Portfolio submitted in fulfilment of the requirements for the Professional Doctorate in Counselling Psychology

Is Social Media a Breeding Ground for an Obsession with Healthy Eating?

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THE FOLLOWING PARTS OF THIS THESIS HAS BEEN REDACTED FOR COPYRIGHT AND DATA PROTECTION REASONS:

List of abbreviations

AN: Anorexia Nervosa

ON: Orthorexia Nervosa

TA: Thematic Analysis

TOS: Tereul Orthorexia Scale

HeOr: TOS Healthy Orthorexia

OrNe: TOS Orthorexia Nervosa

Acknowledgements

I would like to thank the participants who so kindly agreed to take part in this study, and I hope I have done their vital contributions justice. I would also like to thank my research supervisor, Dr Courtney Raspin, for inspiring me to work with eating disorders from the first lecture she gave me and for supporting me throughout the research process. I am grateful to have had her as a research supervisor, and thank her for challenging my thinking, and encouraging me to persist with my research even when my motivation and confidence were faltering.

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Preface

This thesis offers an exploration of detrimental eating patterns and their possible link to social media use. The portfolio is divided into three sections that are linked by common themes of disordered eating and the current social and cultural environment that may be contributing to an increase in individuals’ preoccupation with health. A framework of the three sections of the portfolio is outlined below, along with a reflection on the personal and professional development process that formed this study.

Sections of the Portfolio

Section A presents the research study that examined Orthorexia Nervosa, a pathological, unhealthy fixation with eating healthy food, and the possible link between the epidemiology of ON and social media use. The study aimed to test the prevalence of ON in an opportunity sample with the use of two different ON measures; to utilise and validate a new ON measure; to examine the relationship between ON and social media use, with a focus on Instagram users; and to further understand the participants’ interpretations of the possible link between eating patterns and social media use. The examination utilised a mixed methods approach that employed both statistical and thematic analysis.

Section B presents a journal article proposed for publication by a respectable academic periodical. The publishable fragment included is a summarised account of the research study in Section A. Previous research regarding ON, a rationale for the study, methodology and methods, and main findings are presented, along with recommendations for practical applications of the outcomes and suggestions for future research.

Section C presents an extended case study and process report which aim to echo and evaluate a piece of therapeutic work from my placement experience. The section exhibits my

clinical work with an individual with binge eating disorder (BED) and highlights the parallels between clinical training and research. The case study employs a CBT-E approach and attempts to highlight the transdiagnostic feature of eating disorders (Fairburn, 2008), in order to bridge the gap between the research study and its clinical applicability. The piece also makes reference to how the current environment contributes to the individual’s distress with a note on social media use. Finally, it suggests that practitioners should be encouraged to discuss their clients’ social media use, as this may give a fuller picture and deeper understanding of a client’s distress.

Development of the Portfolio

The three sections in the portfolio are linked by the themes of eating disorders and the current environment that seems to encourage individuals’ preoccupation with health. The work outlined in the portfolio is influenced by the same epistemological position I hold as both a practising trainee counselling psychologist and a researcher.

I was initially attracted to the pathological unhealthy obsession with healthy eating as a coping mechanism for individuals recovering from other eating disorders. Throughout my own recovery from such a disorder, I found it much easier to eat foods such as fruit, vegetables and nuts, as I perceived these to be healthy due to their non-processed nature. Additionally, reassuring friends and family that I was abstaining from specific foods in pursuit of health rather than weight loss eased their worry. Through my research and my work with eating disorders, I have come to understand that this pattern of eating was possibly caused by my eating disorder disguising itself in a different form, which adheres to the transdiagnostic characteristic (Fairburn, 2008) of eating disorders.

My interest in the potential link between ON and social media use stemmed from my personal use of social media channels. The amount of information readily available to us and

our exposure to thousands of images on a daily basis have been proven to have an effect on our thinking, behaviours and emotions (Barry, Sidoti, Briggs, Reiter, & Lindsey, 2017). My own experience included viewing countless images and videos of food, and numerous ‘fitspiration’ posts, including before-and-after images of body transformations, body goals, exercise and healthy eating plans, images of friends on holiday, celebrities in picturesque settings and shameless yet flawless selfies. It would not be accurate to claim that I never compared myself or my own life to the content I saw online. On some occasions this may have been inspiring and have contributed to positive outcomes, but in other instances it had an adverse effect on my mood. The motivation to examine the relationship between ON and the use of social media therefore stemmed from my own experience of both, and my wish to contribute to existing research on these topics in order to better understand them, and in turn to aid both individuals struggling with them and practitioners working with such individuals.

In order to delve deeper into ON and explore the potential link to social media use, a mixed methods approach was employed. It became apparent to me that in previous studies a lack of clear diagnostic criteria and official measuring system had contributed to significant difficulties in measuring ON. Given also the scarcity of qualitative data concerning ON, it seemed that a mixed methods approach was vital, thus compensating for the shortcomings in each approach by employing the strengths from each.

It had also become clear to me through my peers, the course and reading that a general resistance to quantitative methods existed in the counselling psychology community. McLeod (2015) suggests that this resistance is generated in part by the perception that quantitative methods have minimal significance in the development of applied knowledge concerning therapy, and that the counselling and psychotherapy field would derive greater benefit from, for example, qualitative research and clinical case studies. However, the general

agreement amongst counselling psychologists and psychotherapists is that contemporary research in the field benefits from both methodologies: they demonstrate diverse and complementary attitudes to investigation, and both are essential. McLeod (2015) further suggests that individuals in this profession may not be confident in using quantitative approaches, as this involves a set of skills in which they have not been thoroughly trained and which they therefore avoid. This reflected the experience of my peers, and was an additional incentive for me to use a mixed methods approach, as I would like to motivate others on similar courses to do so too.

The qualitative aspect of the study was analysed thematically. As a researcher I was attracted to the flexibility of thematic analysis, as it seemed relatively easy to understand and learn, and because it has been identified as a useful means of summarising fundamental characteristics in large data sets (King, 2004), which proved beneficial to the current study.

My interpretation, and my post-positivist and critical-realist perception, of the world affected all segments of the portfolio, based on an understanding that builds upon positivist theory whilst drawing on social constructivism, which proposes that reality can only be known imperfectly and that human development and knowledge are socially situated and constructed through interaction with others (Vygotsky, 1978). My aim in this study, therefore, was not to give a comprehensive interpretation of ON and the potential effects of social media use on eating patterns, but rather to stimulate consideration of ON and contribute to continuing research whilst recognising that all observation is imperfect, as theory is revisable (Ponterotto, 2005).

My experience of working in a clinic for those with eating disorders confirmed that the health-centred content to which individuals are exposed online contributes to unhelpful beliefs and attitudes regarding food and eating. In both my research and clinical work,

individuals reported that they were aware of the abundance of unrealistic ideals they observed online but that they lacked immunity to the effects of this content; this reinforces the importance of social media literacy for clinicians and clients, and suggests that social media should be considered as a contributing factor to the cause or continuation of eating disorders.

My personal experience, research and clinical practice in eating disorders have given me a multifaceted and rich understanding of such conditions. Both my clinical practice and my research have highlighted the importance of bracketing my own assumptions and experiences in order to allow space for the client or participant to express their own stories and for me to improve my understanding. Although my motivations to research and work with eating disorders were intertwined with my own story, it was vital for me to learn to separate it throughout the process of assembling the portfolio.

The word empathy is, for me, synonymous with counselling psychology. Counselling psychologists strive to help individuals to give meaning to their own stories, through fostering a strong therapeutic alliance and observing a holistic image of others. The development and completion of this piece of work has highlighted how counselling psychologists can generate useful and novel research using their empathetic lens, which can in turn inform therapeutic practice and interventions.

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Section A: Doctoral Research Paper: ‘Healthy Eating’ and Social Media Use

Abstract

Orthorexia Nervosa (ON) describes a pathological, unhealthy fixation with eating healthy food. Research concerning the symptomatology of ON, and its prevalence in numerous samples, differs as there no official measures or clear diagnostic criteria exist for this fairly new affliction. Though research on the link between the epidemiology of ON and social media is gaining traction, published evidence is scarce. This study intends to further understand ON and its possible link to the use of social media, and specifically, to test the prevalence of ON in an opportunity sample with the use of two ON measures – the ORTO-15 and the Tereul Orthorexia Scale (TOS); to use and validate a new ON measure (TOS); to examine the relationship between ON and social media use, with a focus on Instagram users; and to further understand the participants’ interpretations of the possible link between eating patterns and social media use. This study uses a convergent design and a mixed methods approach, which employs both statistical and thematic analysis (TA) to evaluate the quantitative and qualitative data generated. Data from 201 participants suggested a high prevalence of ON across the sample, and the results also reinforced the validity of the TOS measure ($\alpha = .86$). ORTO-15 scores showed significant differences between age groups, genders, and Instagram users and non-Instagram users. The TA generated three overall themes: ‘The Importance of Belonging’, ‘Health as Art’ and ‘Craving’. The high prevalence in the sample may have been a result of the researcher’s recruitment method, and the ON measures may have categorised individuals on non-medically prescribed diets as ‘orthorexic’. Both the quantitative and qualitative results offer evidence to support a possible link between ON and social media use, specifically Instagram. Further research should be done to establish official criteria and measures for ON and the effect of social media on eating patterns, and to investigate the notion of ‘healthism’.

Introduction

Overview

The aim of the present study is to further understanding of Orthorexia Nervosa, the ‘unhealthy’ preoccupation with ‘healthy’ eating, and its potential link to the use of social media, specifically Instagram. I hope to contribute to a greater understanding of this relatively new affliction by utilising a mixed methods approach, examining various measures for Orthorexia Nervosa as well as trying to understand the meaning individuals give to the possible link between their eating patterns and their use of social media.

Orthorexia Nervosa has not been clinically acknowledged as an eating disorder, nor does it have any relationship to body image concerns. It is assumed, for the purposes of this study, to be an eating disorder that may have a possible link to weight and shape concerns in the pursuit of health. The following chapter outlines the aims of the current study, examines previous research concerning the topics of Orthorexia Nervosa and social media, and provides a rationale for the study.

Background

Orthorexia Nervosa

The developing literature, from a social constructionist viewpoint, establishes that eating disorders offer an insight into a spectrum of cultural conditions of being, and the integral ambiguities within these conditions (Nagel & Jones, 1992; Polivy & Herman, 2002; Stice & Shaw, 2002). It seems to be widely acknowledged that eating disorders result from a multifaceted interaction of genetic, social, biological, psychological and cultural factors. Nagel and Jones (1992) attempt to attribute the increase in detrimental relationships to food to certain socio-cultural factors: the shift in beauty ideals over the past decades, the

association of these ideals with modern consumerism and the diet culture, and the increase of ‘healthism’.

The notion of ‘healthism’ encompasses the development of a heightened awareness regarding health which appeared in the 1970s and has since become a widely accepted ideology associated with good health in Western society (Crawford, 1980). This ideology suggests that good health is attained by healthy eating and regular exercise, and is represented by a slim or athletic body shape (Crawford, 1980). Advertising and popular media promote these health ideals (Dworkin & Wachs, 2009) and highlight how ‘healthism’ affects various practices. Crawford (2004) suggests that behaviours encouraging good health are likely to contribute to increased self-monitoring, in order to conform to the societal pressures of reducing health risks and improving health, which could in turn encourage unrealistic expectations of one’s body. These efforts to conform to societal norms could in fact generate detrimental behaviours (Rich & Evans, 2009). Håman, Barker-Ruchti, Patriksson and Lindgren (2015) state that social constructions of health have increased the general population’s awareness, and placed accountability on people to prevent illness, whilst relating moral responsibility and worth to body weight and shape. Shilling (2013) adds that transforming the body in the quest of an aesthetic goal has become a normal part of life, as people today are urged to monitor food intake and examine their lifestyle in a similar manner to athletes. These comprehensive procedures of reflexive transformation, therefore, generate a socio-cultural context for the development of the relatively new affliction known as ON.

The health food eating disorder was first described as ‘Orthorexia Nervosa’ by US physician Steven Bratman (1997) in an article in *Yoga Journal.* Bratman devised the term in order to describe a pathological, unhealthy fixation with eating healthy food. The word orthorexia is derived from the Greek words *orthos* meaning right and *orexis* meaning appetite.

Orthorexia Nervosa is defined as the wish to consume what is understood by the individual to be healthy, which may result in individuals who suffer from ON eliminating food they believe to be unhealthy, or eliminating whole food groups. Orthorexic individuals are motivated to eat healthily in order to improve their health, to treat and to inhibit disease. The wish to devour healthy foods is not a condition in itself, but the single-minded fixation and obsessive preoccupation with eating healthy foods may lead to increased levels of stress and anxiety about food. Bratman and Knight (2000), report that orthorexic individuals are not on medically recommended diets and that they often spend excessive amounts of time studying, examining and making food. Bratman and Knight outline a self-test for ON comprising 10 YES/NO questions, describing specific behaviours concerning food, such as spending so much time thinking about or preparing food that it interferes with day-to-day life; feeling anxious when consuming what they perceive to be unhealthy or impure; and being judgemental towards people who eat such foods. The test was intended as an informal assessment tool, as the scale does not provide data concerning validity or reliability. ON is not listed in the Diagnostic and Statistical Manual of Mental Disorders, and is not yet clinically acknowledged. However, throughout the literature researchers seem to agree upon certain clinical characteristics of ON.

The earliest peer-reviewed article concerning ON was by Donini, Marsili, Graziani, Imbriale and Cannella (2004), who described ON as ‘maniacal obsession for healthy food’. The study’s aim was to propose a diagnostic tool, and to attempt to validate the occurrence of ON. The diagnosis of ON was based on the occurrence of excessive healthy-eating behaviour patterns and obsessive-compulsive personality characteristics. The orthorexic subjects shared certain traits, such as their feelings towards food, for example labelling biological produce as healthy and industrially produced items as artificial. They also displayed an overwhelming craving to eat when they felt happy, guilty, nervous or excited. Given that this was the first

attempt to quantify ON, this study was limited by the lack of previous literature and reference material. Furthermore, Donini et al. (2004) only employed a single measure from the Minnesota Multiphasic Personality Inventory (MMPI) test (Schiele, Baker & Hathaway, 1943), and used no other psycho-diagnostic control tests. While the paper thus had some limitations, it was nevertheless crucial in the growth of interest in the term ON.

Shortly after the seminal article by Donini et al. (2004) emerged, case studies concerning individuals with ON started to appear in the literature (Zamora, Bonaechea, Sánchez & Rial, 2005). Although case studies are not of great use when attempting to generate a tool to measure ON and demonstrate its validity, they are a vital part of the literature, and have added to understanding of the subjective experience of the sufferers.

Zamora et al. (2005) describe a 28-year-old patient with symptoms of severe malnutrition. Despite weighing only 27 kg, isolating herself from friends and family and eating only uncooked vegetables, she displayed no cognitions typically linked to a diagnosis of Anorexia Nervosa (AN). She did not have a distorted image of her body nor did she wish to be thin; she simply believed that any other foods were toxic and should not be consumed. There appear to be several other case studies describing people with ON in the literature (Park et al., 2011; Saddichha, Babu and Chandra, 2012; Moroze, Dunn, Holland, Yager, & Weintraub, 2015). All the individuals outlined in the case studies had a shared obsession with healthy food, and avoided foods that they considered impure. The case studies provide some evidence to support Bratman’s ON term, but have little statistical validity, as they simply report cases and do not use control groups to compare outcomes.

Orthorexia Nervosa Amongst Eating Disorders

ON appears to be a new development when situated within the broader range of known eating disorders. Bratman and Knight (2000) identified ON as a novel eating disorder

that progresses from an individual’s effort to improve their health through diet, but results in detrimental psychological and physical symptoms. ON is characterised by an obsessive fixation with ‘healthy’ food; ceremonial and restrictive eating patterns; increased self-esteem when obeying self-imposed dietary rules and severe guilt when faced with dietary transgressions; avoidance of social events; possible isolation and malnutrition. ON was therefore proposed as a separate condition to AN even though they appear to have shared characteristics (Dunn & Bratman, 2016).

AN was labelled by Gull (1874) to describe an anxious loss of appetite, and Bulimia Nervosa was coined much later (Russell, 1979) as a variant of AN which did not involve extreme self-control regarding eating. Bratman and Knight (2000) and Donini et al. (2004) suggest that the fundamental difference between ON and AN is that ON is driven by distress regarding ill health, and AN is driven by a fear of being overweight. Whilst the dietary restrictions characteristic of ON may be shared with the aforementioned conditions, preoccupation with weight and shape is not said to be present in ON.

Proving this claim, however, could be challenging, as studies among Western societies have suggested that body dissatisfaction is so prevalent among women that it is considered as ‘normative discontent’ (Rodin, Silberstein & Striegel-Moore, 1984), and that both men and women often experience anxiety regarding their body image and changes in their eating (Striegel-Moore et al., 2009). Proving an absence of concern related to weight and shape in ON could be difficult, as these preoccupations appear so often in the overall population. Additionally, the social constructs of health and wellness principles seem to be closely linked to weight control (Crawford, 1980), making it even more challenging to identify a fascination with health that does not include efforts to control weight.

The fifth and most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (2013), includes eight diagnostic categories for eating disorders: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), Persistent eating of non-nutritive substances (PICA), Rumination Disorder (repeated regurgitation of food), Avoidant and Restrictive Food Intake Disorder (ARFID), Other Specified Feeding or Eating Disorder (OFSED) and Unspecified Feeding or Eating Disorder (UFED). As mentioned above, ON was not included in DSM-5 (2013) although professionals working with eating disorders had testified that orthorexic traits were frequently seen in their clinical practice (Vandereycken, 2011).

A 2015 study by Beat, the UK’s leading eating disorder charity, illustrated that more than 725,000 people in the UK suffer from an eating disorder, with BN being the most common diagnosis, followed closely by BED, and AN making up noticeably fewer of the diagnoses. Studies in young females have indicated a prevalence of 1% for BN, 1% for BED and 0.3% for AN (Hoek & Van Hoeken, 2003), who also report that only a small proportion of sufferers engage with services, which could imply that the occurrence of eating disorders in the general population is much higher than the aforementioned percentages.

Prevalence of Orthorexia Nervosa

Despite the lack of an official diagnostic measure, the majority of studies have used the ORTO-15 (Donini et al., 2004), or a shortened version of the measure, or a version in a different language, with a cut-off score of 40. Although studies have generated various prevalence results, the majority of research has shown a high occurrence of ON in the samples (Aksoydan & Camci, 2009; Alvarenga et al., 2012; Asil & Sürücüoğlu, 2015; Bosi, Çamur, & Güler, 2007; Brytek-Matera, Rogoza, Gramaglia, & Zeppegno, 2015; De Souza & Rodrigues; 2014; Fidan, Ertekin, Işikay, & Kirpinar, 2010; Gubiec, Stetkiewicz-

Lewandowicz, Rasmus, & SobówProblem, 2015; Jerez, Lagos, Valdés-Badilla, Pacheco, & Pérez, 2015; Missbach, Dunn and Koenig, 2015; Ramacciotti et al., 2011; Segura-Garcia et al., 2012; Segura-Garcia et al., 2015; Stochel et al., 2015; Valera, Ruiz, Valdespino, & Visioli, 2014; Varga, Thege, Dukay-Szabó, Túry, & van Furth, 2014).

A study investigating ON symptoms in Turkish doctors (Bosi et al., 2007) found that 45.5 % displayed symptoms of ON. These results were emulated in several other Turkish studies that investigated prevalence of ON in artists (Aksoydan & Camci, 2009), medical students (Fidan et al., 2010) and dieticians (Asil & Sürücüoğlu, 2015), where more than 40 % of the samples tested were considered to have ON. The prevalence in these samples may have been influenced by the view of health or dieting behaviours in Turkey, or by the participants’ professions, as medical professionals may place a higher value on health than the average population, and performance artists may conform to appearance-related expectations.

Even higher prevalence scores have been reported in studies conducted in dieticians (Alvarenga et al., 2012) and nutrition students (De Souza & Rodrigues, 2014) in Brazil. Both studies used a version of ORTO-15 translated into Portuguese, and showed prevalence rates of ON above 80 %. Researchers expressed their reservations about the measure’s validity, but the extremely high occurrence of ON could have been influenced by the Portuguese translation, or by the population sample which seems to be at higher risk of developing ON. Similar findings were also present in the study by Valera et al. (2014) of a Spanish ashtanga yoga community, which used a Spanish translated version of the ORTO-15. The study reported the occurrence of ON in 86% of its sample. Researchers report that the high prevalence in this sample may be explained by the excessive attention that ashtanga yoga practitioners pay to food and diet, as it is noted that maintaining a healthy diet is a core aspect of yoga (Ross, Friedmann, Bevans, & Thomas, 2013).

The high prevalence findings of ON when utilising ORTO-15, and the cut-off score of 40, encouraged researchers to question this specific cut-off point and to examine their results with a reduced cut-off score. An Italian study examining ON in the general population (Ramacciotti et al., 2011) generated a prevalence of 57.6 % when using the cut-off score of 40; however the prevalence was reduced to 11.9% when the researchers altered the cut-off score to 35. Another Italian study (Segura-Garcia et al., 2012), using the ‘sensibly lower’ cut-off score suggested by Ramacciotti et al. (2011), examined ON in athletes and showed a prevalence of ON in 28% of male athletes and 30% of female athletes. A 30% prevalence using the reduced cut-off score was also reported by Jerez at al. (2015) in a study examining high school students in Chile.

Altering the cut-off point led to differing results and should be further investigated. The findings may be due to the fact that the studies were focussed on small and highly specific samples, such as medical students, nutrition students and dieticians. Nevertheless, it is clear that further studies on the occurrence of ON need to be carried out, using larger and broader samples.

Orthorexia Nervosa Across Different Demographics

The relationship between demographic data and eating disorders has been widely documented. Demographic information was included in the study as it provides data about participants and is vital to the generalisability of results, determining whether participants in the sample are representative of the target population. The demographics analysed in the current study are age, gender, ethnicity, country of residence and education level. The various demographics were taken into consideration, as they are independent variables that could potentially affect ON scores as well as social media use. The following attempts to outline

findings regarding these demographics and their link to eating disorders and ON in order to offer a better understanding on how these may be linked.

Age

Eating disorders have been predominantly associated with adolescent girls. A 2013 study in the UK offered evidence to support this, as the highest incidence of eating disorders occurred in females between the ages of 15 and 19 (Micali, Hagberg and Petersen, 2013). The study identified that the peak age for diagnosis for males differed depending on the disorder, and was 15–19 for AN, 20–29 for BN and 10–14 for Eating Disorder Not Otherwise Specified (EDNOS).

Studies relating to the prevalence of ON offer conflicting results regarding the link between age and ON. Several studies have suggested that ON is more common in younger adults than older adults. A medium-sized effect was reported by a study examining medical students in Turkey, where participants below the age of 21 were more likely to present with ON than those over the age of 21 (Fidan et al., 2010). ON was also more common in younger Italian (Dell’Osso et al., 2016a) and Croatian (Livazovic & Mudrinic, 2016) students than in older students. Similar results with smaller effect sizes, suggesting that ON is more prevalent in younger adults, were repeated in studies involving athletes in Italy (Segura-Garcia et al., 2012) and fitness club members in Germany (Rudolph, 2018) and in Portugal (Almeida et al., 2018).

Contrary to the above, the seminal Donini et al. (2004) study suggested that ON was positively correlated to age. Similar results, indicating that ON was more likely to increase with age, were shown in a Spanish study of ON in ashtanga yoga practitioners (Varga et al., 2014).

Nevertheless, a number of other studies in varied cultural and age-range populations have generated results suggesting that no significant relationship exists between ON and age (Aksoydan & Camci, 2009; Bundros, Clifford, Silliman, & Neyman Morris, 2016; Depa, Schweizer, Bekers, Hilzendegen, & Stroebele-Benschop, 2017; Grammatikopouou et al., 2016; Herranz Valera, Acuña Ruiz, Romero Valdespino, & Visioli, 2014; Turner & Lefevre, 2017).

These conflicting outcomes may be due to the lack of an official measure or to other complicating factors that have not been considered in the aforementioned studies, such as gender or ethnicity. There seem to be equal numbers of studies suggesting that a younger age is linked to ON, as there are studies proposing that age is not related to ON. More research is required to understand the link between age and ON, and specifically studies employing older adults, as previous research has predominantly focussed on participants between the ages of 20 and 30.

Gender

Eating disorders have been predominantly linked to females, yet males comprise 25% of those suffering from eating disorders (Adult Psychiatric Morbidity Survey, 2007). Although it is irrefutable that eating disorders present more often in females, males may nevertheless be under-represented as they may be part of the population that will not engage with services. The occurrence of eating disorders in men seems to be increasing, as in 2010 there was a 66% increase in male inpatient admissions reported by the Royal College of Practitioners. This increase could, however, demonstrate a cultural environment that now enables men to admit to suffering from eating disorders.

Gordon (2000) contends that the contemporary woman’s identity is intrinsically conflicted due to the range of pressures felt by women, and that these conflicts manifest in

dieting behaviours and the pursuit of being thin. Hence, struggles of gender, identity and social positioning are manifested through eating. Females seem to be conditioned by society to dislike or doubt their bodies, whereas males are conditioned to be proud of theirs (Chernin, 1983). However, this could be seen from the social constructionist view as an expectation of masculinity. Past studies have illustrated that males may use the development of an athletic figure as a way of forming their masculine identity (Mischkind, Rodin, Silberstein & Striegel-Moore, 1986; Pope, Phillips & Olivardia, 2000). With this in mind, the men can be proud of their bodies and see an athletic body, achieved through exercise and diet, as symbolising masculinity. This seems to be contrary to female narratives, which do not involve being proud of achieving a specific body shape but rather show a persistent dissatisfaction, primarily driven by an ability, or lack thereof, to regulate appetite.

In 2000, Pope et al. documented that males had become progressively more preoccupied with their weight and shape. Additionally, whereas males might control their eating and exercise, they were less likely to classify this as a way to control or lose weight (Drewnowski, Kurth & Krahn, 1995). Contemporary males are portrayed in research as attempting to find their masculine identity in their capacity to lose body fat and increase muscle (Drummond, 1999; 2000 Pope at al., 2000), whilst being averse to any association with ‘female dieting’ (Drummond, 2000).

Gender has been considered to have a central role in socio-cultural perspectives on eating disorders, as both Orbach (1993) and Gordon (2000) have highlighted the struggle females face in the current culture, between adhering to traditional gender roles and acclimatising to new expectations. Several studies to date have examined whether there are gender differences in ON scores (Aksoydan & Camci, 2009; Donini et al., 2004; Fidan et al.,

2010; Bosi et al., 2002; Eriksson, Baigi, Marklund, & Lindgren, 2008), but results regarding a link between gender and ON have been conflicting.

