisfaction was significantly positively correlated with internalisation r = .38(p = < .001) A mediation path from early adversity through self-concept clarity and internalisation to body dissatisfaction was significant but weaker than the student sample. Standardised indirect effect was .005 where confidence intervals do not cross 0.

12	**Vartanian and Hayward (2020)**	To explore which dimensions of internalisation of the 'thin ideal' are most relevant to the Identity Disruption Model of body dissatisfaction	Self-concept clarity was significantly negatively correlated with internalisation *r* = −.45 (p < .001) but not with awareness or endorsement. A mediation path from early adversity through self-concept clarity and internalisation to body dissatisfaction was significant. Standardised indirect effect was .015 where confidence intervals do not cross.
13	**Vartanian, Hayward, Smyth, Paxton and Touyz (2018)**	To provide a conceptual test of the Identity Disruption Model of body dissatisfaction and disordered eating. examined a theoretical model, linking negative early life experiences to body dissatisfaction and disordered eating via SCC and sociocultural factors.	Self-concept clarity was significantly negatively correlated with early adversity r = -.29(p = < .01) and internalisation of the thin ideal r = -.14(p = < .001),; and appearance comparisons (r = -.39(p = < .001). Body dissatisfaction was significantly positively correlated with internalisation r = .54(p = < .001) and appearance comparison r = .56 (p = < .001). respectively).
14	**Vartanian, Nicholls and Fardouly (2023)**	To test the Identity Disruption Model of body dissatisfaction among adolescents	Self-concept clarity was significantly negatively correlated with early adversity r = -.21(p = < .01) and internalisation of the thin ideal r = -.32(p = < .001),; and appearance comparisons (r = -.43(p = < .001). Body dissatisfaction was significantly positively correlated with internalisation r = .48(p = < .001) and appearance comparison r = .46 (p = < .001). respectively). A mediation path from early adversity through self-concept clarity, internalisation and appearance comparisons to body dissatisfaction was significant. Standardised indirect effect was 0.08 where confidence intervals do not cross 0.

15	***Study 2***	To test the Identity Disruption Model of body dissatisfaction among adolescents	Self-concept clarity was significantly negatively correlated with early adversity r = -.34(p = < .001) internalisation of the thin ideal r = -.44(p = < .01) and appearance comparisons (r = -.42(p = < .001). Body dissatisfaction was significantly positively correlated with internalisation r = .34(p = < .001) and appearance comparison r = .35 (p = < .001). respectively). A mediation path from early adversity through self-concept clarity, internalisation and appearance comparisons to body dissatisfaction was significant. Standardised indirect effect was 0.10 where confidence intervals do not cross 0.
16	**You and Shin (2019)**	To examine how SCC, influence from media, parents, and peers are associated with internalisation of the thin-body ideal and body esteem in Korean adolescents.	Self-concept clarity was significantly positively correlated with body esteem in males r = .57 (p = < .05) and females r = .23 (p = < .05). For females, self-concept clarity was significantly negatively correlated with internalisation of the thin ideal r = -.07 (p = < .05) and internalisation was significantly negatively correlated with body esteem r = -.33(p = < .05). For males self-concept clarity was significantly negatively correlated with internalisation of the thin ideal r = -.06 (p = < .05) but internalisation was not significantly correlated with body esteem.
17	**Zhang, Su, Li, Yang and Li (2023)**	To evaluate the profiles of body appreciation and predictive factors of these profiles among Chinese nursing students	Self-concept clarity was significantly and positively correlated with body appreciation r = .194 (*p* < .01). Those with lower SCC scores had higher odds of being in the “low BA” group (B = −0.087, SE = .023, p = .000) and “upper medium BA” group (B= .059, SE= 0.020, p = .003) than the “high BA” class.

Appendices

Appendix 1-A. Database search strategies

PsycINFO Search Strategy

(DE "Body Dissatisfaction" OR DE "Body Awareness" OR DE "Body Esteem" OR DE "Body Size" OR DE "Body Height" OR DE "Body Mass Index" OR DE "Body Weight" OR DE "Body Image" OR DE "Body Dissatisfaction" OR DE "Body Esteem" OR DE "Body Image Disturbances" OR DE "Body Image Disturbances" OR DE "Koro" OR DE "Phantom Limbs" OR DE "Anorexia Nervosa" OR DE "Body Modification" OR DE "Body Weight" OR DE "Birth Weight" OR DE "Body Weight Cycling" OR DE "Overweight" OR DE "Underweight" OR DE "Weight Control" OR DE "Weight Gain" OR DE "Weight Loss") OR TI (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) OR AB (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) AND ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR TI ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR AB ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”)

CINAHL search strategy

((MH "Body Image+") OR (MH "Body Image Disturbance (Saba CCC)") OR (MH "Body Image Disturbance (NANDA)") OR (MH "Body Image (Iowa NOC)") OR (MH "Body Dissatisfaction")) OR TI (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) OR AB (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) AND ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR TI ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR AB ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”)

MEDLINE search strategy

((MH "Body Image+") OR (MH "Body Dissatisfaction") OR (MH "Body Size+") OR (MH "Physical Appearance, Body+")) OR TI (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) OR AB (((body) N7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem))) AND ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR TI ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”) OR AB ("Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR

"Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS”

Web of Science search strategy

((body) NEAR/7 (image OR dis* OR percep* OR awar* OR appreci* OR esteem)) (Topic) AND "Self-Concept clarity" OR "Self concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Clarity of Self concept" OR "Self-Concept Clarity Scale" OR "Self concept clarity scale" OR "SCCS” (Topic)

Appendix 1-B. Quality appraisal tool for assessing the quality of quantitative studies

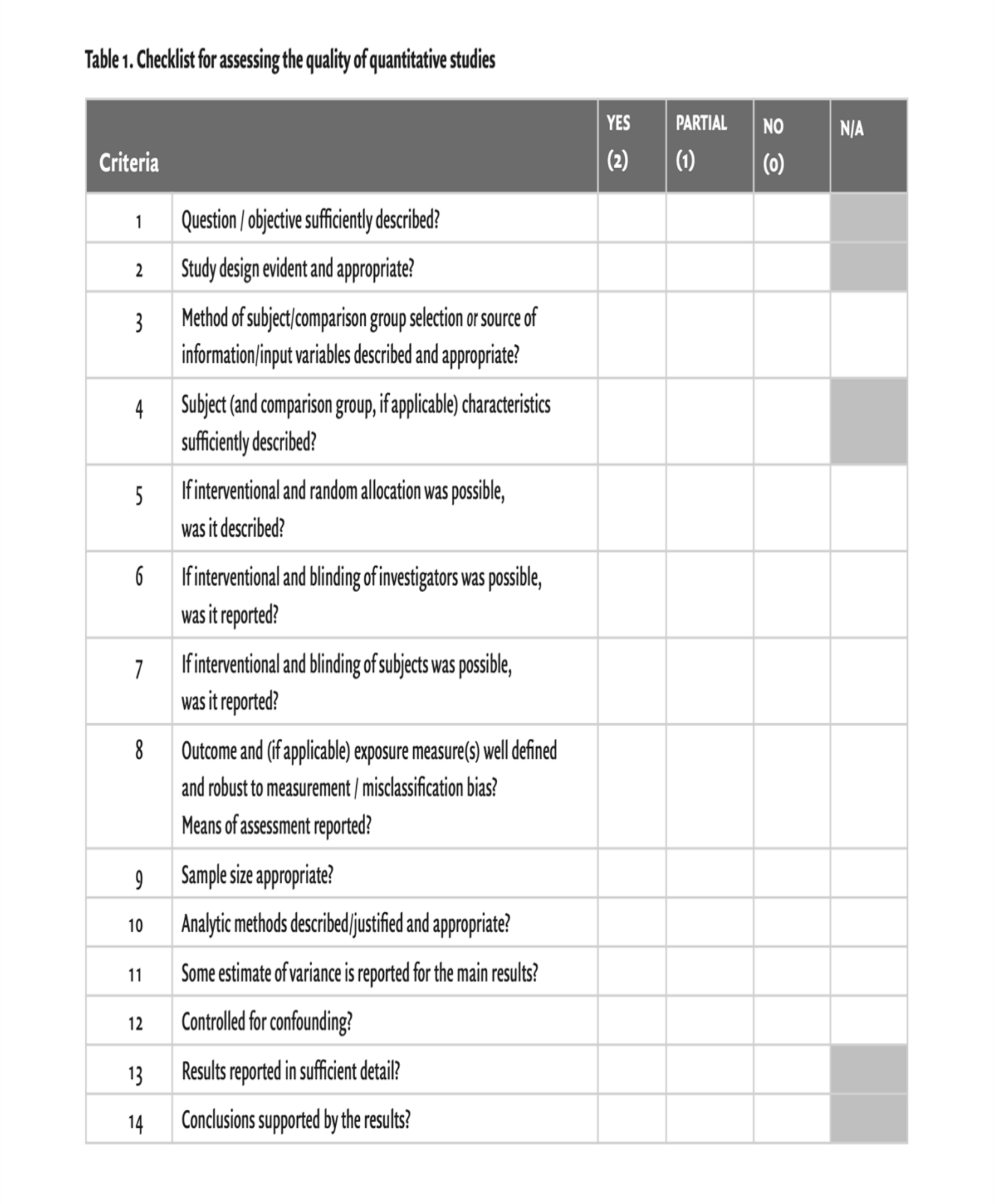


Table 1. Checklist for assessing the quality of quantitative studies

Criteria		YES (2)	PARTIAL (1)	NO (0)	N/A
1	Question / objective sufficiently described?				▨
2	Study design evident and appropriate?				▨
3	Method of subject/comparison group selection *or* source of information/input variables described and appropriate?				
4	Subject (and comparison group, if applicable) characteristics sufficiently described?				▨
5	If interventional and random allocation was possible, was it described?				
6	If interventional and blinding of investigators was possible, was it reported?				
7	If interventional and blinding of subjects was possible, was it reported?				
8	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?				
9	Sample size appropriate?				
10	Analytic methods described/justified and appropriate?				
11	Some estimate of variance is reported for the main results?				
12	Controlled for confounding?				
13	Results reported in sufficient detail?				▨
14	Conclusions supported by the results?				▨

Appendix 1-C. Summary of inter-rater process

Item No.	***(Shahyad et al., 2018)***		***(Vartanian, 2009) Study 1***		***(Vartanian, 2009) Study 2***		***(You & Shin, 2019)***		***(Zhang et al., 2023)***		***IR Agreement (%)***
	IR1	***IR2***	***IR1***	***IR2***	***IR1***	***IR2***	***IR1***	***IR2***	***IR1***	***IR2***	
1	P	N	Y	Y	P	P	Y	P	Y	Y	60
2	P	N	Y	Y	Y	Y	Y	Y	Y	Y	80
3	P	P	P	P	P	P	Y	P	Y	P	60
4	P	N	Y	Y	Y	Y	P	P	Y	Y	80
5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
8	P	P	P	P	P	P	Y	Y	Y	Y	100
9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
10	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	80
11	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
13	P	P	Y	Y	Y	Y	Y	Y	Y	Y	80
14	Y	Y	Y	Y	Y	P	Y	Y	Y	Y	80
Global quality Rating (%)	70	50	90	90	85	80	95	86	100	95	
Overall agreement (%)	71.4		100		92.9		85.7		92.9		

** Y- Yes, N – No, P – Partial, NA – Non-Applicable, IR – Inter-rater*

Appendix 1-D: Body image journal notes for authors

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You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

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• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided • Indicate clearly if color should be used for any figures in print *Graphical Abstracts / Highlights files* (where applicable)

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Further considerations
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• A competing interests statement is provided, even if the authors have no competing interests to declare
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

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Powertech Systems. (2015). *Lithium-ion vs lead-acid cost analysis*. Retrieved from http://www.powertechsystems.eu/home/tech-corner/lithium-ion-vs-lead-acid-cost-analysis/. Accessed January 6, 2016
Reference to a dataset:

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Chapter Two: Empirical Paper

Is Self-Concept Clarity a mediating factor between body image dissatisfaction and restrictive eating disorders?

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Vicky Barnett

Doctorate in Clinical Psychology

Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT

v.barnett@lancaster.ac.uk

Abstract

Objective: The current study investigated the relationship between body dissatisfaction, Self-Concept Clarity, and restrictive Eating Disorder symptoms. More specifically, this study investigated whether Self-Concept Clarity would act as a mediator in the relationship between body image dissatisfaction and restrictive eating. **Method:** The study employed a cross-sectional design whereby a sample of 145 participants completed an online survey. Participants all identified as experiencing a restrictive Eating Disorder and were recruited either by two NHS Eating Disorder services in England or online via social media. **Results:** Body image dissatisfaction was associated with reduced Self-Concept Clarity and increased Eating Disorder symptoms. Self-Concept Clarity partially mediated the relationship between body dissatisfaction and Eating Disorder symptoms. **Discussion:** The results are discussed in the context of existing literature and future directions for research.

Introduction

Eating Disorders (EDs) are considered to be one of the most persistent mental health difficulties. Body dissatisfaction, preoccupation with body shape and weight are common features of EDs, which can lead to unhealthy and extreme eating and exercise behaviours to attain a desired appearance or manage difficult emotions (ICD10, 2019). A recent systematic review indicated that the estimated global prevalence of EDs is 7.8% (Galmiche et al., 2019). A significant increase in reported prevalence between 2000 and 2018 was also observed, suggesting the number of people experiencing EDs has been increasing over time. EDs can become chronic and enduring. Some estimates suggest that up to 20% of people with Anorexia and 10% of people with Bulimia develop a long standing disorder (Kotilahti et al., 2020).

In the UK, there has been recent recognition of the need for increased investment in ED research (All-Party Parliamentary Group on eating disorders, 2021). Similar trends have been observed in the USA (Murray et al., 2017), Australia (Bryant et al., 2023), and Canada (Stone et al., 2021). Consistent underfunding has contributed to gaps in understanding how and why EDs develop, who they impact, and developing effective interventions. Similarly, because EDs are often associated with physical health outcomes (Bamford & Sly, 2010) psychological understandings and interventions may garner less attention than a medical understanding, influencing how treatment is structured and offered.

The DSM-V lists three distinct EDs based on specific symptoms or characteristics: Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder (Smink et al., 2014). Also listed is a fourth diagnosis of ‘Other Specified Feeding or Eating Disorder’ (OSFED), when someone presents with difficulties that do not meet the criteria for a specific diagnosis. However, Fairburn (2008) suggests that an individual’s presentation often transitions from one ED to another during or after treatment. Additionally, ED presentations may change within clients across time, and many attract a diagnosis of OSFED. This indicates the way we conceptualise EDs may need development, as current diagnostic categories do not accurately reflect the experience of many people with an ED. This is pertinent when considering that OSFED is the most common diagnosis (Withnell et al., 2022) given when an ED is present but the specific presentation does not fit a predetermined category. This further suggests that categorising EDs based on behavioural observations fails to capture the underlying mechanisms by which they develop. Therefore, exploring psychological and socially constructed understandings of EDs may be of greater utility than separating out conceptualisations and treatments based on specific diagnoses.

Body image dissatisfaction is thought to be a key contributor to the development and maintenance of EDs (Stice & Shaw, 2002). Body image can be defined as a "person's perceptions, thoughts, and feelings about his or her body," (Grogan, 2017, p.4) where body dissatisfaction refers to negative evaluations of the body, and a discrepancy between one's perceived and ideal body. Body dissatisfaction has been consistently linked to poorer wellbeing (Vartanian & Hayward, 2017). Body image is highly influenced by our social experiences and messages communicated by our environment about desired and undesired bodies (van den Berg et al., 2002). During adolescence and emerging adulthood Shagar et al. (2017) argued that body dissatisfaction may increase as identity formation develops and individuals experience significant physical, emotional and social changes. Importantly, body dissatisfaction has been shown to remain high in some individuals, even after receiving treatment for an ED (Walker et al., 2018), suggesting that current treatments may not sufficiently address the underlying mechanisms by which they develop. Considering that body image dissatisfaction is common in adolescence (Wang et al., 2019) and is a risk factor for EDs, which also commonly present in adolescence, it is important to develop a nuanced understanding of how these factors may influence one another. Furthermore, body dissatisfaction is highly prevalent for women, and increasingly men, in industrialised countries (Grogan, 2017). However, most individuals with body dissatisfaction do not go on to develop a clinical ED, highlighting gaps in our knowledge as to why for some, but not others, body dissatisfaction increases vulnerability to EDs.

Identity formation in adolescence and emerging adulthood is also thought to increase vulnerability to EDs (Potterton et al., 2022). Developing a secure sense of self is an important aspect of this period, when individuals experience identity confusion and distress, leading to meaningful exploration of the self and eventually a progressive strengthening of one’s identity (Palmeroni et al., 2020). If this process is disrupted, or if one’s environment does not allow for a ‘normal’ process of identity development, this may prevent the emergence of a secure and stable sense of self, which is likely to impact psychological wellbeing. Bardone-Cone et al. (2020) explored a number of self-related constructs in the context of EDs. They demonstrated that self-esteem, self-efficacy and perfectionism are considered most often in relation to EDs, and highlight the utility in directing research to other self-related constructs to further our understanding.

Self-Concept Clarity (SCC) is a significant aspect of identity conceptualised by Campbell (1990). SCC is a structural component of the self, defined as the *“extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable”* (Campbell et al., 1996, p.141). Focusing on the structural aspects of the self-concept, SCC is distinct from content factors such as evaluative and knowledge components (Campbell, 1990). Campbell suggested that individuals with uncertain self-concepts may be more susceptible to, and influenced by external stimuli, such as the views of others. SCC is thought to be susceptible to changes throughout the lifespan (Lodi-Smith et al., 2017), initially developing during adolescence, and is an important factor in overall healthy identity development (Van Dijk et al., 2014). Adverse experiences during this period such as abuse, difficult family relationships and bullying may result in an unclear self-concept (Lodi-Smith & DeMarree, 2018). Higher SCC is associated with better psychological adjustment and greater psychological wellbeing (Richman et al., 2016) and low SCC may be associated with a range of mental health difficulties (Binsale, 2017). This suggests that SCC may be a factor underlying general psychological wellbeing, with high SCC being more holistically protective, rather than related to specific mental health diagnoses (Lodi-Smith & DeMarree, 2018).

Interest in SCC as a concept in psychological research has increased since its introduction as a part of the landscape of identity research and, more recently, as an underlying mechanism in psychological wellbeing and mental health (Lodi-Smith & DeMarree, 2018).

It is important to consider and clarify similarities between related constructs and to consider the utility of studying SCC specifically in relation to psychological wellbeing. Conceptualised in 1990 by Campbell, SCC is presented as a way of understanding how identity develops in terms of structure and organisation, and the clarity with which people hold their self-conceptions (Campbell et al., 1996). Two theories which share similarities with SCC are self-discrepancy theory (Higgins, 1987) and social comparison theory (Festinger, 1954).

Self-discrepancy theory conceptualises the self in three domains: the actual self, referring to the attributes one perceives they hold, the ideal self, one’s desired personal attributions, and the ought self, attributes one believes they should possess (Higgins, 1987). When significant discrepancies between the actual self and the ideal or ought selves are perceived, it can evoke negative emotions. Social discrepancy theory suggests that consistency in self-perceptions leads to positive psychological outcomes, whereas holding conflicting ideas leads to reduced internal consistency and reduced psychological wellbeing.

Self-discrepancy theory has been demonstrated as an underlying mechanism in a range of mental health difficulties (Mason et al., 2019). The theme of internal consistency can be highlighted as a key similarity between self-discrepancy theory and SCC, of which internal consistency is a key component. However, SCC considers internal consistency as one of several elements which contribute to clarity of the self-concept as a whole, and it may therefore be useful to explore SCC as a structural mechanism in how self-discrepancy is organised in the boarder structure of the self.

Social comparison theory (Festinger, 1954) suggested that individuals are driven to compare themselves with others as a tool with which to evaluate themselves and encourage group cohesion and belonging, and that when people lack certainty about their opinions and abilities, they are more likely to engage in social comparisons (Butzer & Kuiper, 2006). Similarly, Campbell's definition of SCC is that individuals with uncertain self-concepts may be more susceptible to, and influenced by, external stimuli (Campbell, 1990). Previous research demonstrates that those with reduced SCC are more likely to engage in social comparisons to assess who they are, where they stand in a group and to attempt to gain a sense of certainty around their own attributes in the absence of internal certainty and clarity (Carter & Vartanian, 2022). Therefore if someone is less certain about their own attributes, they may place more value on the opinions of others and internalise these perceptions. People who tend to compare themselves to others more frequently have been shown to experience higher levels of anxiety and depression (Butzer & Kuiper, 2006). Similarities between social comparison theory and SCC may demonstrate how SCC can further explain why someone might engage in social comparisons and assign meaning and value to them, and how this impacts wellbeing and mental health.

Both theories overlap with SCC, however in incorporating different structural aspects of how the self is organised, SCC may have utility in addition to existing theories by attempting to describe the mechanism underlying how individual's self-concepts are shaped and what factors influence or drive this. Both of these theories can also be considered in regards to EDs. Those experiencing eating distress may be more likely to perceive significant discrepancies between their actual and ought/ideal selves (Mason et al., 2016). This may drive thoughts, feelings and behaviours associated with EDs, such as body image dissatisfaction, restrictive eating and compensatory behaviours such as overexercising. Similarly, engaging in appearance based social comparisons has been linked to increased body dissatisfaction and disordered eating (Carter & Vartanian, 2022).

Previous evidence suggests SCC influences body dissatisfaction and EDs. Vartanian (2009) found reduced SCC was associated with body image dissatisfaction through thin ideal internalisation. Internalisation of a thin ideal refers to taking on societal standards of ideal body size as a personally meaningful belief. This suggests that those lower in SCC may look to external ways to define themselves. Messages about idealised bodies in western culture are ubiquitous throughout media and, though placed as high value, are often unattainable for many (Vartanian & Hayward, 2017). Vartanian (2023), suggests that a thin ideal is more likely to impact women, whereas a 'muscular ideal' may be more pertinent to men. This is thought to relate to cultural ideals dictated by western societies. Additionally Perry et al. (2008) found that low SCC predicted increased risk of eating disturbances. Vartanian et al. (2018) furthered this by proposing the identity disruption model, whereby early adversity predicts low SCC, leading to thin ideal internalisation, body dissatisfaction, and eating disturbances. Further research has shown support for this model in non-clinical samples (Vartanian & Hayward, 2020; Vartanian et al., 2023). Additionally, those with low SCC may be resistant to self-change (Emery et al., 2017) suggesting that SCC may be relevant to EDs especially considering that many people experience them as an important part of their identity, meaning they may be reluctant to engage in therapeutic processes that aim to guide them away from this.

To date, there has been no research concerning SCC, body image and EDs in a clinical sample. Bardone-Cone et al. (2020) highlight the need for more research investigating SCC and clinical EDs in order to provide a more established evidence base regarding this relationship. Further exploration of SCC could provide a nuanced understanding of how different risk factors interact and how they impact outcomes for people who experience restrictive EDs. Reduced SCC may lead to increased focus and investment in particular aspects of the self which are concrete and provide a felt sense of control, such as body image, where control and agency can be exercised using behaviours associated with EDs, including dietary restriction, purging and compulsive exercise. This means that SCC might explain the established link between body image and ED symptoms. Consequently, the present study aims to explore the relationship between body image dissatisfaction, SCC and ED symptoms in those who have lived experienced. It was predicted that:

1. ED symptoms and body image dissatisfaction would be associated with SCC
2. SCC would partially mediate the relationship between body image dissatisfaction and ED symptoms

Thus, the prediction was that low SCC would, to some extent, account for increased eating disorder symptoms linked to high body image dissatisfaction.

Method

Participants

Participants were required to be at least 18 years of age, fluent in the English Language, currently residing in the United Kingdom, and identify as having a restrictive ED. The study recruited UK residents only, in order that appropriate support avenues could be offered to participants if required. Participants were not required to have an ED diagnosis from a healthcare professional to take part. Data were collected using Qualtrics online database (Qualtrics, 2005). Service users in two UK NHS ED services were invited to take part. The research was also advertised through online sources such as social media sites Twitter and Reddit. Additionally, the research was advertised on an online participant recruitment platform Survey Circle (SurveyCircle 2023).

Measures

Along with demographic information about participants, the following measures were used:

Body image was measured using the Body Appreciation Scale-2 (BAS-2) (Tylka & Wood-Barcalow, 2015). This is a self-report measure consisting of 10 questions that assess individuals' acceptance of favourable opinions toward, and respect for, their bodies. Respondents are asked to rate how often they agree with statements about their body (e.g., 'I take a positive attitude towards my body') via a Likert scale from 1 (Never) to 5 (Always). A lower score indicates higher body dissatisfaction. It has good internal consistency ($\alpha = .93$), test-retest reliability ($r = .90$) and convergent validity ($r = .73$) (Tylka & Wood-Barcalow, 2015). In the present study the Cronbach's alpha was $\alpha = .94$.

Eating disorder symptoms were measured using the Eating Disorder Examination Questionnaire - Short version (EDE-QS) (Gideon et al., 2016). This is a 12-item self-report scale designed to measure ED symptoms over the preceding seven days. It has good internal consistency ($\alpha = .90$), test-retest reliability ($r = .93$) and convergent validity ($r = .91$) and is commonly used in mental health settings. In the present study the Cronbach's alpha was $\alpha = .87$. Respondents are asked to rate on how many days of the week they have been impacted by different eating beliefs or behaviours in the previous 7 days (e.g. 'On how many of the past 7 days have you had a strong desire to lose weight?'). Possible responses are 0 days, 1-2 days, 3-5 days and 6-7 days. Possible scores range from 0-36 with a higher score indicating increased presence of ED symptoms. A score of 15 or above indicates the presence of an ED in clinical settings.

Self-Concept Clarity was measured using the Self-Concept Clarity Scale (SCCS) (Campbell et al., 1996). This is a 12 item self-report scale evaluating the extent to which beliefs about self are clearly defined, stable and consistent. Questions focus on certainty, temporal stability and consistency of self-beliefs and responses are provided via a Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). Items 6 and 11 on the SCCS are reverse scored (e.g. ‘I seldom experience conflict between the different aspects of my personality’) using a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1). Possible scores range from 12-60, with a higher score indicating reduced SCC. The SCCS has good internal consistency ($\alpha = .86$) and test-retest reliability ($r = .79$) and is widely used in research which aims to study SCC. In the present study the Cronbach’s alpha was $\alpha = .88$.

Procedure

Participants were recruited using either leaflet or poster advertisements (*Appendix 4-D*) across two UK NHS ED sites. Staff were asked to invite potential participants to take part and an email inviting people on the waiting list for treatment was circulated to those who had given permission to be contacted *(Appendix 4-B).* Participants were also recruited through online advertisements, where electronic versions of the leaflet and poster were shared by Twitter and Reddit social media accounts. The study was also advertised on participant recruitment website Survey Circle. These contained an online link to a participant information sheet (*Appendix 4-A*), which participants were asked to read prior to providing consent. If participants consented, they were directed to the first page of the study and asked to complete all measures. At regular intervals, participants were given the option to withdraw if they wished and then taken to a debrief page. On completion of the study, participants were provided with the debrief sheet (*Appendix 4-C).*

Participation was anonymous and no identifiable details were collected. However, there was an option for participants to provide an e-mail address after completing the study if they wanted to receive a summary of the research after completion. 29 participants provided e-mail addresses which were collected and stored in a different location from the data to preserve confidentiality and anonymity.

Data Analysis

A mediation analysis was chosen to attempt to explain the relationship between body image dissatisfaction and restrictive eating. Mediation aims describe the possible causal process in how two variables are related, by explaining how one influences the other through a third variable. Moderation analysis was also considered, which aims to identify how the strength and direction of the relationship between an independent and dependent variable is impacted by a third variable. As the aim of this study was to attempt to describe a potential mechanism (that the association between body image and ED symptoms would depend on the level of SCC) it was felt that a mediation model was the most appropriate method. This study aimed to find a partial mediation effect. Partial mediation effects as opposed to full mediation effects are more common in psychological research because psychological behaviours are likely to have a variety of causes (MacKinnon et al., 2007).

Additionally, mediation analysis was chosen for current study as this follows on from existing literature in this area. In chapter one of this thesis, many of the included studies investigates SCC as a mediating factor in a range of models exploring body image dissatisfaction.

To examine the association between SCC, body image dissatisfaction and ED symptoms, three Pearson’s correlations were conducted (Hypothesis 1). A predictive power calculation for a 2 tailed correlation to achieve a power of .8 at a probability level of p = .05 requires 84 participants for a medium effect size (.3), which was achieved in this sample. A medium effect size was chosen because previous research citing relationships between SCC, and body image dissatisfaction report medium sized relationships (Seo et al., 2020; Vartanian, 2009). Similarly Vartanian et al. (2018) reported medium effect sizes when citing relationships between SCC and disordered eating behaviours.

A mediation analysis was conducted to examine whether SCC played a mediating role between body image dissatisfaction and ED symptoms (Hypothesis 2). To explore the potential of a partially mediating role of SCC between body image dissatisfaction and ED symptoms, a bias-corrected bootstrap test had the highest power (Fritz & MacKinnon, 2007). For .8 power to be achieved within a bias-corrected bootstrap test where the effects of the independent variable (body image dissatisfaction) and mediating factor (SCC) are .39 and the effects of the mediating factor (SCC) and the dependent variable (ED symptoms) are .39, (a medium effect size) an estimated minimum sample size of 116 is recommended (Fritz & MacKinnon, 2007). These effect size estimates were based upon previous research. Vartanian and Hayward (2020) cite a medium effect size when exploring SCC as a partial mediator between early adversity (a path .34) and body dissatisfaction (b path .52) similarly Seo et al. (2020) cite a medium effect size when exploring SCC as a partial mediator between media influence (a path .38) and body image (b path -.33)

Results

Participants

A total of 187 participants consented to take part. Of those, 38 were unable to complete the study due to not residing in the UK, 1 participant was excluded due to being under the age of 18 and 3 participants withdrew from the study. Thus 145 participants were included in analyses. Participants’ ages ranged from 18-57 years (M = 28.04, SD = 7.74). The majority of the sample identified as female (n = 116, 80%) with 19 participants identifying as male (13.1%) 7 as non-binary (4.8%) 1 as transmasculine (0.7%) and 1 as agender (0.7%). One participant did not disclose their gender. The majority of the sample described their ethnicity as white (n = 121, 83.4%) with 11 participants describing themselves as Asian/Asian British (7.6%) 6 as Black/Black British/Caribbean/African (4.1%) 6 as Mixed/Multiple Ethnic groups (4.1%) and 1 as another Ethnic Group not specified (0.7%). Demographic characteristics for the total sample population are presented in Table 1.

INSERT TABLE 1 HERE

Of the 145 participants, 40% reported they had been experiencing an ED for less than 5 years, 27.6% for between 5 and 10 years, and 32.4% had been experiencing an ED for more than 10 years. 14.5% were currently accessing treatment, 9.7% were on a waiting list for treatment, 38.6% had accessed treatment in the past and 37.2% had never accessed treatment. A summary of duration of ED, treatment access, and scores on psychometric measures can be found in Table 2. The EDE-QS was used to measure ED symptoms, which stipulates that a score of 15 or above indicates the presence of an ED. In the current sample, 80% scored 15 or above, suggesting they would meet the diagnostic criteria for an eating disorder. All participants in the sample were included in the final analysis, regardless of their score on the EDE-QS. This was because the criteria for the study was that participants perceive themselves as having a restrictive eating problem, and it was felt that analysis of all the data could provide useful information about the relationship between body image dissatisfaction and eating difficulties.

INSERT TABLE 2 HERE

Assumption of normality.

The data were analysed to assess the assumptions for parametric testing. Skewness and Kurtosis values for each variable were calculated and revealed approximately normal distribution of scores for all variables (Table 3), suggesting that the data were suitable for parametric testing (Field, 2018).

INSERT TABLE 3 HERE

Confounding Variables

T-tests were conducted to investigate if age was significantly associated with any of the outcome variables and found a significant association between age and SCC. However, SCC is thought to increase with age, meaning an association between SCC and age is likely a reflection of this and was therefore not included as a confounding variable in the final analysis.

When considering the remaining demographic variables, it was deemed inappropriate to investigate between group differences due to large differences in group sizes for the variables collected. Unequal group sizes are sensitive to violations of homogeneity of variances meaning that the likelihood of finding a false positive difference between groups is significantly increased. Therefore, investigating between group differences would not provide any meaningful information. However, a small number of variables were considered as confounders as they could be arranged into meaningful groups in order to investigate differences.

The access to treatment variable was split into those who have access treatment before and those who have not as this produced two even groups. Three independent sample t-tests were conducted between the group of access to treatment and no access to treatment and scores on the SCCS, EDE-SQ and BAS-2. No significant differences were found in scores on all three outcome measures as a function of whether participants had accessed treatment for an ED or not.

The duration of ED variable was split into three categories to create more even group sizes in order to investigate between group differences. The three groups were: less than 5 years, 5-10 years and more than 10 years. Three one way ANOVAs were then conducted between these groups and scores on the SCCS, EDE-QS and BAS-2. No significant differences were found in scores on all three outcome measures as a function of the duration of time participants had been experiencing an ED.

Pearson's Correlations

As predicted, Pearson's correlation analyses (Table 4) revealed a significant, negative association between SCC and body appreciation (*r* = -.293, p = < .001), a significant positive association between SCC and increased ED symptoms (*r* = .263, p = < .001), and a significant negative association between body appreciation and ED symptoms (*r* = -.457, p = < .001). The data here confirms hypothesis 1.

INSERT TABLE 4 HERE

Mediation analysis

The principal hypothesis was that SCCS would partially mediate the relationship between body image dissatisfaction (as measured by the BAS-2) and ED symptoms (as measured by the EDE-QS). To determine if a partial mediation effect was present, mediation analysis was conducted. The PROCESS extension version 4.2 (Hayes, 2017) was used to conduct the mediation analysis in SPSS. The mediation model was completed using 5000 bootstrap samples to estimate the confidence intervals. The model (Figures 1-2) considers body image dissatisfaction (independent variable as measured by the BAS-2) against SCC (mediator as measured by the SCCS) and ED symptoms (dependent variable as measured by the EDE-QS). The outcome of the mediation provided results of the linear model of SCC predicted from body image dissatisfaction ('a' path; Figures 1-2). Body image dissatisfaction significantly predicted SCC, *a* = 3.29, 95% CI [−5.07, −1.52], p = < .001. SCC did not significantly predict ED symptoms ('b' path; Figures 1-2), *b* = -0.12, 95% CI [0.01, -0.24], p .07. Body image dissatisfaction significantly predicted ED symptoms with SCC in the model ('c" path; Figures 1-2), *c'* = -3.90, 95% CI [−5.33,-2.47], p = < .001. The mediation analysis displays the total effect of the predictor (body image dissatisfaction) on the outcome (ED symptoms) when SCC (the mediator) is not present in the model (Field, 2018). When SCC is not in the model, Body image dissatisfaction significantly predicts ED symptoms (*c* = -4.28, 95% CI [-5.66, -2.91], p =<0.001. The final mediation outcome displays results for the indirect effect of Body image dissatisfaction on ED symptoms (the effect via SCC) and suggests a significant mediation: *ab* = -0.39, 95% CI [-0.91, -0.02]. Given that the CI range does not include zero, it supports the idea that SCC partially mediated the relationship between Body image dissatisfaction and ED symptoms, confirming hypothesis 2.

INSERT FIGURE 1 HERE

INSERT FIGURE 2 HERE

Discussion

The purpose of the present study was to further our understanding of the relationship between body dissatisfaction, SCC and EDs. As expected, and in line with previous literature, body dissatisfaction significantly predicted ED symptoms. In particular, this study examined whether SCC mediated the relationship between body dissatisfaction and ED symptoms. The results suggested that SCC partially mediated the relationship between body dissatisfaction and SCC, meaning that if someone is clearer in their self-concept, they may be less likely to engage in ED beliefs and behaviours as a result of body dissatisfaction. However, other factors are also likely to be involved, as SCC did not fully mediate the relationship between body dissatisfaction and ED symptoms.

The results are consistent with previous findings suggesting that body dissatisfaction may be, at least in part, a result of reduced SCC. Vartanian et al. (2018) proposed that thin ideal internalisation is a significant driver of body dissatisfaction, and that low SCC may make individuals more likely to internalise societal standards of attractiveness and take steps to achieve these standards as a way of defining themselves through the external source of appearance. Conversely, those high in SCC may place less value on the importance of attaining a perceived desirable body as they have a clearer and more stable sense of self, consisting of internal sources of identity, thus reducing the need to define the self-using external sources.

Given that those with low SCC may be resistant to self-change (Emery et al., 2017) this may provide an explanation as to why EDs can be enduring for some people. If someone has reduced SCC, they may over-value external ideas, such as societal standards of attractiveness. Once these ideas have been internalised, they could be difficult to change using external feedback or psychological interventions. This could mean that once someone with low SCC has found something they consider important to their identity, they are motivated to hold on to this way of defining themselves and are therefore less able or willing to develop other ways by which to define themselves. This could have significant implications for treatment outcomes, with evidence suggesting that some people with an ED remain dissatisfied with their bodies, even after there is a reduction in overt ED symptoms (Walker et al., 2018).

Given that body dissatisfaction is commonplace (Grogan, 2017) SCC may not be the only path to body dissatisfaction, and cannot explain the link between dissatisfaction and ED symptoms alone. As mentioned previously, many who are dissatisfied with their bodies do not go on to develop an ED, suggesting that for many, to be dissatisfied is tolerable, perhaps due to having a clearer self-concept and being less vulnerable to external stimuli. In studying SCC and body image within non-clinical samples Vartanian and Hayward (2020) investigated which specific dimensions of internalisation may lead to increased body dissatisfaction; awareness, endorsement, and internalisation. They found that internalisation of societal standards of attractiveness, that is, to take on societal standards as personally meaningful beliefs, mediated the association between SCC and body dissatisfaction, whereas awareness or endorsement of those standards did not. This suggests that SCC may lead to body dissatisfaction specifically by increasing vulnerability to internalising societal standards of attractiveness. Endorsement or awareness of those standards may not be related to SCC, but may offer a different path to body dissatisfaction which is less likely to result in the development of an ED, as societal standards are not taken on as personally meaningful beliefs and incorporated into their sense of self. This may explain why, although body dissatisfaction is common, EDs are less so.

When considering the evidence presented in this study and its place within wider literature, it is important to understand how the development of SCC is influenced. Early adversity has been identified as a way in which normal identity development may be disrupted, resulting in reduced SCC (Hayward et al., 2020). Difficult family relationships in early life have been suggested to contribute to the development of EDs (Perry et al., 2008). Thus, understanding more about these potential pathways may support existing and future interventions offered to those who experience EDs. A growing body of literature suggests that SCC is a significant construct in body image and EDs, meaning that value can be found in incorporating this understanding into psychological interventions. There is currently a lack of strong evidence for the superiority of differing therapeutic treatments, and evidence based interventions often have modest treatment outcomes (Solmi et al., 2021). This suggests that there is much room for improvement in how we develop and offer effective psychological interventions for EDs. Research exploring identity formation and its association with SCC, body dissatisfaction and in turn EDs within new and existing interventions, may help develop pathways to improving wellbeing outcomes for those with EDs.

Strengths and Limitations

One strength of the current study was that 80% of the sample of individuals who identified as having an ED scored above 15 on the EDE-QS, indicating the presence of a clinical ED. This adds a meaningful contribution to existing literature investigating the relationship between SCC, body dissatisfaction and ED symptoms. Thus far, most research available has focused on non-clinical samples. However, 20% of the sample scored below 15, indicating they may not meet the diagnostic criteria for an ED. This poses the question as to whether the sample can be fairly described as 'clinical'. The focus of the study was to capture data from those who self-identified as having an ED, rather than those who had received a clinical diagnosis, in an attempt to capture a broader range of participants. It may therefore be more accurate to describe the sample as partially clinical, or to ensure clarity about the range of scores captured on the EDE-QS. The study could have been improved if analysis was conducted on those who scored above 15 in addition to the whole sample, to investigate if there were any significant differences, assuming appropriate levels of power.

The recruitment strategy for the current study allowed individuals who are experiencing an ED to take part regardless of whether they had accessed treatment or received a diagnosis by a healthcare professional. Many people experiencing an ED are not in contact with services, and literature suggests that help-seeking in individuals with an ED is low (Austin et al., 2021). This means a large group of people who experience EDs may be excluded from research that recruits from health services alone or requires a diagnosis to take part. There are many documented reasons for low help seeking in this group, including stigma and shame, fear of change, negative attitudes towards treatment and accessibility and knowledge of resources (Ali et al., 2017). Attempting to access this often excluded group allowed the study to be more representative and not disregard valuable data. Additionally, the sample size allowed appropriate statistical power, meaning that more reliable conclusions can be drawn from the analysis.

A limitation of this study was that it employed a cross-sectional design. While cross-sectional designs can capture a large amount of data and investigate associations between variables, they capture data taken within one time period only, meaning causal inferences cannot be made. A further potential limitation of the study was the measure used to assess body image dissatisfaction. The current study used the BAS-2, developed by Tylka and Wood-Barcalow (2015). However, the main goal of the BAS-2 is to measure body appreciation as opposed to body image dissatisfaction, so it could be argued that a different measure to assess body dissatisfaction would have been more appropriate. The measure was chosen because it had good internal consistency, test-retest reliability and convergent validity, and has been strongly negatively associated with body dissatisfaction in women and men (Tylka & Wood-Barcalow, 2015). It attempts to offer a different perspective and way of measuring body image when compared to previous measures which have typically focused only on the negative features of body image and their relation to mental health outcomes (Tylka, 2011). The BAS-2 is a measure of body appreciation, defined as the acceptance, respect and holding favourable opinions towards one’s body, while also rejecting media promoted appearance ideals (Avalos et al., 2005). The BAS-2 does not use gender specific or body dissatisfaction based language (Zarate et al., 2021) meaning it is a useful tool to measure body appreciation among a wide demographic. A higher score on this measure represents higher body appreciation, which has been linked to improved psychological wellbeing, whereas a lower score indicates body dissatisfaction (Zarate et al., 2021). The

BAS-2 has also been used in research investigating the relationship between body appreciation and disordered eating in adolescents (Baceviciene & Jankauskiene, 2020). Additionally, the BAS-2 and the EDE-QS have no overlapping items relating to body image. For these reasons, the researcher felt that using this measure was appropriate for the current study.

Another limitation of this study involves the outcome measure used to investigate the dependent variable of restrictive eating. The EDE-QS was used to collect these data, and is a validated measure of eating beliefs and behaviours. However it encapsulates a broad range of thoughts, beliefs and behaviours related to EDs and does not solely focus on restrictive eating. Several items ask specifically about restrictive eating, for example “Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded).” However, other items ask about other behaviours relating to eating such as “Have you had a sense of having lost control over your eating (at the time that you were eating?)” A single score from the questionnaire was taken as a measure of restrictive eating, meaning that it is not possible to deduce if the score obtained specifically relates to restrictive eating behaviours or other behaviours and beliefs around eating. It would therefore be more appropriate to suggest the results of this study pertain to eating difficulties more broadly as opposed to restrictive eating specifically. Future studies could focus on restrictive eating more effectively by using items from validated questionnaires that refer specifically to restrictive eating experiences.

A further issue is the self-selected nature of the sample. Some evidence suggests that self-selected samples represent a smaller proportion of the actual target population in comparison to a truly random sampling method (Haddad et al., 2022). This may impact on the generalisability of the sample. Additionally, recruiting via social media and an online recruitment website such as Survey Circle may bias the results towards a more educated sample, as those accessing this site are likely to do so on the basis of conducting their own research, suggesting they may be university educated. This is demonstrated in the descriptive statistics of the sample in which 87.5% were university educated, compared with 33.8% of the UK population (Waddington, 2023). This figure includes 10.3% who had obtained a doctoral degree which is significantly above the UK national average, estimated at 2% (Academia & Academia, 2023). Furthermore, the online methods used to recruit participants for the current study may exclude those with reduced access or use of the internet or social media, such as older adults or those experiencing poverty. This may be reflected in the age of the sample which ranged from 18-57, with an average of 28.04 years. These issues are reflected in wider ED research where there is an observed bias towards white, female, educated and younger samples (Halbeisen et al., 2022). A further issue is in the definition of the sample as clinical. The actual clinical levels of symptomatology may have been low for some of the sample. However, it should be noted that 80% scored above the clinical cut off on the EDE-QS. Thus the majority of the sample are likely to be affected by symptoms at a clinical level.

Another limitation of this study was the way in which the participant data were collected. Participants were recruited through online adverts and two NHS ED services, and were required to fill out an online questionnaire. However, the questionnaire did not ask participants to identify which method they had been recruited to the study from. It was therefore not possible to calculate any differences in participant characteristics by recruitment method. If this were possible, it could have offered the opportunity to investigate any between group differences. Additionally, some of the information was collected in a way that could have been more theoretically informed. One question asked was the length of time they had been experiencing an ED. The options to choose from were; less than a year, 1 year – 1 year and 11 months, 2 years – 2 years and 11 months, 3 years – 4 years and 11 months, 5 – 10 years and more than 10 years. The study could have been improved if the options were more consistent in their intervals to allow for a more sensitive analysis of the data.

Future Directions

The current study highlights potential directions for future research and clinical implications. Investment in longitudinal studies which aim to investigate the relationship between SCC, body image and EDs would be a useful direction to attempt to establish specific, causal relationships between relevant variables, building on findings from the current study which demonstrates SCC as a small but significant partial mediator in the relationship between body image and EDs.

Given that SCC has been found to influence the relationship between body dissatisfaction and ED symptoms, it would be useful if future research aimed to replicate and situate the findings of the current research in the context of the identity disruption model (Vartanian et al., 2018) to further our understanding of this relationship. Research which tests different aspects of the identity disruption model in a clinical sample may help to further our understanding of the mechanisms by which body dissatisfaction develops, relating it to SCC and early adversity and how it links to the development of EDs.

A general lack of diversity is present in ED research (Halbeisen et al., 2022) and it would be advantageous to understand if the findings from the current study are applicable in groups not recruited in this study. Addressing this may help to enhance our understanding of how body dissatisfaction and SCC evolve at different points in adulthood and how this may impact the presence and experience of EDs. Older adults may be underrepresented in ED and body image research due to expectations that these issues largely impact young people (Halbeisen et al., 2022). While SCC is thought to develop during adolescence and emerging adulthood, literature also suggests that SCC may change across different points of the lifespan (Lodi-Smith & Crocetti, 2017). Similarly, body dissatisfaction has been found to be pervasive and prevalent throughout the lifespan, although may impact individuals differently depending on other factors such as gender and ethnicity (Grogan, 2017). It is therefore important to capture the experiences of as many groups as possible to further our understanding. Additionally, given the limitations of the current study in terms of self-selected sample bias, it would be important to consider how future research can limit this bias while still maintaining a commitment to accessing people with lived experience who are not accessing treatment.

Caution should be taken when thinking about specific recommendations for clinical practice in the recognition and treatment of EDs in light of the evidence presented in this research. The present study contributes to a small but growing body of literature which suggests that SCC may play a role in the underlying mechanisms by which EDs develop, but this is still in preliminary and exploratory stages in considering how this relationship occurs. Therefore, further research which focuses on these relationships is needed before translating learning to clinical practice. However, there may be avenues to tentatively consider in regards to where the focus of interventions may be useful.

Currently, two of the most widely used psychological interventions for adults are Cognitive Behavioural Therapy for Eating Disorders (CBT-ED) and The Maudsley Anorexia Nervosa Treatment for Adults (MANTRA),(NICE, 2017). Both of these interventions consider identity as part of the therapy. MANTRA dedicates one full module to identity exploration and developing a sense of identity outside of an ED, and CBT-ED addresses identity through evaluation of the self outside of and ED. Both interventions consider identity as an important construct in the treatment of EDs and focus on content factors of identity, such as perfectionism and self-esteem. Findings from the current study could provide further theoretical understanding as to why psychological interventions that consider identity can be effective, highlighting the importance of the structure and organisation of identity in addition to content. Explicitly differentiating between content and structural facets of identity could enhance the efficacy of existing interventions.

The current study can be contextualised within an existing body of literature which demonstrates SCC as a protective factor in a range of mental health difficulties. Given that previous literature suggests reduced SCC is linked to overall psychological wellbeing (Lodi-Smith & DeMarree, 2018) it may be beneficial to adopt a transdiagnostic approach to interventions which aim to improve SCC more broadly (Ali & Keel, 2023). Further research into SCC and EDs can enhance understanding as to why these intervention aspects can be helpful and the mechanisms by which change occurs, in order to support further development of interventions that consider identity and how it is structured.

Research suggests that the development of SCC is influenced by a range of factors, including quality of attachment in relationships with caregivers and opportunities to explore different roles and identities during adolescence (Lodi-Smith & DeMarree, 2018). Literature also demonstrates that those who have not had adequate opportunities to explore and experiment with their identities in early life are more likely to experience reduced SCC as adults (Bardone-Cone et al., 2020). The current study demonstrates that individuals with reduced SCC may be more likely to experience body dissatisfaction and eating distress, therefore improving SCC may also support ED recovery. Therapeutic interventions which focus on developing a clearer sense of self through the attainment of self-knowledge and exposure to new and varied experiences could support improving SCC, and in turn general psychological wellbeing. Taking this holistic approach and supporting individuals to make sense of their experiences could support people to either restructure and reorganise their view of themselves and create more clarity, or further develop and reinforce existing structures to support clarity. Additionally, talking about SCC more explicitly in therapeutic contexts may encourage people to develop a language to describe and understand their own experiences.

These strategies could be employed in conjunction with behavioural based interventions which aim to restructure thinking specifically around eating behaviour, beliefs and attitudes to increase efficacy of psychological interventions. For example, narrative approaches to therapy aim to enhance lesser described identity narratives and create opportunities to nourish these, using language and meaning that is directed by individuals (Heywood et al., 2022).

Perhaps improving SCC in these ways, using supportive therapeutic approaches may allow individuals with EDs to reduce and change the value and meaning currently placed on weight and shape and how thin bodies are perceived by others. In other words, improving one's sense of self may reduce internalisation of a thin/muscular ideal and engagement in appearance related social comparisons. This is likely to be a difficult journey when considering how prevalent and pervasive ideas about ideal bodies are and how they are reinforced and communicated. This may demonstrate the need for community and social based interventions to challenge beliefs about the value placed on body image and appearance ideals. Ideas about future interventions in this regard remain speculative for the time being.

Conclusion

The current study was the first to specifically explore the association between body dissatisfaction, SCC and ED symptoms in a clinical sample and consider if SCC mediates the relationship between body dissatisfaction and ED symptoms. The results further support those of previous literature describing how reduced SCC may increase both body dissatisfaction and ED behaviours and beliefs by showing a partial mediation path, where some of the variance in how body dissatisfaction influences ED symptoms is partly dependent on SCC. The findings emphasise the need for more research in this area, including using clinical samples and prioritising further exploration into the mechanisms by which body dissatisfaction and reduced SCC develop, for example, using Vartanian's identity disruption model to conceptualise and explore these ideas. The findings also present some future directions for research into psychological interventions for EDs.

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Figures

Figure 1:

A Simple Mediation Using the Mediating Effect of Self-Concept Clarity (SCC) on the Relationship Between Body Image Dissatisfaction And Eating Disorder (ED) Symptoms

Note: a is effect of body image dissatisfaction on SCC; b is effect of SCC on ED; c' is direct effect of body image dissatisfaction on ED symptoms; c is the total effect body image dissatisfaction on ED symptoms.

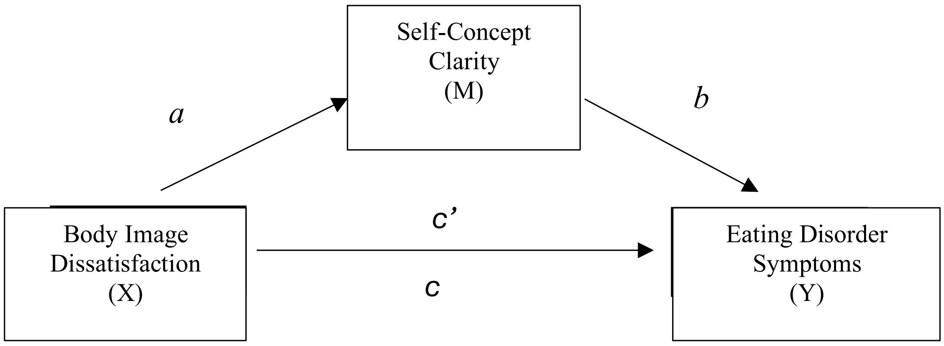
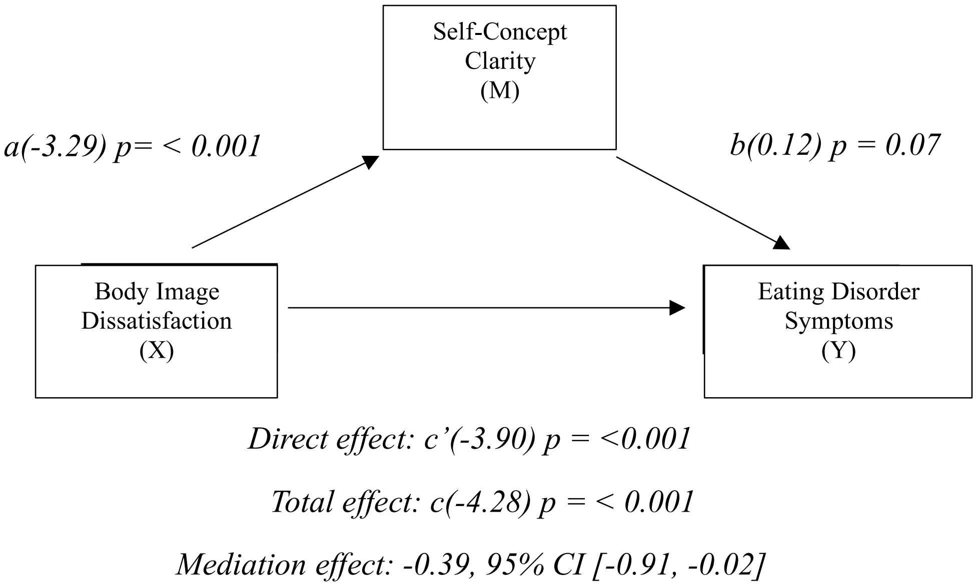


Figure 2:

Mediation Model of Body Image Dissatisfaction as a Predictor of ED Symptoms Mediated by SCC



Tables

Table 1

Summary of demographic information

Variable		Sample
Number		145
Age (years)	Mean	28.04
	Standard Deviation	7.74
Gender (%)	Female	116 (80)
	Male	19 (13.1)
	Non-binary	7 (4.8)
	Transmasculine	1 (0.7)
	Agender	1 (0.7)
	Not reported	1 (0.7)
Ethnicity (%)	Asian/Asian British	11 (7.6)
	Black/Black British/Caribbean/African	6 (4.1)
	Mixed/Multiple Ethnic Groups	6 (4.1)
	White	121 (83.4)
	Other Ethnic Group	1 (0.7)
Sexual Orientation (%)	Asexual	5 (3.4)
	Bisexual	24 (16.6)
	Gay	7 (4.8)
	Heterosexual	85 (58.6)
	Lesbian	9 (6.2)
	Pansexual	4 (2.8)
	Queer	2 (1.4)
	Not reported	9 (6.2)
Education (%)	Doctoral Degree	15 (10.3)
	Postgraduate Degree	55 (37.9)
	Undergraduate Degree	57 (39.3)
	A-Levels	8 (5.5)
	GCSE/O-Levels	4 (2.8)
	Didn’t finish school	2 (1.4)
	Other	4 (2.8)
Marital Status (%)	Married/Co-habiting	34 (23.4)
	Civil Partnership	5 (3.4)
	Widow(er)	2 (1.4)
	Divorced/Separated	3 (2.1)
	Single	101 (69.7)

Employment Status (%)	Employed	73 (50.3)
	Homemaker/Carer	2 (1.4)
	Student	59 (40.7)
	Unemployed	10 (6.9)
	Unpaid volunteer	1 (0.7)

Table 2

Summary of duration of Eating Disorder, treatment access and psychometric measures

Variable		**Number (%)**
Duration of ED (%)	<1 year	16 (11)
	1 year – 1 year and 11 months	10 (6.9)
	2 years – 2 years and 11 months	12 (8.3)
	3 years – 4 years and 11 months	20 (13.8)
	5 – 10 years	40 (27.6)
	>10 years	47 (32.4)
Treatment access	Currently accessing treatment	21 (14.5)
	Accessed treatment in past	56 (38.6)
	On treatment waiting list	14 (9.7)
	Never accessed treatment	54 (37.2)
Self-concept Clarity Scale Total	Mean	42.69
	Standard Deviation	9.39
Body Appreciation Scale -2 Total	Mean	2.31
	Standard Deviation	0.84
Eating Disorder Examination Questionnaire Short version Total	Mean	20.74
	Standard Deviation	7.83

Table 3

Skewness and Kurtosis measures of normal distribution in psychometric measures

	Skewness (std.error)	**Kurtosis (std.error)**
Self-concept Clarity Scale	-.764 (.201)	.599 (.400)
Body Appreciation Scale -2	.663 (.201)	.256 (.400)
Eating Disorder Examination Questionnaire – Short version	-.302 (.201)	-.183 (.400)

Table 4

Summary of Pearson's Correlations for each psychometric measure

		Self-concept Clarity Scale	**Body Appreciation Scale -2**	**Eating Disorder Examination Questionnaire – Short version**
Self-concept Clarity Scale	Pearson Correlation	1	-.293**	.263**
	Sig. (2-tailed)			
	N	145	145	145
Body Appreciation Scale -2	Pearson Correlation		1	-.457**
	Sig. (2-tailed)			
	N		145	145
Eating Disoder Examination Questionnaire – Short version	Pearson Correlation			1
	Sig. (2-tailed)			
	N			145

**$p < .001$

Appendices

Appendix 2-A

International Journal of Eating Disorders – Author Guidelines

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Chapter Three: Critical Appraisal

A Commentary on Representation and Exclusion in Eating Disorder Research

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Vicky Barnett

Doctorate in Clinical Psychology

Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT

v.barnett@lancaster.ac.uk

The current critical appraisal explores issues of representation and diversity in eating disorder (ED) research. Chapters one and two explore body dissatisfaction and EDs in relation to self-concept clarity. However, writing these chapters presented me with a narrow scope of research in terms of diversity within participant samples. This was briefly discussed in both chapters; however detailed exploration was not possible. Additionally, many documents I read while writing these chapters highlighted issues of funding in ED research and implications of this. Furthermore, when presented with my own sample in chapter two, I was surprised at its homogeneity, despite efforts to increase accessibility. This led me to question how diversity in ED research could be achieved, and the impact of continuing to exclude marginalised groups from the landscape. This chapter highlights the current funding landscape for ED research and how this impacts conceptualisations and treatment, before moving on to discuss the impact stigma and diversity issues in ED research. I then go on to explore diversity issues raised in chapters one and two of the current thesis.