Studies in samples from Germany (Missbach et al., 2015), Spain (Parra-Fernandez et al., 2018a, 2018b; Roncero, Barrada, & Perpiñá, 2017) and Turkey (Sanlier et al., 2016) suggest that ON may be more common in women than men. Findings from the Turkish study (Sanlier et al., 2016) even proposed that females are 2.5 times more likely to suffer from ON than males. However, it is important to note that the samples in these studies mainly comprised women, which may explain the results.

Studies offering contrary results, suggesting that ON is more prevalent in males, have been conducted on Turkish nutrition students (Karakus et al., 2017). Although the sample used in this study was also predominantly female, studies with samples that comprise approximately equal proportions of men and women have suggested that ON is more prevalent among males than females (Donini et al., 2004; Fidan et al., 2010).

Additionally, a number of studies have found no evidence of a significant relationship between gender and ON (Aksoydan & Camci, 2009; Barnes & Caltabiano, 2017; Brytek-Matera et al., 2017; Bundros et al., 2016; Clifford & Blyth, 2018; Dunn, Gibbs, Whitney & Starosta,2017; Depa et al., 2017; Grammatikopoulou et al., 2018).

Existing literature does not seem to agree on differences in prevalence of ON between genders. The mixed results in the studies may have been caused by the varying proportions of genders in the samples, by the particular cultures included, such as Swedish, Italian and Turkish, and by the socio-cultural expectations of masculinity within each culture. Findings may also have been affected by the lack of an official measure of ON.

Level of Education

Studies investigating a possible link between level of education and ON have also offered varied results. The study by Donini et al. (2004) indicated a negative correlation between level of education and ON, suggesting that individuals with lower levels of education were more likely to report orthorexic symptoms. Bosi et al. (2007) attempted to support this correlation, proposing that higher levels of education were linked with fewer orthorexic symptoms, but the correlation was not statistically significant.

Aksoydan and Camci (2009) reported conflicting results, suggesting that higher levels of education were linked to higher levels of orthorexic symptoms; however, this correlation was not statistically significant. Additionally, a medium-sized effect was reported in an Australian sample examining ON, which suggested that it was more prevalent in participants with a bachelor’s degree than in those with a high school diploma (Barnes & Caltabiano, 2017).

There does not seem to be consensus in the literature regarding any link between ON and levels of education. The conflicting evidence may be due to the lack of an official measure for ON.

Ethnicity and Country of Residence

Most studies have been conducted within, and reflect on, the socio-cultural norms of Western society, in which being overweight is seen as unappealing and unwelcomed (Tiggeman & Rothblum, 1988). A number of studies have attempted to examine the importance of cultural norms and ethnicity in individuals’ experiences of eating disorders (Katzman, Hermans, van Hoeken, & Hoek, 2004; Makino, Tsuboi, & Dennerstein, 2004). Early studies showed a large incidence of eating disorders in upper-middle-class teenage and adult females from Western societies (Abrams, Allen, & Gray 1993).

More recent studies proposed that eating disorders are universal and prevalent across different cultures, ethnicities and countries (Gordon, Perez, & Joiner, 2002). Although findings from prevalence studies produce varying results – prevalence in samples from Brazilian nutrition students and dieticians (Alvarenga et al., 2012; De Souza & Rodrigues, 2014) indicate a higher occurrence of ON than that reported in a sample of Turkish dieticians (Asil & Sürücüoğlu, 2015) – the demographic effects of ethnicity and country of residence on symptoms have not been examined. The current study therefore assumes no difference between different ethnic groups regarding eating disorders in general.

Measuring Orthorexia Nervosa

There has been extensive debate regarding a computable description of ON and the difficulties of measuring such a condition (Donini et al., 2004; Gleaves, Graham & Ambwani, 2013; Missbach et al., 2015; Koven & Abry, 2015).

The first measure to be developed was proposed by Bratman and Knight (2000) and involved a 10-question self-reporting questionnaire: the Brat-10. The initial measure concentrates on an obsessive preoccupation with healthy eating, effect of dietary transgressions, impact on daily functioning, and time spent in meal planning. The responses to the questions are framed in a Yes/No format; replying affirmatively to two or three questions implies slight ON, whereas a score of four or above suggests ON. The Brat-10 has not, however, been widely used and is not held in high regard in the scientific community, due to its lack of reliability and validity and its ambiguous nature.

Donini et al. (2004) therefore attempted to position ON in academic literature in proposing a valid and reliable measure for ON with the ORTO-15. This method of calculating ON in the general population is based on Bratman and Knight (2000), which outlined ON as a ‘maniacal obsession for healthy foods’, and bases identification on the

presence of a combination of severe ‘healthy’ eating habits and obsessive-compulsive personality traits. Donini et al.’s (2004) measure was developed by adding to the Brat-10 and was devised as a 15-item measure to examine patterns regarding the selection of food, assumptions about healthy food, eating patterns and the effect of these patterns. The ORTO-15 hence comprises 15 multiple-choice questions, 6 of which are derived from Bratman’s Orthorexia self-test. Additional questions generated by Donini et al. (2004) include ‘Do you think that the conviction to eat healthy food increases self-esteem?’ and ‘Are your eating choices conditioned by your worry about your health status?’ Unlike Bratman’s Orthorexia self-test, Donini et al. (2004) did not use a Yes/No format for scoring, but a 4-point Likert scale that included always (1), often (2), sometimes (3) and never (4), with less obsessive eating behaviours indicated by a higher score. In order to determine whether participants had ON, Donini et al. relied on a combination of scores on the ORTO-15, alongside obsessive-compulsive measures taken from the Minnesota Multiphasic Personality Inventory (MMPI). The test was validated using a sample of 110 participants and by employing a cut-off score of 40. The validation sample generated a 100 % probability of detecting individuals with ON and 73.6 % specificity.

Donini et al. (2004) proposed that for an individual to be considered as being afflicted by ON, they had to display symptoms of ‘healthy’ eating behaviours as well as pathological MMPI scores. While this seminal approach was influential, and a necessary starting point for further studies of ON, Donini et al.’s (2004) decision to utilise the MMPI encouraged debate linking ON and obsessive compulsive disorder, leading to a danger that ON symptoms existing in the absence of OCD personality traits would be disregarded and remain undiagnosed. Additionally, OCD is commonly present in eating disorders and it has been proposed that their comorbidity is due to a common etiological relationship (Altman & Shenkman, 2009). As mentioned above, ON does share similarities with other eating

disorders, but Donini et al.’s method features the element of OCD as a defining characteristic and, while OCD is present in other eating disorders such as AN (O’Brien & Vincent, 2003; Young, Rhodes, Touyz & Hay, 2013), it does not form part of the diagnostic criteria in the DSM-5 (2013). Hence these factors are not necessarily exclusive to ON and may carry less importance than Donini et al. initially suggested.

It has previously been proposed that eating disorders in general could be viewed as classical obsessive-compulsive neurosis (Rothenberg, 1986). Additionally, fixations regarding disordered eating are strengthened by a combination of Western culture’s praise of slenderness and the cognitive weakening linked to restrictive eating (Schmidt & Treasure, 2006). Donini et al.’s (2004) emphasis on obsessive-compulsive personality traits suggest that ON is predominantly a personality disorder that is not influenced by trends; however, the increase of ON in clinical settings serves as evidence to refute this and to support the argument that ON is affected by socio-cultural factors or trends (Vandereycken, 2011). Presenting ON as a personality and behaviour disorder may have been a means by which Donini et al. could differentiate ON from AN, but to suggest that it is not affected by contemporary cultural influences seems contrary to recognising ON as a new developing disorder that should be examined further.

Studies following Donini et al.’s (2004) efforts to measure ON have focussed on examining the lack of validity of the ORTO-15 (Donini et al., 2005; Janas-Kozik et al., 2012; Missbach et al., 2015) and the prevalence of ON in student samples (Fidan et al., 2010; Poínhos et al., 2015; Brytek-Matera et al., 2015b; Bundros et al., 2016). A small number of studies have looked at patients in clinical settings with attributes of ON (Zamora et al., 2005; Park et al., 2011; Saddichha et al., 2012; Moroze et al., 2015). There is a lack of broader studies regarding the socio-cultural environment in which ON is found, and previous

evaluations of ON literature suggest a requirement for holistic and empirical studies that can generate a deeper understanding of ON (Håman et al., 2015).

Moroze et al. (2015) attempted to measure ON, in order that it might be officially acknowledged. They recommended that diagnosis of ON should be based on four overall criteria with various subsections. The first criterion includes features of the ORTO-15, such as feelings of guilt after dietary transgressions and an extreme fixation on healthy foods. Other criteria involve the effects of impairment to physical health and daily function. Two criteria should be identified in order for ON to be diagnosed. The increase of symptoms linked to OCD, schizophrenia, psychotic disorders, food allergies and medical conditions are among the criteria excluded by Moroze et al. (2015). Excluding the exacerbation of OCD symptoms is in contrast to the study by Donini et al. (2004) which included obsessive-compulsive traits as a part of the diagnostic criteria.

Among Moroze et al.’s (2015) proposals regarding new criteria, the exclusion of other psychotic disorders, including OCD or schizophrenia, is reasonable as they are trying to distinguish ON from it merely being an exacerbation of other disorders. They also reveal that clear diagnostic criteria would aid discussions regarding ON and that the literature risks being overcome with debate regarding validity, rather than developing an understanding of ON.

A study by Missbach et al. (2015) questioning the validity of the seminal ORTO-15, noted that items included in the measure are possibly deceptive and involve queries that are not appropriate to the proposed criteria for ON such as ‘at present are you alone when having meals?’ Missbach et al. (2015) therefore examined the German ORTO-15 on a large (1029) and predominantly female sample by using a confirmatory factor analysis. Findings suggested that the reduced 9-item questionnaire (ORTO-9-GE) was the best fitting model, and the shortened version of the questionnaire generated 69.1% prevalence of ON. The study

further acknowledged the need for a valid measure and assessment tool for ON, and similar results in the Turkish, Polish and Hungarian versions of the ORTO-15 have offered evidence to support this (Aksoydan et al., 2009; Brytek-Matera et al., 2015a; Varga et al., 2014).

It is also important to note that the ORTO-15 was developed in Italian and translated into English, which may have had an effect on its validity. The ORTO-15 has been translated into several different languages and has been altered in certain cases where it was believed to better suit the sample being assessed (Asil & Sürücüoğlu, 2015; Bosi et al., 2007; Alvarenga et al., 2012; Pontes, M.I. Montagner, & M.A. Montagner, 2014; Gubiec et al., 2015; Stochel et al., 2015; Jerez et al., 2015).

Recent attempts to develop measures in other languages include the Eating Habits Questionnaire (EHQ) (Gleaves et al., 2013), which was developed in English, the Dusseldorf Orthorexia Scale (DOS) developed in German (Barthels, Meyer & Pietrowsky, 2015), the Tereul Orthorexia Scale (TOS) (Barrada & Roncero, 2018) and the Barcelona Orthorexia Scale (BOS) (Bauer, Fusté, Andrés, & Saldaña, 2018), which were both established in Spanish.

The EHQ was developed in the USA by Gleaves et al. (2013) who conceptualised ON as a severe preoccupation with healthy eating, and extrapolated the diagnostic criteria for their measure by examining Bratman and Knight’s case studies. The measure involves 21 items, ranked on a Likert scale, examining three factors: knowledge of healthy eating; difficulties linked to healthy eating; and positive feelings regarding healthy eating. Validation of the three-factor model produced an internal consistency of $\alpha = 0.90$, $\alpha = 0.82$, and $\alpha = 0.86$ respectively for the aforementioned three factors. The EHQ has since been used in four studies (Barnett, Dripps & Blomquist, 2016; Lopes, Melo & Pereira, 2018; Oberle, Watkins, & Burkot, 2018; Oberle & Lipschuetz, 2018) to examine ON links to personality traits,

exercise, and the influence of ethical and non-ethical factors on in student samples. However, the EHQ has received criticism, as the scale lacks vital components of ON, such as the negative emotions resulting from concern about eating unhealthy or contaminated foods (Zamora et al., 2005), nor does it consider compulsive behaviour (Koven & Abry, 2015). Moreover, the EHQ does not include questions which would display the distress caused by a severe preoccupation with healthy eating.

Similar to the EHQ (Gleaves et al., 2013), the Dusseldorf Orthorexia Scale (DOS) (Barthels et al. 2015) also studied Bratman and Knight’s case studies in order to produce their diagnostic criteria and used a four-point Likert scale. The DOS was generated with the use of multi-level processing, containing item and factor analyses along with standardisation, and used a large online sample. The results from the 1340 online participants generated acceptable results for both retest reliability ($r=0.74$) and Cronbach’s alpha ($\alpha=0.84$). The measure was constructed and validated in German, and was subsequently validated in English (E-DOS) (Chard et al., 2018) with an equally satisfactory Cronbach’s alpha ($\alpha=0.88$). The DOS has been recently used in five German studies that attempted to examine the presence of ON and its association with specific diets or with AN (Barthels et al., 2017, 2018; Depa et al., 2017; Luck-Sikorski, Jung, Schlosser, & Riedel-Heller, 2018; Rudolph, 2018). The E-DOS does not appear elsewhere in the literature, and the lack of any distinction between AN and ON within the scale (Barthels et al., 2017), as well as the fact it was only recently established, may have contributed to the small number of studies referencing it.

Bauer et al. (2018) focussed their criteria of ON for the Barcelona Orthorexia Scale (BOS) on more recent research by Dunn and Bratman (2016) together with the available scientific literature to date. The Delphi method used to develop the scale differed from the aforementioned measures, as it employed both Spanish and English experts on eating

disorders. The BOS comprises 64 items examining six different areas of interest: cognition, emotion, behaviour, negative effects on health, negative effects on daily functioning and differential diagnosis. Although the scale’s method of conception is novel and unprecedented, it lacks validation and hence no studies have used the BOS to date.

The most recent measure to be developed for assessing ON is the Tereul Orthorexia Scale (Barrada & Roncero, 2018). The TOS conceptualises and defines ON as the pathological feature of Orthorexia, which describes an extreme preoccupation with consuming what the sufferer believes to be healthy. The TOS introduces and attempts to measure a new concept called ‘healthy Orthorexia’ (HeOr) which is a non-pathological attitude to healthy nourishment. The diagnostic criteria for this dual conceptualisation was based on a widespread literature review, after which the two authors identified 93 items indicative of ON, which were reduced down to the final 17 questions by removing duplicates and redundant items. The validation process to confirm a two-factor model of HeOr and ON generated an internal consistency of $\alpha = 0.85$ for HeOr and $\alpha = 0.81$ for ON (Barrada & Roncero, 2018). The 17 items of the TOS included the aforementioned two related, yet differentiable ($r = .43$), features of Orthorexia. HeOr is measured with 9 items whilst ON is measured with 8 items. Findings regarding the link between these two variables suggested that HeOr was negatively correlated to measures of psychological distress, whereas ON was positively related to psychological distress, obsessive-compulsive symptoms, perfectionism, low self-esteem and eating restrictions. The proposed bi-dimensional structure of the scale and the links to the novel variables contribute to an understanding of their theoretical underpinnings. HeOr, or Orthorexia non-nervosa, assesses an affinity to healthy eating and characterises a healthy interest in nutrition that is free of psychopathology and is even inversely linked to it. Hence, individuals with high HeOr scores have an interest in healthy diet, and spend a significant amount of money and time preparing, purchasing and cooking

healthy food. Their interest in healthy eating does not seem to cause them any distress, as they appear to be in harmony with their healthy eating behaviour and identify this as a way of life.

Barrada and Roncero (2018) suggest that ON measures the negative impact of the attempt to adhere to a strict regimen of eating. They propose that this factor measures the pathological obsession with eating healthily and that individuals who score highly on this factor are extremely anxious and overwhelmed by their fixations, which in turn generate negative consequences for their emotional state and social interactions. ON as conceptualised by Barrada and Roncero (2018) is linked to obsessive compulsive eating symptoms, feelings of guilt, lack of self-worth and social isolation. This novel arrangement of relations and the distinguishable dimensions offer additional evidence regarding the new scale’s validity, and could contribute to the continued debate regarding ON and its clinical recognition as an eating disorder in its own right.

However, the TOS is not without its shortcomings: the sample in the study comprised predominantly female university students, all the measures were self-reported, and the absence of an agreed definition of ON restricts examination of the content validity of the novel scale. The scale also lacks specific cut-off points, making it difficult to compute prevalence of HeOr or ON in a sample population.

Barrada and Roncero (2018) suggest that further studies should examine the psychometric properties of the scale and conduct cross-validations to examine the constancy of findings in clinical and community populations. They also propose that further use of the scale could assist in the vital task of improving the definition of ON. The overall view to date is that clear diagnostic criteria for ON need to be established, and that no measure has yet been successful in measuring ON.

Social Media

Social media platforms and the Internet have been linked to the rise in eating disorders (Shumar & Madison 2013). Andreasen (1994) suggested that commercial marketing technologies aim to affect the behaviour of their target audience in order to improve individual and societal wellbeing. Dittmar (2007) proposes that consumer capitalist structures focus on the slim ideal for profit by using the Internet as a universal correspondent of this ideal, with the result that the promotion of profit-making social change, in adherence to socially constructed health behaviours, has contributed to the glamourisation of eating disorders (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Recently social media has been used to offer instruction on food consumption, through photographs, videos, recipes or reviews, which has resulted in an excess of sites, channels, blogs and ‘influencers’ attempting to offer health guidance.

The ability to send and view photographs, at any time, anywhere, through a mobile phone exponentially increases opportunities for comparisons based on appearance (Perloff, 2014). Social media enables users to control how they present themselves with frequent use of edited or enhanced images, and also allows individuals to interact with a variety of people, from friends to celebrities (Fardouly & Vartanian, 2016). Social media differs from traditional media in that it allows users to tailor and adapt their online contact and interactions frequently and easily (Perloff, 2014). The continuous increase in social media use in young UK adults, with 90% of individuals between the ages of 16 and 34 using some form of social media (Ofcom, 2015), acts as a motivator for researchers to further understand its effect on our mental wellbeing. Several studies have examined the effect of social media on mental health, as social media use has been linked to increased levels of depression in young adults (Sidani et al., 2016), and eating disorders and behaviours related to eating disorders (Carrotte, Vella, & Lim, 2015). Previous research regarding eating disorders proposes that the

use of social media may add to an ‘echo-chamber’ effect in which beliefs are intensified or reinforced by contact and recurrence inside a closed system, as users believe their values and perceptions of the world to be more common than they are in reality because of the content to which they choose to be exposed (Salathé & Khandelwal, 2011).

Masawi (2019) conducted a qualitative study to further understand the socio-cultural and environmental factors contributing to the development of eating disorders from the perspective of young women, in an attempt to explain the rise in eating disorders. Participants in the study explained that the negative presentation of beauty ideals on social media led to them internalising the thin ideal, which in turn led to body dissatisfaction and dieting behaviours that placed them at higher risk of developing an eating disorder. The study also suggested that a combination of media, availability of fast food and society’s presentation of beauty contributed significantly to the development of eating disorders by generating recurring internal conflicts regarding body image, healthy food choices and societal acceptance.

Previous studies such as Rieger et al. (2010) support this argument and state that individuals form detrimental eating patterns as a response to negative social comparisons. These findings are further supported by Smith, Hames and Joiner (2013) who propose that young women who are more likely to engage in appearance-related comparisons are more likely to display bulimic symptoms. Such comparisons, which can be detrimental to eating patterns, self-esteem and body image, can take place at any time and anywhere with the use of social media platforms such as Facebook.

The social network site, Facebook, has over two billion monthly active users, of whom over one billion access the platform only via a mobile phone, and 1.49 billion are daily active users. Across the globe, 26.3% of the online population uses Facebook

(Newsroom.fb.com, 2019). A number of studies have focussed on examining the link between Facebook use and mental wellbeing, with Facebook being linked to negative mood (Fardouly & Vartanian, 2015), increased appearance-related comparisons, self-objectification, adverse eating behaviours (Tiggemann & Slater, 2013) and body image dissatisfaction (Meier & Gray, 2014).

Tiggemann and Slater (2013) conducted a study on Australian pre-adolescent girls, which indicated a link between time spent on Facebook and motivation for being thin, increased body surveillance, dietary restriction and decreased self-esteem. The participants were under 13, and therefore too young to have their own accounts but, as social media is not limited by cost or physical availability and can therefore be accessed at any time, in private the young pre-adolescent girls had no difficulty in gaining access, and reported using Facebook for more than an hour a day. Even though the study suggested that Facebook has the potential to generate body image concerns and dietary restrictions, it was not successful in identifying which aspects of the platform were linked to these symptoms. Studies on other age groups have indicated similar results (Fardouly et al., 2015). For young women in Australia, Facebook use led to negative comparisons of their own appearance, and the lack of personal contact with distant peers made it harder for them to assess the degree to which the appearance of such peers was idealised.

However, the varied content on social media has been difficult to capture in a controlled study, which has resulted in mixed outcomes (Fardouly & Vartanian, 2016). Cohen and Blaszczynski (2015) conducted another study with young women in Australia, in which they showed the women idealised images on Facebook and in the media, and asked them to answer questions on their internalisation of the thin ideal, appearance-related comparisons, self-esteem and eating disorders before and after being exposed to these

images. The findings indicated that exposure to the idealised images on Facebook were linked to increased risk of eating disorders and body image concerns. However, the study lacks external validity as it used mock social media profiles rather than actual content to which participants would be exposed via their own social media profiles.

Another experimental study with young women in the UK produced findings suggesting that brief exposure to their own Facebook accounts (Fardouly et al., 2015) resulted in increased negative mood. Nevertheless, unlike the previously cited studies, this one did not find a direct link between Facebook exposure and body dissatisfaction or eating disorder risk. This may have been due to the fact that participants were not directed to look at others or appearance-related content; hence the content they were exposed to on their accounts may have not given them the opportunity to compare their bodies to others.

Most studies have been conducted on young females, but a recent study involving males produced similar results in regards to the appearance-related comparisons encouraged on social media platforms. Griffiths, Murray, Krug, & McLean (2018) conducted an online study advertised in New Zealand and Australia, which examined the responses of 2733 men of a sexual minority. Participants responded to questions regarding their use of various social media platforms, as well as dating application use, body image, eating disorder signs and anabolic steroids. The study reported that Facebook, YouTube, Snapchat and Instagram were the most frequently used social media platforms and that there were links between social media use, specifically Facebook, Instagram and Snapchat, and body dissatisfaction, eating disorder symptoms and cognition regarding the use of anabolic steroids. Links between muscularity dissatisfaction and eating disorder symptoms were more prevalent in the use of image-focussed social media platforms such as Instagram than they were for non-image-focussed platforms. Given that the format of Instagram is more image-based than Facebook,

it could engage users in focussing more on appearance-based comparisons and this area may therefore require more investigation (Meier & Gray, 2014; Fardouly & Vartanian, 2016; Holland & Tiggemann, 2017).

Instagram is the world’s fastest evolving image-based social media channel with 1 billion users worldwide, of whom 400 million are active daily users, who spend 53 minutes per day on the platform, with the majority of users being under the age of 35 (Instagram Engagement Report, 2018). Instagram allows users to share and view images and short video content as well as to follow, not only their friends and family, but also celebrities, models, brands and businesses. Instagram appears to be a source of inspiration, as 83% of Instagrammers report that they discover new products and services on the platform, a statistic that makes Instagram an attractive advertisement tool for businesses. Mention (2018), a social media and web monitoring tool, reported that 50% of Instagram users follow at least one business. Recurrent use of Instagram has been linked to increased levels of depressive symptoms, and following a higher number of strangers has been related to increased levels of negative social comparison (Lup, Trub, & Rosenthal, 2015).

As the primary use of Instagram has been sharing and viewing visual content such as images and videos, it has led researchers to propose that it offers more opportunities for appearance-based comparisons and hence could have a more detrimental effect on users’ body image, self-esteem and risk of developing eating disorders, than would other social media channels (Fardouly et al., 2015a; Holland & Tiggemann, 2017). Users are able to alter the content they upload with features offered by Instagram, as well as with the use of other editing apps such as Facetune. The edited images may encourage a specific beauty ideal standard that may in turn result in individuals considering themselves to be less attractive than others (Tylka & Sabik, 2010). Furthermore, as Instagram is more widely used for

individuals to follow and see photographs of celebrities than of friends, colleagues or family, appearance-related comparisons between users and celebrities may be more prominent (Fardouly et al., 2015a; Fardouly & Vartanian, 2016). Instagram seems to be most popular amongst young women, a population that has been most often studied and identified as at risk of eating disorders and body image difficulties related to social media use (Fardouly & Vartanian, 2016).

Most of the studies on Instagram have been limited to the phenomenon of ‘fitspiration’, a combination of fit and inspiration, using images to advocate a fit and healthy lifestyle (Boepple & Thompson, 2018). The rise of fitspiration was purportedly a healthy response to the ‘thinspiration’ (thinness and inspiration) trend, which advocates and glamourizes thinness by presenting images of skeletal females and weight loss practices, and has been linked to the onset of eating disorders (Borzekowski, Schenk, Wilson, & Peebles, 2010; Boero & Pascoe, 2012).

An examination of the #fitspiration hashtag on Instagram, which appears to denote content aimed to inspire or motivate individuals to improve their fitness and health, indicated that most of the content showed images of women with a thin and toned physique along with objectifying features, which could have a negative impact on the viewer’s body image and self-esteem (Tiggemann & Zaccardo, 2016). Fitspiration images also appear only to display one body type, which is thin, fit and toned (Bozsik, Whisenhunt, Hudson, Bennett & Lundgren, 2018).

A study comparing thinspiration and fitspiration online content (Boepple & Thompson, 2016) established resemblances involving guilt-provoking messages regarding bodyweight, the stigma of being fat, and exhorting dietary restraint for weight loss. Whilst the results from this study are useful, the images they examined were presented on websites,

which may not be representative of the fitspiration content featured on social media. Nevertheless, studies involving fitspiration content on Instagram (Deighton-Smith & Bell, 2018) have been linked to body dissatisfaction, and the analysis of the physical characteristics of the individuals in the images support the premise that fitspiration features thin and toned individuals who conform to socio-cultural ideals of beauty.

Preoccupation with food has been linked to eating disorders and ON (Bratman, 1997). An individual’s fixation with food could involve looking at cookbooks, searching for recipes or viewing programmes about cooking on television but, with the rise of the Internet and social media use as well as mobile access to both of these, individuals’ ability to access, and therefore exposure to, images of food, recipes, cooking channels or shows has increased. This is apparent from the popularity of food online, and especially on Instagram. The hashtag ‘#food’ remains one of the 25 most popular hashtags on Instagram, used 360 million times to tag images or video content, with the hashtag ‘#foodporn’ being tagged 210 million times and ‘#healthy food’ being tagged 68 million times. A comprehensive examination of Instagram content suggested that food was one of the eight popular categories, the others being ‘selfies’ (self-portraits), friends, activities, ‘memes’ (captioned photos), gadgets, fashion and pets (Hu, Manikonda, & Kambhampati, 2014). Sharma & De Choudhury (2015) suggest that healthy food posts received more support from users than less healthy images. Studies have also indicated that social media could be used to influence actual food selection as 54% of users use social media to find or share food experiences, and 42% use social media to find guidance regarding food (The Hartman Group, 2012).

Motivating factors for the use of Instagram correspond well with the sharing of food-related content. Lee, Lee, Moon, & Sung (2015) and Sheldon & Bryant (2016) listed

documentation, observation and inspiration as motivators for using the platform, which can be seen in the keeping and sharing of food diaries and searches for recipes.

Foodporn originally denoted watching others cook on television, or seeing palatable meals in magazines (McBride, 2010). In recent times the term has primarily been used to describe glamourised images of food, fashioning and photographing food on mobile devices, and the vicarious consumption of these images through social media (Ibrahim, 2015). The hashtag ‘#foodporn’ has been used to distribute attractive images of culinary experiences with Instagram being a tool widely used to share such images (Mejova, Abbar, & Haddadi, 2016).

The term ‘foodie’ denotes an individual who has an enthusiastic interest in the newest food trends, including how food tastes, looks and smells. Social media is full of individuals checking into restaurants, posting their culinary experiences, and restaurant and meal recommendations (Mejova et al., 2015) and food bloggers or foodies, on Instagram specifically, are followed by millions of people.

Holmberg, Chaplin, & Hillman (2016) and Mejova et al. (2016) explored the visual presentation of food on social media by analysing images tagged with the foodporn hashtag as well as examining the effect of social media peers on adolescents’ consumption of confectionery. It aimed to assess how adolescents use images of food on Instagram by examining the context in which food was presented and the type of food displayed. The study highlighted that food is central to, and portrayed positively in, most adolescents’ Instagram content; the majority of the food images showed foods high in calories but low in nutrients; branded food items were frequently shown as they would be in advertisements; and fruit and vegetables were depicted as they would be in cookbooks in more than a fifth of images.

Further research involving the body shape of the foodie or food blogger include Jin’s (2018) attempt to examine whether the weight and shape of the food blogger had an effect on Instagram users’ response to content shared. The results indicated that the food blogger’s body shape had a significant effect on the user’s eating intentions.

There has been extensive research regarding social media, body image and eating disorders (Holland & Tiggemann, 2016). A systematic review of the body of literature regarding this topic suggested that use of social networking sites is positively correlated to body image concerns and eating disorders, that image-based behaviours are particularly noticeable, that these links are true for both men and women, and that internalisation and appearance-related evaluations facilitate these links (Holland & Tiggemann, 2016). For the purposes of this study I covered some, but not all, studies regarding this topic, with the aim of providing insight into a variety of approaches used to examine social media, both quantitative and qualitative, as this study utilises a mixed methods approach. I wanted to introduce studies in social media research that included participants from different age groups, genders and countries, as this study aimed to recruit a diverse population. Finally, I wanted to present research regarding motivations for using social media, and studies that introduced popular hashtags and social media concepts such as ‘thinspiration’, ‘fitspiration’ and ‘foodporn’ in order to better understand possible trends that could be contributing to the current climate and ON.

Orthorexia Nervosa and Social Media

Despite the apparent effect of social media on weight and shape concerns, eating habits, views of health regarding fitness and healthy diets, how health is influenced by societal beauty ideals, research still remains scarce. Although the link between ON and social media use has been widely discussed in the press (Ball, 2019; Becker, 2019; Brown, 2018;

Dunn, 2018; Haigh, 2019; Mcnamara, 2018; Taylor, 2019; Turner, 2019), only one academic study has examined the potential link between ON and social media use (Turner & Lefevre, 2017), and the emphasis on Instagram in their study was due to the platform being the most widely used to promote healthy eating (Marsh & Campbell, 2016). The researchers added that the forerunners of the healthy eating movement have a powerful social media presence, specifically on Instagram and are able to influence a large number of users, even though they may not have any formal training regarding nutrition or health sciences. The image-based content of Instagram encourages users to follow, and possibly attempt to imitate, the diets they see portrayed online, which could in turn carry significant risks especially when they are encouraged to cut out whole food groups. Although the link between ON and social media use has not been researched in sufficient depth for us to have a clear image, the links between social media use and mental health, and the effect of social media on eating behaviours may contribute to a positive link between Instagram use and ON (Turner & Lefevre, 2017).

Participants in the Turner and Lefevre (2017) study were recruited from advertisements on Instagram, Facebook, Twitter, one of the researcher’s healthy eating blogs and a health blogger’s community newsletter. Data analysis was conducted on 680 females ranging from the ages of 18 to 75, with an average healthy BMI, and most participants lived in the UK or the US. Participants responded to demographic questions including on weight and height, completed the ORTO-15 (Donini et al., 2004) and responded to questions regarding their social media use. These questions included which social media channels they used, to which they could respond by selecting multiple options from: Instagram, Facebook, Twitter, Pinterest, Google+, Tumblr and LinkedIn. Further questions involved how frequently they accessed, and how much time they spent on, social media platforms as well as ranking the content they were exposed to by category, using the eight popular categories suggested by Hu et al. (2014).

Findings from the study indicated that the majority of participants used at least one social media platform, with Instagram being the most commonly used (80%) and Google being the least commonly used. The prevalence of ON in the sample was 90.6% with a cut-off score of 40, reduced to 49% with a cut-off score of 35. There was a significant negative correlation between ORTO-15 scores and Instagram use, and a small positive correlation between ORTO-15 scores and Twitter use. Turner and Lefevre explained that the link between Instagram and ON might be due to the image-focussed nature of the platform as images tend to be remembered more than words (Childers & Houston, 1984). It could also be due to the selective exposure encouraged by social media and its echo-chamber effect. Finally, they suggest a possible occurrence of popularity-based practice by which social media users with a significant following are seen as authoritative figures. The ON link to Twitter could be explained by Twitter’s text-based nature, which does not flatter food as well as images do, and this could be an interesting relationship to investigate further.

The study was not without its limitations as the population sample was not representative of the general population, with participants predominantly recruited from the author’s Instagram account. Furthermore, the research title of the study, ‘Healthy habits on social media’, could have engaged more participants with an interest in health. The study did not exclude individuals on medically prescribed diets, which may also have contributed to the high prevalence of ON in the sample.

Image-based social media platforms such as Instagram have, however, been linked to a reduction in self-reported loneliness, whilst text-based platforms like Twitter do not have this positive effect (Pittman & Reich, 2016). Whilst there is extensive evidence regarding the adverse effects of social media use on mental health, social media does also seem to offer some users inspiration or motivation to try something new, and helps them feel less lonely.

Rationale for Study

The current social and cultural environment seems to encourage the proliferation of conditions such as ON, as individuals are increasingly preoccupied with health and the appearance of health online. ON references in the media have been extensive, and research regarding ON has grown in the past few years. The research has, however, been restricted by the lack of both clear diagnostic criteria and a valid and reliable measurement tool. It is clear throughout the literature that a good measurement tool cannot be developed without clear criteria being established, despite ORTO-15 (Donini et al., 2004) having become the most widely used measurement tool for ON. The measurements of prevalence, possible links to demographic data, use of social media and causal factors have all therefore been problematic.

In addition, most studies on ON have used limited samples, such as nutrition or medical students; they have not used control groups and they have produced differing results on the prevalence of ON, which makes comparing results across studies difficult. Specifically, there appears to be a shortage of new, experimental studies on ON, and a lack of studies building on previous systematic research. The uncertain validity of the ORTO-15 and the absence of clear criteria have led to research being focussed on validity and measurement instead of on gaining a deeper contextual understanding of ON.

With regard to qualitative studies of ON, individual experiences of those affected have been reported (Zamora et al., 2005; Park et al., 2011; Saddichha et al., 2012; Moroze et al., 2015) but these seem to present the most severe cases of ON. Other qualitative data regarding means of ‘healthy’ eating, which precede the aforementioned studies on ON, include Chapman’s (1999) exploration of women’s experience of dieting in general. The study was conducted soon after Bratman (1997) explored the growing concept in the US of an unhealthy obsession with health. Chapman’s (1999) study involved interviews with a non-

clinical population of 17 women, and aimed to examine the changes in their outlooks on eating for weight loss. The discourse analysis employed by Chapman indicated variances between the participants’ ‘old’ and ‘new’ perceptions of dieting. ‘Old’ diet approaches were linked to guilt and restriction, whereas ‘new’ approaches to dieting were linked to an awareness of what participants were consuming and to being conscious of health. Participants’ aims changed from rapid weight loss to long-term changes in routine and, although they identified their new attitude towards dieting as an aspiration to be healthy, the motivation of participants regarding changes to their diet focus on refining appearance rather than physical health. This study highlights the novel changes in the acceptability of dieting in pursuit of health and dieting for weight loss. Current trends that advocate ‘healthy’ eating, such as diets centred around ‘pure’ foods, can conceal the growth of detrimental eating patterns driven by weight and shape concerns, even if these concerns are not directly apparent to others.

The increase in eating disorders in the UK (Health and Social Care Information Centre, 2014) and the emergence of ON as a novel deviation to pathological eating attitudes (Vandereyken, 2011) highlight the need for better understanding of what being ‘healthy’ means in the current environment, particularly given the contention that efforts to eat healthily may have the ability to cause detrimental eating patterns as diets become progressively more rigid and obsessive (Brytek-Matera, 2012).

It has been reported that ON is frequently observed in eating disorder clinics, which could suggest an existing trend (Brytek-Matera et al., 2015; Segura-Garcia et al., 2015; Vandereyken, 2011). This fact, alongside the high prevalence recorded in previous studies, may suggest that orthorexic behaviours are perhaps more common in the general population than we thought. Instead of focussing studies on measurement and distinguishing ON from other eating disorders, it could possibly be useful to gain a better understanding of this

condition and the environment that seems to have contributed to individuals being preoccupied with health. Further research, which could benefit from the contextual depth offered by qualitative approaches, should provide insight into causal factors or motivators for ‘healthy eating’, and in turn ON.

Previous social media research has reported an abundance of negative effects of use, especially on body image disturbances, negative mood and eating behaviours. The increase in social media use and the growth in healthy eating concerns could be contributing to the preoccupation with healthy eating we are seeing in both the clinical and general population. Nevertheless, there is only one study examining the possible link between social media use and ON (Turner & Lefevre, 2017).

The majority of studies on ON appear to be carried out by physicians, psychiatrists or nutritionists. As a counselling psychologist, I would seek greater understanding of the psychological symptoms of ON and a more holistic knowledge of the condition. Furthermore, the lack of qualitative research, and the difficulties faced in quantitative research, of ON could be mitigated by the use of mixed methods studies. The gaps in ON research, the lack of research regarding its potential link to social media use, and the relative absence of the perspective of a counselling psychologist on ON, all fuel my interest to research this condition.

The current study intends to enhance our understanding of ON by examining the prevalence of ON in an opportunity sample; assessing whether there is a relationship between ON scores and the use of social media; analysing participants’ understanding of the aforementioned potential link; and exploring the reliability and validity of a new ON measure. Given that most ON research uses a single measure for ON, which has led to varied results, the study employs the ORTO-15 as well as a proposed new measure by Barrada and Roncero

(2018), which attempts to compensate for the limitations of the ORTO-15 and introduces a ‘healthy Orthorexia’ threshold. The Tereul Orthorexia Scale (Barrada & Roncero, 2018) (r = .43) consists of 17 items which aim to evaluate a healthy preoccupation with diet, and the negative social and emotional influence of rigid adherence to a healthy eating programme.

The study adopts the ideas proposed in a recent study by Turner and Lefevre (2017) in order to build upon earlier systematic data. Turner and Lefevre (2017) attempted to examine the associations between social media use and ON indications, with the use of an online survey examining social media use and eating behaviours. The study indicated that a higher level of Instagram use was related to a greater predisposition towards ON. The study generated a high prevalence of ON amongst Instagram users, but this may have been due to the fact that the authors had advertised the study on healthy eating blogs and their own personal accounts. Their research pool may therefore have been biased by their method of advertisement.

The current study explores whether it can emulate the findings in the Turner and Lefevre (2017) study, with the use of the two aforementioned ON measures, a social media use questionnaire and a demographic questionnaire. The study follows the social media use questionnaire used in Turner and Lefevre (2017), investigating the use of social media outlets such as Instagram, Facebook, Twitter, Snapchat, LinkedIn, but focussed predominantly on the use of Instagram. This is because the aforementioned study produced significant results only for a relationship between Instagram usage and ON scores. Based on this previous evidence, the current study compares the ON scores from the two measures for Instagram and non-Instagram users. The study attempts to compensate for the shortcomings in quantitative exploration of ON, and the difficulties in measurement, by also using a qualitative approach to offer deeper insight into the potential link between ON and social media use. The rationale

of the study is to contribute to a greater understanding of the motivators for ‘healthy’ eating and of the current climate contributing to ON, by exploring through the use of probing questions the participants’ understanding of the impact of social media on their eating patterns. The study benefitted from a convergent design, a mixed methods approach that used both statistical and thematic analysis (TA) to evaluate the quantitative and qualitative data generated.

Reflexivity

Reflexivity requires the researcher to be aware of their own impact on the development and results of the research, and stems from the proposition that knowledge cannot be distinct from the ‘knower’ (Steedman, 1991). There is a vast amount of information about reflexivity in qualitative research, but minimal advice concerning reflexivity in handling quantitative data. This may be due to the premise of positivism and the nature of quantitative research, as the researcher is independent of the data and the research. However, as a researcher, I am driven by my own motivations to research a particular subject and to examine certain relationships, which supports the notion that knowledge cannot be independent of the knower and maintains the premise of post-positivism.

My motivation for researching this topic stemmed from a personal interest in eating disorders and ON. Having had an eating disorder myself, I am interested in why individuals treat food not simply as nutrition, but as a form of comfort or means of control. Whilst recovering from AN, I found myself developing various coping mechanisms, including replacing certain detrimental behaviours with other equally damaging ones. During my recovery, I did not feel comfortable eating foods that I did not consider to be ‘healthy’. I experimented with different diets, such as veganism, raw veganism and ketogenic diets, which allowed me to cut out whole food groups without causing concern, as I was still eating.

Although I was eating and my weight was stable, my thoughts around food had not particularly changed, as I still struggled with anxiety if I had to go out for dinner or found myself in situations where I could not control what I was going to eat. I did not know how I could admit to still having difficulties, or how to seek help for a problem that seemed to have been resolved. Given that ON is not clinically acknowledged, and not part of the DSM-5, it is highly unlikely that I would have been aided by any NHS service. This study was, therefore, stimulated by a desire to add to the knowledge of ON, and raise awareness of it, in order to help individuals with this condition more effectively. My personal experience led to me reading more about ON as a coping mechanism for patients already suffering from eating disorders, and many studies have examined the likelihood of individuals with anorexia nervosa or bulimia having orthorexic thoughts (Gramaglia, Brytek-Matera, Rogoza, & Zeppegno, 2017; Barthels, Meyer, Huber, & Pietrowsky, 2017).

My interest in social media usage stemmed from being an active user myself. My generation started using social media as teenagers, and I remember excitedly waiting for my turn on the home computer in order to dial up to the Internet, update my MySpace profile and check what my online friends were doing. Now, in contrast, I have instant access to social media through my smartphone and use an array of platforms, and these immense changes in the availability and use of social media have altered my perception and have been proven to have wide-reaching effects. A number of studies outline the effects of social media and examine its link to mental health issues (Wongkoblap, Vadillo, & Curcin, 2017). Easy access to a wealth of information and exposure to thousands of images on a daily basis have been proven to have an effect on our thinking, behaviours and emotions (Barry, Sidoti, Briggs, Reiter, & Lindsey, 2017). My motivation to examine the relationship between ON and the use of social media stemmed therefore from my own experience of both and my wish to contribute to the existing research concerning these topics, in order to better understand them

and in turn to help both the individuals struggling with them and the practitioners working with such individuals.

Finlay (2002) explained the functions of reflexivity as analysing the effect of the researcher’s position, view and presence. The choice of questionnaires and the questions posed have been informed by my perception and views. I initially thought that my presence would have no effect on the data collection process, as this took place online. In retrospect, I realise that my presence probably did have an effect, as I recruited participants through my friends and family, via email and messages and through online advertisements on my social media platforms (Facebook and Instagram). Although I was not physically present while participants were responding to the questionnaires and probing questions, they may have responded knowing that I would be analysing their data.

Finlay (2002) suggests that reflexivity increases the reliability and trustworthiness of the research by meticulously analysing the research process, method and results. It allows the researcher to reflect upon the research and identify any limitations throughout the process. Finlay (2002) also suggests that a researcher should be reflexive at each stage of the research, able to reflect on the topic, their relationship to it and their assumptions concerning it, even at the pre-research stage, in order to increase their understanding of how this may affect the research, and how to manage these effects. I have reflected upon my own thoughts about the topic and my experiences during my own therapy, by talking about my reasons for researching this topic and my findings, not only to my therapist, but also to my supervisor, colleagues, friends and family in order to acquire different perspectives and a better understanding of my own perspective, and I continued to do so throughout the process. I was aware that the quantitative segment of the study was less likely to be affected by my

assumptions concerning the topic, but that they may have affected my analysis of the qualitative segment of the study.

The data collection stage involved online questionnaires and probing questions. In this quantitative segment of the study, it may be relevant to reflect on the data analysis stage, and more specifically my interpretation of the statistical results. Whilst biasing statistical analysis is difficult, I was aware that, as a researcher, I might have been more drawn to interpreting statistically significant results in my analysis, and biased towards being inclined to find a statistically significant result that would support the hypothesis proposed by Turner and Lefevre (2017) of a link between ON scores and Instagram users. However, I was also aware that the lack of a significant result is a result in itself.

Knowing that qualitative research is characteristically interpretive, I needed to be aware of my own biases, values and judgements, so that they could be considered during the analysis stage. I realised that my own perception of social media may have already created a negative bias towards it. I expected to find negative connotations regarding healthy eating and social media use, which I was aware came from my own negative experience. Looking at the data, and seeing that some people use social media for motivation, inspiration or ideas, all of which I deem to be positive, challenged my expectations of what I would find.

Reflexivity also entails thinking about the participants’ emotions and managing them. This can be closely tied into ethics as it is the ethical responsibility of the researcher to take into consideration how responding to our research questions may affect the participant or may provoke certain emotions or thoughts (Guillemin & Gillam, 2004). In this study, a participant may have been prompted to think about their eating patterns, thoughts, behaviours and emotions as well as their use of social media, through answering the online questionnaires. It was vital to clarify that these questionnaires and probing questions do not

aim to diagnose anyone with normal or abnormal eating patterns, or normal or abnormal use of social media outlets. However, if participants were still worried about issues the questionnaires had raised for them, they were able to contact the researcher or research supervisor, who would direct them towards appropriate help.

During the period in which I was conducting my research and writing it up, I was also on a placement in an outpatient clinic for eating disorders. Both my research and my clinical work posed similar challenges for me: keeping my own story separate from my clients’ stories, and keeping my own biases outside the therapeutic space. Using the benefit of my experience, without allowing it to influence me as a researcher or a therapist was a delicate balance, but personal therapy and a reflective diary allowed me to explore my story and biases thoroughly, and to differentiate them.

Research Aims

The study has four aims:

To utilise and validate a new measure for ON, the TOS (Barrada & Roncero, 2018), which introduced a HeOr threshold.

To test the prevalence of ON in an opportunity sample with the use of the ORTO-15 (Donini et al, 2005) and the TOS (Barrada & Roncero, 2018). To examine the relationship between ON scores, demographics and social media usage, specifically Instagram usage.

To further understand the participants’ interpretations of the possible link between eating patterns and social media use, through the use of probing questions and TA.

Hypotheses

The hypotheses tested in the current study are based on findings from previous studies examined in the literature review above. The hypotheses aim to examine demographic

differences between ON scores as well as the validity and reliability of the TOS (Barrada & Roncero, 2018).

The validity and reliability of the TOS (Barrada & Roncero, 2018) is tested. The TOS has not been used in any other studies to date; however it is predicted that HeOr will be negatively correlated to measures of psychological distress in the TOS and the ORTO-15.

The demographics analysed in the current study are age, sex, ethnicity, country of residence and education level. The hypotheses tested are whether the aforementioned demographic factors have a significant effect on the ON scores. Previous research has not established clear demographic effects on scores, which could inform the direction on the hypotheses being tested.

The final hypothesis tested attempts to analyse the differences between social media use and ON scores. Previous research indicates that Instagram users are more likely to rate highly on ON scores than non-Instagram users (Turner and Lefevre, 2017). The hypothesis therefore tests the potential difference between ON scores of Instagram users and non-Instagram users. The null hypothesis tested was that there are no significant differences in ON scores between the two groups and hence no significant effect of Instagram use on ON scores. The alternative hypothesis was that there is a significant difference in ON scores between the two groups and that Instagram users are more likely to have high ON scores than non-Instagram users. The understanding of these findings was further enhanced by the responses to the probing questions regarding the participants’ view of the potential effect of social media use on their eating.

The qualitative research question being whether social media has an effect on eating patterns and if so what participants make of it and their understanding of this potential link.

Methodology

Overview

This chapter aims to provide a detailed explanation of the research methodology and method utilized in the study. It includes an explanation of the epistemological view that informs the work, and a rationale for the use of the mixed methods approach and TA. Finally, the methodological process is described, followed by the ethical considerations and validity of the study.

Mixed Methods Design

Since the nineteenth century, quantitative methods have been considered the gold standard in scientific research. Initially used by psychophysicists to test hypotheses (Atkinson & Hammersley, 1994), they have also been employed widely in psychology studies. Although they have allowed researchers to examine large groups, findings tend to generalise a specific sample in the population (Brennan, 2001). Quantitative methods have also been criticised for being unable to apprehend the abundance of human experience, as they may often simplify and transform objective data (Willig, 2008).

Later, in the early twentieth century, some researchers began employing qualitative approaches, as they refuted the positivist view of one objective reality that can be explained solely by numerical data (Smith & Heshusius, 1986). Supporters of qualitative methods saw the importance of understanding bias and inter-subjectivity, and consequently rejected conventional research approaches (Guba & Lincoln, 2005). Despite their ability to produce in-depth analyses, qualitative methods were not extensively used in psychology until the late twentieth century (Denzin & Lincoln, 2005).

The popularity of the combination of quantitative and qualitative approaches in social sciences developed in the 1960s (Leech & Onwuegbuzie, 2009) and grew further when researchers suggested that the mixed methods approach can facilitate richer findings than qualitative or quantitative data alone (Tashakkori & Teddlie, 1998). In mixed methods approaches, each approach may complement the other as the strengths of both can be employed and different methods can be used to answer different questions (Vidich & Shapiro, 1995). Mixed methods can be used for development, when findings from one approach denounce the other; initiation, when discrepancies are revealed that inform a novel research question; and expansion, when different approaches to a question are employed to expand the range of investigation (Greene, Caracelli & Graham, 1989). Employing two approaches may improve the accuracy of the findings, which could in turn aid both practitioners and clients (Gergen, 2001). Given the difficulties in measuring and the obstacles in quantitative research, as well as the scarcity of qualitative data concerning ON, a mixed methods approach was considered suitable in offering a deeper insight into ON as well as fitting in with the aims of the study.

The study used a convergent parallel design, which involved conducting the quantitative and qualitative elements of the study concurrently, weighing the methods equally, analysing the two elements independently and interpreting the results together (Creswell & Pablo-Clark, 2011). A triangulation strategy (Creswell, 2009) was employed to analyse the interactions between the quantitative and qualitative results during the interpretation phase.

Epistemological Stance

A researcher’s epistemological position reflects vital assumptions about the nature and source of knowledge, which in turn informs the research strategy. Hence, the epistemological position chosen dictates how data concerning a particular phenomenon

should be collected, examined and used. Research philosophy encompasses an extensive range of disciplines including pragmatism, positivism, realism and interpretivism (Collins, 2010). In counselling psychology there has been extensive debate surrounding the nature of knowledge and the validity of research methods, due to ethical limitations and the complexity of social sciences (McLeod, 2003).

This study uses a convergent, parallel, mixed method approach by drawing on both quantitative and qualitative data. Due to the nature of the study and my own assumptions of the nature of knowledge, the study is informed by a post-positivist position, which is neither subjective nor objective, neutral and distant. Post-positivist research highlights the importance and development of novel knowledge and offers support to social movements that aim to alter the world and fund social justice. Post-positivist studies are often all-encompassing rather than specific. Post-positivism adheres to the premise that theory and practice cannot be separate; hence researchers’ incentives and obligations are fundamental and crucial to their research (Schratz and Walker, 2005).

A post-positivist approach intends to make up for the shortcomings of positivism as there has been an increase of interest concerning the limitations of the epistemological foundations of positivism in the past few decades. Positivism is based on the premise that knowledge is derived objectively, empirically and scientifically. It dictates that specific subjects are commendable to study, specifically those that occur in the public world. In positivism the researcher is seen as independent to the research, as the link between the self and knowledge is disregarded (Collins, 2010).

Positivism ties in well with quantitative research, as it is founded on the notion that science is the sole means of learning about the truth. Furthermore, positivism supports the perspective that only factual data acquired from observation is reliable. Hence the part of the

researcher in positivism studies is restricted to an objective collection and interpretation of data. Positivism is contingent on quantifiable observations that are central to statistical analyses and agrees with the empiricist understanding that knowledge comes from anthropological experience. Positivism involves an atomistic and ontological view of the world which implies that all psychological phenomena can be reduced to simple elements, whilst examining why these elements came to be and how they can be grouped together based on their similarities and differences (Collins, 2010).

Positivism has been criticised as being superficial, as research findings in positivist studies are solely descriptive and lack in-depth understanding of issues. The resistance to positivism arose from progress in qualitative research, along with critical psychology, anthropology, feminism and ethnography. Opponents of positivism suggest that there is no neutral knowledge, and that dualism and black-and-white thinking encompass many shortcomings (Hesse-Biber & Johnson, 2015).

Opponents of positivist epistemologies assert that knowledge cannot be separated from personal experience and being. There has been a decline in the reliance on dualistic thinking, as post-positivist studies do not entail being subjective or objective, but instead highlight the complexity and diversity of people and aim to explore meaning, an individual’s perception, experience and knowledge (Henriques, Hollway, Urwin, Venn and Walkerdine, 1998).