Eating disorders as an under researched field of study

There is consistent evidence that ED research receives limited investment (Murray et al., 2017). While true of mental health research generally (Bryant et al., 2023), ED research budgets remain among the lowest of all mental health research, despite associated physical health complications, mental health comorbidities, and carrying the highest mortality rate of any mental health difficulty (Murray et al., 2017). The estimated global prevalence of EDs is 7.8% (Galmiche et al., 2019) and although treatment costs are high (Stone et al., 2021) outcomes are modest (Murray et al., 2017). The US spends $0.73 on research for every person with an ED, compared with $89.97 for psychosis (Bryant et al., 2023). In Canada, $50.17 is spent on research per person with psychosis compared to $0.70 for EDs (Stone et al., 2021). In Australia the figures are $67.36 for psychosis compared to $1.10 for EDs

(Murray et al., 2017). In the UK, £1.13 per person with an ED is spent on research, equivalent to 1% of the total mental health research budget (All-Party Parliamentary Group on Eating Disorders, 2021). These figures are concerning when considering the estimated prevalence of psychosis is lower than EDs, at around 1% (Estradé et al., 2023) and demonstrates the need to consider how policy makers arrive at funding decisions.

Lack of investment in ED research may have contributed to difficulties in developing successful treatments, resulting in a limited evidence base. Estimates suggest that 50% of those with an ED recover after treatment (Allen et al., 2023). National bodies such as the UK's National Institute of Clinical Excellence (NICE) offer guidelines on evidence based treatments for physical and mental health conditions for use within the National Health Service (Mollon, 2009). However, Solmi et al. (2021) illustrate that recommendations for psychological interventions for EDs in current international guidelines evoke only modest outcomes. This implies that lack of research contributes to an absence of clear evidence on how to treat EDs successfully, reducing treatment efficacy compared to mental health conditions which garner more funding.

For guidelines such as NICE, interventions often become recommended through evidence provided by randomised control trials (RCTs). RCTs are considered the 'gold standard' because they can establish causality by ruling out alternative explanations (Philips & Falkenström, 2020). RCTs aim to remove key sources of bias that can affect the validity, accuracy and reliability of results so that no false conclusions can be drawn from the data (Ahuja, 2019). RCTs are considered more likely than other methodologies to be able to claim that treatment benefits observed can be attributed to a particular treatment. RCTs are considered by NICE to be the most appropriate way to discern the relative treatment effects of comparable interventions due to their robust deign (NICE, 2022). However, this presents issues when considering psychological interventions for EDs, as RCTs are expensive to conduct and ED research receives little funding. Additionally, many psychological therapies do not lend themselves to this methodology, as RCTs often do not reflect the realities of clinical practice (Shean, 2014). Difficulties in using RCTs to provide evidence for psychological therapies can create a bias towards particular therapies, in which the treatment process can be manualised and measure successful outcomes as a reduction in specific symptoms (Shean, 2014). This potential bias in how guidelines are developed may explain some of the difficulties in finding alternative effective treatments. If to be NICE recommended, psychological therapy must demonstrate efficacy through the specific means of symptom reduction, this may discourage research into therapies which demonstrate efficacy in ways which are not easily measured by this standard. Considering alternative methodologies to demonstrate efficacy of psychological therapies could broaden the treatment options for reducing psychological distress transdiagnostically, including EDs. A systematic literature review with a meta-analysis methodology could support this as a way of measuring effect sizes of a particular therapy across a range of experimental studies to assess their efficacy and critically appraising the overall quality of research reviewed. This methodology is considered the most appropriate way of conducting reliable and trustworthy synthesis of available evidence in one area of study (Crocetti, 2015). Additionally, utilising qualitative research to capture the lived experience of different demographics can support the development of more progressive conceptualisations of EDs by offering nuanced understandings of how EDs present and are understood by those who experience them.

The impact of stigma

EDs carry a significant amount of stigma (Brelet et al., 2021). Mental health stigma may be more prevalent among diagnoses that are not well understood by the general population (Robinson et al., 2019) and EDs are poorly understood in a societal context and in mainstream healthcare (Anderson et al., 2017). ED stigma presents in several ways;

societally, healthcare, families and internalised stigma (O’Connor et al., 2021). Societal narratives around EDs imply that those affected are to blame for their difficulties, that they should be able to “pull themselves together” or their difficulties are the result of vanity (O’Connor et al., 2021). Additionally, EDs are often described in terms of their behavioural components, and media representation play a role in perpetuating stigmatising narratives (Brelet et al., 2021). For these reasons, societal attitudes towards EDs may cause more stigmatisation compared other mental health difficulties such as depression (Ali et al., 2017). Negative beliefs are also commonly held by clinicians working with people with EDs, and families or friends of those affected (O’Connor et al., 2021). The impact of stigmatising attitudes on those affected by EDs is pervasive. Individuals often feel blamed, isolated, dismissed and have their difficulties trivialised, which can lead to internalised stigma, shame and worsening of their eating difficulties (Brelet et al., 2021).

If stigma creates the idea that individuals are to blame for their eating problems, does this link to our behavioural view of them? EDs are often presented in popular culture as a set of behaviours related to food and exercise, which may reinforce the narrative that they are easier to change and therefore to not change is a ‘choice’. This may be particularly pertinent in the case of Anorexia Nervosa (AN), which can be very visible, perpetuating the ‘attention seeking’ narrative. Attention seeking is commonly used as a pejorative term which implies that ‘attention’ is the primary motivation for any observed difficulty, which in turn implies an element of deception or immorality (Dixon-Ward & Chan, 2022). Therefore, if those affected by EDs are seen as ‘choosing’ their difficulties for the purpose of ‘attention’ others may believe they are to blame and therefore are not deserving of care. Furthermore, if this view is upheld on a societal level, it will likely influence policy makers regarding decisions around funding research and treatment. Governments are less likely to fund research in areas that the general population do not believe are worthwhile, or for groups who are perceived as less deserving because they are making the ‘choice’ to be unwell. This may demonstrate why EDs receive significantly less research funding when compared with other mental health difficulties.

It is important to consider other stigmatising stereotypes in regard to EDs. One pervasive stereotype is that EDs affect only white, young and affluent women (Halbeisen et al., 2022). It is being recognised that ED research needs to be more inclusive. However, when considering how stigmatised EDs often are, and how they are societally associated with women, it is useful to consider the impact that gender inequality may have. Some feminist perspectives on EDs view them as the consequence of contradicting societal values and expectations placed on women in western society as a result of misogyny (LaMarre et al., 2022). It therefore could be considered that stigma around EDs is partially gender specific and a product of misogyny, which also has implications on those affected by EDs that do not fit this stereotypical view. For example, men with EDs may experience stigma through threat to their masculinity, as a result of EDs being viewed as a ‘woman’s disease’ (O’Connor et al., 2021).

Stigma may influence ED research in different ways. Firstly, stigma is considered a significant barrier to help seeking (Ali et al., 2017). This has implications for treatment outcomes for individuals who are reluctant to seek help as a result of stigma and for research. Research focusing on ‘clinical populations’ will miss significant numbers of people affected by EDs because they do not present in services, or have not received a clinical diagnosis. Groups who do not present in services are also likely to be overlooked in research and their experiences will be missed, without this gap being acknowledged. Consequently, conceptualisations of EDs and resulting treatment options will not be based on evidence representative of all those affected. Secondly, if stigmatising narratives around EDs are widespread in society, particularly the blaming or attention seeking aspect, this may deter healthcare systems and governments from investing in ED research in the first place. If individuals are to blame, then there is no need to develop our understanding as those affected by EDs may be perceived as less deserving of research funding. This may be compounded by negative healthcare narratives around EDs. If stigma is greater in mental health difficulties that are less understood, this could create a negative feedback loop where stigma increases due to a lack of understanding, and increased stigma reduces the desire to understand them more through research, and so the cycle continues.

The issues raised have significant implications for the recognition and treatment of EDs, particularly within marginalised groups. Stigmatising narratives causes reluctantance to present to services, so when they do, they are likely to be severely unwell. This has significant implications for treatment outcomes as research demonstrates that early recognition and treatment leads to consistently better outcomes (Austin et al., 2021). Additionally, marginalised groups may further reluctant to present to services, and clinicians are less likely to identify EDs in people whose identities do not fit with stereotypes and refer them for specialist treatment (Huryk et al., 2021). Difficulties in securing appropriate funding poses a further risk, stilting meaningful progression in the development of effective evidence based treatments. Increasing awareness of how EDs impact and present in other groups could challenge assumptions that have prevented more research into EDs who do not fit stereotypical conceptualisations.

Diversity issues in eating disorder research

Significant gaps exist in ED research with regards to diversity (Halbeisen et al., 2022). Much of the available literature focuses on white, young, cisgender women, which stems from early conceptualisations of EDs (Mitchison et al., 2014). Little attention is given to other genders, ethnicities and those who are neurodiverse, with even less focus on intersectionality. This is despite evidence that EDs can impact anyone and significant social inequalities in terms of ED risk have been illustrated (Burnette et al., 2022). Research shows that marginalised communities are significantly impacted by EDs (Cheng et al., 2019) and in some cases may be disproportionally affected (Burnette et al., 2022). Additionally, societal perceptions of EDs as a ‘ women’s disease’ and an ‘choice’ make it difficult to garner widespread support for funding, particularly when the current dominant ideology values individual responsibility (Pirie, 2016). In a society that is systemically misogynistic and heteronormative, encouraging policy makers to increase research funding in areas that are marginalised and devalued is increasingly difficult and may be one factor that affects ED funding. Furthermore, within the minimal research budget EDs receive, much of the research conducted focuses on white females, possibly as a result of existing stereotypes. This perpetuates current conceptualisations and prevents us from developing better conceptualisations of how EDs impact other groups and how effective current treatments are for marginalised populations.

This section will attempt to describe the landscape of diversity in ED research.

Age

Stereotypical narratives of EDs suggest that they largely impact young people (O’Hara & Smith, 2007). However, recent literature demonstrates that prevalence of EDs are increasing among middle aged and older populations (Mitchison et al., 2014). Research also suggests that body dissatisfaction, a known risk factor for EDs, is commonplace across the lifespan (Grogan, 2017). Despite this, ED research largely focuses on younger populations, limiting our understanding of how EDs present in middle aged and older adults. Samuels et al. (2019) argued that ED presentations in middle aged women may differ from younger women in various ways, including physical comorbidities and age-related anxieties such as menopause. Evidence also suggests that EDs occur in middle aged and older men, however may be difficult to identify, as common measurement tools may not be appropriate to capture their experience (Mangweth-Matzek et al., 2016). The presence of EDs in older adults and differences in how they present demonstrate a need to focus research efforts in this area.

Socioeconomic status

Socioeconomic status (SES) is considered a primary social determinant of health (Burnette et al., 2022). A common perception of EDs is that they largely impact 'upper class, white women' (Mitchison et al., 2014) suggesting that those higher in SES are more at risk. However, EDs are increasing in prevalence across lower SES groups (Mitchison et al., 2014) with some research suggesting that prevalence is comparable across all SES (Radunz et al., 2021). Despite this, it has been difficult to deduce how low SES groups are impacted by EDs due to lack of research, potentially related to long held beliefs about EDs and high SES (Burke et al., 2023). This creates significant barriers in terms of identification and access to treatment (Huryk et al., 2021) for example through low help seeking (Radunz et al., 2021).

Gender and sexuality

EDs in men have been increasing since the 1990s at a faster rate than in women, however this is not reflected in research (Laskowski et al., 2023). Some research on EDs in men has highlighted differences in how they present, for example weight histories and specific weight and body concerns (Strother et al., 2012). Malova and Dunleavy (2022), found that the triggers for EDs in men were likely to centre around unsatisfactory personal relationships and social anxiety as opposed to body dissatisfaction. They also observed differences in preoccupation with control, availability of support resources and attitudes towards treatment. Additionally, they identified doctors were less likely to diagnose men with an ED, despite demonstrating behaviours associated with them. Men may also be disadvantaged as evidence suggests that current ED understandings and treatment options are heavily focused on women and women's bodies, for example focusing on the menstrual cycle and fertility (Sangha et al., 2019). Amenorrhea was only removed from the criteria for AN in the DSM-V in 2013, which further demonstrates this (Dahlgren et al., 2017).

When considering gender diversity in EDs, it is also crucial to consider the whole spectrum of gender identities which, similarly to men, are often overlooked. Part of the reason for this can be attributed to the way in which many studies report on gender, often conflating biological sex and gender identity, meaning participants can only identify as male or female within the cisgender binary (Burnette et al., 2022). Some recent research has begun reporting other genders, such as a non-binary identity (Vartanian et al., 2023). However, this is currently the exception. Evidence suggests that gender diverse populations are at greater risk of developing an ED, and their experiences may differ from cisgender individuals as a result of complex body image difficulties related to their gender identity (Nagata et al., 2020). Gender diverse individuals often experience systemic discrimination which can impact on their mental health and access to appropriate gender affirming care (McGregor et al., 2023) EDs may be understood in this context as a response to manage the impact of these difficult experiences. Furthermore, gender diverse individuals may be more likely to experience ED treatment negatively through being misgendered, having their gender identity ignored or lack of understanding from clinicians (Hartman-Munick et al., 2021). Moreover, stereotypes around EDs mean females are more likely to access services (Ulla & Kate, 2014) and therefore be more prevalent in research. Research then reinforces current stereotypes and conceptualisations of EDs (Sangha et al., 2019) causing the ED paradigm to become feminised, thus neglecting how EDs present in other genders.

Sexual minority groups are also thought to be at greater risk of EDs and may present differently to heterosexual peers (Burnette et al., 2022). This could be understood using the minority stress model (Nagata et al., 2020) which proposes that minority groups are more likely to develop mental health difficulties as a result of systemic oppression and discrimination. Parker and Harriger (2020) demonstrate that sexual minority groups may internalise appearance ideals related to their sexual identity, contributing to body dissatisfaction and disordered eating or exercise behaviour. They report that each subgroup of sexual and gender minorities have unique risk factors depending on their specific experiences of oppression.

Race and ethnicity

The perception that EDs predominantly affect white women has been challenged in recent years (Mitchison et al., 2014). Detailed ethnicity data in ED research is increasingly being reported, however a significant proportion of ED literature still omits race and ethnicity data or reports only on ‘white’ and ‘non-white’ or ‘minority’ data (Burnette et al., 2022). This creates a reductionist view of racially minoritised groups and their experience of EDs Grouping in this way means any nuance between these groups is lost in the data. This is concerning when considering that research suggests significant differences in how ethnic groups experience EDs (Rodgers et al., 2018). Moreover, this grouping strategy perpetuates a narrative of white normativity, where white is considered ‘standard’. Studies which report race and ethnicity data often demonstrate majority white samples (Egbert et al., 2022) making it difficult to explore differences in a meaningful way.

Autism

Literature highlights a significant overlap between AN and Autism Spectrum Condition (ASC), with some studies suggesting 20% - 30% of women accessing treatment for AN meet the diagnostic criteria for ASC (Boltri & Sapuppo, 2021). AN and ASC share some common features, such as restrictive eating, cognitive rigidity and social difficulties (Kinnaird & Tchanturia, 2021) which may partially explain their common comorbidity. The effects of starvation in AN may result in similar presentations to ASC (Boltri & Sapuppo, 2021) highlighting the importance of distinguishing between them. Those with ASC and AN often experience poorer treatment outcomes, potentially due to lack of adapted treatment methods (Kinnaird & Tchanturia, 2021). Additionally, some research indicates the way individuals with ASC experience AN differs from their neurotypical counterparts. Brede et al. (2020) highlight that for women with ASC, their experience of AN is often entwined with their autistic traits, such as sensory sensitivities, thinking styles, sense of identity and emotional and social processing. This suggests that the mechanisms by which AN develops in people with ASC may differ to those who are neurotypical. Consequently, current treatment options of EDs may not be suitable for those with ASC. This is demonstrated by Babb et al. (2022) who highlight that autistic traits are related to longer duration, and those with ASC reported finding current ED treatment options less beneficial.

Intersectionality

Intersectionality refers to the inter-connected way that systems of inequality may operate for individuals who occupy multiple marginalised identities (Beccia et al., 2021). Goel et al. (2022) offer an explanation for the disparity in ED research, arguing that dominant cultures conduct and participate in research, and therefore knowledge and understanding of EDs and how to treat them is confined to the views of one group. Marginalised groups discussed in this paper have been historically omitted from the picture, meaning interventions may not address the needs of other groups. This is pertinent when considering how intersectionality operates and how many experience systemic oppression, and therefore poorer mental health. An intersectional approach to ED research is needed to recognise how high risk identities interact and contribute to the experience of EDs as a result of structural inequality (Burke et al., 2020).

Diversity issues in the current thesis

During the process of writing this thesis, I was surprised at the homogeneity of the participant samples in chapter one, and my own recruited sample in chapter two. In chapter one, white, female participants and those with higher educational attainment were overrepresented. Contrastingly, participants of African and Caribbean heritage and those who are gender diverse were the most underrepresented across all samples. Sexual orientation was not reported in any of the studies. Of the 17 studies, 13 were conducted in western countries, seven did not report ethnicity data, two reported on nationality but not ethnicity, meaning only eight of the 17 studies reported ethnicity data. Of those, all were conducted in western countries. Most studies reported a large proportion of white participants compared to other ethnicities, with the exception of two studies, which reported comparable numbers of white and Asian participants, although they were not more specific with this data. Two studies reported on diverse genders, although the percentage was small. Additionally, the mean age range across the full sample was 13.44 – 26.33. The omissions and gaps in sociodemographic data in the studies in chapter one demonstrates a lack of diversity in body image research.

Similarly, in chapter two, I highlight the homogeneity of my participant sample. Similar to the samples seen in Chapter one, chapter two saw an overrepresentation of white, female and highly educated participants, with participants who are gender diverse or of African or Caribbean heritage being the least represented. Comparatively, 41.4% of this sample identified as belonging to a sexual minority group, indicting the sample was more representative with regards to sexuality. The lack of representation in this participant sample meant that it was not feasible to make group comparisons, or successfully investigate any socio-demographic characteristics as confounding variables. This is an important limitation of my own study, and many studies investigating EDs, given that literature has demonstrated that many demographic variables collected have an impact on experiences of EDs (Halbeisen et al., 2022).

Final Comments

Funding and diversity in ED research are key issues which impact access to appropriate, evidence based treatment. Recent attempts to diversify the literature demonstrate unique experiences of EDs which differ to common understandings, suggesting the way we currently view EDs is not representative. Stigma and inequalities in diagnosis and access to treatment further demonstrate the need for meaningful investment in this area. Halbeisen et al. (2022) demonstrate positive steps in to explore and address gaps in knowledge, and how this can inform clinical practice. It is clear that issues of inclusivity within research need to be addressed to understand the mechanisms by which EDs develop and are maintained in biological, cognitive, psychological and social contexts. Failing to make genuine and consistent efforts to understand the experience of EDs in marginalised groups impacts access to effective support and treatment and contributes to stigma. The trivialisation of EDs through myths of personal responsibility or ‘attention seeking’ (Easter, 2012) dismisses the painful experiences of people affected. This paper has demonstrated some areas where efforts are being made to acknowledge and increase diversity in ED research, which will hopefully increase and lead to positive outcomes for those affected.

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Chapter Four: Ethics Application

Ethics Application

Total word count: 5978

Vicky Barnett

Doctorate in Clinical Psychology

Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT

v.barnett@lancaster.ac.uk

Welcome to the Integrated Research Application System

IRAS Project Filter

The integrated dataset required for your project will be created from the answers you give to the following questions. The system will generate only those questions and sections which (a) apply to your study type and (b) are required by the bodies reviewing your study. Please ensure you answer all the questions before proceeding with your applications.

Please complete the questions in order. If you change the response to a question, please select 'Save' and review all the questions as your change may have affected subsequent questions.

Please enter a short title for this project (maximum 70 characters)
Can self-concept clarity enhance understanding of eating disorders 0.1

1. Is your project research?

● Yes ○ No

2. Select one category from the list below:

○ Ionising Radiation for combined review of clinical trial of an investigational medicinal product

○ Ionising Radiation and Devices form for combined review of combined trial of an investigational medicinal product and an investigational medical device

○ Clinical investigation or other study of a medical device

○ Other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice

○ Basic science study involving procedures with human participants

● Study administering questionnaires/interviews for quantitative analysis, or using mixed quantitative/qualitative methodology

○ Study involving qualitative methods only

○ Study limited to working with human tissue samples (or other human biological samples) and data (specific project only)

○ Study limited to working with data (specific project only)

○ Research tissue bank

○ Research database

If your work does not fit any of these categories, select the option below:

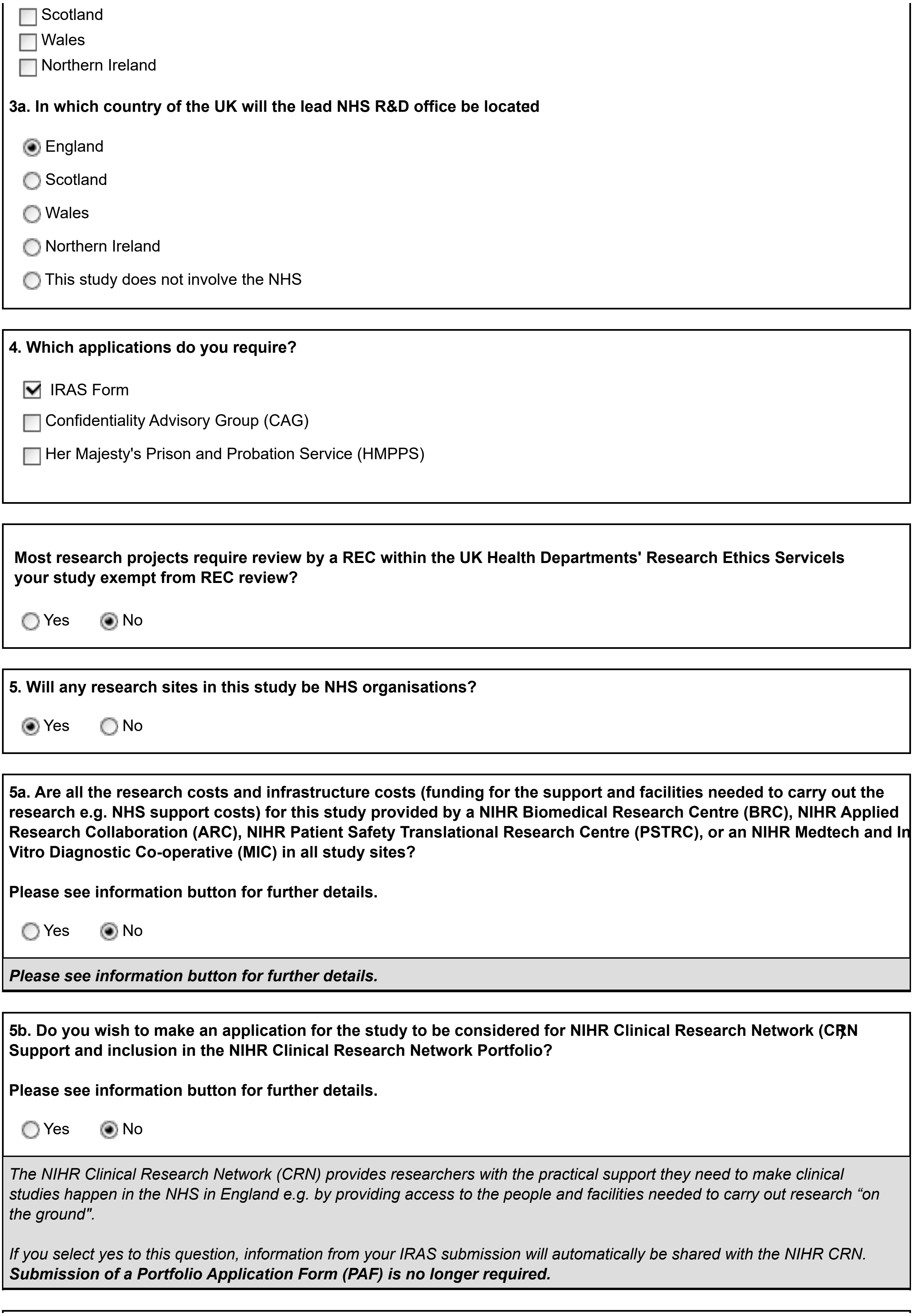
○ Other study

2a. Please answer the following question(s):

a) Does the study involve the use of any ionising radiation?	○ Yes	● No
b) Will you be taking new human tissue samples (or other human biological samples)?	○ Yes	● No
c) Will you be using existing human tissue samples (or other human biological samples)?	○ Yes	● No

3. In which countries of the UK will the research sites be located? *(Tick all that apply)*

☑ England



☐ Scotland
☐ Wales
☐ Northern Ireland

3a. In which country of the UK will the lead NHS R&D office be located

● England
○ Scotland
○ Wales
○ Northern Ireland
○ This study does not involve the NHS

4. Which applications do you require?

☑ IRAS Form
☐ Confidentiality Advisory Group (CAG)
☐ Her Majesty's Prison and Probation Service (HMPPS)

Most research projects require review by a REC within the UK Health Departments' Research Ethics Servicels your study exempt from REC review?

○ Yes ● No

5. Will any research sites in this study be NHS organisations?

● Yes ○ No

5a. Are all the research costs and infrastructure costs (funding for the support and facilities needed to carry out the research e.g. NHS support costs) for this study provided by a NIHR Biomedical Research Centre (BRC), NIHR Applied Research Collaboration (ARC), NIHR Patient Safety Translational Research Centre (PSTRC), or an NIHR Medtech and In Vitro Diagnostic Co-operative (MIC) in all study sites?

Please see information button for further details.

○ Yes ● No

Please see information button for further details.

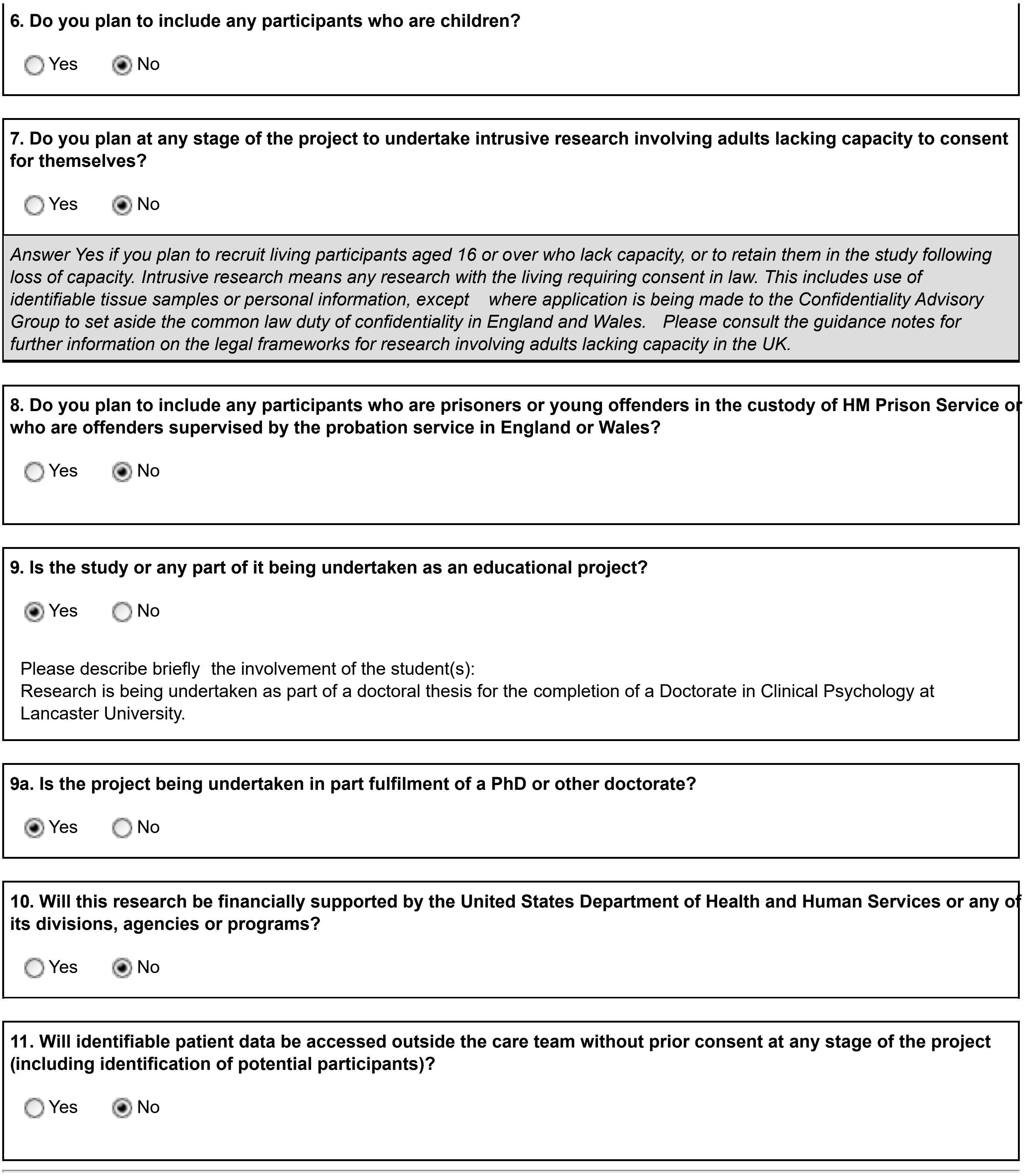
5b. Do you wish to make an application for the study to be considered for NIHR Clinical Research Network (CRN Support and inclusion in the NIHR Clinical Research Network Portfolio?

Please see information button for further details.

○ Yes ● No

The NIHR Clinical Research Network (CRN) provides researchers with the practical support they need to make clinical studies happen in the NHS in England e.g. by providing access to the people and facilities needed to carry out research “on the ground".

If you select yes to this question, information from your IRAS submission will automatically be shared with the NIHR CRN. ***Submission of a Portfolio Application Form (PAF) is no longer required.***



6. Do you plan to include any participants who are children?

○ Yes ● No

7. Do you plan at any stage of the project to undertake intrusive research involving adults lacking capacity to consent for themselves?

○ Yes ● No

Answer Yes if you plan to recruit living participants aged 16 or over who lack capacity, or to retain them in the study following loss of capacity. Intrusive research means any research with the living requiring consent in law. This includes use of identifiable tissue samples or personal information, except where application is being made to the Confidentiality Advisory Group to set aside the common law duty of confidentiality in England and Wales. Please consult the guidance notes for further information on the legal frameworks for research involving adults lacking capacity in the UK.

8. Do you plan to include any participants who are prisoners or young offenders in the custody of HM Prison Service or who are offenders supervised by the probation service in England or Wales?

○ Yes ● No

9. Is the study or any part of it being undertaken as an educational project?

● Yes ○ No

Please describe briefly the involvement of the student(s):
Research is being undertaken as part of a doctoral thesis for the completion of a Doctorate in Clinical Psychology at Lancaster University.

9a. Is the project being undertaken in part fulfilment of a PhD or other doctorate?

● Yes ○ No

10. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs?

○ Yes ● No

11. Will identifiable patient data be accessed outside the care team without prior consent at any stage of the project (including identification of potential participants)?

○ Yes ● No

Integrated Research Application System
Application Form for Research administering questionnaires/interviews for quantitative analysis or mixed methodology study

IRAS Form (project information)

Please refer to the E-Submission and Checklist tabs for instructions on submitting this application.

The Chief Investigator should complete this form. Guidance on the questions is available wherever you see this symbol displayed. We recommend reading the guidance first. The complete guidance and a glossary are available by selecting Help.

Please define any terms or acronyms that might not be familiar to lay reviewers of the application.

Short title and version number:(maximum 70 characters - this will be inserted as header on all forms)
Can self-concept clarity enhance understanding of eating disorders 0.1

Please complete these details after you have booked the REC application for review.

REC Name:

REC Reference Number: **Submission date:**

PART A: Core study information

1. ADMINISTRATIVE DETAILS

A1. Full title of the research:

Is Self-concept clarity a mediating factor between body image dissatisfaction and restrictive eating disorder symptomology?

A2-1. Educational projects

Name and contact details of student(s):

Student 1

	Title	Forename/Initials	Surname
		Vicky	Barnett

Address Lancaster University
Division of Health and Medicine

Post Code
E-mail v.barnett@lancaster.ac.uk
Telephone 07531355580
Fax

Give details of the educational course or degree for which this research is being undertaken:

Name and level of course/ degree:

Doctorate in Clinical Psychology

Name of educational establishment:
Lancaster University

Name and contact details of academic supervisor(s):

Academic supervisor 1

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood
Address	Division of Health Research Health Innovation One, Sir John Fisher Drive Lancaster University, Lancaster		
Post Code	LA1 4AT		
E-mail	b.sellwood@lancaster.ac.uk		
Telephone	01524593998		
Fax			

Please state which academic supervisor(s) has responsibility for which student(s):
Please click "Save now" before completing this table. This will ensure that all of the student and academic supervisor details are shown correctly.

Student(s)	**Academic supervisor(s)**
Student 1 Vicky Barnett	☑ Professor Bill Sellwood

A copy of a current CV for the student and the academic supervisor (maximum 2 pages of A4) must be submitted with the application.

A2-2. Who will act as Chief Investigator for this study?

○ Student
● Academic supervisor
○ Other

A3-1. Chief Investigator:

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood
Post	Professor of Clinical Psychology		
Qualifications	BSc, MSc, PhD		
ORCID ID	0000 0001 8260 9503		
Employer	Lancaster University		
Work Address	Division of Health Research Health Innovation One, Sir John Fisher Drive Lancaster, Lancashire		
Post Code	LA1 4AT		
Work E-mail	b.sellwood@lancaster.ac.uk		
* Personal E-mail			

Work Telephone	01524593998
* Personal Telephone/Mobile	
Fax	

** This information is optional. It will not be placed in the public domain or disclosed to any other third party without prior consent.*
A copy of a current CV (maximum 2 pages of A4) for the Chief Investigator must be submitted with the application.

A4. Who is the contact on behalf of the sponsor for all correspondence relating to applications for this project?
This contact will receive copies of all correspondence from REC and HRA/R&D reviewers that is sent to the CI.

	Title	Forename/Initials	Surname
	Ms	Becky	Gordon

Address	Head of Research Quality and Policy Lancaster University
Post Code	LA1 1AT
E-mail	sponsorship@lancaster.ac.uk
Telephone	0
Fax	0

A5-1. Research reference numbers. *Please give any relevant references for your study:*

Applicant's/organisation's own reference number, e.g. R & D (if available):	X661
Sponsor's/protocol number:	NA
Protocol Version:	0.5
Protocol Date:	07/12/2022
Funder's reference number (enter the reference number or state not applicable):	N/A
Project website:	N/A

Additional reference number(s):

Ref.Number Description	Reference Number
N/A	N/A

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you have registered your study please give details in the "Additional reference number(s)" section.

A5-2. Is this application linked to a previous study or another current application?

○ Yes ● No

Please give brief details and reference numbers.

2. OVERVIEW OF THE RESEARCH

To provide all the information required by review bodies and research information systems, we ask a number of specific questions. This section invites you to give an overview using language comprehensible to lay reviewers and

members of the public. Please read the guidance notes for advice on this section.

A6-1. Summary of the study. *Please provide a brief summary of the research (maximum 300 words) using language easily understood by lay reviewers and members of the public. Where the research is reviewed by a REC within the UK Health Departments' Research Ethics Service, this summary will be published on the Health Research Authority (HRA) website following the ethical review. Please refer to the question specific guidance for this question.*

This study will investigate the relationships between experiences of body image dissatisfaction and restrictive eating disorder symptoms. It will explore whether or not a person's understanding of who they are, their beliefs and values (also known as Self-concept clarity or SCC), influences the likelihood that body image dissatisfaction will lead to the development of restrictive eating disorder symptoms. Eating disorders are among the most persistent and chronic mental health difficulties, characterised by a fixation with body shape, weight and disordered eating behaviour to achieve the desired body shape or to cope with difficult situations or feelings. The emotional and physical consequences of these beliefs and behaviours maintain these unhelpful patterns and result in a high mortality rate from malnutrition, suicide and physical issues. Body image dissatisfaction is a common experience, and self-concept clarity might influence how or if being dissatisfied with one's body leads to beliefs and behaviours thought to be indicative of an eating disorder.

Eligible participants are adults who self-identify as having a restrictive eating disorder. The study will recruit participants from [redacted] Eating disorder services. Clinicians within the services will ask clients if they are interested in participating in the research, and clients who have been assessed and are currently on the treatment waiting list, will also be sent information about the study via letter or email. The study will also recruit via Twitter, Reddit and with permission, online support platforms and forums.

Data collected will be used to explore the relationships between body image dissatisfaction, the development of restrictive eating disorder symptoms and whether or not self-concept clarity influences this. Should self-concept clarity be found to influence this relationship, it could have meaningful implications for psychological interventions which focus on increasing self-concept clarity in people with restrictive eating disorders.

A6-2. Summary of main issues. *Please summarise the main ethical, legal, or management issues arising from your study and say how you have addressed them.*

Not all studies raise significant issues. Some studies may have straightforward ethical or other issues that can be identified and managed routinely. Others may present significant issues requiring further consideration by a REC, HRA, or other review body (as appropriate to the issue). Studies that present a minimal risk to participants may raise complex organisational or legal issues. You should try to consider all the types of issues that the different reviewers may need to consider.

The current design of the study will rely on support from [redacted] and its eating disorder services. Lead psychologists in two of these services have agreed to support the facilitation and dissemination of the study via information leaflets with QR codes which will take participants to an online platform to complete the study. It is hoped that the study will not have a significant impact on the workloads of staff in these services; however there is a small chance that service users may seek additional support after completing the study. Therefore, the service and researchers will liaise to ensure that any additional support required after completion of the study will be accessible and signposted through the participant information sheet and debrief.

The design requires a large number of respondents and will partially recruit from a clinical sample of participants who are open to eating disorder services in [redacted] Because this sample will be currently experiencing mental health difficulties, it may reduce their motivation to take part in the study. I will address this by recruiting from different sources to increase the likelihood of achieving the required participant sample size. The study's multiple recruitment strategies mean that it may capture data from individuals who may be impacted by an eating disorder but are not in any form of treatment. The information sheet and debrief will highlight support systems, such as online resources, the participant's GP or access to third party services such as Samaritans.

Some of the questions that participants will be asked to contain sensitive information and could cause them distress. Participants will be asked questions regarding aspects of their `zaseating behaviour and relationship with food and body image, and the impact this has on their life and functioning. I plan to address these issues by ensuring that the participant information sheet includes an explanation of the types of questions that will be asked in the questionnaires, so people have an idea of what the study entails. This enhances participant understanding of what to expect from the study so that they are able to make an informed decision about taking part. Participants will be offered the email address of the researcher so that they can ask questions about the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress and will be directed immediately to the debrief sheet, which contains information on support services that they can contact.

Participants will be advised in the initial information sheet that they can withdraw at any time during participation and can request to have their data removed, which will not impact the support they receive from services. Participants will be asked to share some demographic data such as age and gender but will be not asked for identifiers such as their names. Because the data are not attributable to participants, it may not be possible to withdraw data after the participant has completed the questionnaires. The debrief information sheet can be accessed at any point during the study if participants choose to withdraw before completion. All collected data are anonymised and individual consent is gained from each participant.

☐ 3. PURPOSE AND DESIGN OF THE RESEARCH

A7. Select the appropriate methodology description for this research. *Please tick all that apply*:

- ☐ Case series/ case note review
- ☐ Case control
- ☐ Cohort observation
- ☐ Controlled trial without randomisation

☑ Cross-sectional study

- ☐ Database analysis
- ☐ Epidemiology
- ☐ Feasibility/ pilot study
- ☐ Laboratory study
- ☐ Metanalysis
- ☐ Qualitative research

☑ Questionnaire, interview or observation study

- ☐ Randomised controlled trial
- ☐ Other (please specify)

A10. What is the principal research question/objective? *Please put this in language comprehensible to a lay person.*

This study aims to explore the relationship between body image dissatisfaction and the presence of restrictive eating disorder symptoms. It will explore whether or not a person's understanding of who they are (also known as Self-concept clarity), influences the relationship between body image dissatisfaction and the presence of restrictive eating disorder symptoms. If self-concept clarity is found to influence this relationship, the study will aim to explore the extent to which this influence is present.

Questionnaires will collect information about the participant's background, such as age, gender, self-concept clarity, body image dissatisfaction and presence and severity of eating disorder symptoms.

A11. What are the secondary research questions/objectives if applicable? *Please put this in language comprehensible to a lay person.*

NA

A12. What is the scientific justification for the research? *Please put this in language comprehensible to a lay person.*

Self-concept clarity is the "extent to which a person's beliefs about themselves are clearly and confidently defined, internally consistent, and stable," (Campbell et al., 1996). People with lower self-concept clarity are more vulnerable to experiencing difficulties with their mental health, such as anxiety, depression and neuroticism (Surdey, 2016) personality disorders (Cohen, Leibu, Tanis, Ardalan, & Galynker, 2016), paranoia (de Sousa, Sellwood, Spray,

Fernyhough, & Bentall, 2016) and psychosis (Evans et al., 2015). In contrast, people with high self-concept clarity often experience better psychological wellbeing (Chiu, Chang, & Hui, 2017). Self-concept clarity describes how and why the structure of identity develops, and how it may impact psychological wellbeing. As high SCC is correlated with more positive mental health outcomes, it could play a mediating role between other risk factors and the onset of mental health problems (e.g., Evans et al., 2015).

Identity is thought to be a significant factor in eating disorders, (Stice, et al 1994), (Potterson et al., 2021), and research indicates that body image dissatisfaction is the best-known contributor to the development of anorexia nervosa and bulimia nervosa (Stice & Shaw, 2002). However, EDs are being under researched and receive little funding comparably to other mental health difficulties, therefore we still have a lot to understand around eating difficulties and what helps people recover (BEAT 2021). Current psychological interventions for eating disorders have been shown to have limited success in treating eating disorders, even for specific psychological treatments recommended by international clinical guidelines (Solmiet al.'s (2021). These persistent trends have prompted close consideration of underlying contributing factors. Given that eating disorders have been shown to have strong links to identity formation (Bardone-Cone, Thompson, & Miller, 2018), this may illustrate that current psychological therapies could be missing important aspects of how eating disorders develop. Though there are several identity constructs which could be explored, Self-concept clarity is the only one that describes how and why the structure of identity develops, and how it may impact psychological wellbeing. This suggests there is a need for eating disorders to be investigated to see if self- concept clarity influences the likelihood of developing an eating disorder, particularly if they are dissatisfied with their body image.

If a link is found between body image dissatisfaction, self-concept clarity and eating disorders, it could have implications for therapy that supports people who experience them. The more we understand about self-concept clarity and its links to eating disorders, the more person-centred and well-informed interventions can be developed to match individual needs. Some people might benefit from interventions that focus on improving self- concept clarity to help improve resilience and emotional wellbeing, which in theory could improve their ED presentation and enhance their quality of life.

This research aims to bridge the gap between our understanding of body image dissatisfaction, eating disorders and its relationship with self-concept clarity. It will follow similar procedures to those utilised in previous research into self-concept clarity by making use of questionnaires. It will also be used in a clinical setting and additionally aim to target those who experience an eating disorder who are not connected to the healthcare system. The aim of this to capture a rich data set that does not exclude those who are not currently seeking active treatment.

The current study intends to fulfil its aim of examining the relationships between eating disorders, body image dissatisfaction and self-concept clarity by using questionnaires that specifically identify the salience of these factors.

A13. Please summarise your design and methodology. *It should be clear exactly what will happen to the research participant, how many times and in what order. Please complete this section in language comprehensible to the lay person. Do not simply reproduce or refer to the protocol. Further guidance is available in the guidance notes.*

Service users from [redacted] Eating disorder services will be contacted to notify them of the opportunity to take part in the current research. Clinicians in the service will identify those who may be suitable for the study, from the information gathered during assessment and therapy. Service users who have been assessed and accepted into the service and are currently on the treatment waiting list, will also be contacted by their preferred method. QR codes will be provided to access the study online. Participants will also be recruited via online platforms Twitter and Reddit, to recruit participants who are experiencing a restrictive eating disorder but may not be currently accessing treatment. In all recruitment strategies, it will be highlighted in the information that their participation is completely optional and will not impact on their treatment in any way.

On Qualtrics, the participants will be presented with the information sheet and consent forms prior to participating.

They can decline to take part at this point or disengage at any time.

The participants will be presented with questionnaires one at a time. Once they have filled in all of the questionnaires, they will be presented with a debrief, including a brief explanation of the study, resources for support and the contact details of the researchers, should they wish to get in touch. They will not routinely be contacted following completion of the questionnaires.

The study hypothesises that:

- High body image dissatisfaction will be associated with a higher level of eating disorder symptoms.
- That reduced self-concept clarity will be associated with higher instances of eating disorder symptoms.
- That high self-concept clarity will mediate the relationship between high body image dissatisfaction and eating disorder symptoms.

The design of this study has been chosen to increase accessibility, as participants are not required to travel to a site to take part. Furthermore, it is hoped that the online method of data collection will limit time and energy costs to the participant as travel to a site will not be necessary. The research aims to recruit a minimum sample size of 115.

A14-1. In which aspects of the research process have you actively involved, or will you involve, patients, service users, and/or their carers, or members of the public?

☑ Design of the research

☐ Management of the research

☑ Undertaking the research
☐ Analysis of results
☑ Dissemination of findings
☐ None of the above

Give details of involvement, or if none please justify the absence of involvement.
The field supervisor works as a clinical psychologist and clinical lead within the eating disorder service at [redacted]
[redacted] which is supporting the study. He has been able to advise on clinical elements of
the study.
The field supervisor has taken the study brief and materials to a group of experts by experience within the supporting trust, where the clients have provided feedback on the study aims and materials. Some adjustments to the proposed materials have been made as a result of this feedback.

Within the study, participants will have an option to provide their email addresses to receive information on the outcome and findings of the study.

4. RISKS AND ETHICAL ISSUES

RESEARCH PARTICIPANTS

A15. What is the sample group or cohort to be studied in this research?

Select all that apply:

☐ Blood
☐ Cancer
☐ Cardiovascular
☐ Congenital Disorders
☐ Dementias and Neurodegenerative Diseases
☐ Diabetes
☐ Ear
☐ Eye
☐ Generic Health Relevance
☐ Infection
☐ Inflammatory and Immune System
☐ Injuries and Accidents
☑ Mental Health
☐ Metabolic and Endocrine
☐ Musculoskeletal
☐ Neurological
☐ Oral and Gastrointestinal
☐ Paediatrics
☐ Renal and Urogenital
☐ Reproductive Health and Childbirth
☐ Respiratory
☐ Skin
☐ Stroke

Gender: Male and female participants Lower age limit: 18 Years

Upper age limit: No upper age limit

A17-1. Please list the principal inclusion criteria (list the most important, max 5000 characters).

To be eligible, participants must be 18 or over. Participants must self-identify as currently experiencing a restrictive eating disorder. Participants do not have to be accessing treatment for an eating disorder to be eligible, nor do they need to have received a diagnosis of an eating disorder from a mental health professional.

A17-2. Please list the principal exclusion criteria (list the most important, max 5000 characters).

Those who are unable to read study materials and answer questions in English, as translation is not available. Those who do not identify as currently experiencing a restrictive eating disorder. Another specific exclusion criterion for this study is those who have a diagnosis of Avoidant/restrictive food intake disorder, (ARFID), as the aetiology, symptomology, maintaining factors and treatment pathways are different to other restrictive eating disorders (Thomas et al., 2017).

☐ RESEARCH PROCEDURES, RISKS AND BENEFITS

A18. Give details of all non-clinical intervention(s) or procedure(s) that will be received by participants as part of the research protocol. *These include seeking consent, interviews, non-clinical observations and use of questionnaires.*

Please complete the columns for each intervention/procedure as follows:

1. Total number of interventions/procedures to be received by each participant as part of the research protocol.
2. If this intervention/procedure would be routinely given to participants as part of their care outside the research, how many of the total would be routine?
3. Average time taken per intervention/procedure (minutes, hours or days)
4. Details of who will conduct the intervention/procedure, and where it will take place.

Intervention or procedure	1	2	3	4
Demographic Questionnaire	1	0	5 minutes	Completed online
Eating Disorder Examination Questionnaire - Short version (EDE-QS)	1	0	5 minutes	Completed online
Self-Concept Clarity Scale (SCCS)	1	0	5 minutes	Completed online
Body Appreciation Scale-2 (BAS-2)	1	0	5 minutes	Completed online

A21. How long do you expect each participant to be in the study in total?

It is anticipated that each participant will spend approximately 20 minutes completing all the questionnaires. This can range from 15-25 minutes.

A22. What are the potential risks and burdens for research participants and how will you minimise them?

For all studies, describe any potential adverse effects, pain, discomfort, distress, intrusion, inconvenience or changes to lifestyle. Only describe risks or burdens that could occur as a result of participation in the research. Say what steps would be taken to minimise risks and burdens as far as possible.

Some information elicited by questionnaires, is sensitive in nature and may cause distress for the participant as they ask about specific beliefs, attitudes and behaviours relating to the experience of a restrictive eating disorder and body image dissatisfaction. Participants will receive information about the nature of the questions asked in the study, including sample questions, so they have an understanding of what to expect if they proceed. The debrief will also contain information about support available should participants feel distressed during the study. Participants will be advised that should they become distressed, they can stop engaging with the study at any time, with no consequence to themselves or their treatment if this is applicable to them.

The time burden may be a challenge for participants. To minimise this risk, participants will be made aware of the estimated completion time in the patient information sheet. Participants are able to discontinue the study at any time without having to provide a reason.

The researcher's email address will be provided in the patient information sheet, to allow participants to ask questions to raise concerns prior to taking part.

A23. Will interviews/ questionnaires or group discussions include topics that might be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could occur during the study?

● Yes ○ No

If Yes, please give details of procedures in place to deal with these issues:

Some information elicited by questionnaires is sensitive in nature and may cause distress for the participant. Participants will receive information about the nature of the questions asked in the study, so they have an understanding of what to expect if they proceed. They will also receive details of support available to them in the debrief, which they will be directed to at the end of the study. There will also be an option to end participation early in the form of a button that will direct participants to the debrief without having to respond to any more of the questions.

Participants will be made aware that they can leave the study at any time.

The researcher's email address will be provided in the patient information sheet, to allow participants to raise questions or concerns before deciding to take part.

A24. What is the potential for benefit to research participants?

Although there are no specific benefits for the participant, sharing experiences will help to enhance the researcher's understanding of the relationship between self-concept clarity, and restrictive eating disorders. It is hoped that this will help inform and improve mental health support and interventions for those who may be experiencing a restrictive eating disorder.

A26. What are the potential risks for the researchers themselves? *(if any)*

The researcher will not have any direct contact with service users, but it is likely that participants will report aspects of mental health difficulties relating to an eating disorder. The researcher will be able to utilise supervision for support around this if needed.

☐ RECRUITMENT AND INFORMED CONSENT

In this section we ask you to describe the recruitment procedures for the study. Please give separate details for

different study groups where appropriate.

A27-1. How will potential participants, records or samples be identified? Who will carry this out and what resources will be used? *For example, identification may involve a disease register, computerised search of GP records, or review of medical records. Indicate whether this will be done by the direct healthcare team or by researchers acting under arrangements with the responsible care organisation(s).*

Potential participants will be identified by clinicians within the eating disorder teams in [redacted]. Service users will be approached by staff and given information about the study in the form of leaflets and posters which have a QR code that gives them access to the study online should they wish to take part. Service users who have been accepted into the service but are on the waiting list will also be approached using their preferred method (post or email), where a leaflet and poster will be sent containing a QR code or weblink to the online study. Participants can then choose if they wish to take part. It will be made clear that their choice of whether or not to take part will not impact their treatment or care in any way.

Potential participants will also be identified via social media platforms Facebook, Twitter, and Reddit, where posters and leaflets will be posted on relevant forums with a link to the study online should people wish to take part.

A27-2. Will the identification of potential participants involve reviewing or screening the identifiable personal information of patients, service users or any other person?

● Yes ○ No

Please give details below:

For potential participants identified within NHS services, will be those under the care of the service currently, and their details would be accessible to relevant service staff in terms of delivering care. potential participants will be notified of the research by staff involved in their care and asked if they wish to know more information. If they do, advertising materials will be provided. If they do not wish to know more, materials will not be provided. Only those involved in their care would access the files, and no non-NHS research staff will be able to access them. Potential participants on the service waiting lists, they will only be notified of the research if they have given permission to be contacted.

A27-3. Describe what measures will be taken to ensure there is no breach of any duty of confidentiality owed to patients, service users or any other person in the process of identifying potential participants. *Indicate what steps have been or will be taken to inform patients and service users of the potential use of their records for this purpose. Describe the arrangements to ensure that the wishes of patients and service users regarding access to their records are respected. Please consult the guidance notes on this topic.*

Only staff members involved in the clinical team of potential participants will have access to identifiable information which is already accessible to them.

A27-4. Will researchers or individuals other than the direct care team have access to identifiable personal information of any potential participants?

○ Yes ● No

A28. Will any participants be recruited by publicity through posters, leaflets, adverts or websites?

● Yes ○ No

If Yes, please give details of how and where publicity will be conducted, and enclose copy of all advertising material (with version numbers and dates).

One recruitment strategy is to advertise the study publicly on Facebook, Twitter, and Reddit. Posters and leaflets will be posted on relevant forums with a link to the study online should people wish to take part.

A29. How and by whom will potential participants first be approached?

Participants will be approached directly either via email, post or face to face by the eating disorders services that are supporting with the facilitation of the study. At no point will the researcher approach individuals, however researcher contact information will be available should participants wish to get in touch. Although members of the service will be given information about the study and will therefore be equipped to support potential participants with queries, the staff team will not be involved in facilitating participation beyond this. After receiving the initial poster and leaflet about the study, it is up to the individual to decide whether or not they wish to participate.

A30-1. Will you obtain informed consent from or on behalf of research participants?

● Yes ○ No

If you will be obtaining consent from adult participants, please give details of who will take consent and how it will be done, with details of any steps to provide information (a written information sheet, videos, or interactive material). Arrangements for adults unable to consent for themselves should be described separately in Part B Section 6, and for children in Part B Section 7.

If you plan to seek informed consent from vulnerable groups, say how you will ensure that consent is voluntary and fully informed.

For service users who are currently receiving treatment in the eating disorder service, they will be provided with a leaflet, poster and information sheet which will contain either a QR code or link to Qualtrics, which they should click if they wish to participate. For those on the waiting list, the invitation will be sent directly from the eating disorder service's admin email account, or be posted directly from the service, so the researcher will not have access to any confidential data such as email addresses.

If individuals who may wish to take part follow the link to the online Qualtrics study, the participant information sheet will provide details of what the individual can expect from taking part in the study, including sample questions. Participants who opt to proceed will be shown the consent form, which can be signed electronically. Following this
the survey will begin. The survey cannot begin until the consent form has been signed.

For participants recruited via social media, the same process applies once they follow the link to the online study.

If you are not obtaining consent, please explain why not.

Please enclose a copy of the information sheet(s) and consent form(s).

A30-2. Will you record informed consent (or advice from consultees) in writing?

● Yes ○ No

A31. How long will you allow potential participants to decide whether or not to take part?

There is no specific time following participants being approached and given information and the study and access to the participant information sheet in which an individual must decide whether or not to take part in the study. The Qualtrics survey will be available for a period of three months, after which time participants will not be able to participate. Participants are advised that they can decline or withdraw from the study without affecting their care if this is applicable.

A33-1. What arrangements have been made for persons who might not adequately understand verbal explanations or written information given in English, or who have special communication needs? *(e.g. translation, use of interpreters)*

Translated materials are not available for this study. Therefore, the inclusion criteria require participants to have a good understanding of the English language. The researcher's contact details are available in the participant poster, leaflets, and information sheet should potential participants encounter any difficulties with completing the study.

A35. What steps would you take if a participant, who has given informed consent, loses capacity to consent during the study? *Tick one option only.*

○ The participant and all identifiable data or tissue collected would be withdrawn from the study. Data or tissue which is not identifiable to the research team may be retained.

○ The participant would be withdrawn from the study. Identifiable data or tissue already collected with consent would

be retained and used in the study. No further data or tissue would be collected or any other research procedures carried out on or in relation to the participant.

○ The participant would continue to be included in the study.

○ Not applicable – informed consent will not be sought from any participants in this research.

● Not applicable – it is not practicable for the research team to monitor capacity and continued capacity will be assumed.

Further details:

Due to participation taking place online and ending as soon as the participants submit the questionnaire, it is not practical to monitor capacity.

CONFIDENTIALITY

☐ **In this section, personal data means any data relating to a participant who could potentially be identified. It includes**

pseudonymised data capable of being linked to a participant through a unique code number.

Storage and use of personal data during the study

A36. Will you be undertaking any of the following activities at any stage (including in the identification of potential participants)? *(Tick as appropriate)*

- ☐ Access to medical records by those outside the direct healthcare team
- ☐ Access to social care records by those outside the direct social care team
- ☐ Electronic transfer by magnetic or optical media, email or computer networks
- ☐ Sharing of personal data with other organisations
- ☐ Export of personal data outside the EEA
- ☐ Use of personal addresses, postcodes, faxes, emails or telephone numbers
- ☐ Publication of direct quotations from respondents
- ☐ Publication of data that might allow identification of individuals
- ☐ Use of audio/visual recording devices

- ☑ Storage of personal data on any of the following:
  - ☐ Manual files (includes paper or film)
  - ☐ NHS computers
  - ☐ Social Care Service computers

☑ Home or other personal computers

☑ University computers

☐ Private company computers ☐ Laptop computers

Further details:

Participants can choose to enter their email addresses at the end of the study if they would like to receive a summary of the findings following study completion. However, this email address will not be linked to individual study responses. Emails will be kept in a separate password-protected file on secure university systems.

A37. Please describe the physical security arrangements for storage of personal data during the study?

All information will be collected online through Qualtrics. As per Lancaster University guidance, consent forms and responses will be stored on a university-approved secure cloud storage system, which will have a clear folder structure so that information will be visible to the research supervisor. All documents will be password protected. Participants who have opted to share their name and email address for the purpose of receiving a summary of the findings post-completion will have their data stored in the same space. This information will be destroyed following dissemination.

A38. How will you ensure the confidentiality of personal data? *Please provide a general statement of the policy and procedures for ensuring confidentiality, e.g., anonymisation or pseudonymisation of data.*

Demographic information, such as gender, race, and age will be collected from participants. No specific identifying data will be collected in the survey. Data collected will be anonymous and rendered as such by Qualtrics automatically, therefore the researcher will not have any access at all to identifying information. Furthermore, demographic information will not be used to identify individual respondents, but instead may be used to generalise findings to a particular demographic, for example, if sex differences are found.