If the current study were simply to use quantitative methods, it could have taken a positivist approach. However, due to the limitations of positivism, and the study’s aim to further understand ON and its possible link to the use of social media as well as the individual’s interpretation of this link, a post-positivist approach is better suited. Mixed methods provide a broader understanding of the research topic, which in turn ties in well with

a post-positivist epistemological position (Creswell, 2014). Although all research methods have their limitations (Hoyt & Mallinckrodt, 2012), mixed methods approaches, which use both quantitative and qualitative methods of obtaining data, can compensate for the limitations of each other (Hanson, Creswell, Clark, Petska & Creswell, 2005).

The post-positivist epistemological position’s value (axiology) encompasses respect, privacy and confidentiality, beneficence and justice (Hesse-Biber & Johnson, 2015). The study ensured the participants’ privacy by anonymising the data, and justice by employing random sampling in order to prevent bias and the pursuit of easily accessible participants, such as students. The approach’s belief of its nature of being (ontology) is that there is one reality waiting to be examined and revealed. As mentioned above, most mixed methods studies are informed by this epistemological position, as mixed methods research targets the development of general findings along with the advancement of a better understanding of complexity. The mixed methods approach is founded on the premise that phenomena are not described solely by linear causal mechanisms. It facilitates the acknowledgement of different understandings and offers complementary quantitative and qualitative results, which enhance the accuracy of results (Creswell, 2015).

As a researcher, I am more comfortable with the quantitative segment of the study as I have a background in statistics, and in this segment I cannot project any bias on the results. The independence of the researcher from the data is what initially drew me to carry out a quantitative study. However, if the study were to be solely quantitative it would not offer the insight required to better understand individuals’ experience of ON and to inform practitioners working with individuals with ON about the way their patients perceive their use of social media and its possible link to their eating patterns. In addition, the post positivist position places great value on the researchers’ motivation and commitment to their research.

To adhere to the premise that a researcher can be completely independent of their research is idealistic, as my own motivations and incentives are what drive and inform the research study; hence it could not be entirely independent of me.

If I were to interpret how I view the world and the development of knowledge, I would say I am a post-positivist (Phillips & Burbules, 2000) and a critical realist, a view that builds upon the positivist theory but suggests that reality can only be known imperfectly, whilst drawing upon social constructivism (Vygotsky, 1978), which in turn suggests that human development is situated within social structures, and that knowledge is constructed through interaction with others. TA, therefore, functions well within the study and its theoretical underpinnings, which aim to explore how the themes of the possible link between eating patterns and social media use play out in the data, and how they affect our mental wellbeing.

It has become apparent to me through my peers, course and readings that there is a general resistance to quantitative methods in the counselling psychology community. McLeod (2015) suggests that this resistance is in part generated by the perception that quantitative methods have minimal significance in the development of applied knowledge concerning therapy, and that the counselling and psychotherapy fields would benefit from other types of research, such as qualitative research and clinical case studies. However, the general agreement amongst counselling psychologists and psychotherapists is that the contemporary research in the field greatly benefits from both methodologies, as they bring diverse and complementary attitudes to investigation, and both are essential. McLeod (2015) also suggests that individuals in this profession may not be confident in using quantitative approaches, as this involves a set of skills in which they have not been thoroughly trained, and therefore avoid, as has been the case with a number of my peers. This increases my

incentive to use a mixed methods approach, as I would like to motivate others on similar courses and my peers to do so too.

Quantitative Methodology: Questionnaires to examine ON and social media use

The quantitative approach was employed to provide insight to support the study’s aims of assessing the prevalence of ON, validating a novel measure for examining ON and analysing the relationship between ON and social media use. Survey questionnaires were selected after considering these aims. The study employed two questionnaires for the measurement of ON: the ORTO-15 and the TOS, and emulated the Turner and Lefevre (2017) questionnaire regarding the use of social media. Questionnaires such as those employed in the study enable the production of qualitative data on large numbers of participants. Quantitative approaches have, however, been criticised for omitting data that may be specific to the individual by generalising findings to the greater population (Lamiell, 1981; Runyan, 1983). Hence the quantitative approach used in the study does not aim to offer results that are an absolute truth, but to produce findings that may complement the probing questions.

The outcomes from the survey questionnaires and their statistical analyses could validate the findings from the probing questions, or could explain the themes that arise from the TA of the probing questions. For example, if a high prevalence of ON was computed in the sample that was potentially linked to the use of social media, this could be validated by participants referring to how their use of social media contributes to feelings of guilt when transgressing from their diet in the probing questions.

It is hoped that the combination of quantitative and qualitative results in the study will improve the complete outcomes, compensate for the shortcomings in measurement of ON and offer a better and more in-depth understanding of ON’s potential link to the use of social media.

Qualitative Methodology: Probing Questions and Thematic Analysis

The qualitative aspect of the study was employed to further understand the participants’ interpretations of the possible link between eating patterns and social media use through the use of probing questions and TA.

Probing questions aim to explain or clarify an individual’s response to a survey question and obtain more specific answers. Probing questions aid in seeing the bigger picture and motivating reluctant participants to offer more information (Jarvis, 2010). In the current study, participants responded to questions about their eating in the TOS (Barrada & Roncero, 2018) and ORTO-15 (Donini et al, 2004) questionnaires and were then asked probing questions regarding a possible link between eating and social media use. The use of open-ended questions instead of probing questions was initially considered, as they encourage broader discussion and explanation; however, as the researcher was developing the questions they took on a more probing format instead of open-ended.

TA is based on identifying, analysing and reporting themes in the data (Braun & Clarke, 2006), and was only recently acknowledged as a method in its own right (Joffe, 2012) as it has been criticised as merely underpinning other approaches such as grounded theory and interpretive phenomenological analysis (Braun & Clarke, 2013). Critics argue that TA simply offers the tools to conduct other approaches (Willig, 2013).

Nevertheless, TA benefits as a method from being flexible and applicable over various epistemological perspectives so that it fits with the philosophical standpoint of the researcher. Braun and Clarke (2006) explain that TA fits well with critical realism and allows the researcher to explore the participants’ reported reality and unpick the surface of that reality. They add that it is vital for a good TA to state clearly the theoretical position of the researcher as this informs assumptions regarding the nature of the data. Yet the flexibility of

TA can also be seen as a limitation, as it could lead to research being unfocussed. In order to avoid this risk, the researcher must have good knowledge of the epistemological position influencing their research, as well as clear aims and design. Additionally, the researcher should attempt to generate themes relating to the research question, rather than developing themes that do not reflect anything specific or relevant (Willig, 2013).

TA delivers a highly adaptable approach that can be altered to meet the requirements of an array of studies, producing thorough and rich content and multifaceted interpretations of data (Braun & Clarke, 2006; King, 2004). Braun and Clarke (2006) suggest that TA may be a more accessible approach for less experienced researchers, as it does not require extensive theoretical or technological understanding of other qualitative approaches. As a researcher I was attracted to the flexibility of TA, as it seemed relatively easy to understand and learn. TA has also been outlined as a useful method for summarising fundamental characteristics in large data sets (King, 2004), which proved beneficial to the current study.

Why Online?

Researchers have suggested that the Internet can be an efficient method for gathering and exchanging information regarding psychology research (Riva, 2001). Online collection of data in the scientific community has grown and has been a topic of interest due to the advantages it seems to offer experimental psychology.

Internet use in studies began to materialise in the late 1990s (Gosling & Bonnenburg 1998; Kraut et al. 1998; Young, 1998). Even though initial studies suggested that samples were selective and limited to individuals who were technologically knowledgeable and had access to the Internet, they still advocated the benefits of using the Internet as a data collection method: the ability to gather information from a large sample; low costs; the elimination of the need for data entry; and the expansion of the participant pool beyond the

standard university or college undergraduate population (Gosling & Bonnenburg, 1998). Consequently, as more studies began using the Internet, the advantages of doing so became increasingly evident. These include the improvement in efficiency and accuracy of data collection; the opportunity to immediately check the validity of procedures and deliver instant feedback to participants; the power to reach large and diverse samples from across the globe; and the capability to target specific populations (Gosling & Johnson 2010). As the Internet has become gradually more integrated into everyday life, in both social and professional spheres, the need for a distinction between online and real life has reduced its efficacy.

Conversely, significant concerns have been expressed, suggesting that Internet samples are not demographically diverse, questioning the motivation of participants, suggesting that the data may be biased by online anonymity, as participants do not feel accountable, and reporting that the results differ from those attained by other methods (McKenna & Bargh, 2000). Gosling, Vazire, Srivastava, & John (2004), however, provided evidence to suggest that these concerns are unsubstantiated through empirical examination.

Further studies (Dodou & DeWinter 2014; Gosling et al. 2004) suggest that data collected online is often of equal or even better quality than data collected through traditional methods. This may be a consequence of relying on participants who are inherently interested in taking part in research, rather than abundant university populations who are often obliged to participate in order to gain module credits. Yet fundamental risks to the validity of data gathered online persist. These are mainly based on the fact that researchers are not able to manage participants and ensure who they are, or whether they are responding honestly, nor can they oversee the participants’ attention or concentration (Johnson, 2005). Moreover, in counselling psychology, body movements, facial expressions, pauses and sighs may add

richness or meaning in spoken interviews, and can be added to transcripts, but are absent in Internet data collection.

Strategies to improve the reliability and quality of information collected online are often featured characteristics in online survey software. These include utilising automated procedures intended to inspect data quality, such as producing response patterns to assess whether participants are responding too quickly or slowly; employing automated procedures to warn participants of errors, such as missed items; performing statistical tests on the data to assess reliability; applying methods to reduce motivation to offer false information (Johnson, 2010); increasing accountability by employing participants through means where giving a false identity is difficult (Stillwell & Kosinski 2012); proposing suitable incentives (Göritz, 2010); and editing materials to enhance transparency and usability (Reips, 2010).

In addition to the advantages of online data collection, and the tools used in order to compensate for its shortcomings, I believe that the online method of collection of data fits well with my epistemological perspective of post-positivism and critical realism, as it seems dismissive to exclude an online population whilst drawing on social constructivism, given that so many of our interactions nowadays take place online.

Considering Alternative Approaches

Given the nature of the study and the epistemological theory and assumptions that underpin it, it was challenging to think of alternative approaches. However, when initially developing the study, I considered a solely quantitative approach. As mentioned above, as a researcher I felt more competent using statistical analysis than any qualitative methods, but conducting a solely quantitative study would not have adhered to my epistemological and ontological position. It seemed vital to the study to strive to understand the participants’

experience of the research question, and this eventually led to the choice of TA as the most suitable approach.

I contemplated employing focus groups for the qualitative part of the study as an alternative to using probing questions. Krueger (1994) describes focus groups as ‘carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment’. Focus groups pool characteristics of interviewing and participant observation and allow the researcher to investigate participants’ cognitive and emotional reactions, whilst noting underlying group dynamics (Vaughn, Schumm, & Sinagub, 1996). Focus groups could have been a suitable alternative to the online probing questions posed in the study, as their aim is to gain a greater understanding of outlooks and opinions (Hyden & Bulow, 2003) as well as to learn more about the often unsaid social expectations, norms and cultural identifications that occur in in-depth examinations of spoken interactions (Bloor, Frankland, Thomas, & Robson, 2001). An advantage that focus groups certainly have over online probing questions is that they provide the researcher with both content and expression (Kamberelis & Dimitriadis, 2011).

Whilst focus groups have been widely used, they are often criticised for a lack of detail regarding methods of investigation and interpretation (Webb & Kevern, 2001). The method of analysis of focus groups can differ, based on the aim of the research (Morgan, 1997) and can be interpreted using a number of different qualitative approaches, including TA.

As mentioned previously, TA had already been chosen as the form of analysis for the study as it fits well with critical realism and enables the researcher to investigate the participants’ described experience and unpick the surface of that reality (Braun & Clarke, 2006). The use of focus groups and TA would have been suitable, given the epistemological

position that informs the study. Although focus groups could have provided more information regarding group dynamics and unspoken emotions than the online probing questions, they could have also been affected by participants dominating the group, constructing the other predispositions regarding normative discourses and arguments and conflicts within the group (Smithson, 2000). TA and focus groups have been frequently criticised as a means of data reduction as they may be informal and inadequately described (Smithson, 2000).

Although focus groups can be analysed using TA, and could have been a suitable alternative approach to the qualitative segment of the study, online probing questions were employed due to the shortcomings of focus groups as well as the benefits of online collection of data: increased time efficiency, lower cost, inability for researcher to affect or bias data entry, and the ability to achieve large numbers of responses.

Considerations Prior to Collecting the Data

There are a number of decisions a researcher should take before embarking on the collection and analysis stage, including the format in which the questions would be presented to participants, whether the research would be using a deductive or inductive approach, and at what level the data would be interpreted.

There has been debate between researchers regarding which method to employ first during convergent mixed method designs. The sequence in which quantitative or qualitative methods are presented has been of concern to researchers as it may affect the participants’ response and bias the study (Creswell & Plano-Clark, 2007). Quantitative researchers suggest introducing probing questions (e.g. interview questions) closer to the end of a survey primarily consisting of closed questions (e.g. items on surveys) that examine similar variables (Dillman, 2002). Their reasoning is that this offers participants sufficient opportunity to respond to the probing questions and prevent non-responses. Qualitative researchers oppose

this recommendation, arguing that participants’ responses may be biased by their responses to closed questions (Morse, 1991), in that participants’ explanations of their experience may be biased by the areas, dimensions or characteristics examined by the quantitative measures, and the qualitative answers may therefore not truthfully reflect their position.

Although the recommendations are logical, there is no empirical evidence to support or refute the effect of the sequence of data collection on participants’ responses to open or closed questions in concurrent mixed methods designs (Covell, Sidani, & Richie, 2012). Hence data were presented following the order of the research aims, with the quantitative questionnaires examining ON first, followed by the social media questionnaires, and finally the probing questions.

Another decision that was made prior to collection regarded whether the research used a deductive or inductive approach, and at what level the data would be interpreted (Braun and Clarke, 2006). An inductive approach allows the data to speak for itself as any themes that occur are not linked to pre-existing theory (Willig, 2013), whereas a deductive approach is driven by existing theory, and requires the researcher to analyse the data with pre-existing theories in mind.

I was aware that as a researcher I am biased, and I will be drawn to certain responses more than others, due to my own experiences, my own knowledge of research and my work in eating disorders. Although I was also aware that I could not possibly separate my knowledge from myself whilst performing the analysis, I nevertheless chose to use an inductive approach as I wanted the data to speak for itself, rather than to be linked to previous theories or my own expectations of it.

Furthermore, there are various levels at which data is analysed. The semantic level involves data being explored on the surface or at face value. At this level the researcher does

not explore beyond what the participant has reported. Data analysed at a latent level involves the researcher exploring underlying assumptions that may be informing the semantic data (Braun & Clarke, 2006). The data were analysed at both levels at the coding stage and in the final analysis.

Method

Participants and Recruitment

Participants were recruited through the researcher’s friends and family, by email, messages and advertisements displayed on the researcher’s social media outlets, Facebook and Instagram. Recruitment took place in two stages, during February to March 2019 and in July 2019. The sample recruited initially did not include enough non-Instagram users for comparison between the two groups, so a second recruitment was carried out in July via the same means. The study used an opportunity sample and aimed to include both male and female participants.

The study excluded individuals under the age of 18, those currently being treated or with a current diagnosis of an eating disorder, as well as individuals on medically prescribed diets. The reason for these criteria was so that the ON scores were not distorted by participants not necessarily being in control of what they ate, due to being underage, having another eating disorder, or following a medically prescribed diet.

Sample Size

Relevant literature has used varying numbers of participants ranging between 525 (Donini et al., 2005) and 680 (Turner & Lefevre, 2017). A power analysis using an online power analysis calculator indicated that for a log-rank comparison such as the Mann-Whitney U test with two comparison groups, effect size of 0.5 and power of 0.75, a minimum sample of 87 participants was required. In order to compare groups meaningfully, a minimum of 26 participants per group is necessary.

Materials and Procedure

The study used self-reporting online questionnaires to obtain the data. The questionnaires included a question regarding whether the participants had a current diagnosis of an eating disorder or were on a medically prescribed diet, in order to exclude them from the study. The questionnaire also involved questions regarding the participants’ demographic groups; measures from the TOS (Barrada & Roncero, 2018), the ORTO-15 (Donini et al., 2005); the social media channels used; frequency of access to social media; time spent on social media and content of feed; as well as probing questions regarding the participants’ understanding of the possible effect on their eating patterns of specific social media channels, frequency of access and exposure time to social media, and the content of their social media feeds.

Demographics

The questionnaire collected basic demographic information such as age, gender, level of education, ethnicity and country of residence. Personal demographic information collected was limited in order maintain participants’ anonymity.

Orthorexia Nervosa Measures

Tereul Orthorexia Scale

The Tereul Orthorexia Scale (Barrada & Roncero, 2018) (r = .43) consists of 17 items, which aim to evaluate a healthy preoccupation with diet, and the negative social and emotional influences of rigidly following a ‘healthy’ eating plan. This scale therefore attempts to measure orthorexia in two distinct dimensions: Healthy Orthorexia (HeOr) with nine items which includes questions such as ‘I mainly eat foods that I consider to be healthy’; and Orthorexia Nervosa (OrNe) with eight items which involves questions such as ‘Thoughts

about healthy eating do not let me concentrate on other tasks’. Answers are given on a 4-point scale ranging from 0 = Completely disagree to 3 = Completely agree.

ORTO-15

The ORTO-15 (Donini et al., 2005) is developed from the dichotomous measure established by Bratman and Knight (2000), and expands the original measure to include 15 items (Cronbach’s alpha = 0.78) intended to measure symptoms of ON. Answers to every item are based on a 4-point Likert scale, representing ‘always’, ‘often’, ‘sometimes’, and ‘never’.

Answers that indicate ON symptoms are scored 1 on the scale whilst 4 indicates normal eating behaviours. A sum of the scores for each item is calculated to give the overall ORTO-15 score. Total scores of under 40 points meet the criteria for ON.

Examples of ORTO-15 questions include, ‘Do you allow yourself any eating transgressions?’ and ‘Do you think that on the market there is also unhealthy food?’

Social Media Measure

The study emulated the questionnaire on social media used by Turner and Lefevre (2017), which included questions regarding social media outlets such as Instagram, Facebook, Twitter, Pinterest, Google +, Tumblr and LinkedIn, but did not find any significant link between ON scores and use of social media channels apart from Instagram. Although the current study used the same questions, it included slightly different social media channels and gave the participants the option of ‘no social media use’. The following questions, and possible answers, were included in the social media measure:

Which social media channels do you use? Instagram, Facebook, Twitter, Snapchat, LinkedIn, I don’t use social media.

How often do you access (Instagram, Facebook, Twitter, Snapchat, LinkedIn)? Less than once per month, 1-3 times per month, once a week, 2-3 times per week, 4-5 times per week, once a day, several times per day, I don’t access social media.

On a typical day where you access (Instagram, Facebook, Twitter, Snapchat, LinkedIn) how much time do you spend on it in total? Less than 15, 15-30, 31-60, 60+ mins, I don’t access social media.

If you do use Instagram please rank the order in which the following content types typically appear on your feed, with the first being the one most frequently emerging. Friends (posing with other friends, at least two human faces in photo), food (recipes, cakes, drinks, etc.), gadget (electronic goods, tools, motorbikes, cars, etc.), captioned photo (pictures with embedded text, memes), pet, selfie (self-portraits only one human face is present), fashion (shoes, makeup, personal belongings).

Probing Questions

In order to gain insight into the participants’ understanding of the possible links between social media use and eating patterns, participants were asked to respond to the following probing questions.

‘Do you think social media affects your eating? If so, how? Please elaborate.’ ‘Do you think certain social media channels have a larger effect on your eating? If so, how? Please elaborate.’ ‘Do you think the content on your newsfeed or the content you upload has an effect on your eating? If so, how? Please elaborate.’ ‘Do you think the frequency and the time you spend on social media affects your eating? If so, how? Please elaborate.’

There was no word limit to the probing questions.

Procedure

Participants were recruited in two phases during February and March 2019, and July 2019. The initial sample recruited included 154 participants, of whom 127 were Instagram users and 18 were non-Instagram users. As the power analysis conducted suggested that a minimum of 26 non-Instagram users was necessary for conducting the Mann-Whitney U test, the researcher engaged in further recruitment. The advertisements and brief for the study did not use the term ON, to avoid influencing participants. The study was advertised as a study on eating patterns and social media usage. The online survey was generated using the online data collector, Qualtrics.

Participants were able to complete the questionnaires and probing questions online; therefore location and accessibility were not an issue.

Participants were initially presented with a brief (Appendix B) outlining the aim of the study, and a consent form (Appendix C). When participants signed the consent form, they were asked their age and were excluded from the study if they were below the age of 18.

Participants were then asked whether they had a current diagnosis of an eating disorder or were on a medically prescribed diet. If participants were under 18, had a current diagnosis of an eating disorder or were on medically prescribed diets, they were automatically shown the last page of the survey that thanked them for their participation and showed them a brief outlining more specific details about the study.

If participants continued, they were asked their level of education, gender, ethnicity and country of residence. They were then asked to answer questions that related to their ideas and attitudes towards food by completing the TOS (Barrada & Roncero, 2018), and were asked to select the response that best described their eating patterns in the ORTO-15 (Donini et al., 2005). After completing the two ON scales, participants were asked which social media

channels they used, how often they accessed them, how much time they spent on them and the type of content to which they were typically exposed. Following this, they were presented with the probing questions regarding their understanding of the potential link between their eating patterns and use of social media.

Once all questions were filled out and completed, participants were asked whether they would like to provide their email in order to enter a draw giving them the chance to win a £50 Amazon voucher. At the end of the survey, a brief appeared outlining more specific aims of the study, as well as the researcher’s and research supervisor’s contact details if participants had any further questions.

The procedure of filling out the questionnaires should have not taken more than 20 minutes in total, but participants were advised to allow an additional 20 minutes in order to read the brief, sign the consent form and read the brief at the end.

The data were collected online using Qualtrics, and analysed using the Statistical Package for Social Sciences (SPSS) Software. The factors available for analysis were demographic information: age, gender, ethnicity, country of residence and education level, ON scores from both measures: ORTO-15 (Donini et al.,2005) and TOS (Barrada & Roncero, 2018) and data on social media use: social media channels used, frequency of use, time spent and typical feed content. The majority of the data was generated and coded automatically by Qualtrics, allowing it to be downloaded directly into Excel and SPSS format. The questionnaires were coded in accordance with the appropriate scoring for each item.

Design

The study used a quasi-experiment independent measures design.

In order to examine the potential link between social media and ON, specifically Instagram, subjects were divided into Instagram users and non-Instagram users, depending on their responses in the online questionnaire. The dependent variables were the ON scores from both questionnaires, the ORTO-15 (Donini et al., 2005) and TOS (Barrada & Roncero, 2018).

In order to assess whether any demographic data had an effect on ON scores, demographic data such as gender, education, age and ethnicity were treated as independent variables and ON scores as the dependent variable.

Finally to further assess the possible links between ON, demographics and social media as outlined in the research aims the study also used a correlational design to examine the nature of the relationship between demographics, ON scores and sub-scores, and social media use scores.

Ethics and Permissions

Ethical considerations included considering the effect on the participant and the researcher, as well as ensuring that data were treated appropriately. The study had been reviewed by the City University Ethics Board as a light touch review as it did not involve underage participants, vulnerable adults, use of deception or questions about illegal activities or subjects that might cause significant discomfort to the participant. The study received ethical approval from the City University Research and Ethics Committee on 27 July 2018 under the reference number PSYETH (P/L) 17/18 205.

As mentioned previously, data were collected with the use of Qualtrics and saved on a secure server and a password-locked computer. The study remained confidential as the data were anonymised and used solely for the current study. The study ensured the participants’ privacy by anonymising the data and keeping any identifying information, such as email addresses for the Amazon gift voucher draw, separate to the data.

Participants were reassured that taking part in the study was voluntary and that they could withdraw from it at any point. They may have been concerned about their eating behaviour scores, but they were reassured that neither measures is a diagnostic tool and that the study did not aim to diagnose or label anyone with an eating disorder. If participants were concerned about their eating, they were able to contact the researcher or research supervisor who would provide them with a list of services they could consult. Completing the questionnaires and writing up answers may have been tiring to participants, and therefore participants could leave the study whenever they pleased.

Analysing the data and writing up the study required many hours in which the researcher was alone and in front of a screen. The researcher therefore prioritised self-care, frequent breaks, adjusted the height of the screen and sitting in a straight position that did not contribute to any back pain.

Researcher Involvement

Another ethical consideration is the researcher’s involvement in the study. Although data were collected online, which could imply that the researcher could not affect the data at the point of collection, the researcher was involved in the design of the questionnaire as well as recruitment. The design of the questionnaire, including the questions posed, and the order in which they were presented, were influenced by the researcher. The researcher also recruited individuals through emails, messages and advertisements displayed on the researcher’s and researcher’s friends’ personal social media outlets such as Facebook and Instagram. The researcher was also involved in analysing the probing questions using a TA. The researcher’s own expectations of results or narratives could have influenced the final themes. In order to prevent such bias and ensure that all themes were representative of the data acquired, the researcher’s supervisor helped with establishing and finalising the themes.

Data Analyses

As both the quantitative and qualitative data were acquired together, they were also analysed in parallel. Once the statistical and TA were complete, the outcomes were merged to offer a conclusion to the research questions.

Quantitative Analyses

All quantitative data were analysed using IBM SPSS Statistics for Windows. Questionnaires were coded according to the scoring outlined under TOS and ORTO-15 in Appendix E, and alpha levels were set at $p<0.05$. All the data were screened by the researcher before analysis to check for mistaken entries by observing the data for missing or repeated data or outliers.

The quantitative data acquired were tested for normality, missing data and outliers. Although the statistical tests utilised do not assume normality of data, and some argue that normality should be ignored in large data sets (Howell, 2012), a visual investigation of the data was conducted with the use of histograms to examine for normality, missing data and outliers. There were no missing items in the data and no outliers were identified.

Variables available for the quantitative analysis were:

Demographic information: age, gender, ethnicity, country of residence and education level.

ON scores from ORTO-15 (Donini et al.,2005) and TOS (Barrada & Roncero, 2018).

Social media usage: channels used, frequency of use, time spent and typical feed content.

Participants’ ages were divided into four groups, 18–23, 24–38, 39–54 and 55–73, which aimed to represent different generations and aid in comparing the demographic data to ON scores and social media use.

In order to compare whether there were significant differences in ON scores between the different generational groups, between different levels of education and between ethnicities, a Kruskal-Wallis H test was employed. The Kruskal-Wallis H test is a non-parametric rank-based test that can be utilised to measure statistically significant differences between two or more groups of an independent variable on an ordinal or continuous dependent variable, which made this test ideal for examining whether there were statistically significant differences between ON scores and the aforementioned variables.

In order to compare whether there were significant differences between genders in ON scores, the Mann-Whitney U test was employed. The Mann–Whitney U test is a nonparametric test, which enables us to examine ordinal or continuous dependent variables such as the HeOr, NeOr and ORTO-15 and independent variables that consist of two categorical independent groups, such as gender or Instagram users and non-Instagram users, where no participants are in more than one group, making it a suitable test for identifying possible statistically significant differences between these categorical groups.

Correlations were generated in order to assess whether there were any significant associations between the demographic variables, ON scores and social media use scores. To do so, the Spearman rank-order correlation coefficient was used. Spearman’s correlation is a nonparametric measure of the direction and strength of the possible monotonic link between two variables that can be measured on an ordinal, interval or ratio scale.

An examination of the prevalence of ON in the sample was computed by assessing the scores from both measures, ORTO-15 (Donini et al.,2005) and TOS (Barrada & Roncero, 2018). Percentages of prevalence were calculated only for the ORTO-15, as the TOS does not offer any cut-off scores. Prevalence using the ORTO-15 was calculated by pooling the participants who scored above the cut-off scores of the measure.

Validity denotes whether a measure does what it claims to do. In order to provide insight into whether the TOS is internally consistent and measures what it is meant to, reliability analyses such as the Cronbach’s alpha to measure internal consistency, and correlations comparing the new measure against the widely used ORTO-15 measure were generated. The data acquired from the 201 participants on the ON questionnaires (TOS, Barrada & Roncero, 2018; ORTO-15, Donini et al., 2005) was analysed to measure whether the new measure is valid and reliable.

In order to examine the relationship between ON scores and social media use, participants were divided into two groups: Instagram users and non-Instagram users. The Mann-Whitney U test was then employed to assess whether there was a significant difference in HeOr, OrNe and ORTO-15 scores for Instagram users and non-Instagram users. The data adhered to the assumptions previously outlined.

Qualitative Analyses

In order to explore the participants’ understanding of the potential link between ON and social media use, the probing questions were analysed using TA and the six-phase model outlined by Braun & Clarke (2006). The probing questions analysed were ‘Do you think social media affects your eating? If so how? Please elaborate.’ ‘Do you think certain social media channels have a larger effect on your eating? If so how? Please elaborate.’ ‘Do you think the content on your newsfeed or the content you upload on social media has an effect on your eating? If so how? Please elaborate,’ and ‘Do you think the frequency and the time you spend on social media affects your eating? If so how? Please elaborate.’

There was no minimum or maximum word count set for the probing questions, hence responses varied from one-word answers such as ‘no’ or ‘yes’ to long paragraphs outlining

the participants’ understanding of the effect of social media on their eating habits, or their beliefs and assumptions of the effect on others.

TA aims to identify, analyse, organise, describe and report themes found within a data set (Braun & Clarke, 2006) and involved the following phases.

Phase 1: Familiarisation with the data. This entailed the researcher reading the data so as to become familiar with it, whilst looking for potential repetitive patterns, re-reading the data and noting some initial codes that could be of use in the following stage.

Phase 2: Creating initial codes. Coding classifies data that is of interest to the research and that seems to be reoccurring across the data set. Manual, methodical coding of interesting information related to the research question was employed on all probing questions. Responses across the four probing questions seemed to have commonalities and hence codes were generated across all of them. This phase involved semantic codes which were solely based on the clear and superficial responses given, and latent codes regarding possible underlying assumptions or thoughts that may have informed the data. Coding was also inductive as the researcher started anew and created the codes based on these new data.

Phase 3: Searching for themes. This phase included organising the aforementioned codes into themes and collecting the information related to each theme. During this phase a long list of codes was organised to see which related to each other, and whether they formed an overarching theme. Thematic maps for each individual probing question were generated (Appendix G) as well as thematic maps outlining which codes fitted within each theme. Braun & Clarke (2006) suggest that there is no definite answer as to what constitutes a theme and that there is no requirement for the data set to display a specific proportion of evidence in order for it to constitute a theme. This is determined by the researcher’s judgement. As a researcher, I am more inclined to quantitative methods and was curious to see how many

times specific words to which I had assigned codes and themes were repeated over the four probing questions. Hence, during this phase, a word-count table was also generated.

Phase 4: Reviewing themes. This involved re-reading the responses of the probing questions and checking whether the themes already identified were appropriate. The coded responses were reviewed keeping these themes in mind to ensure that the themes reflected information that was present throughout the data.

Phase 5: Defining and naming themes. Themes were further defined and renamed so that their core meaning was appropriately outlined. As thematic analysis relies greatly on the researcher’s judgement, which can be biased, the help of the researcher’s supervisor was used during this phase in order to ensure that no vital information was being disregarded and that all themes covered the data provided.

Phase 6: Producing the report. This involved choosing the right extracts from the probing questions to illustrate the themes, and relating them back to the research question and the literature.

Response Rate

The study aimed to obtain 200 responses. Qualtrics enables the creator of the online questionnaire to require a response before the participant is allowed to move on to the next question and displays the number of responses for each question. The required response function was used for all questions in order to reduce overlooked questions and prevent participants from skipping questions. Participants were initially presented with a brief and a consent form.

Qualtrics recorded 223 signed consent forms. Participants were then asked whether they had a current diagnosis of an eating disorder or were on a medically prescribed diet.

Seventeen participants responded that they were and were automatically forwarded to the end of the survey.

The remaining 206 participants then completed questions regarding their level of education, age, gender, ethnicity, country of residence, and ideas and attitudes regarding food (TOS, Barrada & Roncero, 2018). As the TOS was presented before the ORTO-15 in the online questionnaire, more participants completed it. Participants who did not drop off after the initial questionnaire regarding their attitudes and ideas towards food and eating proceeded to complete the ORTO-15 (Donini et al, 2005). A total of 201 participants completed both the TOS and the ORTO-15.

Furthermore, 195 participants provided information about which social media channels they used; 183 responded to the frequency and time spent on them; 154 ranked the content that typically appears on their feed; 152 responses were recorded on the first open ended question which queried whether participants thought social media affected their eating; 143 responses were recorded on the second probing question which queried whether participants thought specific social media channels affected their eating; 141 responses were recorded for the third probing question which asked whether participants thought the content they viewed or uploaded affected their eating and, lastly, 139 responses were recorded on the fourth probing question which enquired whether participants thought the frequency and time they spent on social media affected their eating.

Results

Overview

As outlined in the previous chapter, the data generated from the study was subject to statistical analysis and TA (Braun & Clarke, 2006). The following chapter reports the results regarding the demographics of the sample, ON scores and social media scores, the links between demographic factors and ON scores and social media scores, and the links between ON and social media scores. Following these results, the chapter outlines the themes that arose from the TA.

Quantitative Results

Demographics

The 206 participants’ age ranged from 20 to 70 (M=32.92, SD=9.624). Seventy were male and 136 were female. Most participants had a Master’s Degree or equivalent, were White and came from Cyprus or the UK. The following table outlines the range, mean and standard deviation of the demographic data.

Table 1

Summary Statistics of Sample Demographics

	N	M(SD)
Age	206	32.92(9.62)
Level of Education	206	3.34(0.92)
Gender	206	1.66(0.47)
Ethnicity	206	1.38(1.21)

List of Countries	206	104.11(68.10)

Age

The table outlines the number and percentages of participants in each age group with participants aged 18–23 in Generation Z, participants aged 24–38 in Millennials, participants aged 39–54 in Generation X and participants aged 55–73 in Boomers.

Table 2

Number and Percentages of Participants in each Age Group

Age Groups	N	%
Generation Z	8	3.9
Millennials	161	78.2
Generation X	28	13.6
Boomers	9	4.4

The following table outlines the summary statistics for the ON scores across the different age groups.

Table 3

ON Scores Across Age Groups

	Generation Z		Millennials		Generation X		Boomers	
ON Measures	n	M(SD)	N	M(SD)	n	M(SD)	n	M(SD)
HeOr	8	23.38(6.21)	161	21.46(5.18)	28	22.36(4.42)	9	20(7.05)
OrNe	8	12.38(4.27)	161	13.41(4.08)	28	12.54(3.05)	9	12.44(5.48)

ORTO-15	8	39.75(6.94)	156	38.72(5.91)	28	41.93(6.16)	9	44.56(4.25)

The Kruskal-Wallis H test showed that there is a statistically significant difference in ORTO-15 scores between age groups (H(3)=13.16, p=0.004). The Kruskal-Wallis H test showed no statistically significant differences between age groups for either of the scores generated by the TOS measure: the HeOr (H(3)=2.60, p=0.46) and the OrNe (H(3)=2.81, p=0.42). The test suggested that Generation Z (M=39.75) and Millennials (M=38.75) were more likely to rate highly on ON scores using the ORTO-15 measure than Generation X (M=41.93) and Boomers (M=44.56).

Gender

The following table outlines the number and percentage of male and female participants in the study.

Table 4

Gender Distribution in Sample

Gender	N	%
Male	70	34
Female	136	66

The following table outlines the summary statistics of the ON scores across the different gender groups.

Table 5

ON Scores Across Gender Groups

	Male		Female	
ON Measures	N	M(SD)	N	M(SD)
HeOr	70	20.73(4.65)	136	22.04(5.43)
OrNe	70	12.49(3.44)	136	13.58(4.25)
ORTO-15	67	39.06(9.62)	134	38.24(7.98)

The Mann-Whitney U Test revealed no significant differences in the HeOr scores of Males (M=20.73) and Females (M=22.04), U = 4123, z = -1.57, p = 0.12. It also generated no significant differences in the OrNe scores of Males (M=12.49) and Females (M=13.58), U = 4096.50, z = -1.64, p = 0.10. The Mann-Whitney U test indicated that ORTO-15 scores were significantly greater for Males (M=39.06) than Females (M=38.24), U = 3668, z = 2.11, p = 0.03, suggesting a higher likelihood of ON in Females.

Level of education

The following table outlines the level of education of the participants in the sample.

Table 6

Numbers and Percentages of Participants’ Education Levels

	N	%
High School	12	5.8

College	17	8.3
University Degree (Bachelor)	77	37.4
Master’s Degree or Equivalent	89	43.2
Doctorate	11	5.3

The Kruskal-Wallis H test showed that there were no statistically significant differences between different levels of education on HeOr ($H(4)=1.70$, $p=0.79$), nor on OrNe ($H(4)=3.23$, $p=0.52$), nor on ORTO-15 scores ($H(4)=5.72$, $p=0.22$). Hence there was no evidence to suggest any difference of ON scores between different levels of education in using any of the three measures.

The following table outlines the summary statistics for the ON scores across the different levels of education.

Table 7

ON Scores Across Levels of Education

	High School		College		University		Masters		Doctorate	
ON Measures	N	M(SD)	N	M(SD)	n	M(SD)	N	M(SD)	n	M(SD)
HeOr	12	21.33(6.09)	17	20.06(5.13)	77	21.79(5.3)	89	21.74(5.08)	11	21.64(5.25)
OrNe	12	11.75(3.52)	17	13.41(3.94)	77	13.55(3.91)	89	13.01(3.87)	11	13.73(6.39)
ORTO-15	12	43.17(7.2)	17	40.65(5.68)	75	38.60(5.92)	87	39.54(8.44)	10	35.45(12.89)

Ethnicity

The following table outlines the number and percentages of ethnicities of the participants in the study.

Table 8

Numbers and Percentages of Participants’ Ethnicities

	N	%
White	184	89.3
Black/African American	4	1.9
Asian	7	3.4
Native Hawaiian/Pacific Islander	1	0.5
Other	10	4.9

The Kruskal-Wallis H test showed that there were no statistically significant differences between different ethnicity and HeOr scores (H(4)=1.63, p=0.80), nor between ethnicity and OrNe scores (H(4)=1.82, p=0.77), nor between ethnicity and ORTO-15 scores H(4)=3.62, p=0.46. Hence there was no evidence to suggest a difference in ON scores between ethnicities on any of the three measures.

The following table outline the summary statistics of ON scores across the different ethnicities in the sample population.

Table 9

N Scores Across Ethnicity

	White		Black/African American		Asian		Native Hawaiian/Pacific Islander		Other	
ON Measures	N	M(SD)	n	M(SD)	N	M(SD)	N	M(SD)	n	M(SD)
HeOr	184	21.53(5.27)	4	20(7.26)	7	22.14(5.55)	1	20(-)	10	23.2(3.16)
OrNe	184	13.22(3.96)	4	14.75(5.56)	7	12(3.65)	1	10(-)	10	13.5(5.1)
ORTO-15	184	39.47(6.19)	4	35.67(5.69)	7	42.14(3.02)	1	36(-)	10	39.2(6.09)

Country

The following table outlines the countries of the participants in the sample.

Table 10

Participants’ Countries

	n	%
Australia	2	1
Cyprus	106	51.5
France	1	0.5
Germany	2	1
Greece	1	0.5
Italy	1	0.5
Jordan	1	0.5
Lebanon	5	2.4
Netherlands	2	1
Qatar	1	0.5
Sweden	3	1.5
Switzerland	1	0.5
United Kingdom	78	37.9
United States of America	2	1

Orthorexia Nervosa Scores

The subsequent table outlines the summary statistics of the ON scores for 206 participants for the TOS and 201 for the ORTO-15.

Table 11

ON Summary of Scores

ON Measures	n	M(SD)
HeOr	206	21.59(5.20)
OrNe	206	13.21(4.02)
ORTO-15	201	39.47(6.09)

Prevalence of Orthorexia Nervosa

Out of 201 participants, 146 scored below the threshold value of 40 for ON on the ORTO-15 scale. This resulted in a 72.63% prevalence in the sample. There were no thresholds reported for the TOS (Barrada & Roncero, 2018), hence prevalence of HeOr and OrNe in the sample using this measure was not computed.

Validity of Tereul Orthorexia Scale (TOS) (Barrada & Roncero, 2018)

A reliability analysis on the 201 responses resulted in Cronbach’s alpha of 0.86 for all 17 items, Cronbach’s alpha of 0.84 for the nine items identifying HeOr and Cronbach’s alpha of 0.79 for the eight items measuring OrNe. A reliability analysis for the ORTO-15 produced a Cronbach’s alpha of 0.76.

The Spearman’s rho correlation coefficient indicated that there were significant correlations between HeOr, OrNe and ORTO-15. Findings showed a correlation between HeOr and the ORTO-15 rs=-0.28, p=0.00 and between OrNe and ORTO-15 rs=-0.55, p=0.00. The above findings denote that the TOS is therefore valid and reliable.

Social Media Use

The following tables outline which social media channels participants used, how often they accessed them, how much time they spent on them and the content typically displayed on their social media feed. Participants typically used Facebook and Instagram several times a day, spending between 30 and over 60 minutes a day on it. The content of their feeds seemed to be primarily friends’ photos, followed by food.

Table 12

Social Media Channel Used

Social Media Channel	N	%
Instagram	146	29.67
Facebook	160	32.52
Twitter	37	7.52
Snapchat	33	7.18
LinkedIn	99	20.12
I don’t use social media	17	3.46

Table 13

Frequency of Social Media Use

Frequency of use	N	%
Less than once per month	1	0.5
1-3 times per month	2	1
Once a week	2	1
2-3 times per week	4	1.9
4-5 times per week	3	1.5
Once a day	20	9.7
Several times per day	146	70.9
I don't access social media	5	2.7

Table 14

Time Spent on Social Media

Time spent	N	%
Less than 15 mins	31	16.94
15-30 mins	50	27.32
30-60 mins	44	24.04
60+ mins	53	28.96
I don’t access social media	5	2.73

Table 15

Ranking of Content Type Appearing on Feed

Content type	%
Friends (posing with other friends, at least two human faces in photo)	61.04
Food (recipes, cakes, drinks, etc.)	18.18
Gadget (electronic goods, tools, motorbikes, cars, etc.)	9.74
Captioned photo (pictures with embedded text, memes)	3.9
Pets	4.55
Selfies (self-portraits only one human face is present)	1.95
Fashion (shoes, makeup, personal belongings)	0.64

Orthorexia Nervosa Scores and Social Media Use

The Mann-Whitney U Test revealed no significant difference in the HeOr scores of Instagram users (M=21.53, n=46) and non-Instagram users (M=21.75, n=60), U = 4255, z = –0.322, p = 0.747. It showed no significant difference in the OrNe scores of Instagram users (M=13.25, n=146) and non-Instagram users (M=13.10, n=60), U = 4325.50, z = –0.141, p = 0.89. It indicated a significant difference in the ORTO-15 scores of Instagram users (M=38.77, n=146) and non-Instagram users (M=41.35, n=55), U = 3044, z = –2.64, p = 0.008. Hence there is evidence to suggest that Instagram users are more likely to score higher on ON symptoms on the ORTO-15 than non-Instagram users.

Qualitative Results

This part aims to present the participants’ own understanding of the effect of social media on their eating patterns. The themes are presented keeping theory in mind, but are further explained and related to the quantitative results in the discussion chapter.

Three main themes and nine subthemes were developed from the analysis. The first main theme is ‘The Need to Belong (Inclusivity/Exclusivity)’, which tried to encompass the psychological and basic human need to belong, and feel accepted within a social group (Baumeister & Leary, 1995). The theme also attempts to incorporate the contrast in feelings that being a part of something, being included, can generate and the feelings that can manifest when individuals feel excluded, all of which seem to be illustrated on social media.

The first main theme of ‘The Need to Belong (Inclusivity/Exclusivity)’ consists of the sub-themes ‘Stimulation To Do Something’, which describes the use of social media for motivation or inspiration to try something new; ‘Constant Comparisons’, which encompasses the continuous access to social media and hence a perpetual exposure to appearance-related comparisons online; and ‘Meeting Expectations’ which relates to the feelings of pressure to adhere to an explicit set of regulations in order to belong.

The second main theme is ‘Health as Art’, which attempts to encompass the notion that being healthy is projected in a certain way online, and comprises the subthemes ‘What Healthy Bodies Should Look Like’ which describes the beliefs presented on social media regarding what a healthy body looks like visually as well as what a healthy body should be consuming (eating) and doing (exercising); ‘Cult of Social Media’ which encompasses the echo chamber effects of social media use, and how businesses and individuals advertise themselves and their beliefs online; and ‘Illusory Ideal’ which relates to the artistry that goes into the alluring, edited images of food, bodies and health to which participants are exposed on Instagram.

The third main theme is ‘Craving’, which attempts to cover both the literal cravings for food that participants reported and a metaphorical longing, and includes the sub-themes ‘Procrastination’ which entails using social media to avoid doing specific tasks; ‘Escape’

which involves the use of social media to break free of the real world and engross oneself in the online domain; and ‘Food Porn’ which involves the glamourised visual presentation of food.

The three main themes and nine subthemes are also outlined in the following figure.

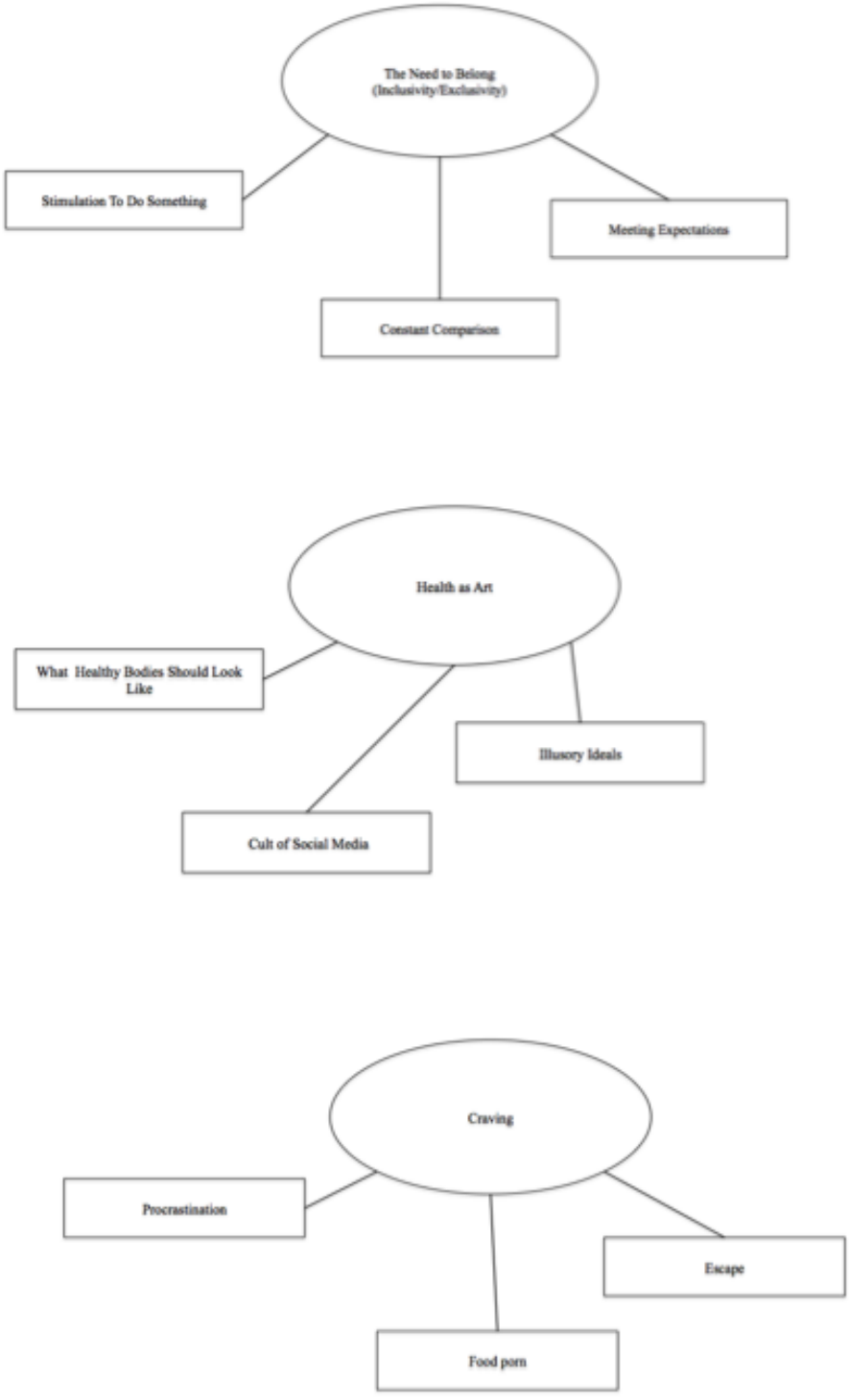

Figure 1

Thematic Map of Main Themes and Sub-Themes

Many participants responded to the questions with a simple ‘No’, or ‘I do not think social media affects my eating.’ Although these were present in the data set and were thought of initially as a possible theme, they were not included in the final themes. The ambiguity regarding these negative responses could suggest that participants wanted to express either that social media had no effect on their eating patterns or that they were not aware of any effect of social media on their eating patterns. Additionally, several participants who responded ‘no’ continued by providing conflicting information, such as ‘No, but seeing it makes me think about losing weight sometimes which then involves healthier food choices.’

Main Themes

The following includes direct quotations from the online responses received, some of which included grammatical errors.

Main Theme 1: The Importance of Belonging (Inclusivity/Exclusivity)

In this theme participants explained how social media, and more specifically Instagram, could make them feel connected. Connecting online with individuals who have shared interests and goals reflect the basic human need of belonging, as is apparent in the reports of the participants. Participants explain that the content they choose to expose themselves to online, whether that be material shared by friends in real life or content shared by celebrities, bloggers or businesses, can make them feel included. The online community to which they feel they belong can offer them inspiration or motivation to try something new: a new diet, a new recipe, new meal plans or novel exercise or fitness routines. However, not adhering to online trends can have adverse effects, contributing to feelings of exclusion and generating detrimental emotions such as guilt. This main theme therefore attempts to encompass both the positive and negative effects of social media use reported by participants regarding their eating patterns, lifestyle, view of themselves and the societal pressures

experienced online.

The main theme comprises the three aforementioned sub-themes, which are related to each other. Participants explain that they use social media as a means of gaining new information and motivation or inspiration to try something new, which is the first sub-theme. These motivations or inspirations may be associated with individuals they follow or to whom they have constant access online, which relates to the second sub-theme of constant comparisons to others. These comparisons seem to underlie the societal norms regarding lifestyle, which encourage participants to meet expectations set online. The pressure to emulate what others are doing and adhere to these unwritten rules is the third sub-theme, which also includes the adverse effects participants may feel when they do not meet expectations. An example of the main theme and sub-themes depicted in the text is the following response to the question of whether social media affects eating patterns, ‘100 percent as I follow many “fitness” figure who regularly blog on their eating habits which I aim to copy. I also follow a lot of restaurants etc so if I see food I like I [am] more inclined to go or to attempt to cook it.’ The response confirms an awareness of an effect of social media on the participant’s eating patterns and cites the constant comparisons to online content by ‘fitness’ figures as well as the need to emulate what these figures are doing. The participant explains that they follow many such individuals, and may be part of an online fitness community. In doing so they may be seeking ‘fitspiration’ – online content that aims to inspire or motivate individuals to improve their health and fitness. It is important to note that individuals who are branded as fitness figures or bloggers online may lack the necessary education and skills to offer nutrition or exercise advice. The participants suggest that this content does indeed encourage them to try something new, and add that the content also includes information on many restaurants, which stimulates them to go and try new dishes or

to attempt to cook them. Overall the response seems to indicate a possible positive effect of social media use on their eating habits, as they are gaining new ideas from individuals in the fitness industry as well as various establishments.

The main theme attempts to include both how belonging can contribute to improved wellbeing and how being excluded can generate negative emotions. Whilst many responses shared the positive effects of social media, and how it has been helpful for them to gain new information and ideas with regard to their eating and health, there were also responses indicating negative effects when participants were unable to meet the expectations raised or to emulate what others appeared to be doing online. The following response outlines an effect of social media use on a participant’s eating, and how seeing others engage in exercise and healthy eating inspires them but leaves them feeling low when they cannot do the same. ‘Yes it does affect my eating. Seeing other people exercise and eating healthy motivates me to do so, however due to the lifestyle and busy schedule I have, I can’t keep up with being healthy which then results in me feeling guilty, stressed and depressed.’