Those who wish to receive a summary of the findings post-study have the option to share their name and email address. This is voluntary and not a requirement of the study. This information will be stored in a separate password protected file to the findings and will be destroyed once the findings have been disseminated. This information will only be accessible to the researcher and their research supervisor.

A40. Who will have access to participants' personal data during the study? *Where access is by individuals outside the direct care team, please justify and say whether consent will be sought.*

The researchers will have no access to participants' personal files. Personal data submitted through Qualtrics, such as demographic information, will be accessible to the primary researcher and their supervisor. Email addresses for those who have opted to receive a summary of the findings will also be accessible to the researchers, although this is voluntary.

Storage and use of data after the end of the study

A41. Where will the data generated by the study be analysed and by whom?

Any saved information will be stored on a university-approved secure cloud storage system with password protection. It will be analysed by the researcher and their research supervisors. The data will be analysed on the University Campus, and where this is not feasible and analysis needs to take place off-site, a secure university VPN will be used.

A42. Who will have control of and act as the custodian for the data generated by the study?

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood

Post Programme Director, Doctorate in Clinical Psychology, Lancaster University
Qualifications BSc, MSc, PhD
Work Address Division of Health Research
Health Innovation One, Sir John Fisher Drive,
Lancaster University, Lancaster, UK.
Post Code LA1 4AT
Work Email b.sellwood@lancaster.ac.uk
Work Telephone
Fax

A43. How long will personal data be stored or accessed after the study has ended?

○ Less than 3 months
○ 3 – 6 months
● 6 – 12 months
○ 12 months – 3 years
○ Over 3 years

A44. For how long will you store research data generated by the study?

Years: 10
Months: 0

A45. Please give details of the long term arrangements for storage of research data after the study has ended.*Say where data will be stored, who will have access and the arrangements to ensure security.*

Following the conclusion of the study and the writing of the final report, data will be securely transferred to the DClinPsy Research Coordinator who will download the folder and store it securely on the University network, with overview by Professor Sellwood. In line with Lancaster University's Research Data Policy (v2), all research data will be stored for a minimum of 10 years on university-approved secure network servers

INCENTIVES AND PAYMENTS

A46. Will research participants receive any payments, reimbursement of expenses or any other benefits or incentives

for taking part in this research?

○ Yes ● No

A47. Will individual researchers receive any personal payment over and above normal salary, or any other benefits or incentives, for taking part in this research?

○ Yes ● No

A48. Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share holding, personal relationship etc.) in the organisations sponsoring or funding the research that may give rise to a possible conflict of interest?

○ Yes ● No

NOTIFICATION OF OTHER PROFESSIONALS

A49-1. Will you inform the participants' General Practitioners (and/or any other health or care professional responsible for their care) that they are taking part in the study?

○ Yes ● No

If Yes, please enclose a copy of the information sheet/letter for the GP/health professional with a version number and date.

PUBLICATION AND DISSEMINATION

A50. Will the research be registered on a public database?

○ Yes ● No

Please give details, or justify if not registering the research.
The researcher is not aware of any suitable database to register this work on.

Registration of research studies is encouraged wherever possible.
You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you are aware of a suitable register or other method of publication, please give details. If not, you may indicate that no suitable register exists. Please ensure that you have entered registry reference number(s) in question A5-1.

A51. How do you intend to report and disseminate the results of the study? *Tick as appropriate:*

☑ Peer reviewed scientific journals
☑ Internal report
☑ Conference presentation
☐ Publication on website
☐ Other publication
☐ Submission to regulatory authorities
☐ Access to raw data and right to publish freely by all investigators in study or by Independent Steering Committee on behalf of all investigators
☐ No plans to report or disseminate the results

☑ Other (please specify)

Direct email to participants who opted to receive a summary of the findings

Results will be shared in the researcher’s thesis that will contribute towards their DClinPsy qualification and will be publicly available

A52. If you will be using identifiable personal data, how will you ensure that anonymity will be maintained when publishing the results?

Although demographic data will be collected, it will not be possible to decipher individuals from the report due to the grouping of data, for example to discuss differences between groups of different genders if they are found. Specific identifiable data about individuals will not be shared. Therefore anonymisation of identifiable data will not be necessary in the report. The only person identifiable data collected will be a contact email to disseminate findings should the participant want to provide this. This will be stored separately to the survey responses so there is no link to the surveys, under password protection on university approved secure cloud servers. Anonymity will also be maintained by using Qualtrics, a secure survey system that automatically renders the results anonymous upon completion without the need for researchers to access the information.

A53. How and when will you inform participants of the study results?

If there will be no arrangements in place to inform participants please justify this.

Participants who volunteer their names and email addresses to receive a summary of the findings will be emailed once the study has concluded. The conclusion of the study will be when the final grade for the project has been confirmed.

☐ **5. Scientific and Statistical Review**

A54. How has the scientific quality of the research been assessed? *Tick as appropriate:*

- ☐ Independent external review
- ☐ Review within a company
- ☐ Review within a multi–centre research group

☑ Review within the Chief Investigator's institution or host organisation

☐ Review within the research team

- ☑ Review by educational supervisor
- ☑ Other

Justify and describe the review process and outcome. If the review has been undertaken but not seen by the researcher, give details of the body which has undertaken the review:

Review within the chief investigator’s institution or host organisation (via the DClinPsy research team) Review by educational supervisor Other: review by field supervisor

For all studies except non-doctoral student research, please enclose a copy of any available scientific critique reports, together with any related correspondence.

For non-doctoral student research, please enclose a copy of the assessment from your educational supervisor/ institution.

A56. How have the statistical aspects of the research been reviewed? *Tick as appropriate:*

☑ Review by independent statistician commissioned by funder or sponsor

- ☐ Other review by independent statistician
- ☐ Review by company statistician
- ☐ Review by a statistician within the Chief Investigator’s institution
- ☐ Review by a statistician within the research team or multi−centre group

☐ Review by educational supervisor

☑ Other review by individual with relevant statistical expertise

☐ No review necessary as only frequencies and associations will be assessed – details of statistical input not required

In all cases please give details below of the individual responsible for reviewing the statistical aspects. If advice has been provided in confidence, give details of the department and institution concerned.

	Title	Forename/Initials	Surname
	Professor of Clinical Psychology	Bill	Sellwood
Department	Division of Health Research		
Institution	Lancaster University		
Work Address	Division of Health Research, Health Innovation One, Sir John Fisher Drive, Lancaster University, Lan		
Post Code	LA1 4AT		
Telephone	+44 1524 593998		
Fax			
Mobile			
E-mail	b.sellwood@lancaster.ac.uk		

Please enclose a copy of any available comments or reports from a statistician.

A57. What is the primary outcome measure for the study?

Three tools are used to measure outcomes in this study. These include the Self-Concept Clarity Scale, the Body Appreciation Scale and the Eating Disorder Examination Questionnaire – Short version. Eating Disorder Examination Questionnaire – Short version will be identifying eating disorder symptoms, the key dependent variable.

A58. What are the secondary outcome measures? *(if any)*

N/A

A59. What is the sample size for the research? *How many participants/samples/data records do you plan to study in total? If there is more than one group, please give further details below.*

Total UK sample size:	115
Total international sample size (including UK):	115
Total in European Economic Area:	0

Further details:
N/A – there will only be one group – participants who are currently experiencing a restrictive eating disorder

A60. How was the sample size decided upon? *If a formal sample size calculation was used, indicate how this was done, giving sufficient information to justify and reproduce the calculation.*

To explore the mediating role of SCC between body image dissatisfaction and ED symptomatology, a bias-corrected bootstrap test has the highest power. For 0.8 power to be achieved within a bias-corrected bootstrap test where the effects of the independent variable (body image dissatisfaction) and mediating factor (SCC) are 0.26 and the effects of the mediating factor (SCC) and the dependent variable (ED symptoms) are 0.39. An estimated minimum sample size of 115 is recommended. These effect size estimates were based on previous research.

A61. Will participants be allocated to groups at random?

○ Yes ● No

A62. Please describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative research) by which the data will be evaluated to meet the study objectives.

Univariate analyses will be used to examine the associations between key variables. Multiple regression will be used to indicate the relevance of each variable in predicting symptoms in combination. A mediation regression analysis will then be employed to investigate Self-concept Clarity as a mediator or partial mediator of the relationship between body image dissatisfaction and eating disorder symptoms.

6. MANAGEMENT OF THE RESEARCH

A63. Other key investigators/collaborators. *Please include all grant co−applicants, protocol co−authors and other key members of the Chief Investigator's team, including non-doctoral student researchers.*

	Title	Forename/Initials	Surname
	Dr	Ian	Gill

Post	Clinical Psychologist/Clinical Lead
Qualifications	Doctorate in Clinical Psychology
Employer	Greater
Work Address	Gaskell House, Swinton Grove, Manchester,
Post Code	M13 0EU
Telephone	0161 271 0621
Fax	
Mobile	
Work Email	ian.gill@gmmg.nhs.uk

A64. Details of research sponsor(s)

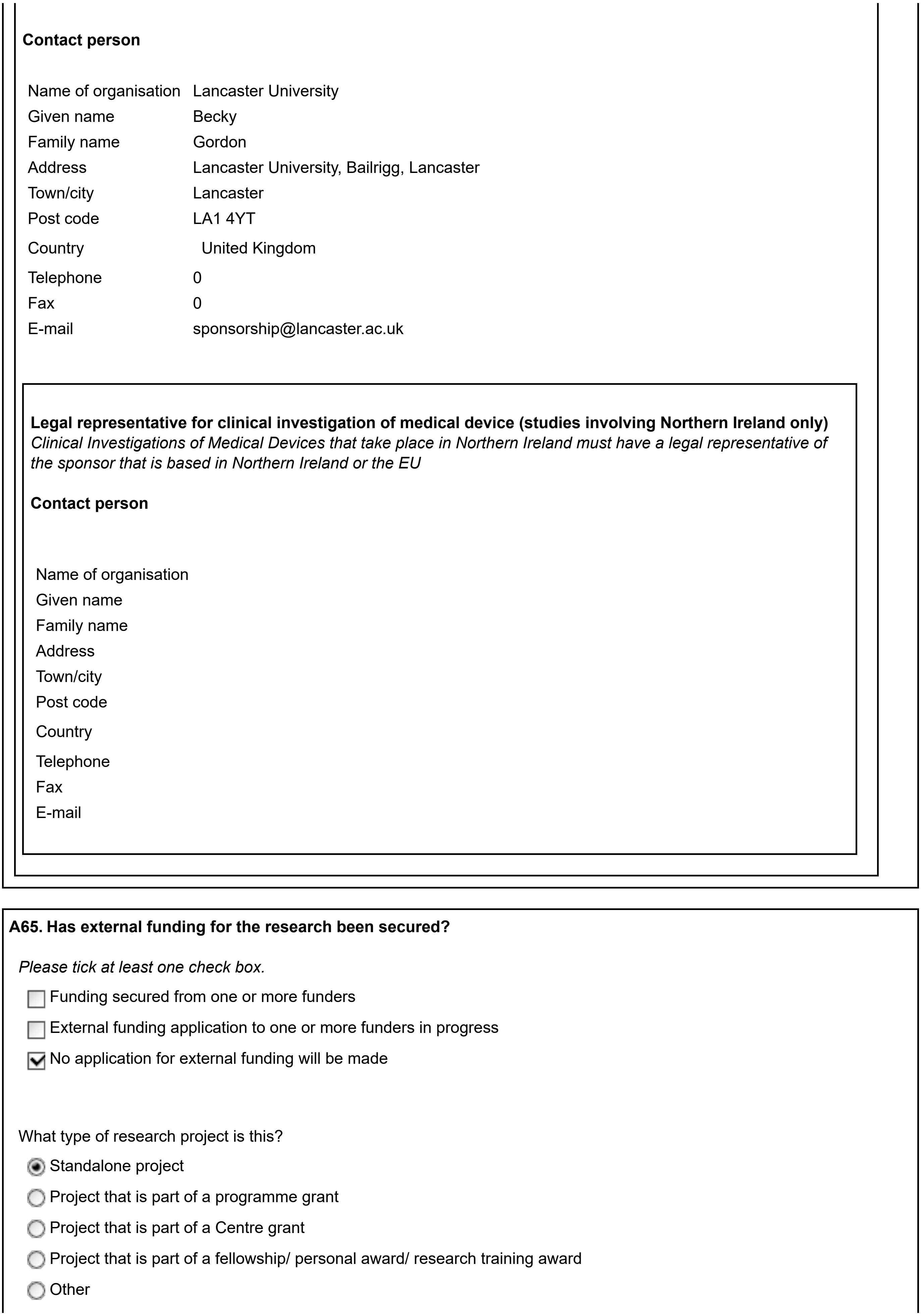
A64-1. Sponsor

Lead Sponsor

Status:
○ NHS or HSC care organisation
● Academic
○ Pharmaceutical industry
○ Medical device industry
○ Local Authority
○ Other social care provider (including voluntary sector or private organisation)
○ Other

Commercial status: Non-Commercial

If Other, please specify:



Contact person

Name of organisation	Lancaster University
Given name	Becky
Family name	Gordon
Address	Lancaster University, Bailrigg, Lancaster
Town/city	Lancaster
Post code	LA1 4YT
Country	United Kingdom
Telephone	0
Fax	0
E-mail	sponsorship@lancaster.ac.uk

Legal representative for clinical investigation of medical device (studies involving Northern Ireland only)
Clinical Investigations of Medical Devices that take place in Northern Ireland must have a legal representative of the sponsor that is based in Northern Ireland or the EU

Contact person

Name of organisation	
Given name	
Family name	
Address	
Town/city	
Post code	
Country	
Telephone	
Fax	
E-mail	

A65. Has external funding for the research been secured?

Please tick at least one check box.

☐ Funding secured from one or more funders

☐ External funding application to one or more funders in progress

☑ No application for external funding will be made

What type of research project is this?

● Standalone project

○ Project that is part of a programme grant

○ Project that is part of a Centre grant

○ Project that is part of a fellowship/ personal award/ research training award

○ Other

Other – please state:

A66. Has responsibility for any specific research activities or procedures been delegated to a subcontractor (other than a co-sponsor listed in A64-1) ? *Please give details of subcontractors if applicable.*

○ Yes ● No

A67. Has this or a similar application been previously rejected by a Research Ethics Committee in the UK or another country?

○ Yes ● No

Please provide a copy of the unfavourable opinion letter(s). You should explain in your answer to question A6-2 how the reasons for the unfavourable opinion have been addressed in this application.

A68-1. Give details of the lead NHS R&D contact for this research:

	Title	Forename/Initials	Surname
		[redacted]	[redacted]

Organisation [redacted]
Address [redacted]

Post Code [redacted]
Work Email
Telephone [redacted]
Fax
Mobile

Details can be obtained from the NHS R&D Forum website: *http://www.rdforum.nhs.uk*

A69-1. How long do you expect the study to last in the UK?

Planned start date: 01/11/2022
Planned end date: 31/08/2023
Total duration:
Years: 0 Months: 9 Days: 31

A71-1. Is this study?

● Single centre
○ Multicentre

A71-2. Where will the research take place? *(Tick as appropriate)*

☑ England
☐ Scotland

☐ Wales
☐ Northern Ireland
☐ Other countries in European Economic Area

Total UK sites in study 1

Does this trial involve countries outside the EU?
○ Yes ● No

A72. Which organisations in the UK will host the research? *Please indicate the type of organisation by ticking the box and give approximate numbers if known:*

☑ NHS organisations in England	1
☐ NHS organisations in Wales	
☐ NHS organisations in Scotland	
☐ HSC organisations in Northern Ireland	
☐ GP practices in England	
☐ GP practices in Wales	
☐ GP practices in Scotland	
☐ GP practices in Northern Ireland	
☐ Joint health and social care agencies (e.g. community mental health teams)	
☐ Local authorities	
☐ Phase 1 trial units	
☐ Prison establishments	
☐ Probation areas	
☐ Independent (private or voluntary sector) organisations	
☐ Educational establishments	
☐ Independent research units	
☐ Other (give details)	
Total UK sites in study:	1

A73-1. Will potential participants be identified through any organisations other than the research sites listed above?

● Yes ○ No

A73-2. If yes, will any of these organisations be NHS organisations?

○ Yes ● No

If yes, details should be given in Part C.

A74. What arrangements are in place for monitoring and auditing the conduct of the research?

The researcher and the research supervisors will meet regularly to audit the conduct of the research and engage in regular supervision. Supervisors will also complete draft reads of various research components.

A76. Insurance/ indemnity to meet potential legal liabilities

***Note:** in this question to NHS indemnity schemes include equivalent schemes provided by Health and Social Care (HSC) in Northern Ireland*

A76-1. What arrangements will be made for insurance and/or indemnity to meet the potential legal liability of the sponsor(s) for harm to participants arising from the management of the research? *Please tick box(es) as applicable.*

Note: Where a NHS organisation has agreed to act as sponsor or co-sponsor, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For all other sponsors, please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (NHS sponsors only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A76-2. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of the sponsor(s) or employer(s) for harm to participants arising from the design of the research? *Please tick box(es) as applicable.*

Note: Where researchers with substantive NHS employment contracts have designed the research, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For other protocol authors (e.g. company employees, university members), please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (protocol authors with NHS contracts only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply

Please enclose a copy of relevant documents.

A76-3. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of investigators/collaborators arising from harm to participants in the conduct of the research?

Note: Where the participants are NHS patients, indemnity is provided through the NHS schemes or through professional indemnity. Indicate if this applies to the whole study (there is no need to provide documentary evidence). Where non-NHS sites are to be included in the research, including private practices, please describe the arrangements which will be made at these sites and provide evidence.

☑ NHS indemnity scheme or professional indemnity will apply (participants recruited at NHS sites only)

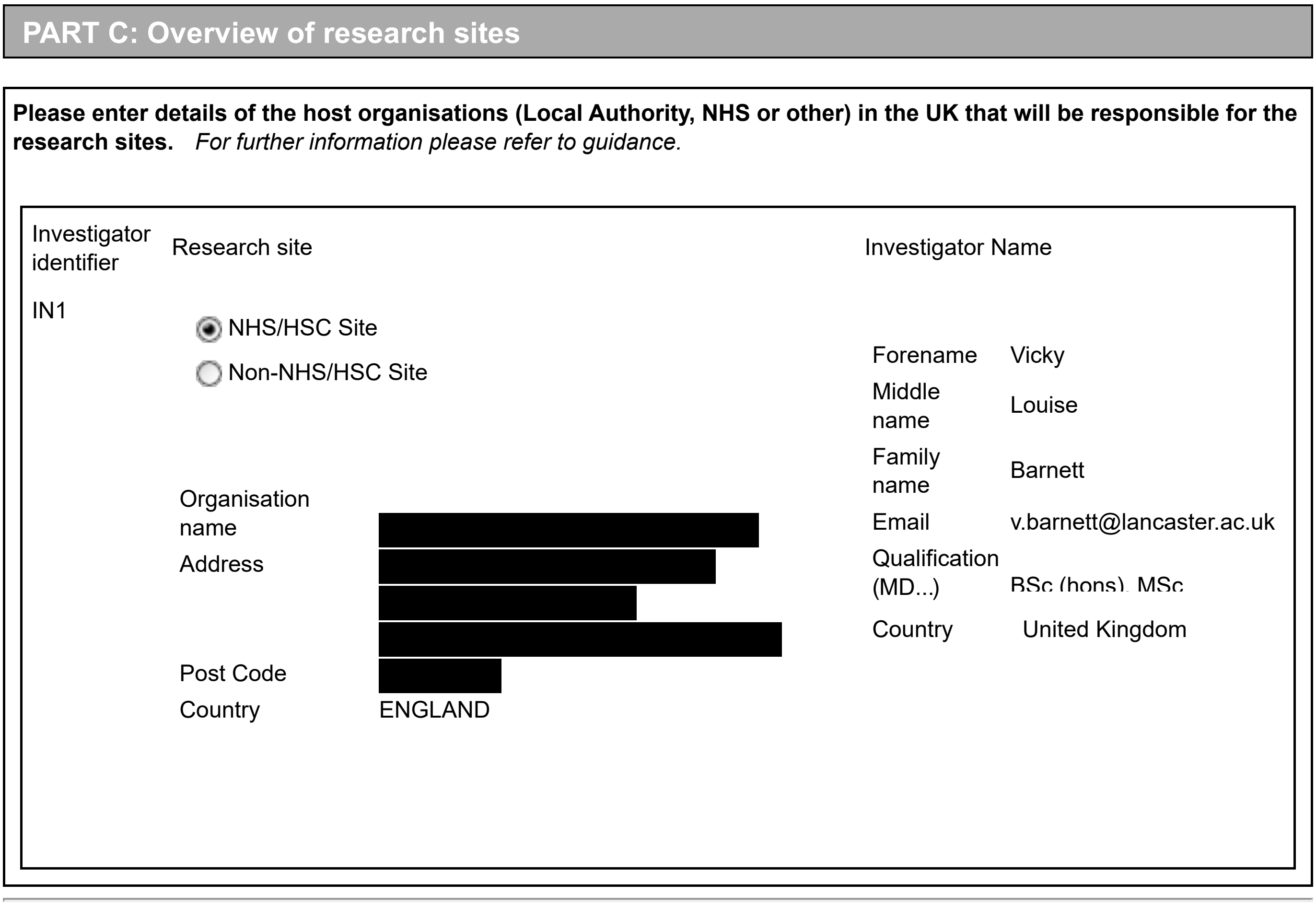
☑ Research includes non-NHS sites (give details of insurance/ indemnity arrangements for these sites below)

Lancaster University legal liability cover will apply

Please enclose a copy of relevant documents.

A78. Could the research lead to the development of a new product/process or the generation of intellectual property?

○ Yes ● No ○ Not sure



PART C: Overview of research sites

Please enter details of the host organisations (Local Authority, NHS or other) in the UK that will be responsible for the research sites. *For further information please refer to guidance.*

Investigator identifier	Research site	Investigator Name
IN1	● NHS/HSC Site ○ Non-NHS/HSC Site Organisation name [redacted] Address [redacted] Post Code [redacted] Country ENGLAND	Forename Vicky Middle name Louise Family name Barnett Email v.barnett@lancaster.ac.uk Qualification (MD...) BSc (hons), MSc Country United Kingdom

▫ PART D: Declarations

D1. Declaration by Chief Investigator

1. The information in this form is accurate to the best of my knowledge and belief and I take full responsibility for it.
2. I undertake to fulfil the responsibilities of the chief investigator for this study as set out in the UK Policy Framework for Health and Social Care Research.
3. I undertake to abide by the ethical principles underlying the Declaration of Helsinki and good practice guidelines on the proper conduct of research.
4. If the research is approved I undertake to adhere to the study protocol, the terms of the full application as approved and any conditions set out by review bodies in giving approval.
5. I undertake to notify review bodies of substantial amendments to the protocol or the terms of the approved application, and to seek a favourable opinion from the main REC before implementing the amendment.
6. I undertake to submit annual progress reports setting out the progress of the research, as required by review bodies.
7. I am aware of my responsibility to be up to date and comply with the requirements of the law and relevant guidelines relating to security and

confidentiality of patient or other personal data, including the need to register when necessary with the appropriate Data Protection Officer. I understand that I am not permitted to disclose identifiable data to third parties unless the disclosure has the consent of the data subject or, in the case of patient data in England and Wales, the disclosure is covered by the terms of an approval under Section 251 of the NHS Act 2006.

8. I understand that research records/data may be subject to inspection by review bodies for audit purposes if required.

9. I understand that any personal data in this application will be held by review bodies and their operational managers and that this will be managed according to the principles established in the Data Protection Act 2018.

10. I understand that the information contained in this application, any supporting documentation and all correspondence with review bodies or their operational managers relating to the application:

Will be held by the REC (where applicable) until at least 3 years after the end of the study; and by NHS R&D offices (where the research requires NHS management permission) in accordance with the NHS Code of Practice on Records Management.

May be disclosed to the operational managers of review bodies, or the appointing authority for the REC (where applicable), in order to check that the application has been processed correctly or to investigate any complaint.

May be seen by auditors appointed to undertake accreditation of RECs (where applicable).

Will be subject to the provisions of the Freedom of Information Acts and may be disclosed in response to requests made under the Acts except where statutory exemptions apply. May be sent by email to REC members.

11. I understand that information relating to this research, including the contact details on this application, may be held on national research information systems, and that this will be managed according to the principles established in the Data Protection Act 2018.

12. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the Health Research Authority (HRA) together with the contact point for enquiries named below. Publication will take place no earlier than 3 months after the issue of the ethics committee’s final opinion or the withdrawal of the application.

Contact point for publication*(Not applicable for R&D Forms)*

HRA would like to include a contact point with the published summary of the study for those wishing to seek further information. We would be grateful if you would indicate one of the contact points below.

○ Chief Investigator

○ Sponsor

○ Study co-ordinator

○ Student

○ Other – please give details

○ None

Access to application for training purposes*(Not applicable for R&D Forms)*

Optional – please tick as appropriate:

☐ I would be content for members of other RECs to have access to the information in the application in confidence for training purposes. All personal identifiers and references to sponsors, funders and research units would be removed.

This section was signed electronically by Prof William Sellwood on 06/01/2023 13:44.

Job Title/Post:	Professor of Clinical Psychology
Organisation:	Lancaster University
Email:	b.sellwood@lancaster.ac.uk

D2. Declaration by the sponsor's representative

If there is more than one sponsor, this declaration should be signed on behalf of the co−sponsors by a representative of the lead sponsor named at A64-1.

I confirm that:

1. This research proposal has been discussed with the Chief Investigator and agreement in principle to sponsor the research is in place.

2. An appropriate process of scientific critique has demonstrated that this research proposal is worthwhile and of high scientific quality.

3. Any necessary indemnity or insurance arrangements, as described in question A76, will be in place before this research starts. Insurance or indemnity policies will be renewed for the duration of the study where necessary.

4. Arrangements will be in place before the study starts for the research team to access resources and support to deliver the research as proposed.

5. Arrangements to allocate responsibilities for the management, monitoring and reporting of the research will be in place before the research starts.

6. The responsibilities of sponsors set out in the UK Policy Framework for Health and Social Care Research will be fulfilled in relation to this research.

   Please note: *The declarations below do not form part of the application for approval above. They will not be considered by the Research Ethics Committee.*

7. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the National Research Ethics Service (NRES), together with the contact point for enquiries named in this application. Publication will take place no earlier than 3 months after issue of the ethics committee's final opinion or the withdrawal of the application.

8. Specifically, for submissions to the Research Ethics Committees (RECs) I declare that any and all clinical trials approved by the HRA since 30th September 2013 (as defined on IRAS categories as clinical trials of medicines, devices, combination of medicines and devices or other clinical trials) have been registered on a publically accessible register in compliance with the HRA registration requirements for the UK, or that any deferral granted by the HRA still applies.

This section was signed electronically by An authorised approver at sponsorship@lancaster.ac.uk on 22/12/2022 15:57.

Job Title/Post:	Associate Director of Research Services
Organisation:	Lancaster University
Email:	y.fox@lancaster.ac.uk

D3. Declaration for student projects by academic supervisor(s)

1. I have read and approved both the research proposal and this application. I am satisfied that the scientific content of the research is satisfactory for an educational qualification at this level.

2. I undertake to fulfil the responsibilities of the supervisor for this study as set out in the UK Policy Framework for Health and Social Care Research.

3. I take responsibility for ensuring that this study is conducted in accordance with the ethical principles underlying the Declaration of Helsinki and good practice guidelines on the proper conduct of research, in conjunction with clinical supervisors as appropriate.

4. I take responsibility for ensuring that the applicant is up to date and complies with the requirements of the law and relevant guidelines relating to security and confidentiality of patient and other personal data, in conjunction with clinical supervisors as appropriate.

Academic supervisor 1

This section was signed electronically by Prof William Sellwood on 06/01/2023 13:45.

Job Title/Post:	Professor of Clinical Psychology
Organisation:	Lancaster University
Email:	b.sellwood@lancaster.ac.uk

Research protocol version 0.5

22/11/2022

Title

Is Self-concept clarity a mediating factor between body image dissatisfaction and restrictive eating disorder symptomology?

Researchers

Trainee
Vicky Barnett
V.barnett@lancaster.ac.uk
Lancaster University
Division of Health and Medicine

Research Supervisor
Bill Sellwood
b.sellwood@lancaster.ac.uk
Lancaster University
Division of Health and Medicine

Field Supervisor
Ian Gill
ian.gill@gmmh.nhs.uk
Greater Manchester Mental Health NHS Foundation Trust

Introduction

Eating disorders are among the most persistent psychological conditions and can become enduring. They can be characterised by a fixation with body shape, weight and problematic eating behaviours. The goal of this may be to achieve a desired body shape or to cope with difficult situations or feelings, although this is not an exhaustive list. The emotional and physical consequences of these beliefs and behaviours maintain the disorder and result in a high mortality rate from malnutrition, suicide and physical issues (NICE 2017). National eating disorder charity, BEAT, estimate that around 1.25 million people in the UK have an eating disorder, however, there has not been sufficient research to draw firm conclusions about the prevalence of eating disorders in the UK, and this is likely to have increased since the COVID-19 pandemic (BEAT, 2021). Eating disorders are a relatively common, serious mental health problem around the world, with an estimated global prevalence of 7.8% (Galmich et al, 2019).