The first sub-theme of the initial main theme is ‘Stimulation to do something’. Numerous responses cited using social media for motivation or inspiration, and specified Instagram as a motivator for change or to persevere. Responses included using social media for inspiration in finding recipes and ideas to try something new with regard to cooking or eating. These responses suggested an understanding of the effects of social media on the eating patterns of the user in a positive manner that contributes to a sense of belonging outlined in the main theme and stimulation to try something new. The responses also included motivation and inspiration to eat more healthily, to exercise, to engage in meal preparation and to try new restaurants. Examples of this theme being depicted in the text were ‘Inspires me to try new healthy recipes’, ‘Inspired to be more creative and healthy’, and ‘It

does give me some new ideas and recipes to use. It helps me out to keep motivated and to motivate my clients on adapting good healthy eating habits.’ These responses also suggest that participants used social media to seek motivation to maintain their healthy eating and exercising, and not necessarily always to try something new. However, it is important to note that the ongoing reference to ‘healthy eating’ in the responses could have also been a result of the current study’s title ‘“Healthy Eating” and Social Media Use’, which was displayed on the brief.

Participants reported that the visual format of Instagram seemed to have more of an effect on them, possibly as it is easier to follow. The following response outlines a confirmation of the effect of social media on the participant’s eating and elaborates on the innovation and novelty of the subject matter they access in photo or short video content. ‘Yes, it does. Seeing healthy meal preparation inspires [you] to do the same at home. It makes you want to explore your kitchen and try something new. Especially the short videos that show how to cook something super quick and tasty with few ingredients’.

The visual format of Instagram and Facebook also encourages the next sub-theme of ‘Constant comparison’. The ease of access to what can seem like the highlights of other people’s lives facilitates an ongoing comparison for the participants that can have varying outcomes. This response included an admission of an effect of social media on eating habits as a result of comparison: ‘Yes. Sometimes I look at what others are doing and want to do the same’. Another participant reported negative comparisons to models: ‘Sometimes I catch myself wishing I could have some of the bodies the models have.’ A further response suggested that, as a platform, Instagram has a greater effect on their eating as it displays visual content of individuals who adhere to societal beauty ideals ‘Instagram-photos of hot models that the human mind constantly compares to.’

This response describes the constant access that Instagram enables users to have into the lives of others, and alludes to its possible effect. ‘Perhaps Instagram due to the fact that you get to see other users every day habits through their insta stories. You have access to their lives at any moment whether it’s during breakfast, lunch, dinner or in the afternoon while sipping a glass of wine or having a cup of coffee/tea with some dessert.’ The participant suggests that others may post everything they do throughout the day, which could enable individuals to feel comforted and less lonely, but can also encourage continuous comparisons to the lifestyles of others. Unlike traditional media, social media is accessed round the clock. Participants’ responses seem to suggest that frequency and increased exposure can affect them: ‘I do feel that the more healthy and fit Instagram famous people I see, the more I want to be like them’; ‘Seeing the [sic] all the perfect bodies frequently can motivate you to change your eating habits more easily’.

The pressure to adhere to the beauty and health ideals set out online are encompassed in the final sub-theme of the first theme: ‘Meeting Expectations’. Participants claimed that there is a pressure to look a certain way, and that they therefore tend to compare themselves and their bodies either to their friends or to celebrities whom they follow online. Although none of the participants used the word ‘rules’, there seemed to be a certain rigidity involved in eating healthily and exercising, which in turn would make them feel they belonged to the ‘healthy’ online community. These rules seemed to be the unofficial guidelines outlined for acceptance in the online community, and not following them seemed to cause a feeling of guilt in the participants. This encompassed negative feelings that participants reported after comparing themselves to others online, such as feeling fat, feeling pressured to look a certain way and feeling frustrated if they did not. The following response explains how a participant thinks that social media has an effect on their eating patterns and how societal beauty ideals

and the notion of ‘healthism’ are manifested online: ‘Yes - I find myself being more conscious because it feels like society is telling you to do so. You feel you’ll be judged if you’re not eating right or going to the gym just because of social content’. The participant adds that if they do not adhere to what society or the online content is telling them to do, they risk being judged. Other responses reporting the negative impact of not meeting expectations and the effect specifically of Instagram follow: ‘Instagram surely does, as stated above seeing photos of people eating healthy and exercising having fit bodies makes me feel like I am over weight or fat. I then feel guilty for eating unhealthy food and not exercising.’ ‘Instagram. It is all about the food, the looks and the body. Good side is that it can also promote healthy eating...but on the other side being a bit overweight or worried about weight can add a lot of pressure and frustration about the why can’t I be this way.’ The participants described comparisons to others resulting in low mood, feelings of guilt and concerns regarding weight and shape.

However, it seems important to note that not all participants reported any effect of social media on their eating patterns, despite displaying an awareness of a general impact of social media. There are various reasons why these participants may report that they are unaffected by social media. One may be protective factors, such as having other interests or more friends. The following response suggests that being older may contribute to not being affected by social media, ‘No, thankfully I think I’m old enough to not let social media affect me in that way.’ Another participant seems to agree with the protective factor of age, and adds that happiness and self-awareness may also be protective factors from the influence of social media, ‘yes it surely can affect our eating habits. it has to do with the person also though, the age how happy and content you are with yourself and self-image. I feel they don’t affect me. my social media are filled with recipe channels, cooking etc. cause i love food and cooking. the only thing they do is perhaps make me hungry or just give me ideas on what to

cook. i aim to simple cook healthier, simpler and i love new ideas’. Further responses also suggest that an interest in healthy eating could contribute to an individual who already has what they perceive to be a healthy lifestyle engaging with like-minded individuals who influence their eating habits: ‘But those who are conscious about eating healthy aren’t always influenced by social media. It can be through their lifestyle and friends etc.’

Main Theme 2: Health as Art

The main theme of ‘Health as Art’ attempted to encompass the notion that healthy appears in a certain way online. Health denotes a state of physical, social and mental wellbeing, and hence cannot be reduced to the absence of disease or to specific physical characteristics. However, due to the nature of visual social media channels such as Facebook and Instagram, health seems to be edited into appearance-based content of health or what societal norms advocate that health should look like. It seems that the content to which participants are exposed is almost art-like, as creative skills are employed to generate ‘health advocating content’ which aims to be appreciated for its beauty.

The word ‘health’ occurred 113 times in the text of the responses to the probing questions. It is important to note that this may have been a result of the title of the study, ‘Healthy Eating’ and Social Media Use’, being depicted on the brief presented to participants at the beginning of the survey. Participants elaborated on how health has a specific appearance, either to make it look appealing to the consumer, like an advertisement, or to adhere to the societal norms of what healthy and attractive food or bodies look like, with an emphasis on food being ‘Instagrammable’. This theme therefore elaborates, through its sub-themes, on the notion of healthism and its manifestation online, as well as the echo-chamber effect and cult-like following it generates for products and businesses through the use of edited, idealistic imagery.

The first sub-theme of the second theme refers to ‘What healthy bodies should look like’. As the main theme advocates that health in general looks a certain way, the sub-theme attempts to encompass what participants reported regarding what healthy bodies look like online, what diets they adhere to and share online, and what exercise plans they advocate and follow. ‘Vegan’ and ‘vegetarian’ appeared as responses to what participants considered healthy diets. Participants seemed to associate health with plant-based diets and used social media to add to their knowledge regarding these diets: ‘I find recipes for healthy eating and vegan recipes and i use some of them in my daily life’. There was also a mention of sustainability in eating ‘To a degree, yes. In particular, articles pertaining to vegetarianism and veganism act as a constant reminder of the fresher and more sustainable options that are available to me.’

Although exercise and fitness were never referred to in the questions or questionnaires, I found it interesting that many participants commented on a link. In numerous responses, participants referred to a link between healthy eating and exercise, which suggested that fitness is an important element of this healthy online ideal. Eating healthily, or what is deemed online to be healthily, and following an exercise regime seem to be closely tied to how participants view their bodies. Participants seem to be aware of the effect of social media on their eating patterns as well as their perceptions of their bodies, as is apparent in the following response, ‘Yes as nowadays we are easily influenced by social media, the various diets out there and exercise programs that impact not only our eating habits but also our perceptions of our body.’ Another participant agreed with the notion that social media promotes a specific body image, which in turn affects their eating patterns, explaining, ‘Yes because we tend to try to achieve that perfect body image that social media tries to advertise.’ Another example of the link between use of social media, exercise and healthy eating is

displayed in the following response: ‘It makes me feel like I need to train more - this makes me want to eat healthier’.

Adhering to a healthy diet and being fit seem to be admirable aims that reduce the risks of weight gain and enduring ailments, and appear to be linked to the notion of being responsible for oneself. It seems that participants view themselves as being accountable for keeping healthy, and strive to be as healthy as they can, which eventually leaves them feeling like failures if they have not succeeded in doing so. This participant alludes to their relationship to exercise and food being ever-changing depending on their motivations. The participant explains that when they are on a ‘health kick’ they are more likely to expose themselves to social media content that involves healthy eating and exercise: ‘As a person who has a cyclical relationship with working out and/or food, it depends on whether or not i am on a health kick or just taking it easy. In case of the former, i end up following a few health channels relating to either workouts or food from which i draw inspirations for (1) healthier recipes and (2) motivation to work harder and/or restrain myself from going for the proverbial burger.’ The participant seems to refer to working harder and self-restraint as ways to strive towards health. They also appear to suggest that a burger is deemed unhealthy food that they should prevent themselves from eating. However, the participant’s self-proclaimed ‘health kick’ seems to be restrictive and difficult to adhere to, given their cyclical relationship with these habits, making me question how healthy these patterns really are.

Another participant discusses the link between healthy eating and fitness, as well as the desired look that adheres to the current socio-cultural beauty ideals and fitspiration content ‘Stressed over the fact that healthy eating is also associated with muscles and fit bodies in social media...healthy eating is not so much for health as it is for looms’. The participant also explains the negative effect that this promotion of healthy eating and this

ideal body image has on them by adding that it causes them stress. When reading the response, I wondered whether the participant meant to write ‘looms’ or ‘looks’. ‘Loom’ could describe an act of appearing or standing over someone in a threatening way, therefore offering evidence reinforcing the negative feelings of stress the participant reports. If the participant meant to write ‘looks’, they might be supporting the notion that health on social media is focussed solely on appearance. The participants’ responses seem to agree on the link between exercise and healthy eating and a specific body ideal promoted online, which emulates the thin and muscular body type associated with online fitspiration content.

Nevertheless, there was also a response that suggested a shift in socio-cultural health ideals online. One participant did not believe that social media use had an effect on their eating, and said that they had noticed a change in how they could be healthy and not adhere to the ‘skinny’ ideal that may have previously been associated with thinspiration, or the thin and toned physique that has been linked to fitspiration: ‘I don't think so, the only thing is the shift that the society now has from skinny being in fashion to curvy being in fashion! I believe it is very good because now there is all types of bodies feeling confident and comfortable! Not just skinny girls but for me it’s giving me a wake up call to be a bit bigger in a healthy way!’ This response suggests that, although there seems to be an abundance of images of toned fitness bloggers online, there is also content displaying a range of body types.

The second sub-theme of the second main theme is the ‘Cult of social media’. Individuals on social media tend to follow people or businesses that are of interest to them or with whom they agree. Social media channels often advertise products or services to users based on what their recent searches were, or based on what content they have already chosen to follow, which can create an echo-chamber effect as individuals online are repeatedly

exposed to the same views. The use of social media, therefore, emulates cult-like behaviour as it fosters the principle that the only ideas worth considering are those that come from within the group or, in this case, from their social media content or feed. This sub-theme attempts to include how this echo-chamber effect further establishes the notion of healthism and the online image of what a healthy body should look like. It seems that participants are aware of the repeated exposure to similar health content and its increased effect on them. The following response explains this and alludes to the echo-chamber effect created on social media: ‘Yes - the more posts you see of healthy eating the more you are encouraged to follow.’

Participants displayed an awareness of the power of influencers and their marketing power as used by companies to advertise their products. One response outlines that social media is a ‘great way of marketing products and influencing choice. It’s a good way of recipes to be demonstrated and explained.’ This participant explains that social media is effective promotion and alludes to the aforementioned influencers, by adding that they occasionally give special attention to food on fitness blogs. This highlights the link between food and exercise, and outlines the content advertised on influencers’ feeds: ‘Yes. It’s good advertising. Also take note of food on fitness blogs sometimes’. nother participant explains that their eating is occasionally influenced by their use of social media, and suggests that the attractiveness of the influencer has an effect on their purchase intention, ‘Sometimes yes: I see interesting recipes or get inspired by ideas for what to eat and how to eat better. I've considered becoming vegan (or at least trying). And of course if someone is hugely attractive and saying how good something (e.g. kale) is, when I next have the chance to buy this I'll probably give it a go too.’

The final sub-theme of the second theme is ‘Illusory ideal’, which relates to the artistry that goes into creating the alluring, edited images of food, bodies and health to which participants are exposed on Instagram. When asked whether they thought that specific social media channels have an effect on their eating patterns, the majority of participants listed Instagram due to its image-based content. Individuals on Instagram seem to post an enhanced version of the highlights of their life. In order to portray the best version of themselves and their lives, they may use various filters or editing apps, such as Facetune. This illusion of beauty is further heightened by the access to celebrities and strangers offered by Instagram. The following response offers evidence of this as it proposes that Instagram has a greater effect on their eating patterns, as it encourages them to view content by strangers whom they are more likely to admire rather than that of their friends: ‘Instagram is definitely the biggest one as a large proportion of people I follow on their I am not personally connected to. They are more figures to “idolise” or attempt to emulate as to gain a physique like theirs etc. Facebook on the other hand is basically following your friends who are far less likely to “inspire” or “motivate”.’

Another participant alludes to the counterfeit content they encounter on specific social media channels, and how it adheres to the thin and athletic ideals that have been related to healthism: ‘Social media, such as Instagram & Facebook, that provoke the users to upload photographs of daily activities, such as eating, can sometimes be used to fool others of a false & unhealthy diet but being able to remain skinny & fit.’ Further references to ‘Unrealistic body images’ and ‘Seeing people with abs as being normal’ were included in the responses by participants that show an awareness of deceptive online content, but not necessarily an immunity to the effects of exposure to such content. The following response reports a definite effect of social media use on eating patterns and elaborates on how content has evolved on the different platforms: ‘Absolutely. All these models or even friends posting perfect body

pictures which are either real or Photoshopped for sure adds pressure for us to look the same. Facebook also had it in the past, but instagram made it worse as there is much more feeding and also competition of who posts the most, who has the best social life, best body, best dinner etc.’ The participant explains that access to real or edited content of models and their friends adds to the expectation to look the same, as well as increasing the pressure to have an enviable lifestyle.

The following response attempts to explain the cognitions involved in these appearance-based comparisons to edited images: ‘Yes, models are always extremely skinny with no cellulite and perfect everything because they've been photoshopped and air brushed but to an average human, we are constantly being made to feel like we aren’t “pretty” or “sexy” enough. You don’t have a thigh gap? Gross .. you have cellulite? Ew. No and or tummy definition? You're fat.’ The participant explains that not adhering to the illusionary beauty ideals that are promoted online may result in a response of disgust from others. The participant further explains the negative impact that these comparisons may have by saying that ‘social media is the cause of so many eating disorders and of depression in today's society’.

Participants also described the notion of users performing ‘for the gram’ and images or videos being ‘Instagrammable’. The informal definition of ‘Instagrammable’ is something that is photogenic and pleasant, that offers itself to being photographed and posted on the social media channel of Instagram. Participants referred to this by explaining that, on social media, food and individuals are only as good as they look, and hence health online is something visually attainable. Participants added that, due to the nature of the platform being solely based on image and video content, Instagram is more influential and has contributed to food presentation playing a big role. This participant responded to whether a specific channel

has an effect on their eating as follows: ‘Instagram - because of the photo and copy content together and the need to everything to look good for the gram. It’s an obsession for most people’, providing more evidence that content needs to look a certain way in order to be shared online.

Participants further reported that if food looks good it will affect their eating, also suggesting that food is Instagrammable. Several responses included this categorisation of food, which may be a result of food also being very popular on the platform, with the hashtag ‘food’ one of the 15 most popular items in content. The following response explains that food presentation has changed because of the platform: ‘Yes, Instagram. Food presentation played a large role due to Instagram.’ Additionally, the following participant explains how food that looks good has an increased effect on their eating, ‘Yes, as mentioned before food is very instagrammable. So by tagging restaurants and instagramming food and sharing posts that make you drool, then yes it has a larger effect. It is a constant advertising of food’.

Nevertheless, although there seems to be an awareness of the manipulation of images, and the fact that content posted by influencers and celebrities may not be genuine, participants were not immune to its effects. Participants reported effects on their eating patterns as well as their body image and self-worth, as these illusory ideals that were portrayed on the platform encouraged them to compare themselves and their lives to them.

Main Theme 3: Craving

The third main theme of ‘Craving’ included both the literal cravings for food that participants reported and a metaphorical longing. Individuals seem to be constantly bombarded with images of food on social media as well as traditional media. Cravings for food can therefore be triggered by these food cues in the environment. Cravings are described as an urge or deep desire for something, in this case for a specific food, and have been

associated with consumption of energy-dense foods, binge-eating, negative emotions and impulsivity (Schumacher, 2019).

Numerous responses offered evidence to support the effect of food cues on social media, by explaining that looking at images of food and videos of food being made or eaten created cravings for that specific food which could be healthy or unhealthy. The actual cravings participants reported were evident in extracts like the following one, in which the participant reports that social media affects their eating patterns solely when they are exposed to what they deem as desirable food: ‘The only way that it does affect my eating is if I see a picture of some yummy food (a bowl of pasta for example), I then have a craving for that!’ Another participant added that being exposed to food imagery can lead to them thinking about that specific food throughout the day, and sometimes acting on their cravings: ‘Yes, if I see doughnuts on my newsfeed I think of them all day. Sometimes I go and buy some, but not always.’

Other responses seem to suggest that being affected by cravings is wrong or unwise, describing how they may be enticed by food cues, ‘It is slightly affecting me. When you are watching food plates with unhealthy food you are tempted and unconsciously sometimes you want to have something like that to eat.’ The participant suggests that the urge to eat may even be unconscious at the time, as they may not be completely aware of the effect of the content on their eating habits in that moment. Additional responses suggested the tempting power of food cues on social media, as shown in the following response: ‘When i watch the videos i always feel hungry, most of the time i give in to temptation in order to stop my mouth from drulling [sic]..’ The participant suggests that looking at food cues on social media generates a physiological response.

Several responses outlined that simply seeing food on social media, specifically Instagram, generated cravings for that food, whereas others related cravings for unhealthy food, saying ‘makes me want to eat more unhealthy food’ or that ‘It makes you see junk food and you start craving it’.

The first sub-theme of the third main theme is ‘Procrastination’, which covers the use of social media to avoid doing specific tasks. Participants reported the link between procrastination and social media use, explaining that they may delay specific tasks by scrolling through social media content, ‘Sometimes instead of cooking, I am wasting my time on Social Media.’ Another participant reported that the use of social media may delay them exercising, adding that this may lead to them consuming unhealthy food: ‘Yes indirectly. It may delay me from exercising so i tend to order more unhealthy food.’ The participant suggests that use of social media has an indirect effect on their eating, as it has a knock-on effect on their exercise routine, which in turn shifts their eating patterns. This provides further evidence of the perceived link between healthy eating and exercise reported by participants in the aforementioned themes.

Another participant attempts to explain how Instagram’s format can contribute to them becoming engrossed in it, which could lead to them spending more time on social media: ‘I think Instagram is more effective than Facebook. On Instagram you choose what you want to see and can easily be absorbed. On Facebook the ads are pushed on you and you tend to scroll rather than take it further.’ Further explanations of the motives to use social media as a form of procrastination are seen in this response: ‘More time on social media means I have free time and that I’m bored. That usually equates to unhealthy eating (and typically, chocolate)’. The participant links being bored with procrastination and unhealthy eating.

The second sub-theme of the third main theme is ‘Escape’, which involves the use of social media to break free of the real world and to immerse oneself in the online domain. This sub-theme is closely related to procrastination, as it could be argued that escaping the real world and its tasks may be a form of procrastination. Individuals may also feel the need to escape from their real life in order to prevent thinking hostile thoughts or because of a lack of things to do. One response seems to explain the notions mentioned above: ‘Yes, because sometimes we stimulate our brain with social media activities for hours rather than organise our weekly diet or our sugar levels or our hydration. We even prefer to spend time on social media to avoid problems in life rather to solve them, which causes stress to the body and leading to eating disorders.’ The participant suggests that social media use has an effect on their eating patterns as they may spend vast amounts of time on social media, and proposes a link between the use of social media and avoiding life stressors, which may have adverse effects in the long term.

Participants referred to social media having brainwashing powers and to spending significant amounts of time on these platforms mindlessly. One participant outlines this by agreeing that social media has an effect on their eating, explaining ‘Yes, since some of those times you are so focussed on what is on the social media that you forget to eat. Then after a while that you are on the social media and get hypnotized of what you watch you understand that you need to go eat something healthy.’ The effect of social media use on the participant’s eating pattern is direct, as they claim to become so engrossed in the content they see that they may neglect to eat.

The final sub-theme of the third main theme is ‘Food porn’. Participants reported watching many videos of food being made or food being presented, described as food porn. Several responses mentioned the online food networking channels which participants

followed on Instagram and Facebook, such as ‘Answered previously. I follow @tasty, @buzzfeedfood etc which often share recipes and such’. The following response describes the format of food porn content that in turn has an effect on their eating habits: ‘Instagram 100%. Lots of 60 sec videos of how to make different recipes affect my daily eating habits’. Other responses report a link between looking at food content and cravings ‘I’d say it does, even though sometimes it might be subconscious. Constantly looking at pictures of delicious foods and sweets increases your appetite and your desire to try that tender piece of meat or go to that new fancy restaurant that just opened in town etc etc.’

Overall the analysis has highlighted how multifaceted the effects of social media use on eating patterns can be. Despite this, there seem to be commonly held views among participants of what constitutes ‘healthy’ online, what it looks like and the impact this has on their eating patterns, perceptions of themselves and well-being. There seems to be a consensus regarding socio-cultural health ideals, a link between healthy eating and exercise, and businesses’ and influencers’ power of advocating these. Participants report an awareness of the manipulation used in the imagery they see, but seem to lack an immunity to its effects that finally results in negative emotions when not adhering to the health ideals promoted online.

Discussion

Overview

The following chapter aims to link the findings to the study’s research aims. The chapter offers further interpretations of the qualitative and quantitative outcomes and their theoretical, clinical and practical significance. It discusses the study’s limitations and strengths, as well as suggestions for further work and implications for counselling psychology.

Summary of Findings

The study intended to gain a greater understanding of ON and its possible link to the use of social media. It investigated ON in an online sample and explored participants’ interpretations of the possible link between eating patterns and social media use.

The quantitative segment of the study calculated the potential differences between demographics and ON scores, assessed the prevalence of ON in the sample, and examined the validity and reliability of the TOS measure for ON (Barrada & Roncero, 2018) and the possible differences in ON scores between Instagram users and non-Instagram users.

The demographics analysed in the current study were age, gender, ethnicity, country of residence and education level. The hypotheses tested were whether there were significant differences between the aforementioned demographic factors in ON scores. Previous research resulted in mixed results regarding established demographic differences between ON scores. The current study established that there were significant differences between age groups on ORTO-15 scores, suggesting that younger participants were more likely to score within the orthorexic range when using the ORTO-15 measure than older participants. There was also a significant difference between ON scores of different genders when using the ORTO-15,

suggesting that females were more prone to ON than males. No significant differences between other demographics and ON scores were reported.

Previous studies regarding the prevalence of ON have resulted in mixed outcomes. Out of 201 participants, 146 scored below the threshold value of 40 for ON on the ORTO-15 scale, which resulted in a 72.63% prevalence in the sample. The study was unable to produce a prevalence statistic using the TOS (Barrada & Roncero, 2018), due to the lack of cut-off points. The developers of the measure explained that they do not provide specific cut-off points in their study as clear diagnostic criteria for ON and yet to be established, and these are vital in setting cut-off points. They add that their view of psychopathology is non-categorical and non-dimensional and suggest that by applying cut-off points they may be missing important data. Hence prevalence of HeOr and OrNe in the sample was not computed using this measure.

Further quantitative aims included validating the new TOS measure (Barrada & Roncero, 2018), which introduced a HeOr threshold. The TOS had not been used in any other studies to date, but it was predicted that HeOr would be negatively correlated to measures of psychological distress in the TOS and the ORTO-15. There were significant negative correlations between the two TOS dimensions and ORTO-15 which were in agreement with previous findings. The findings from the reliability analysis of the measure suggested that the TOS is repeatable and consistent as the correlations between the TOS and the well-established ORTO-15 measure suggested that both tools measured similar concepts and the Cronbach’s alpha suggested good internal validity.

The final aim of the quantitative segment was to examine the relationship between ON scores and social media usage, specifically use of Instagram. Previous research dictated that Instagram users were more likely to rate highly on ON scores than non-Instagram users

(Turner and Lefevre, 2017). The study generated findings to disprove the null hypothesis of no significant differences in ON scores between Instagram users and non-Instagram users. Significant differences between the two groups were present in ORTO-15 scores, offering evidence to support the alternative hypothesis that Instagram users are more likely to have higher ON scores than non-Instagram users.

The quantitative segment of the study aimed to add greater in-depth understanding of the above findings by using TA to examine probing questions regarding participants’ view of the potential effect of social media use on their eating. The analysis offered insight into the participants’ awareness of an effect of social media on their eating patterns, and was predominantly in agreement with the quantitative findings.

Interpretation of Findings

The first main theme regarding the ‘Importance of Belonging (Inclusivity/Exclusivity)’ encompasses the basic human need of belonging to a social group as outlined by Baumeister and Leary (1995). Social groups with shared interests provide individuals with a sense of belonging and social identity (Tajfel & Turner, 1979), which is apparent in the responses by participants and in online communities. Relationships with others are thought to be vital for wellbeing (Deci & Ryan, 1991), and positive social connections can encourage collaboration and extend the possibility of attaining shared goals. The themes generated supported these theories and their online representation. This main theme attempts to include the positive effects of motivation to do something new or inspiration and the negative effects of not adhering to online trends. The pressure to emulate what others are doing could lead to adverse effects participants may feel when they do not meet expectations.

Similar themes regarding feelings of exclusion and detrimental emotions such as guilt were present in a study of self-survey reports and in-depth interviews involving US-based

teens and their social media use (Weinstein, 2018). Findings from the study suggested the notion of social media being an ‘emotional see-saw’ as participants reported both closeness and disconnection through relational interactions; both self-verification and concern about their own judgment during self-expression; and entertainment and boredom as well as admiration when browsing. This identifies, in common with the current study, that social media is not necessarily good or bad, nor is it limited to an ‘either/or’ framework (Weinstein, 2018).