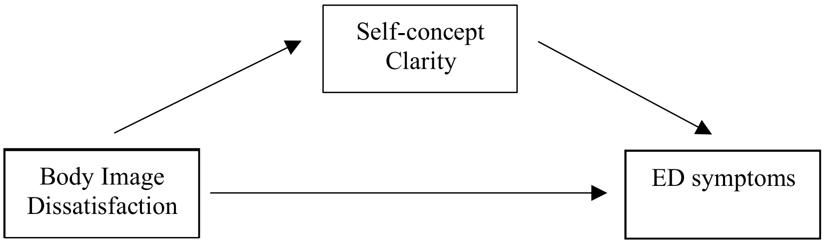
Body dissatisfaction is the best-known contributor to the development of anorexia nervosa and bulimia nervosa (Stice & Shaw, 2002). Identity formation and self-esteem in emerging adulthood is also thought to be a significant predictor of eating disorder symptoms, and how these concepts interact has been the focus of some recent research (Palmeroni et al, 2020 & Kroplewski et al, 2019). Identity formation and self-esteem are also thought to be key components in the clarity of the self-concept (SCC), and low SCC has been linked to the development of psychological disorders such as schizophrenia and psychosis and reduced psychological wellbeing (Cicero, & Cohn, 2018).

Self-concept clarity (SCC) is a structural aspect of the self, defined as the “extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996). Self-concept clarity focusses on the structural aspects of the self-concept and is distinct from content factors such as evaluative and knowledge components (Campbell 1990). SCC has become a construct of interest in the attempt to increase our understanding of the underlying mechanisms that may be associated with the onset and development of mental health conditions. Recent research has explored the relationship between SCC and multiple different categorisations of psychopathology such as, anxiety disorders depression, schizophrenia, post-traumatic stress disorder (PTSD) and personality disorders (Binsale 2017). It is thought that individuals with uncertain self-concepts may be more susceptible to, and influenced by, external stimuli (Campbell, 1990), such as the views of others, suggesting that low SCC may be a common characteristic found in a range of mental health difficulties. Uncertain self-concept may contribute to the maintenance of social phobia as a result of individuals attributing great importance to pessimistic beliefs about other’s opinions of them, leading to reduced feeling of control and influence over outcomes in social situations (Stopa, Brown, Luke, & Hirsch, 2010). It is unclear how significant SCC is as a single construct in mental health outcomes and there is currently little known about the interaction of SCC with other risk factors and the effect of this on how associated mental health conditions present. However, as high SCC is correlated with more positive mental health outcomes, it could play a mediating role between other risk factors and the onset of mental health problems (e.g., Evans et al., 2015).

Treatment for eating disorders usually involves a combination of physical health monitoring, dietary counselling and psychological therapy, via inpatient, day patient or community pathways (Nice, 2017). However, current interventions have relatively low efficacy and relapse rates are high (Solmi et al. 2021). Early intervention has been identified as a significant factor in improving treatment outcomes, but there are challenges to being able to provide this successfully (Potterton et al, 2021). High relapse rates have led to close consideration of underlying contributing factors, including genetic, social, biosocial and developmental variables, however, it remains unclear as to the mechanisms underlying successful relapse prevention (Berends et al, 2016). It is also common for an individual's presentation to change from one ED to another during or after treatment (Fairburn, 2008). This suggests that current treatments may not do enough to address important maintaining factors or functions of the disorder, meaning further research is needed to explore the psychological mechanisms that affect vulnerability and response to treatment. When considering missing links in understanding eating disorders, could SCC provide a nuanced understanding of how different risk factors interact with one another and how they impact mental health outcomes in people who go on to develop restrictive eating disorders? Although body image dissatisfaction is thought to be commonplace, with some research estimating around 61% of UK adults (House of Commons, 2020) are unhappy with their bodies, it is clearly a key issue in the management of eating disorders. The question arises as to why, for some, but not others, body image dissatisfaction seems to be a key factor in restrictive EDs. Reduced SCC may explain this. If one has reduced SCC this may lead to becoming highly focussed and invested in particular aspects of the self which are concrete and over which certain degree of control can be exerted. An example might be body image where control can be exerted using dietary restriction and other behaviours associated with EDs, such as compulsive exercise and purging.

Consequently, the proposed study aims to explore the relationship between SCC and the severity of restrictive eating disorder symptoms in those who have lived experienced. The proposed study also aims to investigate the possibility that SCC might play a mediating role in the relationship between body image disturbance and eating disorder symptoms. The assumption here is that the relationship between body image and restrictive eating disorder symptoms depends upon reduced self-concept clarity. This could possibly open a new pathway to understanding potential reasons that body-image disturbance, although widespread, is an important aspect of eating disorders in some individuals. There are two hypotheses for the proposed study. First, that lower self-concept clarity will be positively correlated with higher eating disorder symptomology. Secondly, that high self-concept clarity will act as a mediator between high body image dissatisfaction and eating disorder symptomology.

Figure 1: proposed mediation model



Method

Participants and procedure

Participant sample will be adults (18 or over) who are fluent in English who are currently experiencing a restrictive eating disorder. This will include those with a diagnosis of Anorexia Nervosa (AN), including atypical anorexia, which the DSM-V describes as "those individuals who meet the criteria for anorexia but who are not underweight despite significant weight loss." This study will exclude those who have a diagnosis of Avoidant/restrictive food intake disorder, (ARFID), as the aetiology, symptomology, maintaining factors and treatment pathways are different to AN (Thomas et al., 2017). Participants will also include individuals who self-identify as having a restrictive eating disorder, even in the absence of a clinical diagnosis. Many people experiencing a restrictive eating disorder may not be in contact with services, as help-seeking in individuals with ED is often low, so by the time they present to services, they may have been experiencing an ED for a significant period of time (Austin et al. 2020). Therefore, including this group will allow the study to be more representative and not exclude valuable data.

To explore the mediating role of SCC between body image dissatisfaction and ED symptomatology, a bias-corrected bootstrap test has the highest power (Fritz & MacKinnon, 2007). For 0.8 power to be achieved within a bias-corrected bootstrap test where the effects of the independent variable (body image dissatisfaction) and mediating factor (SCC) are 0.26 and the effects of the mediating factor (SCC) and the dependent variable (ED symptoms) are 0.39. An estimated minimum sample size of 115 is recommended (Fritz & MacKinnon, 2007). These effect size estimates were based upon previous research. For example, Vartanian (2009) found a moderate effect size between self-concept clarity and thin ideal internalisation. The latter study used the Sobel first order test to analyse mediation, however, Fritz and MacKinnon (2007) state that a bias corrected bootstrap test has increased power and is therefore preferred.

There will be three recruitment strategies. Strategy one will use posters and leaflets to advertise the research and recruit participants from [redacted] Eating disorder services. Clinicians within the services will ask clients if they are interested in participating in the research and direct them towards leaflets which will have a QR code which will take them straight to the study on Qualtrics. Additionally, clients who have been assessed and accepted into the service and identified as having a restrictive eating disorder at assessment, but are currently on the treatment waiting list, will also be included. Clients on the treatment waiting list will be contacted via their preferred communication method (collected at assessment) and sent information about the study via letter or email, depending on their stated preference. Emails will be sent from a service email address in line with Trust policy, including consent procedures about email communication. This information will include a leaflet with the same

QR code. It will be highlighted in the information that their participation is completely optional and will not impact on their treatment in any way.

Strategy two will be an online strategy which will advertise the study via Twitter and Reddit, to recruit participants who are experiencing a restrictive eating disorder but may not be currently in treatment.

Strategy three will be to contact moderators of online or local eating disorder support groups and ask permission to advertise the study on their platforms or forums.

Posters and leaflets will contain a brief summary of the research, contact details of the researcher and inclusion criteria for the study. They will also contain a link to Qualtrics online database, which is where the participant will access the research materials. Included in this will be a full participant information sheet which can be downloaded by participants for later reference and an online consent form which will be submitted electronically. Once consent is obtained the participant will be asked to complete four questionnaires. These are described below. It is estimated that it will take participants around 15 - 25 minutes to complete all tasks required by the study.

Once participants have completed all questionnaires, they will be provided with an online, downloadable debrief sheet which will contain a more detailed summary of the research and the contact details of the chief researcher and research sponsor should they wish to discuss the research or withdraw their consent. There will also be an option to leave an email address should they wish the outcome of the study to be disseminated to them upon completion. Email addresses will be kept in a separate encrypted file from the research data to preserve anonymity of participant responses. Paper materials for all information sheets, consent forms and questionnaires can be provided if there are participants who would like to take part in the study but do not have access to the necessary technology to use the online format.

All of the data will be downloaded from the Qualtrics online database and securely transferred to statistical software package SPSS for analysis. Any physical questionnaires will be scored and input to SPSS manually before destroying paper copies.

Materials

- Research advertisement poster
- Participant Information Sheet
- Consent Form
- Debrief Sheet

Questionnaires

Demographic Questionnaire - Age, gender, ethnicity, marital status, employment status, duration of experiencing an eating disorder, if participants have ever accessed treatment for an eating disorder.

Eating Disorder Examination Questionnaire - Short version (EDE-QS) (Gideon et al, 2016)
This is a 12 item self-report scale assesses eating disorder symptoms over the preceding seven days. It has good internal consistency (α=0.90), test-retest reliability (r=0.93) and convergent validity (r=0.91) and is commonly used in mental health settings. Respondents are asked to rate on how many days of the week, they have been impacted by different eating beliefs or behaviours in the previous 7 days. Possible responses are 0 days, 1-2 days, 3-5 days and 6-7 days.

Self-Concept Clarity Scale (SCCS) (Campbell et al., 1996)
This is a self-report scale with 12 items evaluating the extent to which beliefs about self are clearly defined, stable, and consistent. Questions focus on certainty, temporal stability and

consistency of self-beliefs and responses are provided via a Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). It has good internal consistency (α=0.86) and test-retest reliability (r=0.79) and is used in many studies aiming to observe and study self-concept clarity.

Body Appreciation Scale-2 (BAS-2) (Tylka et al, 2015)
A self-report measure consisting of 10 questions that assesses individuals' acceptance of favourable opinions toward, and respect for their bodies. Respondents are asked to rate how often they agree with statements about their body via a Likert scale from 1 (Never) to 5 (Always). It has good internal consistency (α=0.93), test-retest reliability (r=0.90) and convergent validity (r=0.73)

Design

This is a quantitative study with a cross sectional design and will use a mediation model to analyse results.

Proposed Analysis

Univariate analyses will be used to examine the associations between key variables. Multiple regression will be used to indicate the relevance of each variable in predicting symptoms in combination. A mediation regression analysis will then be employed to investigate SCC as a mediator or partial mediator of the relationship between body image dissatisfaction and ED symptomology. A four-staged approach will be taken to test for mediation based on Baron and Kenny's (1986) method.

X – Body image dissatisfaction

Y – ED symptomology

M – Self-concept Clarity

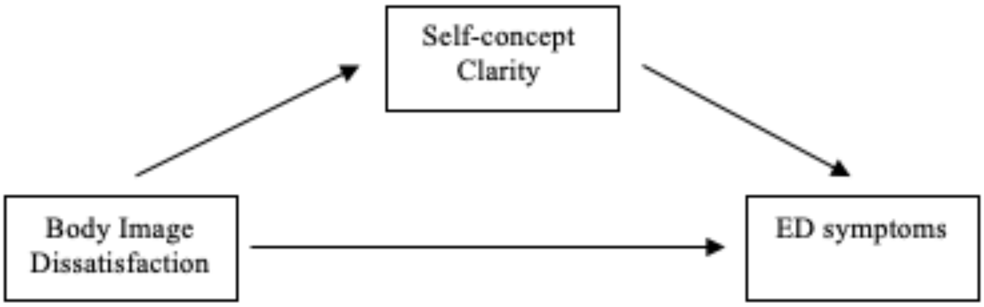
Stage 1 – One simple regression analysis will be conducted to test whether X predicts Y

Stage 2 - One simple regression analysis will be conducted to test whether X predicts M.

Stage 3 - One simple regression analysis will be conducted to test whether M predicts Y.

If all the relationships in stages 1-3 are significant proceed to stage 4, if one or more of the relationships in stages 1- 3 are non-significant this means that mediation is not likely.

Stage 4 - A multiple regression analysis will be conducted with X and M predicting Y.



Practical issues

Potential problem with recruitment as the study requires a large number of participants for statistical power. I will address this by recruiting from different sources to increase the likelihood of achieving the required sample size.

Ethical concerns

Some of the questions that participants will be asked contain sensitive information and could cause them distress. Participants will be asked questions regarding aspects of their eating behaviour and relationship with food and body image, and the impact this has on their life and functioning. The participant information sheet will be open and transparent about what the questionnaires will be asking, and it will provide example questions for the participants to read through before consenting to take part in the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress. Participants will be told that if they choose to withdraw from the study before the study end, they will be directed immediately to the debrief sheet, which contains information on support services that they can contact. In addition to the above participants will be provided with the e-mail address of the researcher and informed that they can contact the researcher to ask any questions they may have regarding the research before they consent to take part. Due to recruitment methods, the study may recruit participants who are currently suffering from a restrictive eating disorder that are not in treatment. The debrief sheet at the end of the study will contain information on how to seek support should they wish to.

Timescale

2022	
August - September	Prepare ethics documents: Research protocol, IRAS, FHM. Gain sponsorship and ethical approval. Create Qualtrics database.
September	Pick Literature review topic
September - December	Complete literature review
October	Begin data collection
2023	
January	Finish data collection
February	Data analysis
February - March	Write up of empirical paper and critical appraisal
April	Submit thesis

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Appendices

4-A Participant information sheet

Exploring how we see ourselves and body image in restrictive eating problems

Participant Information Sheet

We would like to invite you to take part in our research study. Please read the following information carefully before deciding if you would like to take part and click the button at the bottom of the page if you are happy to continue. If you would like some more time to think about it after reading this information, you can close the browser and return at a later time. If you have any questions or queries about taking part in the study, please contact the researcher, Vicky Barnett (v.barnett@lancaster.ac.uk).

I am conducting this research as part of a doctoral programme in clinical psychology at Lancaster University. The study has been given ethical approval by an NHS Research Ethics Committee. Lancaster University is the sponsor for this study. This study has been checked and approved by Health and Social Care Research Ethics Committee B (HSC REC B).

What is the purpose of the study?

I am carrying out this research because I would like to find out more about how people experience restrictive eating disorders. In particular, I would like to develop a further understanding of how a person’s body image might interact with other aspects of identity in people who are experiencing a restrictive eating disorder. Research findings gathered during the study may help us to better understand the underlying causes of restrictive eating disorders and inform psychological treatments.

If you would like to receive a summary of the findings via email when the study is complete, please fill in your email address in the box provided at the end of the survey. All data will be anonymised and therefore email addresses will be kept separate from questionnaire data by secure means in order to preserve participant anonymity.

What will taking part in this study involve?

Firstly, you will be asked to complete an online consent form to confirm that you are happy to take part in the study. If you agree to take part, you will be directed to an online survey. There are 4 sections to this survey, and it is expected to take around 15 - 25 minutes in total to complete all parts of the study.

This survey will ask you questions around your thoughts and feelings relating to eating behaviours, beliefs and attitudes and body image. It will also ask you some questions around identity and collect some demographic information such as gender and age range. Below are some examples of questions you will be asked:

1. ‘On how many days in the past 7 have you felt a strong desire to lose weight?’

2. Please rate on a scale of 1(strongly disagree) to 5 (strongly agree) to what extent the following statement applies to your experience:

‘I spend a lot of time wondering about what kind of person I really am.’

3. Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

‘I feel love for my body’.

Participation in the study is completely voluntary. If at any time during the survey you change your mind about participating, you are free to withdraw at any point up until the very end of the study. Should you wish to do this, you can just close the Internet browser window and your responses will not be saved. Alternatively, you can click the ‘withdraw’ button at the bottom of the page at any time, which will direct you to the debriefing page and support contacts.

Once you have completed the study it will not be possible for your data to be removed, as we will not be able to distinguish between participant responses. You will be reminded of this before completing the survey so you can make an informed decision.

Confidentiality

The data collected for this study will be stored securely and only the researchers conducting this study will have access to this data. Your responses will be combined with those of other participants for the purposes of analysis and producing a written research report. All data associated with the study will be stored on a secure, password protected database which can only be accessed by the named researchers. The files on the computer will be encrypted, and the computer itself password protected. The data you provide will be kept anonymously for a maximum of 10 years on the University’s secure server. It will then be permanently deleted.

There will be an option to provide an email address if you would like to receive a summary of the findings once the research has been completed. If you provide an email address, this will similarly be confidential and kept in a secure, password protected database, separately from your questionnaire responses to protect anonymity.

Lancaster University will be the data controller for any personal information collected as part of this study. Under the GDPR you have certain rights when personal data is collected about you. You have the right to access any personal data held about you, to object to the processing of your personal information, to rectify personal data if it is inaccurate, the right to have data about you erased and, depending on the circumstances, the right to data portability. Please be aware that many of these rights are not absolute and only apply in certain circumstances. If you would like to know more about your rights in relation to your personal data, please speak to the researcher on your particular study.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

Possible risks of taking part

We do not anticipate that participation in this research will cause you distress. However, some questions in the study may contain some potentially upsetting material. If you do experience distress or discomfort, you can withdraw from study any time in the ways mentioned previously. On completion of the study, you will be provided with a list support services that you may wish to contact if you experience distress as a result of your participation. The same information is also included at the bottom of this page. You can also contact me, the researcher, directly via email, and I will respond during my working hours.

If any of the questions asked during the survey raise any particular concerns or distress, we would advise you to contact your G.P. and/or to discuss this with someone that you trust.

Lancaster University holds appropriate indemnity cover which includes but is not limited to Public Liability, Professional Indemnity and Employers Liability Insurance. If you are harmed whilst taking part in this study as a result of negligence by Lancaster University or its staff members, you may have grounds for legal action and should obtain independent legal advice. Non-negligent harm is not covered, and any claims that arise may be referred to the insurance provider for assessment. Should you require more information on the indemnity cover that Lancaster University holds, please contact the researcher.

What will happen to the results?

The results of the research will be included in a report that will be submitted for examination by Lancaster University as part of a doctoral thesis project. Additionally, the results may be published in an academic journal.

Who is involved in this research?

The chief investigator:

Vicky Barnett
Trainee Clinical Psychologist
Clinical psychology doctorate programme
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT
v.barnett@lancaster.ac.uk

The research supervisors' details are:

Professor Bill Sellwood
Doctor of Clinical Psychology Programme Director
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University

Lancaster
LA1 4AT
b.sellwood@lancaster.ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Bill Sellwood
Professor of Clinical Psychology
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT

Email: B.Sellwood@lancaster.ac.uk

Ian Smith (Research Director)
Division of Health Research
Lancaster University
Lancaster
LA1 4YW
Email: i.smith@lancaster.ac.uk

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email:
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

l.machin@lancaster.ac.uk

If any of the questions asked during the survey raised any particular concerns or distress, we would advise you to contact your local G.P. and/or to discuss this with someone that you trust. If you currently access services, this person may be your care coordinator, named nurse or psychologist.

Should you feel distressed either as a result of taking part, or in the future, the following resources may be useful in accessing support.

BEAT Eating Disorders

BEAT is the UK's national eating disorder charity and offers a telephone support service 365 days a year (09:00 – 00:00 on weekdays and 16:00 – 00:00 on weekends) They also have a 1:1 web-based chat support or email support. For more information visit their website: https://www.beateatingdisorders.org.uk

Telephone:
England: 0808 801 0677
Scotland: 0808 801 0432
Wales: 0808 801 0433
Northern Ireland: 0808 801 0434

Email:

Email support for England:
help@beateatingdisorders.org.uk

Email support for Scotland:
Scotlandhelp@beateatingdisorders.org.uk

Email support for Wales:
Waleshelp@beateatingdisorders.org.uk

Email support for Northern Ireland:

NIhelp@beateatingdisorders.org.uk

The Samaritans

The Samaritans are open 24 hours a day 365 days a year. They are a national listening service that you can contact to talk through any distress you are experiencing. For more information visit their website: www.samaritans.org

Telephone: 116 123

Email: jo@samaritans.org

Mind

Mind is a mental health charity, which provides information on a range of mental health difficulties and provides advice on how to access support. For more information visit their website: www.mind.org.uk

Telephone: 0300 123 3393

Email: info@mind.org.uk

4-B Invitation letter for potential participants

You are invited to take part in a research study

Exploring how we see ourselves and body image in restrictive eating problems

We would like to invite you to take part in our research study. I am conducting this research as part of a doctoral programme in clinical psychology at Lancaster University. The study has been given ethical approval by an NHS Research Ethics Committee and approval had been given by [redacted] to contact individuals who are in contact with their eating disorder services.

What is the purpose of the study?

I am carrying out this research because I would like to find out more about how people experience restrictive eating disorders. In particular, I would like to develop a further understanding of how a person's body image might interact with other aspects of identity in those who are experiencing a restrictive eating disorder. Research findings gathered during the study may help us to better understand the underlying causes of restrictive eating disorders and inform psychological treatments.

What will taking part in this study involve?

Firstly, you will be asked to read a participant information sheet and complete an online consent form to confirm that you are happy to take part in the study. If you agree to take part, you will be directed to an online survey. There are 4 sections to this survey, and it is expected to take around 15 - 20 minutes in total to complete all parts of the study.

This survey will ask you questions around your thoughts and feelings relating to eating behaviours, beliefs and attitudes and body image. It will also ask you some questions around identity and collect some demographic information such as gender and age range.

Do I have to take part?

Participation in the study is completely optional and you are under no obligation to take part. Additionally, if you initially choose to take part but at any time during the survey you change your mind about participating, you are free to withdraw at any point up until the very end of the study. Your choice to withdraw or not participate will have no impact on your treatment within the service.

Once you have completed the study it will not be possible for your data to be removed, as we will not be able to distinguish between participant responses. You will be reminded of this before completing the survey so you can make an informed decision.

Confidentiality

All answers that you provide in this study are anonymous and unidentifiable. Your responses will be combined with other participants for the purposes of analysis and producing a written research report. All data associated with the study will be stored on a secure, password protected database which can only be accessed by the names researchers. The data you provide will be kept anonymously for a maximum of 10 years on the University's secure server. It will then be permanently deleted.

There will be an option to provide an email address if you would like to receive a summary of the findings once the research has been completed. If you provide an email address, this will similarly be kept in a secure, password protected database and will not be connected to any of your survey responses to ensure this is kept separate and unidentifiable.

Possible risks of taking part

We do not anticipate that participation in this research will cause you distress. However, if you do experience distress or discomfort, you can withdraw from study any time in the ways mentioned previously. On completion of the study, you will be provided with a list support services that you may wish to contact if you experience distress as a result of your participation. You can also contact me, the researcher, directly via email, and I will respond during my working hours.

If any of the questions asked during the survey raise any particular concerns or distress, we would advise you to contact your G.P. and/or to discuss this with someone that you trust.

What will happen to the results?

The results of the research will be included in a report that will be submitted for examination by Lancaster University as part of a doctoral thesis project. Additionally, the results may be published in an academic journal.

Who is involved in this research?

The chief investigator:

Vicky Barnett
Trainee Clinical Psychologist
Clinical psychology doctorate programme
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University
Lancaster
LA1 4AT
v.barnett@lancaster.ac.uk

The research supervisors' details are:

Professor Bill Sellwood
Doctor of Clinical Psychology Programme Director
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University

Lancaster
LA1 4AT
b.sellwood@lancaster.ac.uk

4-C Consent Form

Exploring how we see ourselves and body image in restrictive eating problems

Consent Form

This consent form asks if you would like to take part in a research study, the purpose of which is to explore the impact that identity and body image may have on the development of restrictive eating disorders. Before giving consent to participate, we ask that you read and consider the participant information sheet. You can then show that you consent to taking part by ticking the box next to each of the following statements. If you have any questions or queries before signing the consent form please speak to the researcher, Vicky Barnett (v.barnett@lancaster.ac.uk)

1. I confirm that I have read the participant information sheet *(version 0.5, 22.11.22)* and understand purpose of the study
2. I confirm that I have had the opportunity to ask any questions and to have them answered.
3. I understand that my answers will be electronically stored and then analysed along with the responses from the other participants in this study.
4. I understand that my participation is voluntary and that I am free to withdraw at any time until the end of the survey without giving any reason.
5. I understand that once the survey is completed and my responses have been recorded and submitted it will not be possible for them to be withdrawn.
6. I understand that any information I give within the survey is completely anonymous.
7. I consent to anonymous information from my responses being used in reports, conferences and training events.
8. I understand that if I provide my e-mail address, that this will be kept confidential and will not be kept with the anonymous data that I provide within the survey.
9. I consent to Lancaster University keeping anonymous electronic responses for up to 10 years after the study has finished.
10. I consent to take part in the above study.

Clicking the button below, confirms that you agree to all of the above points and will act as confirmation of consent.

4-D Study Debrief

Exploring how we see ourselves and body image in restrictive eating problems

Debrief

Thank you for completing this study.

The purpose of this study was to explore the impact that body image may have on the development of restrictive eating disorders. I wanted to explore and develop a further understanding of how a person's body image might interact with other facets of identity in those who have experienced a restrictive eating disorder and those who haven't.

In this study, participants were asked to complete a survey, which contained 4 different questionnaires. The first questionnaire aimed to collect demographic information important to the study such as age and gender. The following 3 questionnaires explored eating behaviours, attitudes and beliefs, perception of body image, and how participants viewed themselves.

Self-concept clarity was the main focus of the current research. This refers to how an individual views themselves and how stable, clear and consistent this view of themselves is. Self-concept clarity was measured on the third questionnaire that you completed.

We are trying to find out whether people with less confidence in who they are as a person are more vulnerable to picking a particular aspect of themselves, such as body image, that they can exert some active control over. This may help explain why some who over-estimate their body size are less concerned with eating than others.

What is the relevance of this research?

It is important to study the different factors that might contribute to the development of mental health difficulties, such as restrictive eating disorders, because the better understanding we have of how and why they develop, the more informed we can be when trying to develop effective therapeutic treatments and ways to support those who experience them and their loved ones. By continuing to explore these difficulties and how people experience them, we can enhance existing approaches to treatment and implement new ones based on new psychological evidence.

If you would like to receive a summary report of this research when it is completed, please tick 'summary of findings' and provide your e-mail address on the next page. Email addresses will be kept securely and separately from the project data.

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Bill Sellwood
Professor of Clinical Psychology
Division of Health Research
Health Innovation One
Sir John Fisher Drive
Lancaster University

Lancaster
LA1 4AT

Email: B.Sellwood@lancaster.ac.uk

Ian Smith (Research Director)
Division of Health Research
Lancaster University
Lancaster
LA1 4YW

Email: i.smith@lancaster.ac.uk

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email:
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

l.machin@lancaster.ac.uk

If any of the questions asked during the survey raised any particular concerns or distress, we would advise you to contact your local G.P. and/or to discuss this with someone that you trust. If you currently access services, this person may be your care coordinator, named nurse or psychologist.

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Mind

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Telephone: 0300 123 3393

Email: info@mind.org.uk

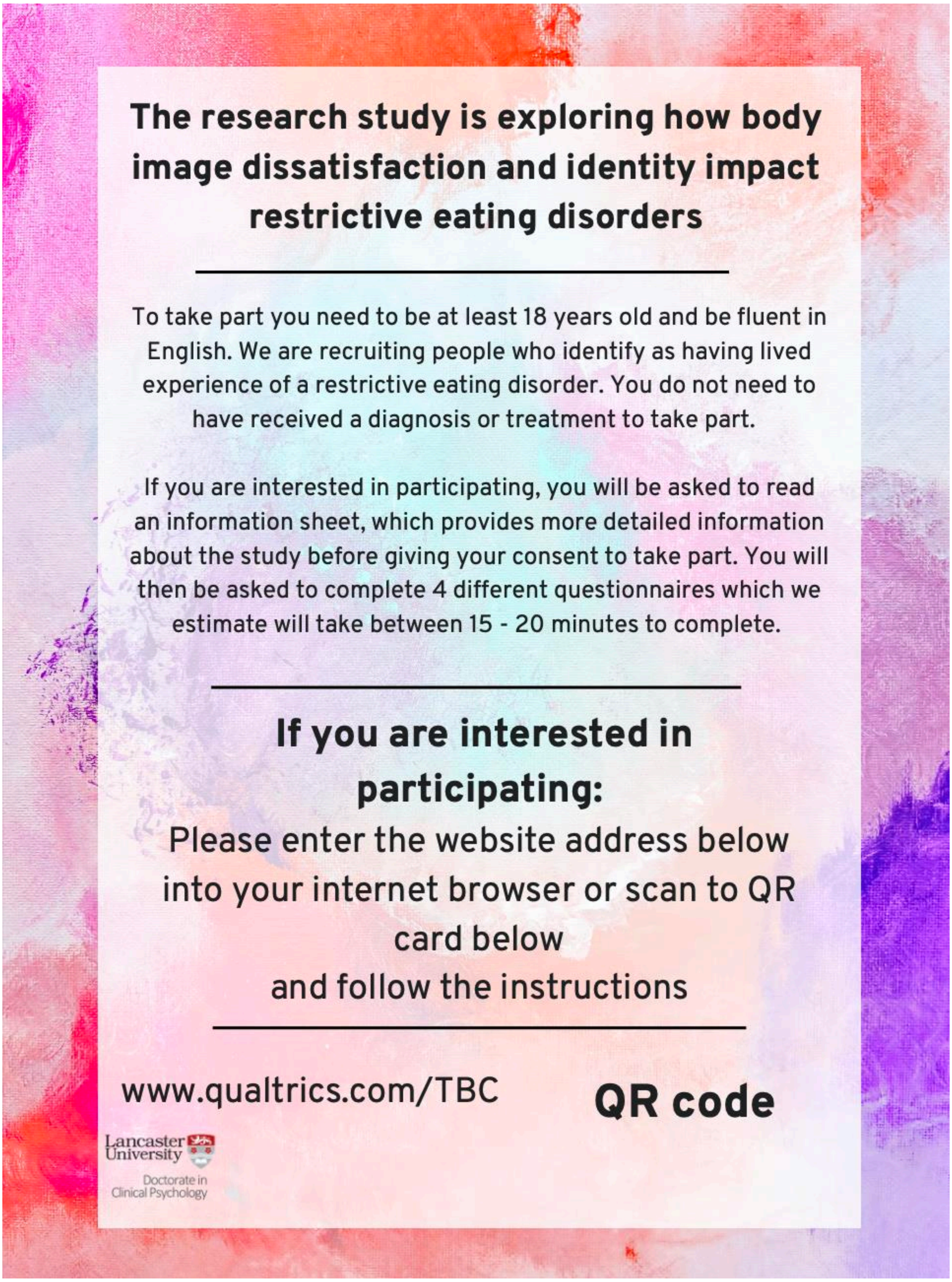
4-E Research Advertisement Leaflet
(Size A5 – Front)

WE WOULD LIKE TO INVITE YOU TO TAKE PART IN OUR RESEARCH STUDY

Lancaster University

Doctorate in Clinical Psychology

4-E Research Advertisement Leaflet
(Size A5 – Back)



The research study is exploring how body image dissatisfaction and identity impact restrictive eating disorders

To take part you need to be at least 18 years old and be fluent in English. We are recruiting people who identify as having lived experience of a restrictive eating disorder. You do not need to have received a diagnosis or treatment to take part.

If you are interested in participating, you will be asked to read an information sheet, which provides more detailed information about the study before giving your consent to take part. You will then be asked to complete 4 different questionnaires which we estimate will take between 15 - 20 minutes to complete.

If you are interested in participating:

Please enter the website address below into your internet browser or scan to QR card below
and follow the instructions

www.qualtrics.com/TBC

QR code

Lancaster University
Doctorate in Clinical Psychology

4-E Poster Advertisement
(A4)

We would like to invite you to take part in our research study

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Exploring how we see ourselves and body image in restrictive eating problems

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To take part you need to be at least 18 years old and be fluent in English. We are recruiting people who identify as having lived experience of a restrictive eating disorder. You do not need to have received a diagnosis or treatment to take part.

If you are interested in participating

Scan the QR code or visit
www.qualtrics.com/TBC
and follow the instructions

QR code

Doctorate in Clinical Psychology | Lancaster University

4-F Demographic Questionnaire

1. What is your age in years?

____

2. What is your gender?

____

3. What is your ethnicity?

Asian or Asian British
Indian
Pakistani
Bangladeshi
Chinese
Any other Asian background

Black, Black British, Caribbean or African
Caribbean
African
Any other Black, Black British, or Caribbean background

Mixed or multiple ethnic groups
White and Black Caribbean
White and Black African
White and Asian
Any other Mixed or multiple ethnic background

White
English, Welsh, Scottish, Northern Irish or British
Irish
Gypsy or Irish Traveller
Roma
Any other White background
Other ethnic group
Arab
Any other ethnic group

4. What is your sexual orientation?

____

5. What level of education did you obtain? (Achieved or currently studying)

I didn’t finish school
GCSE’s / O-Levels
A-Levels
Undergraduate Degree
Postgraduate Degree
Doctoral Degree

6. What is your marital status?

Married or co-habiting
Widow(er)
Divorced or separated
Single

7. Are you currently working or studying at the moment?

Employed (part-time or full-time)
Full-time homemaker or carer
Retired
Unemployed
Unpaid volunteer
Student

8. How long have you been experiencing a restrictive eating disorder?

Less than 1 year
1 –1 year and 11 months
2 – 2 years and 11 months
3 – 4 years and 11 months
5 – 10 years
Over 10 years

9. Have you ever accessed treatment for a restrictive eating disorder?

I am currently accessing treatment
I have accessed treatment in the past
I am currently on a waiting list for treatment
I have never accessed treatment

4-G Self-Concept Clarity Scale (SCCS)

Self-Concept Clarity Scale

from Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141-156.

Scale ranges from 1 *(strongly disagree)* to 5 *(strongly agree).*

_______1. My beliefs about myself often conflict with one another.
_______2. On one day I might have one opinion of myself and on another day I might have a different opinion.
_______3. I spend a lot of time wondering about what kind of person I really am.
_______4. Sometimes I feel that I am not really the person that I appear to be.
_______5. When I think about the kind of person I have been in the past, I'm not sure what I was really like.
_______6. I seldom experience conflict between the different aspects of my personality.
_______7. Sometimes I think I know other people better than I know myself.
_______8. My beliefs about myself seem to change very frequently.
_______9. If I were asked to describe my personality, my description might end up being different from one day to another day.
_______10. Even if I wanted to, I don't think I could tell someone what I'm really like.
_______11. In general, I have a clear sense of who I am and what I am.
_______12. It is often hard for me to make up my mind about things because I don't really know what I want.

4-H Body Appreciation Scale 2 (BAS-2)

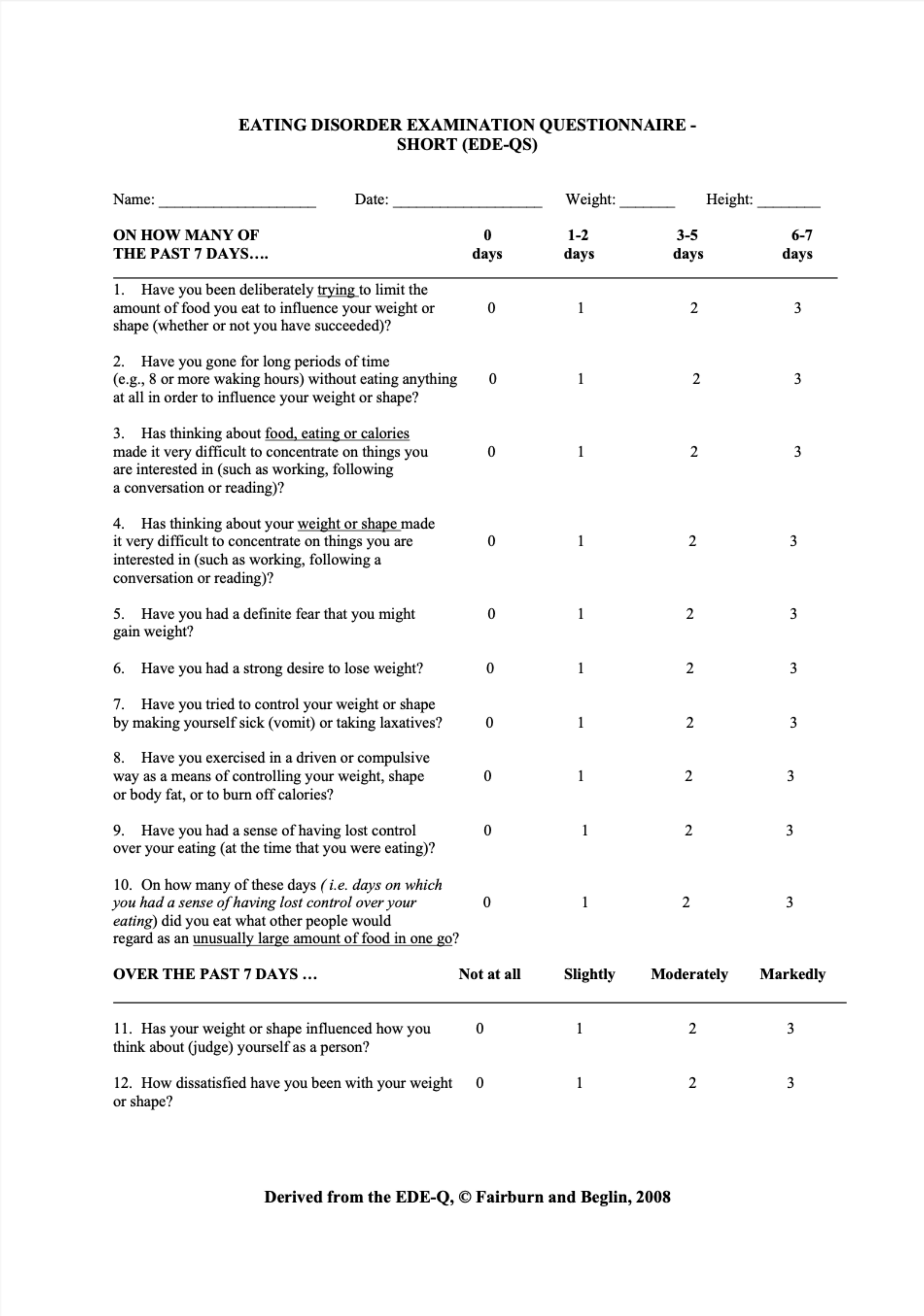
BodyAppreciationScale-2

For each item, the following response scale should be used: 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always.

Directions for participants: Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

1. I respect my body.
2. I feel good about my body.
3. I feel that my body has at least some good qualities.
4. I take a positive attitude towards my body.
5. I am attentive to my body’s needs.
6. I feel love for my body.
7. I appreciate the different and unique characteristics of my body.
8. My behaviour reveals my positive attitude toward my body; for example, I hold my head high and smile.
9. I am comfortable in my body.
10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).

4-I Eating Disorder Examination Questionnaire – Short Version (EDE-QS)



EATING DISORDER EXAMINATION QUESTIONNAIRE - SHORT (EDE-QS)

Name: ____________________ Date: ___________________ Weight: _______ Height: ________

ON HOW MANY OF THE PAST 7 DAYS….	**0 days**	**1-2 days**	**3-5 days**	**6-7 days**
1. Have you been deliberately trying to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?	0	1	2	3
2. Have you gone for long periods of time (e.g., 8 or more waking hours) without eating anything at all in order to influence your weight or shape?	0	1	2	3
3. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
4. Has thinking about your weight or shape made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
5. Have you had a definite fear that you might gain weight?	0	1	2	3
6. Have you had a strong desire to lose weight?	0	1	2	3
7. Have you tried to control your weight or shape by making yourself sick (vomit) or taking laxatives?	0	1	2	3
8. Have you exercised in a driven or compulsive way as a means of controlling your weight, shape or body fat, or to burn off calories?	0	1	2	3
9. Have you had a sense of having lost control over your eating (at the time that you were eating)?	0	1	2	3
10. On how many of these days *(i.e. days on which you had a sense of having lost control over your eating*) did you eat what other people would regard as an unusually large amount of food in one go?	0	1	2	3
OVER THE PAST 7 DAYS …	**Not at all**	**Slightly**	**Moderately**	**Markedly**
11. Has your weight or shape influenced how you think about (judge) yourself as a person?	0	1	2	3
12. How dissatisfied have you been with your weight or shape?	0	1	2	3

Derived from the EDE-Q, © Fairburn and Beglin, 2008

4-J NHS REC Provisional Opinion

Dear Professor Sellwood

Following the REC meeting I am pleased to provide the following update regarding the status of your application. The Research Ethics Committee reviewed the application on 23 January 2023 and issued a Provisional Opinion. Please provide the following information in order for a final ethical opinion to be issued:

	Ethical Review - Further Information required	Response from the applicant
1	The Sub-Committee noted that for those recruited through social media, they may not be accessing any form of clinical support. Members also agreed that whilst the Participant Information Sheet is clear that the study is discussing restrictive eating disorders and personal attitudes and beliefs around these, they considered that it should be made clear that some may find this upsetting. The Sub-Committee acknowledged that the same resources for support are available for both participant groups. However, the Sub-Committee was concerned that the participant is completely unknown to the clinical team, could be based anywhere and the research team will be unaware of any distress. Therefore, the researchers are relying on these participants contacting their GP or accessing other support services if they become distressed when completing the questionnaires. Members considered that these participants could be more vulnerable than those currently known to the clinical team. Due to the vulnerable nature of this population group, acknowledging that some individuals may have other mental health issues, the Sub-Committee seeks a clear rationale from you for recruiting those individuals without a diagnosis or accessing treatment.	
2	The Sub-Committee understood why the research team wish to also recruit via social media in recognition that they may not reach their recruitment target with patients alone. However,	

	the Sub-Committee suggested that the research team may wish to consider recruiting from other eating disorder clinics and only those patients with a clinical diagnosis. Alternatively, if the research team wishes to continue with their recruitment strategy as outlined in this application, the Sub-Committee seeks clarification and a clear rationale for doing so to alleviate its concerns.	
3	Members commented that for the social media cohort, based on the resources for support, it appears that the researchers are targeting the whole of the UK, but this does not appear on the inclusion criteria. The Sub-Committee highlighted that these questionnaires could be accessed by anyone and may be completed by individuals other than the intended target audience. The Sub-Committee seeks clarification from you in this regard.	
4	The Sub-Committee noted that A36 of the IRAS Form indicates that personal data will be stored on ‘home or other personal computers’. It further noted that elsewhere in the IRAS Form, it is stated that all data will be suitably password protected. Therefore, the Sub-Committee seeks clarification from you in this regard.	
5	Please amend the Participant Information Sheet and submit a revised copy for review as follows: · Please include details of who has reviewed the study – “This study has been checked and approved by Health and Social Care Research Ethics Committee B (HSC REC B)”. · Please add the Health Research Authority’s (HRA) recommended transparency wording. Further information is available at https://www.hra.nhs.uk/planning-and-improving-research/policies-standards-legislation/data-protection-and-information-governance/gdpr-guidance/templates/transparency-wording-for-all-sponsors/	
The PR Sub-Committee delegated authority to confirm a final opinion on the application to the Vice-Chair, Dr Anne Moorhead.		

A response should be submitted by no later than 23 February 2023.

Please provide a response to the requested information through IRAS by referring to the instructions on how to submit a response to provisional opinion electronically. Please provide your answers in the table above and then submit this, with revised documentation where appropriate, underlining, tracking or otherwise highlighting the changes which have been made and giving revised version numbers and dates. You do not have to make any changes to the IRAS application form unless you have been specifically requested to do so.

Membership of the Committee

HSC REC B

Attendance at PRS Sub-Committee of the REC meeting on 23 January 2023

Committee Members:

Name	*Profession*	*Present*	*Notes*
Dr Anne Moorhead	Senior Lecturer in Health Communication	Yes	Chaired Meeting
Dr Seamus O'Brien	Outcomes Manager, Primary Joint Unit	Yes	
Dr Samantha Stewart	N.I Civil Servant	Yes	Lead Reviewer

Also in attendance:

Name	*Position (or reason for attending)*
Mrs Melissa Stewart	PRS Manager

There were no declarations of interest.

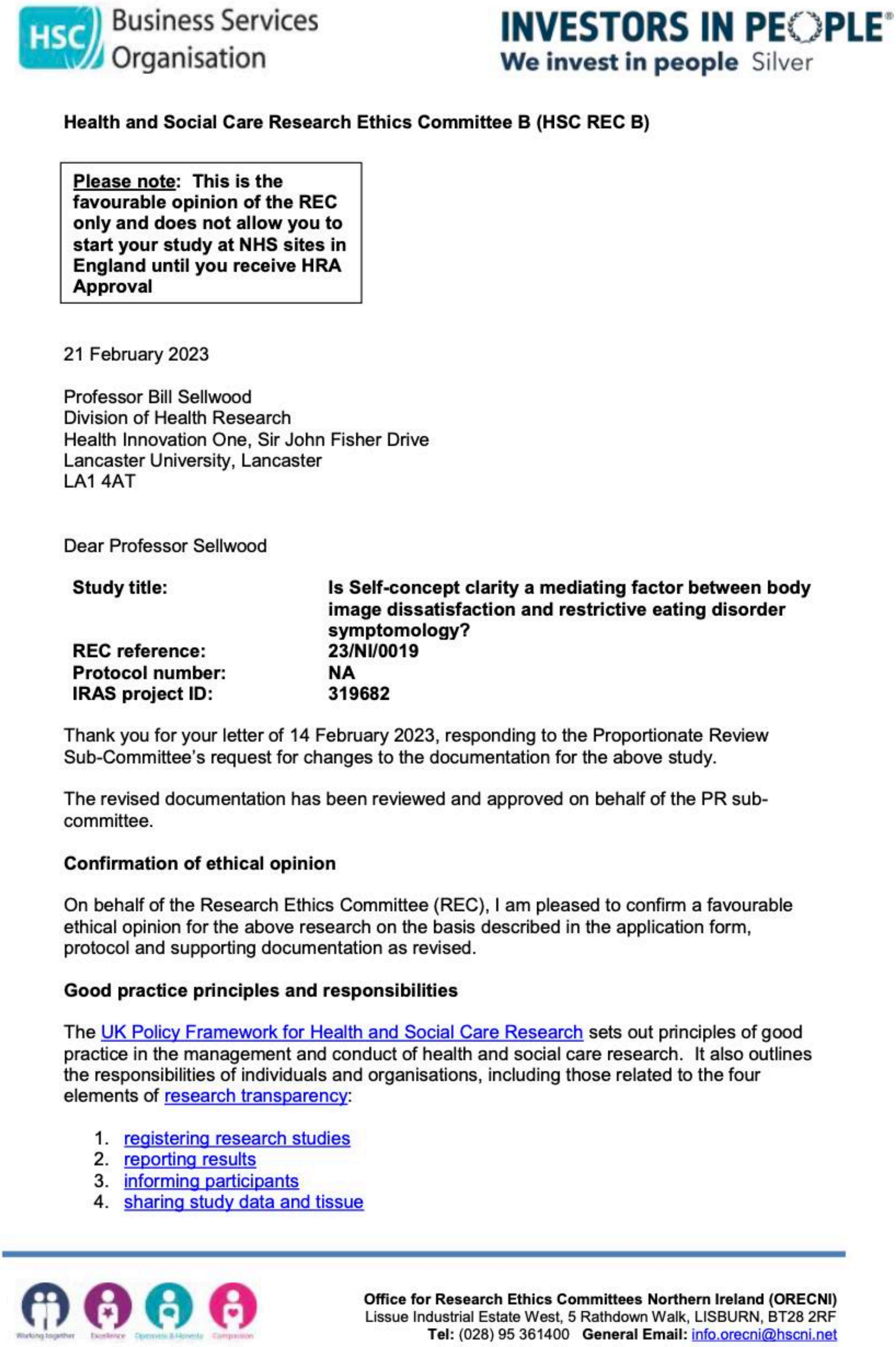
If you have any queries, please do not hesitate to contact me.

Kind regards

M Stewart

Melissa Stewart
PRS Manager

4-K NHS REC Favourable Opinion



HSC Business Services Organisation

INVESTORS IN PEOPLE
We invest in people Silver

Health and Social Care Research Ethics Committee B (HSC REC B)

<u>Please note</u>: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

21 February 2023

Professor Bill Sellwood
Division of Health Research
Health Innovation One, Sir John Fisher Drive
Lancaster University, Lancaster
LA1 4AT

Dear Professor Sellwood

Study title:	**Is Self-concept clarity a mediating factor between body image dissatisfaction and restrictive eating disorder symptomology?**
REC reference:	**23/NI/0019**
Protocol number:	**NA**
IRAS project ID:	**319682**

Thank you for your letter of 14 February 2023, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved on behalf of the PR sub-committee.

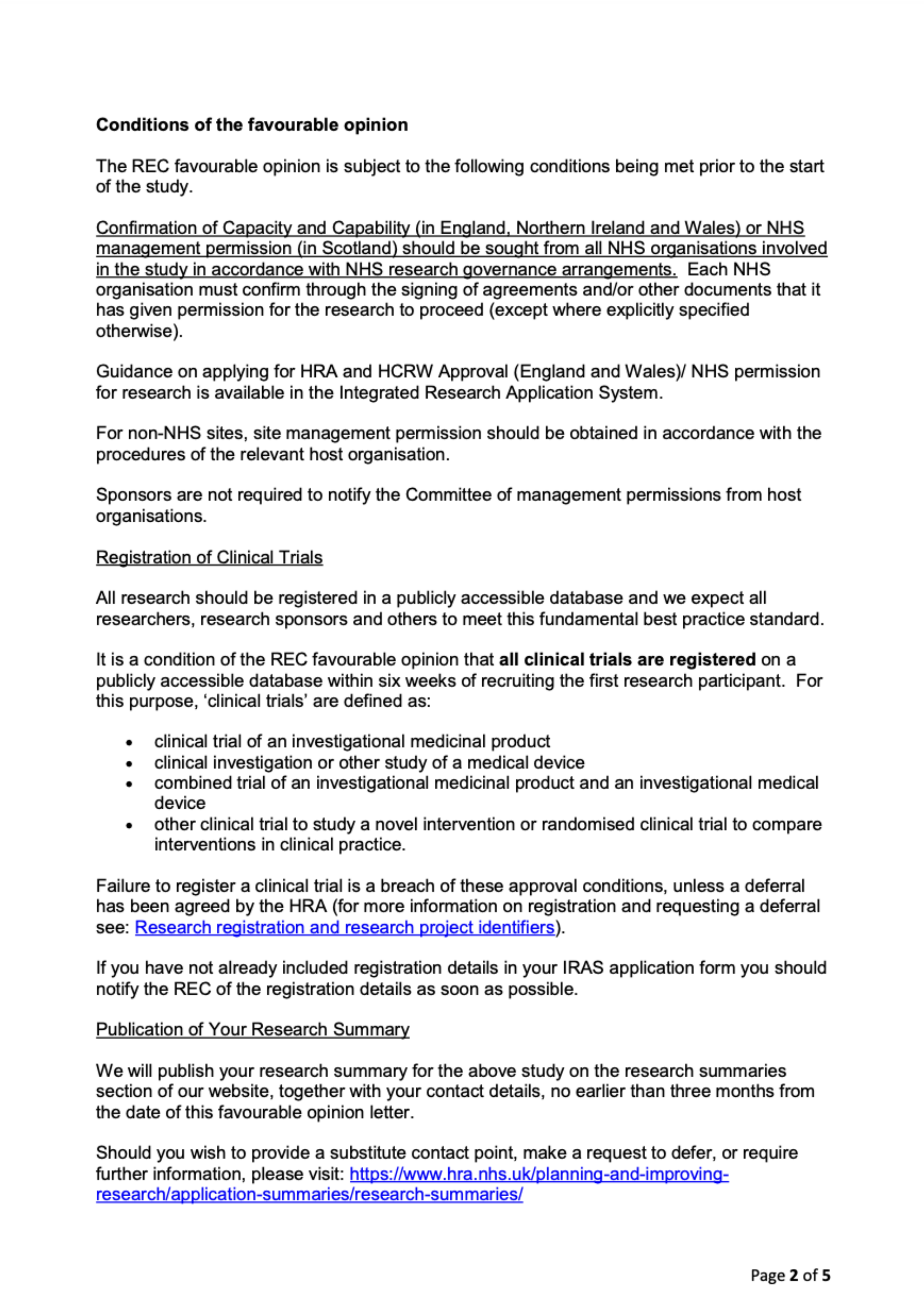
Confirmation of ethical opinion

On behalf of the Research Ethics Committee (REC), 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.

Good practice principles and responsibilities

The UK Policy Framework for Health and Social Care Research sets out principles of good practice in the management and conduct of health and social care research. It also outlines the responsibilities of individuals and organisations, including those related to the four elements of research transparency:

1. registering research studies
2. reporting results
3. informing participants
4. sharing study data and tissue



Conditions of the favourable opinion

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

Confirmation of Capacity and Capability (in England, Northern Ireland and Wales) or NHS management permission (in Scotland) should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System.

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 management permissions from host organisations.

Registration of Clinical Trials

All research should be registered in a publicly accessible database and we expect all researchers, research sponsors and others to meet this fundamental best practice standard.

It is a condition of the REC favourable opinion that **all clinical trials are registered** on a publicly accessible database within six weeks of recruiting the first research participant. For this purpose, ‘clinical trials’ are defined as:

- clinical trial of an investigational medicinal product
- clinical investigation or other study of a medical device
- combined trial of an investigational medicinal product and an investigational medical device
- other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice.

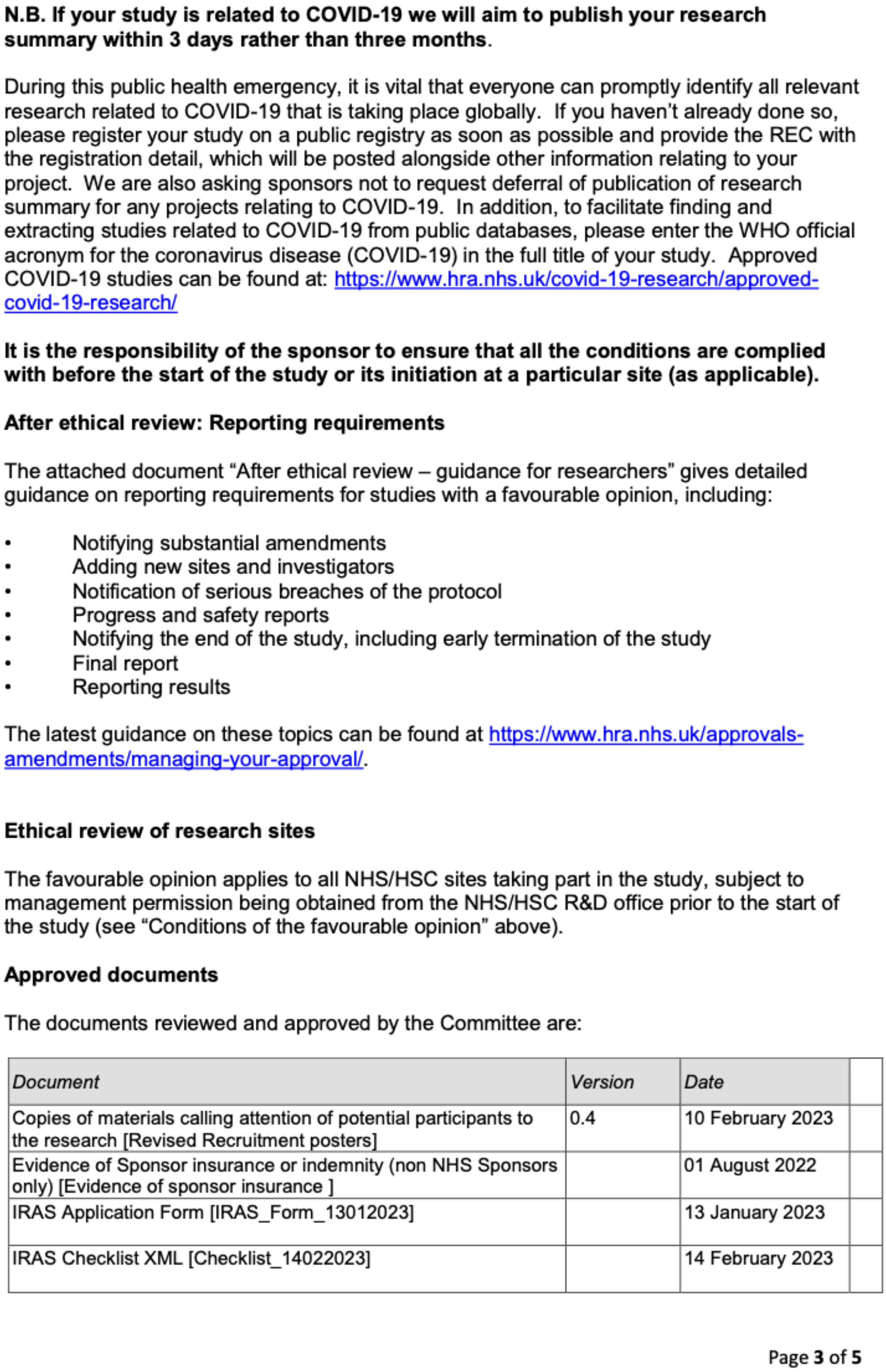
Failure to register a clinical trial is a breach of these approval conditions, unless a deferral has been agreed by the HRA (for more information on registration and requesting a deferral see: Research registration and research project identifiers).

If you have not already included registration details in your IRAS application form you should notify the REC of the registration details as soon as possible.

Publication of Your Research Summary

We will publish your research summary for the above study on the research summaries section of our website, together with your contact details, no earlier than three months from the date of this favourable opinion letter.

Should you wish to provide a substitute contact point, make a request to defer, or require further information, please visit: https://www.hra.nhs.uk/planning-and-improving-research/application-summaries/research-summaries/



N.B. If your study is related to COVID-19 we will aim to publish your research summary within 3 days rather than three months.

During this public health emergency, it is vital that everyone can promptly identify all relevant research related to COVID-19 that is taking place globally. If you haven't already done so, please register your study on a public registry as soon as possible and provide the REC with the registration detail, which will be posted alongside other information relating to your project. We are also asking sponsors not to request deferral of publication of research summary for any projects relating to COVID-19. In addition, to facilitate finding and extracting studies related to COVID-19 from public databases, please enter the WHO official acronym for the coronavirus disease (COVID-19) in the full title of your study. Approved COVID-19 studies can be found at: https://www.hra.nhs.uk/covid-19-research/approved-covid-19-research/

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).

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, including early termination of the study
- Final report
- Reporting results

The latest guidance on these topics can be found at https://www.hra.nhs.uk/approvals-amendments/managing-your-approval/.