Similar studies conducted by Raggatt et al. (2018) to assess the influence of fitspiration on health and wellbeing reported that participants described increased social support and access to information regarding health as two of the benefits of fitspiration content, and this is reflected in the above response. Nevertheless, the same study (Raggatt et al., 2018) also found that participants reported that fitspiration content could negatively affect their perception of health goals and wellbeing.

There has been extensive research into fitspiration and its effect on body image and eating disorders that suggests it has a negative effect on body image and self-esteem (Tiggemann & Zaccardo, 2016). Responses by participants in the results section offer evidence to support these findings as well as those of the Raggatt et al. (2018) study.

Numerous responses reported using social media for inspiration in finding recipes and ideas to try something new with regard to cooking or eating. These are in accordance with previous studies that examined the motivation for Instagram use (Lee et al., 2015; Sheldon & Bryant, 2016), which listed documentation, observation and inspiration as motivators for using the platform. This is evident in online usage reported by participants of sharing food diaries, and searching for recipes and information regarding specific diets, such as vegan and vegetarian diets.

The claims by Turner and Lefevre (2017) that Instagram was widely used to promote healthy eating in the UK are reflected in the participant’s responses, as participants seem to be using social media, and specifically Instagram, as a sharing community for new healthy eating ideas. The visual format of specific social media channels such as Instagram and Facebook also seem to contribute to the stimulation to try something new, and is one of the main reasons why Instagram was used in the healthy eating movement (Marsh & Campbell, 2016).

Social comparison theory (Myers & Crowther, 2009) suggests that we have an innate predisposition to compare ourselves with others and that this is as much a part of human nature as the need to belong. Comparisons enable us to obtain support or appreciate our differences, and social media platforms offer the ideal environment for individuals to relate in this way. Most responses described comparisons with others whom they perceived as having superior qualities to themselves, hence they appeared to compare themselves negatively instead of positively (Festinger, 1954). Responses also seemed to confirm the social comparison theory (Myers & Crowther, 2009) by suggesting that the human mind has an innate tendency to compare.

Unlike traditional media, social media is accessed round the clock (Perloff, 2014). Questions regarding the effect of frequency of access and time spent on social media were posed to the participants. The Tiggemann and Slater (2013) study reported a link between time spent on Facebook and motivation to become thin, increased body surveillance, dietary restriction and decreased self-esteem.

Participant responses also suggest that others may post everything they do throughout the day, which could enable individuals to feel comforted and less lonely, as suggested in Pittman and Reich’s (2016) study, but can also encourage continuous comparisons to the

lifestyles of others as aforementioned. Participants described comparisons to others resulting in low mood, feelings of guilt and concerns regarding weight and shape. This is further substantiated by other studies reporting the negative impact of online social comparison (Fardouly et al., 2015).

The notions presented by participants in relation to the second main theme ‘Health as Art’ seem to accord with Nagel and Jones’s (1992) explanation of the increase in detrimental relationships to food, which they attributed to a change in beauty ideals, a link between beauty ideals and modern consumerism, diet culture and the growth of ‘healthism’. ‘Healthism’ (Crawford, 1980) advocates that good health is attained by healthy eating and regular exercise, and is characterised by a slim or athletic body shape. The current socio-cultural beauty ideals and fitspiration content portrays individuals who are thin and toned (Bozsik, Whisenhunt, Hudson, Bennett & Lundgren, 2018). However participants also referenced a shift in these aforementioned ideals related to the growing social media trend of ‘body positivity’, which aims to challenge the prevailing societal beauty ideals and encourage acceptance of all bodies and appearances (Cohen, Irwin, Newton-John & Slater, 2019).

It seems that many interpretations of what health is appear online, supporting the findings of Håman et al. (2015), who state that social constructions of health have increased the general population’s awareness. They add that this growth in awareness increases the accountability of individuals for preventing illness, while relating moral responsibility and worth to bodies’ weight and shape. The increase in individuals’ accountability may also extend to the greater global impact of diets, which could offer insight into the growth of the vegan population. There was also a mention in the responses of sustainability in eating, which may be attributed to the increase in awareness regarding food production and climate change, and the vast growth of the vegan industry (Joyce, 2012)

Vegans may be motivated by their love of animals or by a wish to limit their impact on the environment (Janssen, Busch, Rödiger, & Hamm, 2016). However, recent research has indicated that vegans and vegetarians may have higher scores on measures of ON, suggesting that health could also be a motivator for their diet choice (Barthels et al., 2018).

Businesses and advertising promote these health ideals (Dworkin & Wachs, 2009) in order to profit from them. These health ideals are often advertised online by so called ‘influencers’ who seem to be the social media cult leaders. They are most commonly Instagram users who have an established following and credibility, and have the power to affect others due to their perceived genuineness and reliability (Watts & Dodds, 2007). Having gained their followers’ trust, they generate visual content that highlights body shape, and establish that diet and exercise are elements that can be controlled to create an ideal and healthy body. The interest in the power of influencers regarding health communication on social networks has increased in recent years, due to their marketable nature and the fact that they are seen by companies as being highly desirable for advertisements. Instagram seems to be a particularly popular tool for businesses, as 83% of Instagram users report that they find novel products and services on the platform (Facebook, 2019). Influencers seem to promote specific beauty ideals related to health, suggesting that happiness and wellbeing rely on adhering to these beauty ideals (Pilgrim & Bohnet-Joschko, 2019).

Furthermore, responses outlined in the results section seem to be in agreement with findings that suggest that the perceived attractiveness and trustworthiness of influencers are linked to the consumer’s purchase intention (Rebelo, 2017).

The sub theme of ‘Illusory ideals’ seems to be in agreement with the following research that Instagram’s main use of sharing and viewing images and videos has led researchers to propose that it offers more opportunities for appearance-based comparisons

(Fardouly et al., 2015a; Holland & Tiggemann, 2016). Findings have also suggested that edited images may promote specific beauty ideals, which in turn make users consider themselves less attractive than others (Tylka & Sabik, 2010).

Additionally, Instagram users are much more likely to follow a combination of celebrities and influencers along with friends and family. Provided that users have no real-life connection to these celebrities, they are more likely to compare themselves to their idealised image of them, as they are only familiar with their online depictions (Fardouly& Vartanian, 2015; Fardouly & Vartanian, 2016). Responses seemed to acknowledge the altered nature of the content participants are exposed to and the conditions of comparison between friends and strangers but also reported a lack of immunity towards their effects. This is in conjunction with findings from Kleemans, Daalmans, Carbaat & Anschütz (2018) that suggested that exposure to manipulated images was related to diminished body image.

The third main theme of ‘Cravings’ seems to be in agreement with the findings reported by Schumacher (2019) with regard to the relationship between cravings, the consumption of energy-dense foods and negative emotions. The main theme also encompassed the sub theme of ‘Procrastination’, which has been described as an unreasonable and challenging behaviour that delays performing vital tasks (Aitken, 1982). It has been linked with decreased concentration and social distractions such as social media (Dewitte & Schouwenburg, 2002). Impulsivity, the tendency to act on a whim, has been linked to procrastination (Aitken, 1982) and to cravings (Schumacher, 2019), which may suggest that some participants may have been more prone to procrastinate through the use of social media, or to be affected by their cravings due to specific personality traits. The participants also described these behaviours as a form of escape which could be in agreement with Young, Kuss, Griffiths, & Howard, (2017) description of escapism as a behaviour used

to distract an individual from real-life issues as studies have suggested a link between engaging in social media use and an escape from reality (Gao, Liu, & Lee, 2017; Lee, 2017).

Cravings also seemed to be heightened by content described as ‘Food Porn’. The term has been largely used to describe glamourised images of food, fashioning and photographing food on mobile devices, and the vicarious consumption of these images through social media (Ibrahim, 2015). The hashtag ‘#foodporn’ has been used to distribute desirable images of culinary experiences, with Instagram being a widely used tool for the public sharing of food (Mejova et al., 2016). Exposure and fixation with food-related content has been linked to eating disorders and ON (Bratman, 1997) which seems to relate to the abundance of food cues online. These raise broader questions as to the breeding ground that social media, and specifically Instagram, offers for eating disorders and ON in particular.

Previous findings regarding the link between age and ON have been inconclusive, with the majority of studies reporting either a link between ON and younger age, or no relation between the two. More research was needed to understand the link between age and ON, and specifically research employing older adults, as previous research was predominantly focussed on participants between the ages of 20 and 30. The current study benefitted from a wide range age range, between 20 and 70. However the majority of participants were Millennials, aged between 24 and 38. Findings regarding age and its link to ON scores suggested that younger participants, specifically those in Generation Z and Millennials, were more likely to display orthorexic traits than older participants from Generation X and Boomers.

Responses to the probing questions also suggested that age might be a protective factor in the effects of social media on eating behaviours, which seems to support the quantitative findings. Participants mentioned an increased sense of self as a protective factor,

suggesting that this may develop with age. Older individuals appear to access social media less frequently and spend less time on social media, which may lead to fewer opportunities for appearance-related comparisons and exposure to glamourised images or videos of food. Younger social media users may therefore be more susceptible to the adverse effects of social media use due to their greater exposure, and the lack of protective factors for them from online pressures, such as adhering to the socio-cultural ideals of health portrayed in fitspiration content. It is probable that this is a reflection of the existing inclination for ‘healthy’ eating, with younger individuals possibly more susceptible to the effect of trends.

Research has established that males are not invulnerable to the harmful effects of image-consumed media and also report low self-esteem, body dissatisfaction and pressure to appear well built (Hobza, Walker, Yakushko, & Peugh, 2007; Ridgeway & Tylka, 2005). The recent 70% rise in eating disorders among males (Marsh, 2017) could demonstrate that we are in a cultural environment that enables the manifestation of eating difficulties. Results regarding the link between gender and ON have been conflicting. The mixed results in the studies may have been caused by the varying proportions of genders in the samples and, although the proportion of males and females in the current study is not evenly split, there was still an adequate participation from males, 34%, in the sample. The cultures in previous studies included those of Sweden, Italy and Turkey, and the socio-cultural expectations of masculinity within each culture could have contributed to the mixed results. Participants in the current study were predominantly from the UK and Cyprus. My own experience of both cultures suggests that traditional gender roles and stereotypes are more prevalent in Cyprus. The difference in cultures could contribute to the generalisability of the results regarding gender and ON.

Findings suggested a higher likelihood of ON in females. The average scores for both genders were below 40 on the ORTO-15 scale, and therefore lay within the orthorexic range, which may be an indication of the high prevalence found in the study. The variance of ON scores was greater for males than females suggesting that the male participants in the study had a wider range of ON scores than the females. This could imply that some males are very concerned about healthy eating whereas others have a minimal interest.

Responses to the probing questions did not refer to any genders or gender stereotypes, apart from one participant who noted that ‘skinny girls’ are what society deems as ideal but reported a shift in trends to include curvy body types. Nevertheless, there did not seem to be any qualitative data to report in agreement or contention to the quantitative findings.

As with most demographic characteristics of participants and their effect on ON scores, findings regarding levels of education and ON scores were mixed. Rothblum (1992) described the widely held conviction that obesity is related to poverty, as it is a marker of a lack of education about nutrition and the failure to afford healthy food or the ability to exercise. The study benefitted from a highly educated sample, as most participants had either a University Bachelor (37.4%) or Master’s (43.2%) degree or equivalent. The study did not find a link between levels of education and ON scores.

There is negligible evidence to suggest any difference between ethnicities in eating disorders and dieting behaviours. Demographic effects of ethnicity and country of residence on ON symptoms have not been examined, as most studies regarding ON have been limited to one ethnicity or country of residence.

Although the prevalence of HeOr and OrNe in the sample was not computed due to the absence of cut-off points, it was apparent that participants’ scores in both categories were relatively high, which matched the 72.63% prevalence found with the ORTO-15 measure.

Barrada & Roncero (2018) outline a possible range of scores for HeOr (0, 27) and add that the mean score for HeOr in their study was quite low at M=12.52. Their participants also tested quite low for OrNe, with M=3.57 and the possible range is (0, 24). In the current study the average HeOr was M=21.59 which was significantly more than that in the Barrada and Roncero (2018) study. This may suggest that the sample had what Barrada and Roncero (2018) deem as a healthy preoccupation with healthy eating without the adverse effects of ON. The OrNe in the current study was M=13.21, which again was much higher than the average of OrNe in the Barrada and Roncero (2018) study. Other studies examining prevalence of ON in dieticians (Alvarenga et al., 2012), nutritionists (DeSouza & Rodrigues, 2014), students in Brazil and yoga practitioners in Spain (Valera et al., 2014) have produced similarly high prevalence scores using the ORTO-15 measure. The high prevalence in these studies may have been due to an increased awareness of and interest in healthy food resulting from the participants’ job roles.

The high prevalence in the current study may be due to various factors. The sample was predominantly made up of Millennials (78.2%), which seem to be more prone to ON than other age groups. More than half the sample was made up of females, 66%, who according to the findings are again more likely to display orthorexic traits than males. The prevalence may have also been affected by the recruitment method or by response bias, as individuals who agreed to take part in the study may have done so because of an interest in healthy eating. The high prevalence may have also been a result of the lenient cut-off scores in the ORTO-15.

Brytek Matera et al. (2015) and Segura-Garcia et al. (2015) recognize that in the current environment ON behaviours can often be seen as socially acceptable and even commendable. Healthy lifestyle choices are currently praised and therefore it may be difficult

for both the measures to distinguish between following a currently fashionable diet and pathological eating patterns. The high average of HeOr in the sample may suggest the former but the high ORTO-15 prevalence and high OrNe scores suggest the latter. Brytek-Matera et al. (2015) explain that the appeal of healthy eating practices could generate an overestimation of ON behaviours in self-reporting measures, which could further explain the high prevalence in the current study.

The argument that ORTO-15 over-pathologises what could be deemed normative eating behaviour (Missbach et al., 2016) and detects individuals who are simply on diets (Roncero et al., 2017), does not explain the high scores generated for HeOr and OrNe. The TOS scale was developed in order to quantify both non-clinical healthy eating and pathological eating behaviours. Hence, if the sample were saturated with individuals on healthy diets who did not experience any of the detrimental effects of dieting, we would have expected high HeOr scores and low OrNe.

The findings from the reliability analysis suggested that the TOS measure is valid and reliable, as it seems to offer repeatable and consistent outcomes and quantifies what it aimed to do. Nevertheless, statistically significant differences between the ON scores of different demographics and between Instagram users and non-Instagram users were only apparent when using the ORTO-15 and not when using the TOS scale. This may be explained by the greater variance in ORTO-15 scores as the questions posed on the measure may have generated more polarised responses than the TOS. Another possible explanation of the absence of significant differences between groups on TOS scores may lie in the format of the measure and the Likert scale labels used. The design of the scale can influence the way in which respondents interpret the choices provided (Andrews, 1984). Although both scales used a four-point Likert scale, the TOS questioned participants on whether they completely

disagree, slightly agree, quite agree or strongly agree with statements regarding their possible ideas and attitudes towards food. The ORTO-15 asked participants whether they always, often, sometimes or never exhibit specific food-related behaviours. Hence the difference in the order and wording of the Likert scale labels on the different measures may have affected participants’ choices. Participants’ responses may have also been less polarised when indicating agreement or disagreement with statements than when responding to the occurrence of behaviours through questions. Finally, the order in which the measures were presented, the TOS first and the ORTO-15 second, may have influenced the participants’ responses.

The high prevalence in the sample could also be explained by the large proportion of social media users, and specifically users of Instagram (29.67%), in the sample, with only 3.46% of the sample not using any social media platform. 70.9% of participants reported that they accessed social media several times a day and 28.96% of participants stated that they spent more than an hour in total on social media, with content depicting friends or other individuals in the image being the most popular category shown on their feeds, and food being the second most popular. Social media has been exploited to influence eating and food consumption, either through photographs, videos, recipes, or reviews, which has resulted in an excess of sites, channels, blogs and ‘influencers’ attempting to offer health guidance. The content depicted on social media, and described in the probing questions, seems to have a direct effect on participants’ view of themselves, their concern with health, their body image and food intake. Participants reported an abundance of health-promoting content online which encouraged them to eat healthy foods and to exercise in order to adhere to the socio-cultural ideals of health promoted online. Quantitative findings confirmed a link between social media and eating patterns, suggesting that individuals who accessed social media more frequently were more likely to describe their interest in healthy food as an important part of

themselves and the way they understand the world. This could suggest that individuals with an interest in healthy eating use the Internet and social media to broaden their knowledge of the topic. Chapman (1999) also suggested an innate link between dieting and self-identity, which could further explain the thinking of these participants.

Further results offered evidence to support Turner and Lefevre’s (2017) findings of a link between Instagram use and ON, as Instagram users were more likely be within the orthorexic range than non-Instagram users in the sample. This was further supported in the qualitative segment as participants described this specific platform as having a greater influence due to its visual format.

The TA generated themes that support the quantitative findings of the study and are predominantly in agreement with previous research. Although social media, and specifically Instagram, has been linked to eating disorders and body image issues (Holland & Tiggemann, 2016) it has also been linked to a decrease in loneliness (Pittman & Reich, 2016), as it may allow users to feel they are part of an online community or encourage them to try something new.

Most studies examining the effect of social media on eating patterns have related adverse eating behaviours to online appearance-based comparisons and body image issues. These were noticeable in the current study as participants described idealised images of unrealistic body types that adhered to the slim and toned physique that denotes healthism (Crawford, 2004). The high prevalence of ON in the sample and the responses of participants who report appearance-based comparisons suggest that weight and shape concerns may in fact be a factor in ON. Whilst Bratman previously highlighted the lack of weight and shape concerns in ON, the latest proposed diagnostic criteria take body image into consideration (Dunn & Bratman, 2016). Dunn and Bratman (2016) focus on positive body image as being

markedly dependent on self-defined healthy eating practices. Hence, if positive body image is reliant on adherence to a specific diet, then weight and shape are definite factors. Being in control of one’s weight and a focus on diet can be seen as vehicles to self-improvement, which can inherently suggest a sense of inadequacy without these interventions. Bratman (1997) explained that feelings of guilt are likely to arise from dietary transgressions when attempts to adhere to a healthy diet become increasingly strict and engrained. In the current environment, where dieting is linked to self-identity and self-control is deemed an admirable trait (Hirschman & Thompson, 1993), it is likely that feelings of guilt play a pivotal role in the development and maintenance of detrimental eating patterns. Feelings of guilt as a result of dietary transgressions could encourage the sense that punishment is required. These feelings were evident in the responses denoted by the subtheme of ‘Meeting expectations’, as participants elaborated on the effects of not meeting the expectations set out online regarding healthy eating and fitness.

Although many participants referred to idealised images of unrealistic bodies and constant image-based comparisons, this was not the only type of content that affected their eating patterns. Preoccupation with food has been related to eating disorders and ON (Bratman, 1997) and the rise of social media use and mobile access has contributed to increased exposure to images of food, recipes and cooking channels. The online popularity of food is clear, as the hashtag ‘#food’ is one of the 25 most popular hashtags on Instagram and was the second most popular content type on participants’ feeds. Studies have indicated that social media could be used to influence actual food selection (The Hartman Group, 2012) and participants reported cravings for specific foods when being exposed to this content online. Participants added that they were likely to act upon these cravings, but described these behaviours, especially when the cravings were for what they deemed as unhealthy foods, as negative and guilt-inducing.

Individuals adhering to strict and restrictive diets in pursuit of health may be more prone to expose themselves to this content, as is evident in other eating disorders. Acting upon the cravings induced by food-related online content could lead to negative emotions. This interpretation of cravings and the outcomes of acting upon them could offer evidence that suggests that ON is similar to other eating disorders, and supports the transdiagnostic nature of eating disorders. It could be suggested that the combination of unrealistic body images and the glamourisation of food on social media, specifically Instagram, generates an environment that promotes detrimental food thoughts and behaviours outlined in new ON criteria.

Limitations and Strengths

The study was able to address prior shortcomings of research by using robust measures of ON and social media use that assessed a number of dimensions within each of these variables. The study profited from a diverse sample population in regards to the age, gender, level of education and country of residence of participants that was not present in prior research, as most previous studies regarding ON were limited to specific age groups, professions or student groups and cultures. The study benefitted from a mixed methods design as it obtained qualitative research to enrich the findings of quantitative research. One of the study’s strengths was the large sample size, which was a result of the online survey employed. An online survey questionnaire was considered as the most effective method, given the study’s methodology and epistemological positioning as well as its time and cost restraints.

However, online surveys are not without their shortcomings. As the setting of this method is uncontrolled, participants are able to complete the measure wherever they wish, which may be from the comfort of their own home, during work, whilst on their morning

commute on their phone or a range of other places. Participants may have been able to complete the questionnaire without any interruptions or distractions, or may have filled it out whilst preoccupied with other tasks. Although the process of the online questionnaire was explained to participants, and they were asked to spare a certain amount of time to complete it, the researcher had no control over how participants actually administered the online survey. Hence the setting and method by which participants completed the study may have affected their responses in comparison with completing it in a controlled setting. Alternatively, the privacy of the setting and the decreased concern of demand representation may have contributed to participants being more honest in reflecting their eating patterns and social media use.

Self-selection bias in opportunity samples is unavoidable, as participants who are interested in the topic of healthy eating or social media use were more likely to take part in the study. This may have resulted in a sample that was more concerned about healthy eating than the average population, and could explain the high prevalence of ON in the sample.

The researcher recruited participants via messages, emails and social media posts to friends, family and colleagues who were then asked to distribute the link to the online survey more widely. Although the snowballing effect may have resulted in recruiting like-minded participants, it was vital to the study as it resulted in the large sample number. Participants may have felt compelled to help out in their friend’s survey, may have trusted the individual who forwarded the survey to them, or may have been motivated by the prospect of the Amazon gift voucher. In order to detect whether this bias affected the study, future research could recruit individuals from independent settings. However, it is important to note that the method used in the study enabled a wider range of participants to be recruited than previous

studies which mainly used college population samples, despite the doubts regarding self-sampling bias.

Although participants’ anonymity and ability to respond to the questionnaire in private may have enabled them to be more truthful in their responses, the bias of demand characteristics should also be taken into consideration. The focus on what participants deemed to be healthy and unhealthy food was apparent through the participants’ responses to the probing questions. This may have been a result of the participants’ awareness of the purpose of the study.

An additional effect of using an online survey is the possibility of restricting the age-range of the sample as well as the likelihood of an increased representation of social media users. The initial recruitment stage did not include enough non-Instagram users to enable administration of the appropriate statistical tests, which is why there were two recruitment phases. Despite the wide age-range, from 20 to 70 years old, the majority of participants (78.2%) were classified as Millennials aged between 24 and 38, with only 5.5% of participants over the age of 55. This suggests that the findings are not essentially generalisable to older adults and may be more representative of a younger population. Older participants, participants who do not often use social media or the Internet, or individuals who are not comfortable using the Internet may have been inclined to take part in the study due to its online format or its subject topic. Nevertheless they might have been more likely to fill out the questionnaire had it been in paper form.

Response bias further restrains the generalisability of the findings in the study. Although 238 people were invited to take part in the study, only 223 agreed to participate. This suggested that around 6% of participants who saw the study decided not to contribute. There could have been different reasons why they did not take part: they may have not been

interested enough in the study or perhaps did not feel comfortable participating. Of these respondents, only 139 completed the entire survey, which is around 58% of those who originally saw the survey, which indicates that the participant pool consisted of people who were interested in both healthy eating and social media use. Their interest may have led them to research this topic more than their counterparts, thus limiting the degree to which they are characteristic of their groups.

Participants may have not completed the whole questionnaire as it may have taken them longer to complete than expected, they may have been interrupted or they may not have felt comfortable answering certain questions. As mentioned previously, there was a progressive drop-off rate throughout the survey, which further contributes to concerns about the effect of the question order, since some of the measures may have influenced the responses on other measures. In the current study, the TOS measure was presented first, followed by the ORTO-15 scale, followed by a social media use measure and finally the probing questions. Participants had to complete two measures on quite similar content. This repetition may have been off-putting to participants and may have further contributed to order effects. Both measures used a four-point Likert scale, but the direction of positive to negative options was reversed, which may have led to further confusion as participants had to fill one out after the other. Future studies could control for potential order effect by randomising the order of the measures for each participant.

The limitations of no established criteria for ON and lack of reliability of previous studies make it difficult to compare results of prevalence and varying demographics. The limitations of the ORTO-15 (Donini et al., 2004) and lack of cut off scores for the TOS (Barrada & Roncero, 2018) also contribute to statistical analysis of differences between the

various demographic groups, and Instagram and non-Instagram users, generating varying results. This highlights the importance of established criteria and measure for ON.

The reliability analysis utilised in the current study looked at the new TOS (Barrada & Roncero, 2018) measure’s internal consistency by administering the Cronbach’s alpha and examined its link to the well-established ORTO-15 (Donini et al., 2004) measure. It is important to note that the lack of further tests of reliability such as test-retest, split half and inter-rater reliability is a limitation of this study too. Although the time limitation and format of the questionnaire would not allow for analyses such as test-retest, the data collected could have been used to examine for split-half reliability. However, given that this is also a measure of internal consistency and the variances needed to be equivalently assumed (Waller, 2008) it was not administered. Further research could attempt to further test the various forms of reliability of the TOS measure (Barrada &Roncero, 2018).

Using probing questions may have also been a limitation in the current study’s design,as it did not allow participants who did not think there was a link between eating and social media to elaborate on their understanding. This may have also contributed to the short answers of ‘No’ or ‘I don’t think so’ in the responses to the probing questions. Using open-ended questions could have contributed to broader explanations of the lack of a link or the lack of an understanding of the possible link between the two.

Responses regarding the probing questions were also of particular concern, as many of the themes were related to the thoughts, emotions and behaviours outlined in the ON measures. It is uncertain whether the questions provided theoretical support for the measures or were simply a result of recency and priming effects. It would have been interesting to see whether participants’ responses to the probing questions were different if they been presented at the beginning of the questionnaire or independently. Responses to the probing questions

also suggested that they might have been repetitive in their nature. The study could possibly have benefitted from fewer probing questions, which may have encouraged participants to elaborate on just one aspect of the link between eating patterns and social media use.

Evaluation of qualitative research is not as straightforward as that of quantitative research. In order for quantitative studies to be deemed reliable, they need to be replicable and offer similar results when the same measures are administered to a different sample by different researchers. The complexity added to qualitative approaches by the researcher and their bias may contribute to difficulty in replicating similar findings and hence in evaluation of the method used. However, this form of research does not intend to be replicated but aims to be transferable and various methods have been developed in order to overcome these challenges. Yardley (2008) generated a set of four principles for doing so that are epistemologically and theoretically neutral. These principles can be interpreted and established in a variety of ways that best suit the research question (Braun & Clarke, 2013).