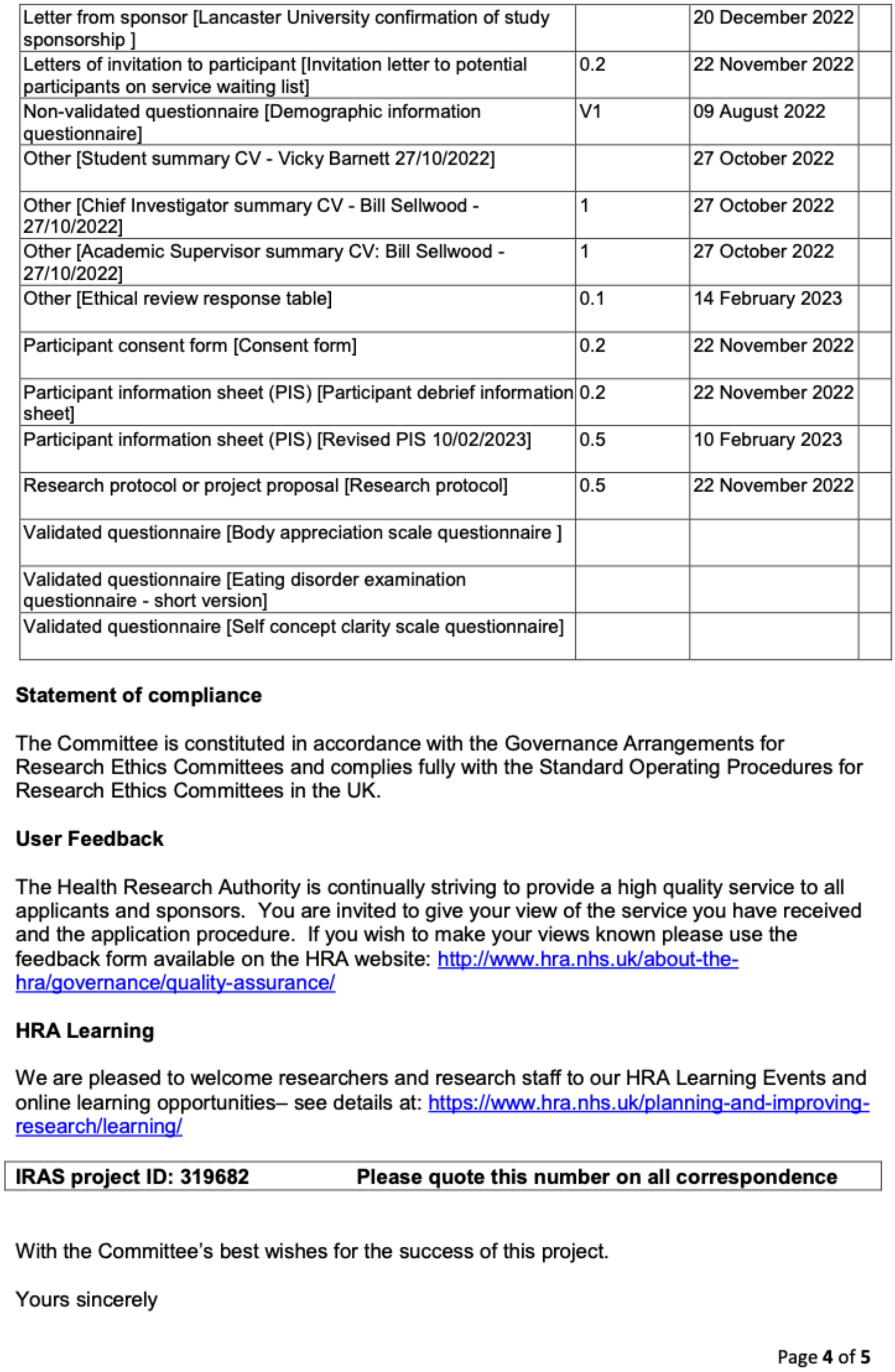
Ethical review of research sites

The favourable opinion applies to all NHS/HSC 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" above).

Approved documents

The documents reviewed and approved by the Committee are:

Document	*Version*	*Date*	
Copies of materials calling attention of potential participants to the research [Revised Recruitment posters]	0.4	10 February 2023	
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of sponsor insurance]		01 August 2022	
IRAS Application Form [IRAS_Form_13012023]		13 January 2023	
IRAS Checklist XML [Checklist_14022023]		14 February 2023	



Letter from sponsor [Lancaster University confirmation of study sponsorship]		20 December 2022	
Letters of invitation to participant [Invitation letter to potential participants on service waiting list]	0.2	22 November 2022	
Non-validated questionnaire [Demographic information questionnaire]	V1	09 August 2022	
Other [Student summary CV - Vicky Barnett 27/10/2022]		27 October 2022	
Other [Chief Investigator summary CV - Bill Sellwood - 27/10/2022]	1	27 October 2022	
Other [Academic Supervisor summary CV: Bill Sellwood - 27/10/2022]	1	27 October 2022	
Other [Ethical review response table]	0.1	14 February 2023	
Participant consent form [Consent form]	0.2	22 November 2022	
Participant information sheet (PIS) [Participant debrief information sheet]	0.2	22 November 2022	
Participant information sheet (PIS) [Revised PIS 10/02/2023]	0.5	10 February 2023	
Research protocol or project proposal [Research protocol]	0.5	22 November 2022	
Validated questionnaire [Body appreciation scale questionnaire]			
Validated questionnaire [Eating disorder examination questionnaire - short version]			
Validated questionnaire [Self concept clarity scale questionnaire]			

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.

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/quality-assurance/

HRA Learning

We are pleased to welcome researchers and research staff to our HRA Learning Events and online learning opportunities– see details at: https://www.hra.nhs.uk/planning-and-improving-research/learning/

IRAS project ID: 319682 **Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

M Stewart

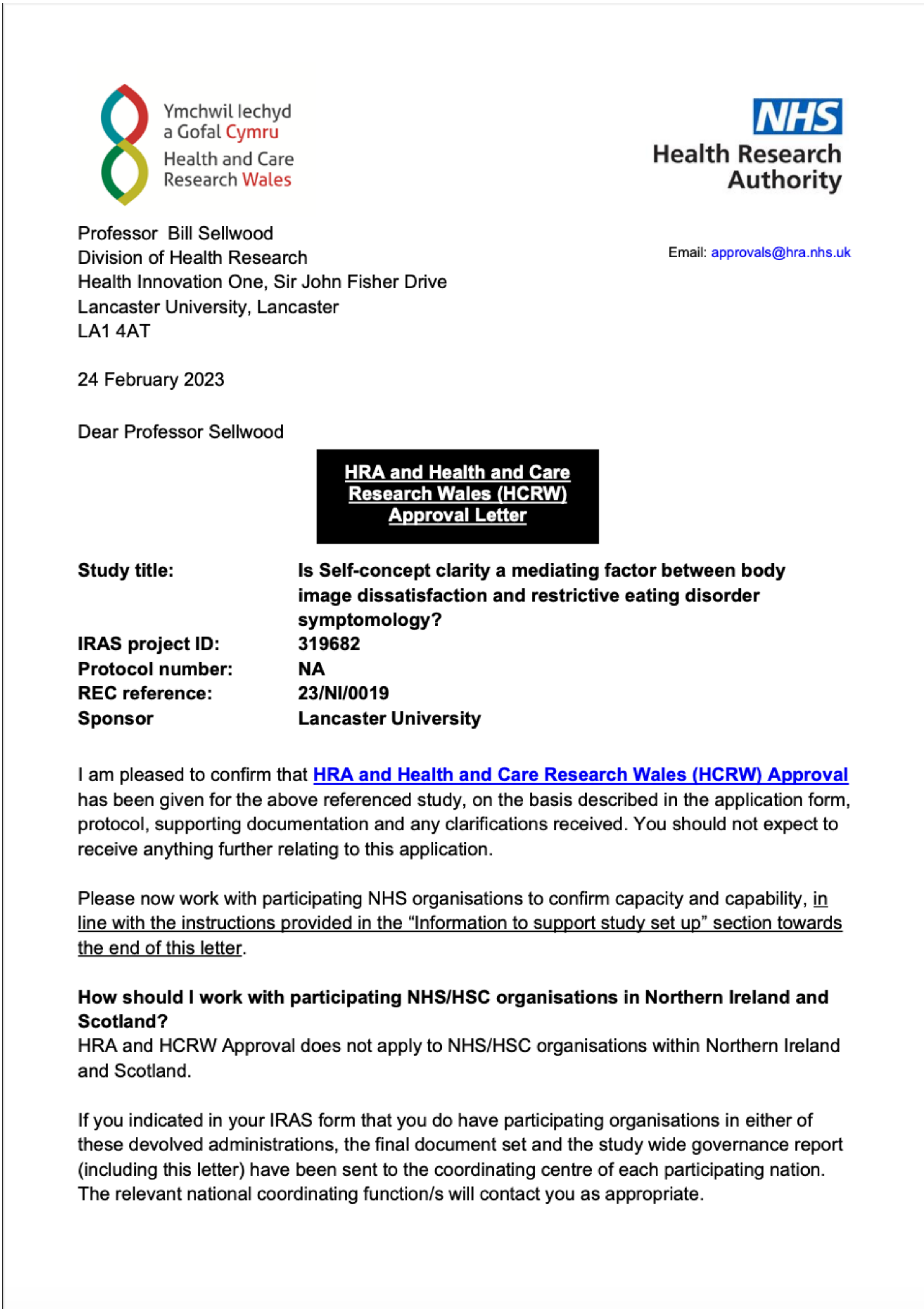
pp. Melissa Stewart
Dr Anne Moorhead
Vice-Chair

Email: PRS@hscni.net

Enclosures: “After ethical review – guidance for researchers”

Copy to: Ms Becky Gordon, Lancaster University
Lead Nation England: approvals@hra.nhs.uk

4-L HRA Approval



Ymchwil Iechyd
a Gofal Cymru
Health and Care
Research Wales

NHS
Health Research
Authority

Email: approvals@hra.nhs.uk

Professor Bill Sellwood
Division of Health Research
Health Innovation One, Sir John Fisher Drive
Lancaster University, Lancaster
LA1 4AT

24 February 2023

Dear Professor Sellwood

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Is Self-concept clarity a mediating factor between body image dissatisfaction and restrictive eating disorder symptomology?**
IRAS project ID:	**319682**
Protocol number:	**NA**
REC reference:	**23/NI/0019**
Sponsor	**Lancaster University**

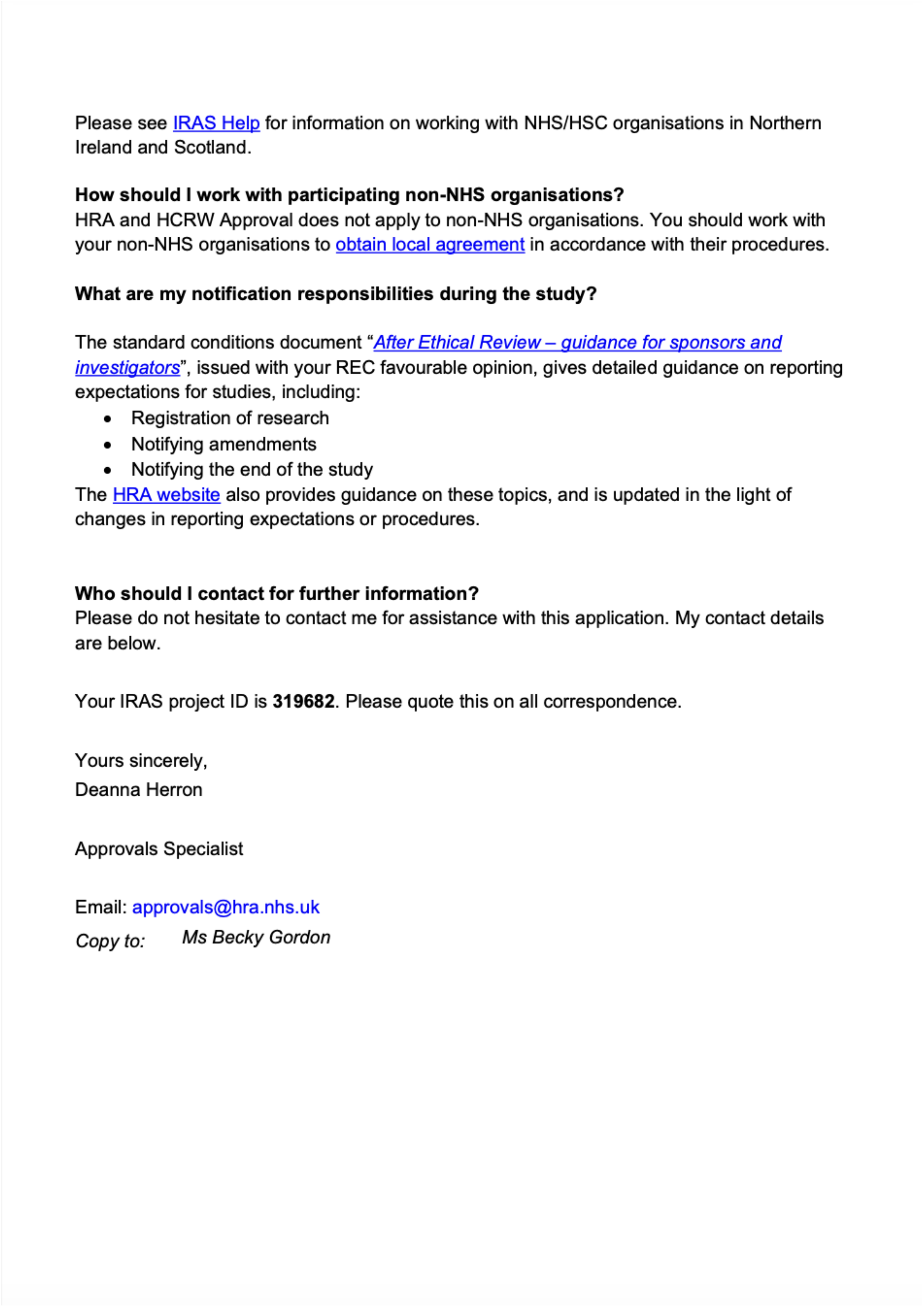
I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.



Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

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

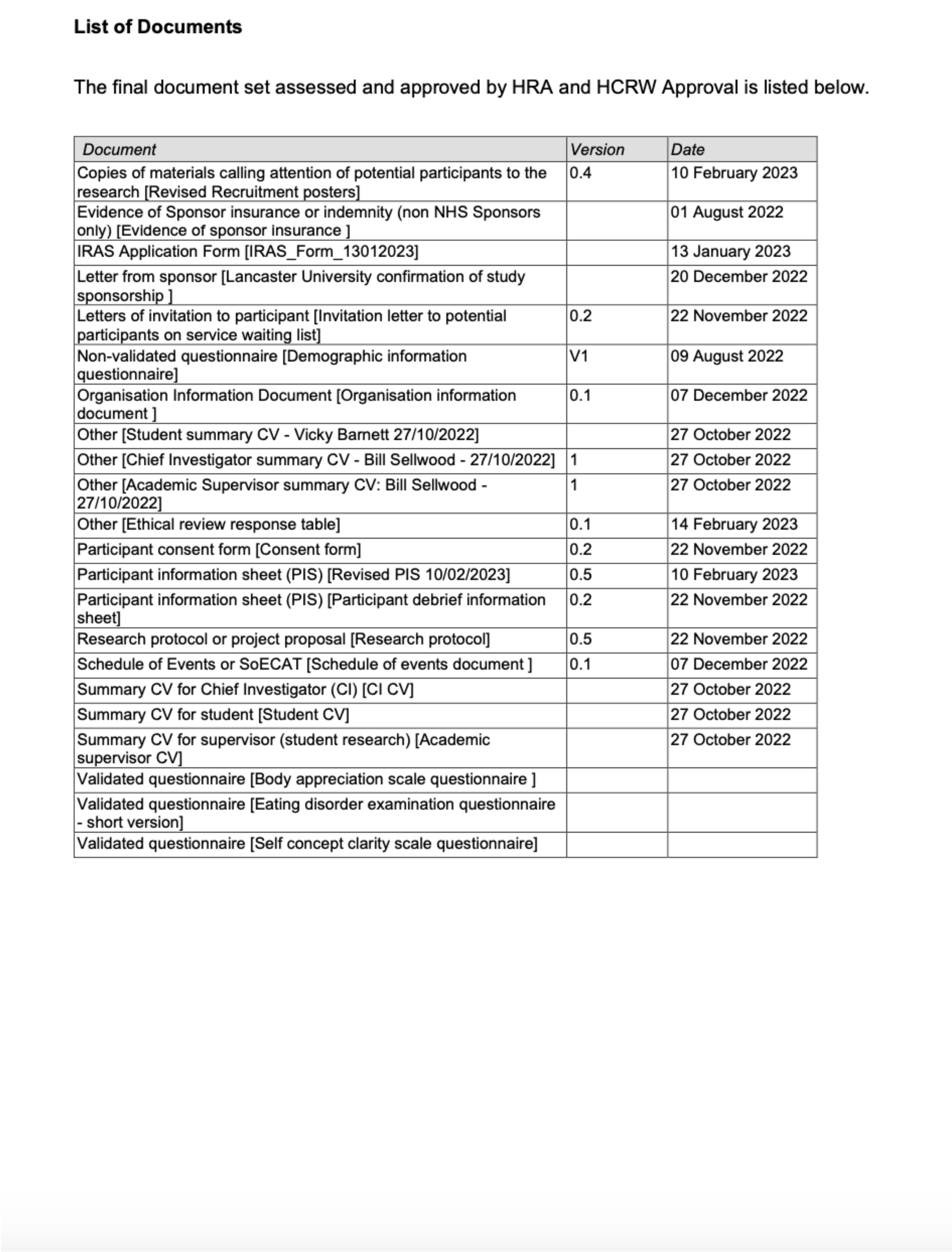
Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **319682**. Please quote this on all correspondence.

Yours sincerely,
Deanna Herron

Approvals Specialist

Email: approvals@hra.nhs.uk
Copy to: *Ms Becky Gordon*



List of Documents

The final document set assessed and approved by HRA and HCRW Approval is listed below.

Document	*Version*	*Date*
Copies of materials calling attention of potential participants to the research [Revised Recruitment posters]	0.4	10 February 2023
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of sponsor insurance]		01 August 2022
IRAS Application Form [IRAS_Form_13012023]		13 January 2023
Letter from sponsor [Lancaster University confirmation of study sponsorship]		20 December 2022
Letters of invitation to participant [Invitation letter to potential participants on service waiting list]	0.2	22 November 2022
Non-validated questionnaire [Demographic information questionnaire]	V1	09 August 2022
Organisation Information Document [Organisation information document]	0.1	07 December 2022
Other [Student summary CV - Vicky Barnett 27/10/2022]		27 October 2022
Other [Chief Investigator summary CV - Bill Sellwood - 27/10/2022]	1	27 October 2022
Other [Academic Supervisor summary CV: Bill Sellwood - 27/10/2022]	1	27 October 2022
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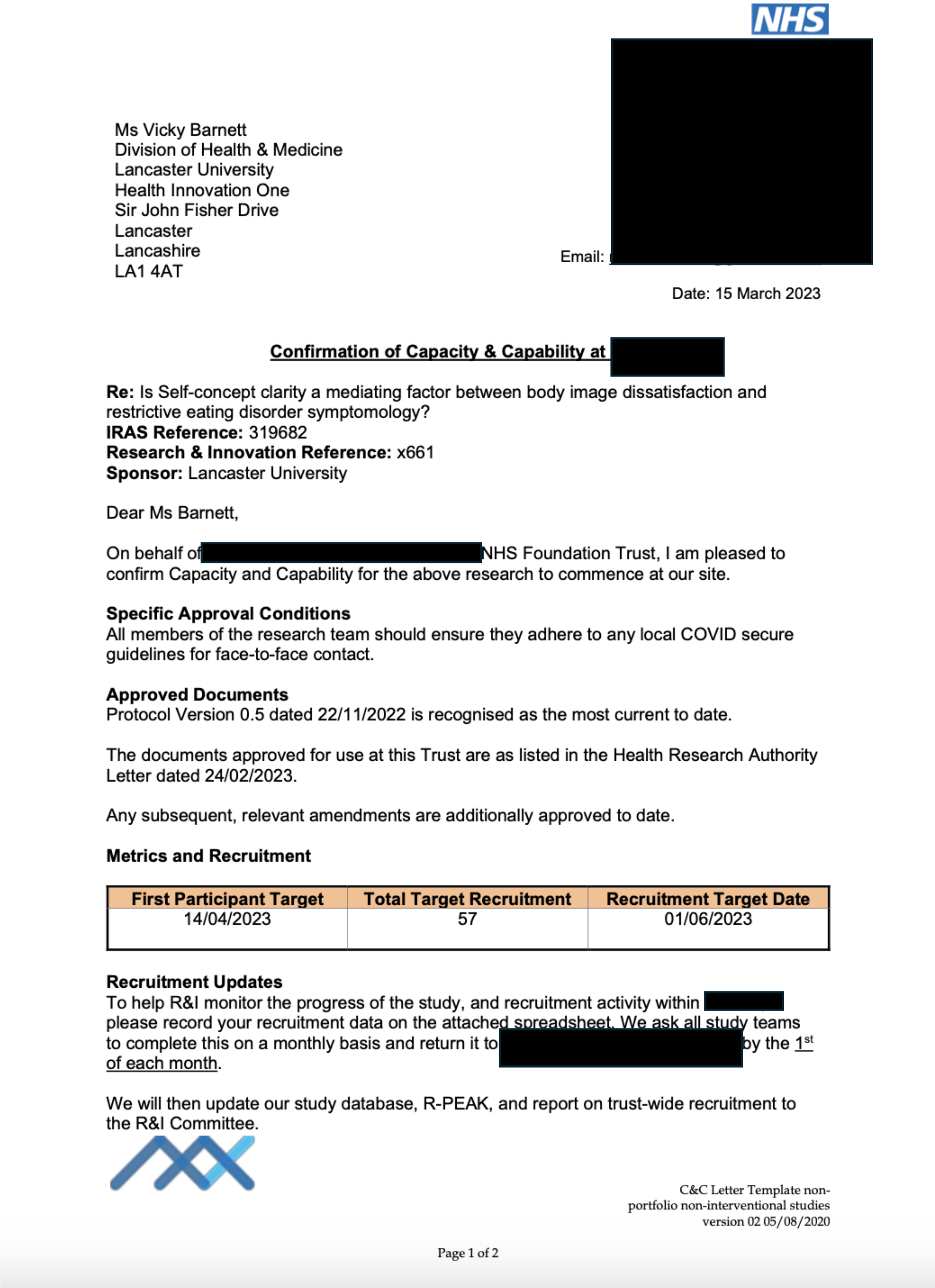
Participant consent form [Consent form]	0.2	22 November 2022
Participant information sheet (PIS) [Revised PIS 10/02/2023]	0.5	10 February 2023
Participant information sheet (PIS) [Participant debrief information sheet]	0.2	22 November 2022
Research protocol or project proposal [Research protocol]	0.5	22 November 2022
Schedule of Events or SoECAT [Schedule of events document]	0.1	07 December 2022
Summary CV for Chief Investigator (CI) [CI CV]		27 October 2022
Summary CV for student [Student CV]		27 October 2022
Summary CV for supervisor (student research) [Academic supervisor CV]		27 October 2022
Validated questionnaire [Body appreciation scale questionnaire]		
Validated questionnaire [Eating disorder examination questionnaire - short version]		
Validated questionnaire [Self concept clarity scale questionnaire]		

4-M R&D Approval



NHS
[redacted]
Email:

Ms Vicky Barnett
Division of Health & Medicine
Lancaster University
Health Innovation One
Sir John Fisher Drive
Lancaster
Lancashire
LA1 4AT

Date: 15 March 2023

Confirmation of Capacity & Capability at [redacted]

Re: Is Self-concept clarity a mediating factor between body image dissatisfaction and restrictive eating disorder symptomology?
IRAS Reference: 319682
Research & Innovation Reference: x661
Sponsor: Lancaster University

Dear Ms Barnett,

On behalf of [redacted] NHS Foundation Trust, I am pleased to confirm Capacity and Capability for the above research to commence at our site.

Specific Approval Conditions
All members of the research team should ensure they adhere to any local COVID secure guidelines for face-to-face contact.

Approved Documents
Protocol Version 0.5 dated 22/11/2022 is recognised as the most current to date.

The documents approved for use at this Trust are as listed in the Health Research Authority Letter dated 24/02/2023.

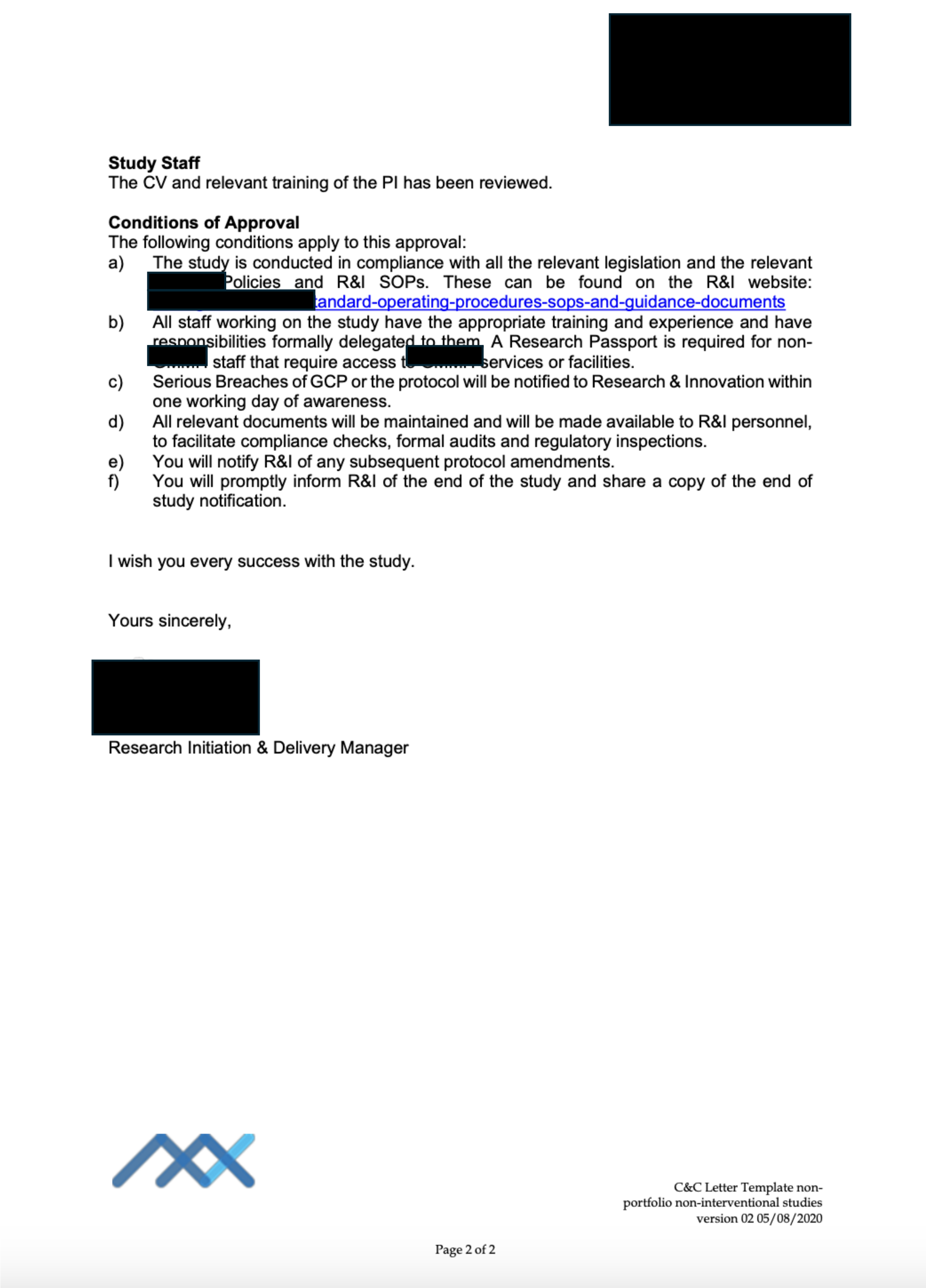
Any subsequent, relevant amendments are additionally approved to date.

Metrics and Recruitment

First Participant Target	Total Target Recruitment	Recruitment Target Date
14/04/2023	57	01/06/2023

Recruitment Updates
To help R&I monitor the progress of the study, and recruitment activity within [redacted] please record your recruitment data on the attached spreadsheet. We ask all study teams to complete this on a monthly basis and return it to [redacted] by the 1st of each month.

We will then update our study database, R-PEAK, and report on trust-wide recruitment to the R&I Committee.



[redacted]

Study Staff
The CV and relevant training of the PI has been reviewed.

Conditions of Approval
The following conditions apply to this approval:

a) The study is conducted in compliance with all the relevant legislation and the relevant [redacted]Policies and R&I SOPs. These can be found on the R&I website: [redacted]tandard-operating-procedures-sops-and-guidance-documents
b) All staff working on the study have the appropriate training and experience and have responsibilities formally delegated to them. A Research Passport is required for non-[redacted] staff that require access t[redacted]services or facilities.
c) Serious Breaches of GCP or the protocol will be notified to Research & Innovation within one working day of awareness.
d) All relevant documents will be maintained and will be made available to R&I personnel, to facilitate compliance checks, formal audits and regulatory inspections.
e) You will notify R&I of any subsequent protocol amendments.
f) You will promptly inform R&I of the end of the study and share a copy of the end of study notification.

I wish you every success with the study.

Yours sincerely,

[redacted]
Research Initiation & Delivery Manager

C&C Letter Template non-portfolio non-interventional studies version 02 05/08/2020