The aforementioned principles include sensitivity to the context being analysed; commitment and rigour; transparency and coherence; and impact and importance (Yardley, 2008). I endeavoured to situate the study in the appropriate context by summarising and critiquing the current literature regarding ON and social media use and detecting the gaps for potential studies. Sensitivity to the participants’ responses was essential when analysing the data, as I attempted to understand their perception of the potential link between the two variables without imposing my own expectations of them or ignoring meanings or experiences that were different to my beliefs (Yardley, 2008). I was careful not to exclude any prominent themes that were not in agreement with my expectations of the data by taking the appropriate time to ensure that my analysis was systematic, methodical and concise. During the analysis phase, I consulted my research supervisor to make sure that I was not

missing any salient information from my themes and modified them accordingly. In order to present an in-depth and wide range of commitment to the topic, I completed a placement in an eating disorders’ clinic during the last year of my counselling psychology doctorate, engaged in extensive reading regarding the topic and volunteered to give talks to my team and interesting parties regarding it.

In order to be as transparent as possible throughout the development of the research, I clearly described the design and methods used for the study, how data were collected and how the analysis was conducted, as well as my own contribution to the study. As previously cited, the TA used the six-phase model outlined by Braun & Clarke (2006), and this was evidenced by keeping a paper trail of the development of the analysis, along with images and figures depicting mind maps of the early grouping of data and clusters that led to the final themes and sub-themes. I also aimed to offer insight into my thought process through reflexivity: by keeping a reflexive journal throughout the process I was able to acknowledge my own experiences and role in the study. Finally, the fourth principle states that the impact and importance of the research study can only be measured relative to the aims of the analysis and the purpose and population for whom its findings were intended (Yardley, 2008). This study has contributed useful knowledge regarding ON and its different quantitative measures; ON and its association with different factors; and a better understanding of the influences of social media on eating patterns. The study therefore seems to adhere to the research quality standards for qualitative data set out by Yardley (2008).

In addition to the above attempts to evaluate the reliability of the qualitative aspect of the study and denote its strengths, the qualitative limitations of the study also need to be highlighted. The study was informed by a post-positivist position, which adheres to the premise that theory and practice cannot be separate. Hence the researcher’s incentives and

obligations are fundamental and crucial to his or her research (Schratz and Walker, 2005). As a researcher, I therefore played a considerable part in generating the analysis and consequent discussion. As qualitative research is fundamentally about meaning, it does involve a level of uncertainty (Braun & Clarke, 2013). It has been proposed that, in order to ensure the data’s integrity, validation of themes from participants is vital (Williams & Morrow, 2009). However, due to the time limitations, the large population sample and the format of the online survey, this recommendation was not observed.

The alternative qualitative data collection method of focus groups was considered, as it could have offered richer and more in-depth information regarding the topic by enabling participants to liaise with each other whilst co-constructing meaning. This quality of data was missing from the responses to the online probing questions, but financial and logistic constraints meant that the use of focus groups was not a feasible option.

Future Work

The findings from the current study regarding the link between age and ON suggest that younger participants are more prone to ON than older participants. Additional analysis proposed that age might be a protective factor from the influence of online content. Further studies could attempt to assess whether these findings reflected an existing inclination for healthy eating amongst younger individuals who tend to be more susceptible to online trends.

Although the findings regarding gender and ON suggested that females were more prone to ON than males. Findings may also suggest that socio-cultural gender role expectations and constructs of masculinity and femininity within cultures may not differ enough to affect ON scores. However, more studies involving populations from a variety of cultures are required to test this further.

The notion that the ORTO-15 detects and over-pathologises individuals who are on diets (Roncero et al., 2017) is refuted by the high HeOr and OrNe scores in the sample. Further studies could employ both measures, in order to successfully distinguish between the proportion of individuals pathologised as ON sufferers by ORTO-15 and individuals who are simply concerned with healthy eating without the detrimental effects of ON. Although results indicated that the TOS is a valid and reliable measure, it needs to be used in more studies in order further to quantify its ability to generate repeatable and consistent outcomes in different samples.

Individuals who accessed social media more frequently were more likely to identify with an interest in healthy food. This finding supported the notion proposed by Chapman (1999) of a link between dieting and self-identity that may prove to be an interesting new avenue to inform ON research.

Furthermore, previous studies and the responses from participants in the current study all seemed to agree with the increased influence of the visual format of Instagram. Further work could explore possible effects of varying Instagram content, in order to provide further insight into whether images, videos, IGTV or live feeds are more influential.

Finally, the findings regarding food content and cravings suggest that there is an abundance of food cues online that appear to affect individuals’ real-life food choices. The combination of unrealistic body images and the online glamourisation of food may be contributing to an environment that promotes detrimental food thoughts and behaviours. Studies examining the variety of content online, not solely focussed on fitspiration or the effect on body image, may be beneficial to gain a deeper understanding of social media’s contribution to ON.

Implications for Counselling Psychology

As a counselling psychologist, I aim to understand my clients as a whole, regardless of diagnosis. Although it could be helpful for ON to be clinically acknowledged in terms of setting clear diagnostic criteria and establishing a successful measure, the aim of this study was not solely to gain understanding of ON in pursuit of clinical acknowledgment.

When I think of counselling psychology, the words human, holistic, empathetic, safe, non-judgemental and congruent spring to mind. To me this field encompasses all of these traits, whilst also being informed by the study of psychology as a whole and an evidence base specific to counselling psychology. The focus on a person as a whole, looking at that individual’s experience of distress or illness, instead of pathologising and focussing on the illness itself, engaged me and resonated with my core values. In adherence to a non-pathologising stance, the words ‘healthy eating’ were used to describe the title of the study and denote it in recruitment advertisements.

The ethos of counselling psychology conforms with my epistemological position of post-positivism, as it does not seek absolute truths and encourages further enquiry and understanding. Counselling psychology turns the outcomes of research into efficient therapeutic practice, and hence works well with therapeutic interventions due to its holistic nature and focus on subjective experience. This study sought to understand an unhealthy obsession with healthy eating and its potential link to social media use. When considering further therapeutic interventions informed by the study, it is important to keep in mind the culturally entrenched nature of eating disorders, the prevalence of body dissatisfaction amongst women and men, and the praise of healthy eating behaviours.

The cognitive behavioural model places the over-evaluation of shape and weight at the core of eating disorders (Fairburn, 2003). The initial conceptualisation of ON did not

include concerns about weight or shape in its characteristic criteria (Bratman, 1997). However, identifying these criteria proved problematic due to the endemic nature of body dissatisfaction and normative discontent in Western cultures (Rodin et al., 1984), which, added to the fundamental part that weight control plays in social constructs of health (Crawford, 1980), suggest that it is challenging to imagine a fixation with health that does not include weight control. Recent criteria of ON however seem to take this into consideration and mention that a valid criterion of ON is positive body image being extremely reliant on self-defined eating practices (Dunn & Bratman, 2016). Consideration of the endemic nature of weight and shape concerns, when working with a broader range of presentations, eating disorders and ON, may be vital in further understanding the socio-cultural factors that contribute to our clients’ distress and empathising with them. Psycho-education regarding normative discontent may aid clients in understanding the contributing factors to this common affliction but also encourage them to challenge both their own thinking and socio-cultural norms.

The high prevalence of ON in the sample and the qualitative segment of the study offered insight into an increasing preoccupation with health, and the growing influence of businesses attempting to sell health-promoting services or products. Participants reflected on the links between health, healthy eating and fitness, and the idealistic and illusory images that appear to promote the perfect state of health online. Participants explained that this content can act as inspiration or motivation on occasions but can also result in negative feelings when they fail to adhere to the rules set for reaching optimal health. The current study therefore confirms previous notions of healthy eating as a highly prized behaviour in the current environment. Notions suggesting that healthy eating may inform self-identity, especially in younger participants, and may contribute to feelings of moral superiority could inform therapeutic approaches. It may therefore be important to consider the value the client places

on healthy eating, their beliefs regarding it, and a socio-cultural environment that maintains the notion that good health is related to moral superiority, when attempting to generate a formulation concerning their distress. It is important to note that health-advocating practices may not always be a force for good, as they may also disguise detrimental effects on physical and mental wellbeing. Healthy may therefore be a well-placed pretence aimed to conceal symptoms of eating disorders (Brytek-Matera et al., 2015).

Serpell, Treasure, Teasdel and Sullivan (1999) highlighted the effect of external positive reinforcement in maintaining eating disorders and proposed that cognitive therapies for treatment of AN should take this into consideration. This may be important to note for treatment of ON, as the admiration of healthy eating practices and external positive reinforcement may be detrimental to the sufferer and provide further fuel to maintain the detrimental eating patterns. Cognitive behavioural therapy has been proposed as a treatment for ON (Koven & Abry, 2015) but there have been no studies to date that validate this. The current study offers evidence to support the notion of similarities between ON and other eating disorders (Koven & Abry, 2015), such as dietary restrictions, preoccupation with food and negative emotions and punishing behaviours when transgressing. The transdiagnostic nature of eating disorders may also translate to ON, suggesting that cognitive behavioural therapy may also be an effective form of treatment for ON.

Social media has been linked to eating disorders and has been suggested to have a detrimental effect on individuals’ body image (Fardouly et al., 2015; Perloff, 2014). The study aimed to investigate the potential link of ON and social media use, as well as to understand participants’ view of the effect of social media on their eating patterns. Although early ON research does not relate it to body image, its link to weight and shape control seems

convincing, and participants’ responses to the online probing questions seem to support notions relating social media with body image and healthism.

The study highlighted the multifaceted nature of the effects of social media use on eating patterns. Participants seemed to have a similar perception of what constitutes ‘healthy’ in an online context, what it looks like, and the impact this has on their eating patterns, perceptions of themselves and well-being. There also seemed to be a consensus regarding socio-cultural health ideals, a link between healthy eating and exercise, and the power of businesses and influencers to advocate these. Participants reported an awareness of the manipulation used in the imagery to which they are exposed online, but lack an immunity to its effects. Not adhering to the notions of health that were promoted online resulted in negative emotions. The abundance of such content online and its possible effects on clients may be useful to keep in mind in treatment, and familiarity with concepts promoted online such as fitspiration may therefore be useful for practitioners in further understanding an environment that may be contributing to our clients’ distress.

Another important notion highlighted in the study is that of food content on social media. Studies have indicated that social media could be used to influence actual food selection (The Hartman Group, 2012) and participants reported cravings for specific foods when being exposed to this content online. Individuals adhering to strict and restrictive diets in pursuit of health may be more prone to expose themselves to this content, as has been shown in the case of other eating disorders. Participants explained that acting upon the cravings induced by food-related online content could lead to negative emotions. The normality of exposing oneself to an abundance of images and videos of food may contribute to an increase in clients’ fixation with food. As previously mentioned, awareness on the part

of practitioners of popular online content, and an understanding of what clients are viewing on a daily basis may be important in enhancing our understanding and ability to aid them.

The study also proposed that younger participants were more likely to access social media more frequently and to spend more time on these platforms. Their increased exposure to various online content may make them more prone to negative effects. Discussion of social media use, what platforms they use, what their feeds consist of, and who they follow may be vital to understanding their everyday exposure and interactions.

The study does not aim to demonise social media but hopes to encourage an increased awareness of it and to stimulate conversations about it in the therapeutic context. Social media literacy is vital for practitioners, clients and carers. Awareness of the potential negative and positive effects of social media, and the ability to critically evaluate the content to which one is exposed, are essential in today’s environment. Nevertheless, an awareness of manipulated images did not result in immunity to their detrimental effects, suggesting that individuals should curate what they expose themselves online in order to reduce negative effects.

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Appendices

Appendix A: Recruitment Advertisement

Department of Psychology

City University London

PARTICIPANTS NEEDED FOR

RESEARCH EXAMINING EATING PATTERNS AND SOCIAL MEDIA USAGE

We are looking for volunteers to take part in a study on eating and social media usage.

You would be asked to: Complete online questionnaires and open ended questions concerning your eating patterns and social media usage.

In appreciation for your time, you will have the chance to win a £50 Amazon Gift Voucher.

For more information about this study, or to take part,

please contact:

[Antigone Lanitis]

Psychology Department

at

Email: [redacted]

This study has been reviewed by, and received ethics clearance through the *[insert committee name here]* Research Ethics Committee, City University London PSYETH (P/L) 17/18 205.

If you would like to complain about any aspect of the study, please contact the Secretary to the University’s Senate Research Ethics Committee on [redacted] or via email: [redacted]

Appendix B: Participant Information Sheet

Title of study *“Healthy eating” and social media usage.*

We would like to invite you to take part in a research study. Before you decide whether you would like to take part it is important that you understand why the research is being done and what it would involve for you. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

The study is part of the Professional Doctorate in Counselling Psychology at City University. The study aims to enrich the research available on “healthy eating” and explore its potential relationship to the use of social media in an opportunity sample. The study involves three short questionnaires and four open ended questions in total. The questionnaires and questions are available online so that you may fill them out at a time and an environment that is most convenient to you.

Why have I been invited?

The study utilizes an opportunity sample as we would like to recruit individuals at random. The study excludes individuals under the age of 18, individuals that are currently receiving treatment or have a current diagnosis of an eating disorder and individuals that are currently on a medically recommended diet.

Do I have to take part?

Participation in the project is voluntary, and you can choose not to participate in part or all of the project. You can withdraw at any stage of the project without being penalised or disadvantaged in any way. It is up to you to decide whether or not to take part. If you do decide to take part you will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen if I take part?

- *You will be asked to fill out questionnaires and open ended questions concerning your eating and social media usage.*
- *The data you provide will be anonymous and will be examined as part of the aforementioned study.*
- *The research project should be complete at the end of 2019.*
- *You will not need to meet with the researcher as the data collection phase will take place online.*

What do I have to do?

You will have to sign a consent form, fill out three questionnaires and answer four open ended questions concerning your eating, social media use and demographic information. The process should not take longer than 20 minutes, but please allow time to read the current brief and debrief at the end. If you take part you would be providing the study with vital information about the topic which could lead to a better understanding of it.

What are the possible disadvantages and risks of taking part?

You may feel a bit tired after filling out the questionnaires. Please take breaks if needed. Also you may feel apprehensive about some of the questions if so please contact the researcher who can explain the study further or refer you to the appropriate aids.

What are the possible benefits of taking part?

You will take part in a study that could provide us with a better understanding “healthy eating” and its potential relationship to the use of social media. You will also be included into a prize draw to win a £50 Amazon gift voucher.

Will my taking part in the study be kept confidential?

- *Data will be anonymised.*
- *Data will be stored on a safe and locked server.*
- *The data you provide will only be used for the study.*

What will happen to the results of the research study?

The results of the research study will be part of a professional doctoral thesis that will be reviewed by other professionals.

What will happen if I don’t want to carry on with the study?

Taking part in the study is voluntary and you are free to leave the study at any point without being penalized or having to provide a reason.

What if there is a problem?

If you have any problems, concerns or questions about this study, you should ask to speak to a member of the research team. If you remain unhappy and wish to complain formally, you can do this through the University complaints procedure. To complain about the study, you need to phone [redacted]. You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the project is: *[insert project title here]* You could also write to the Secretary at:

[redacted]

Secretary to Senate Research Ethics Committee

Research Office, E214

City University London

Northampton Square

London

EC1V 0HB

Email: [redacted]

City University London holds insurance policies which apply to this study. If you feel you have been harmed or injured by taking part in this study you may be eligible to claim compensation. This does not affect your legal rights to seek compensation. If you are harmed due to someone’s negligence, then you may have grounds for legal action.

Who has reviewed the study?

This study has been approved by City University London Psychology Department Research Ethics Committee, PSYETH (P/L) 17/18 205.

Further information and contact details

[redacted]

Thank you for taking the time to read this information sheet.

Appendix C: Consent Form

Consent Form

Title of Study: “Healthy Eating” and Social Media Usage.

Ethics approval code: PSYETH (P/L) 17/18 205.

1. I agree to take part in the above City University London research project. I have had the project explained to me, and I have read the participant information sheet.

I understand this will involve:

Completing questionnaires and open ended questions asking me about my demographic information, eating and social media usage.

2. I understand that this information will be held by City as data controller and processed for the following purpose(s):

To analyse eating behaviours, cognitions, attitudes, feelings and patterns and explore its potential relationship to social media usage.

The legal basis for processing your personal data will be that this research is a task in the public interest, that is City, University of London considers the lawful basis for processing personal data to fall under Article 6(1)(e) of GDPR (public task) as the processing of research participant data is necessary for learning and teaching purposes and all research with human participants by staff and students has to be scrutinised and approved by one of City’s Research Ethics Committees.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.

3. I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

4. I understand that the thesis will be made available in the City Research Online repository.

5. I agree to City recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on City complying with its duties and obligations under the General Data Protection Regulation (GDPR)6. I agree to take part in the above study.

If you agree to the points above and provide your consent to take part in the following study please sign in the space below.

X _____Sign Here

Appendix D: Debrief Information Sheet

DEBRIEF INFORMATION

Thank you for taking part in this study. Now that it’s finished we’d like to tell you a bit more about it.

Orthorexia Nervosa has been coined as the obsession with healthy eating. However the term has not been clinically acknowledged and scarce research is available on it. The study aims to add to the research pool for Orthorexia Nervosa and to explore its potential relationship to the use of social media. The questionnaires and questions that you have completed will provide the study with data about your feelings, cognitions, attitudes and behaviours concerning eating and social media usage in order for the researcher to assess the aforementioned potential relationships. The questionnaires are not diagnostic tools and do not aim to diagnose or label anyone with Orthorexia Nervosa or disordered eating patterns.

If you would like more information about the study or are worried about anything that the study has brought up for you please contact the researcher who will be able to explain more about the study or guide you to find the appropriate help for your concerns or SANEline is a national out-of-hours mental health helpline offering specialist emotional support, guidance and information to anyone affected by mental illness, including family, friends and carers. We are open every day of the year from 4.30pm to 10.30pm on 0300 304 7000. http://www.sane.org.uk/what_we_do/support/helpline

We hope you found the study interesting. If you have any other questions please do not hesitate to contact us at the following:

[redacted]

[redacted]

Ethics approval code: PSYETH (P/L) 17/18 205

Appendix E: ON Questionnaires

TOS – Teruel Orthorexia Scale

The following questions relate to the ideas and attitudes you have regarding food. In particular, we would like to know how important it is for you to follow a healthy diet based on foods such as those free of fats, salt, preservatives, additives made by humans or any substance that you consider harmful or toxic, as herbicides or pesticides.

		Completely disagree	**Slightly agree**	**Quite agree**	**Strongly agree**
1.	I feel good when I eat healthy food	□	□	□	□
2.	I spend a lot of time buying, planning and/or preparing food so my diet will be as healthy as possible	□	□	□	□
3.	I believe that the way I eat is healthier than that of most people	□	□	□	□
4.	I feel guilty when I eat food that I do not consider healthy	□	□	□	□
5.	My social relations have been negatively affected by my concern about eating healthy food	□	□	□	□
6.	My interest in healthy food is an important part of the way I am, of how I understand the world	□	□	□	□
7.	I'd rather eat a healthy food that is not very tasty than a good tasting food that isn't	□	□	□	□

	healthy				
8.	I mainly eat foods that I consider to be healthy	☐	☐	☐	☐
9.	My concern with healthy eating takes up a lot of my time	☐	☐	☐	☐
10.	I am preoccupied with the possibility of eating unhealthy food	☐	☐	☐	☐
11.	I don't mind spending more money on food if I think it is healthier	☐	☐	☐	☐
12.	I feel overwhelmed or sad if I eat food that I consider unhealthy	☐	☐	☐	☐
13.	I prefer to eat a small quantity of healthy food rather than a lot of food that may not be healthy	☐	☐	☐	☐
14.	I avoid eating with people who do not share my ideas about healthy eating	☐	☐	☐	☐
15.	I try to convince people from my environment to follow my healthy eating habits	☐	☐	☐	☐
16.	If, at some point, I eat something that I consider unhealthy, I punish myself for it	☐	☐	☐	☐
17.	Thoughts about healthy eating do not let me concentrate on other tasks	☐	☐	☐	☐

SCORING:

Completely disagree = 0; *Slightly agree* = 1; *Quite agree* = 2; *Strongly agree* = 3.

TOS Healthy Orthorexia =
TOS1+TOS2+TOS3+TOS6+TOS7+TOS8+TOS11+TOS13+TOS15

TOS Orthorexia Nervosa = TOS4+TOS5+TOS9+TOS10+TOS12+TOS14+TOS16+TOS17

ORTO-15

Please select the response that best describes your eating patterns or behaviours concerning food.

TABLE 1
Test for the diagnosis of orthorexia nervosa.

ORTO-15				
	Always	**Often**	**Sometimes**	**Never**
1) When eating, do you pay attention to the calories of the food?	O	O	O	O
2) When you go in a food shop do you feel confused?	O	O	O	O
3) In the last 3 months, did the thought of food worry you?	O	O	O	O
4) Are your eating choices conditioned by your worry about your health status?	O	O	O	O
5) Is the taste of food more important than the quality when you evaluate food?	O	O	O	O
6) Are you willing to spend more money to have healthier food?	O	O	O	O
7) Does the thought about food worry you for more than three hours a day?	O	O	O	O
8) Do you allow yourself any eating transgressions ?	O	O	O	O
9) Do you think your mood affects your eating behavior?	O	O	O	O
10) Do you think that the conviction to eat only healthy food increases self-esteem?	O	O	O	O
11) Do you think that eating healthy food changes your life-style (frequency of eating out, friends, ...)?	O	O	O	O
12) Do you think that cosuming healthy food may improve your appearance?	O	O	O	O
13) Do you feel guilty when transgressing ?	O	O	O	O
14) Do you think that on the market there is also unhealthy food?	O	O	O	O
15) At present, are you alone when having meals?	O	O	O	O

SCORING GRID FOR ORTO-15 TEST RESPONSES

ITEMS	**RESPONSES**			
	Always	**Often**	**Sometimes**	**Never**
2-5-8-9	4	3	2	1
3-4-6-7-10-11-12-14-15	1	2	3	4
1-13	2	4	3	1

Appendix F: Social Media Questionnaire

Which social media channels do you use?

- Instagram
- Facebook
- Twitter
- Snapchat
- Linkedin
- I don't use social media

How often do you access (Instagram, Facebook, Twitter , Snapchat, LinkedIn)?

- Less than once per month
- 1-3 times per month
- Once a week
- 2-3 times per week
- 4-5 times per week
- Once a day
- Several times per day
- I don't access social media

On a typical day where you access (Instagram, Facebook, Twitter , Snapchat, LinkedIn) how much time do you spend social media it in total?

- Less than 15 minutes
- 15-30 mins
- 30-60 mins
- 60+ mins
- I don't access social media

If you do use Instagram please rank the order in which the following content types typically appear on your feed, with the first being the one most frequently emerging.

1Friends (posing with other friends, at least two human faces in photo)

2Food (recipes, cakes, drinks, etc.)

3Gadget (electronic goods, tools, motorbikes, cars, etc.)

4Captioned photo (pictures with embedded text, memes)

5Pets

6Selfies (self portraits only one human face is present)

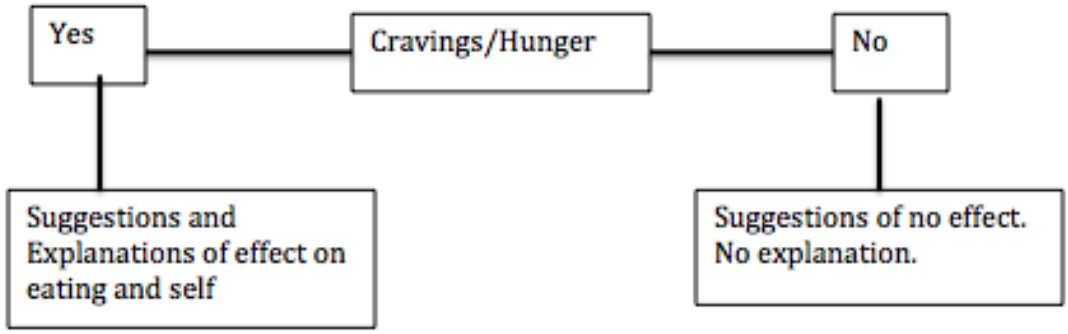
7Fashion (shoes, makeup, personal belongings)

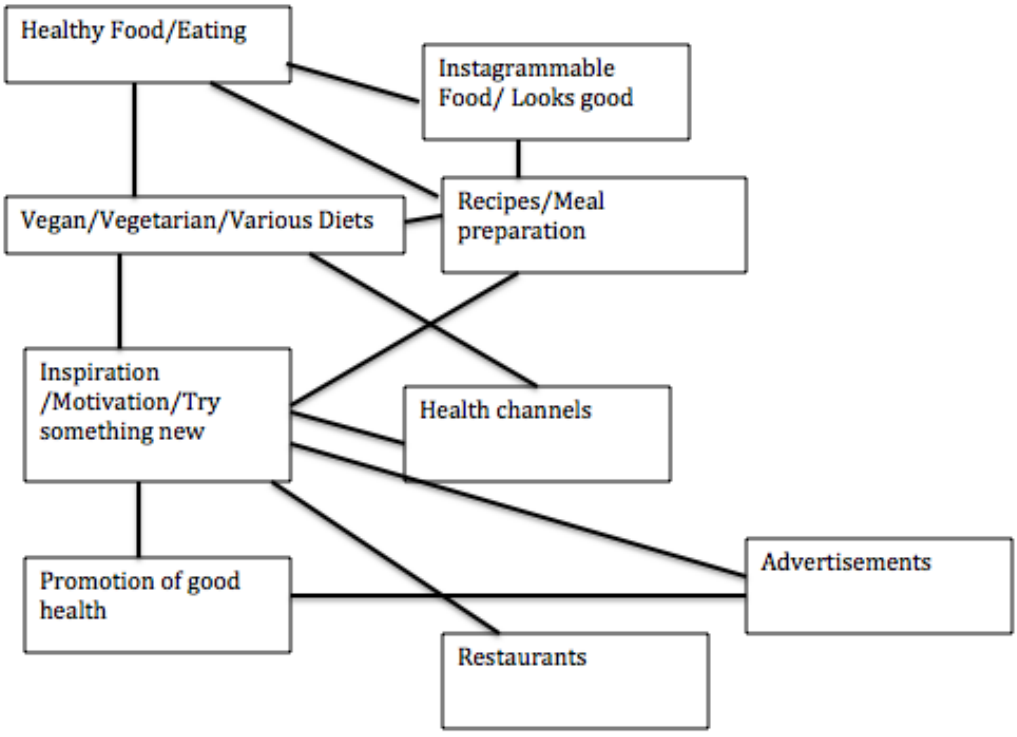
Appendix G: Illustration of TA steps

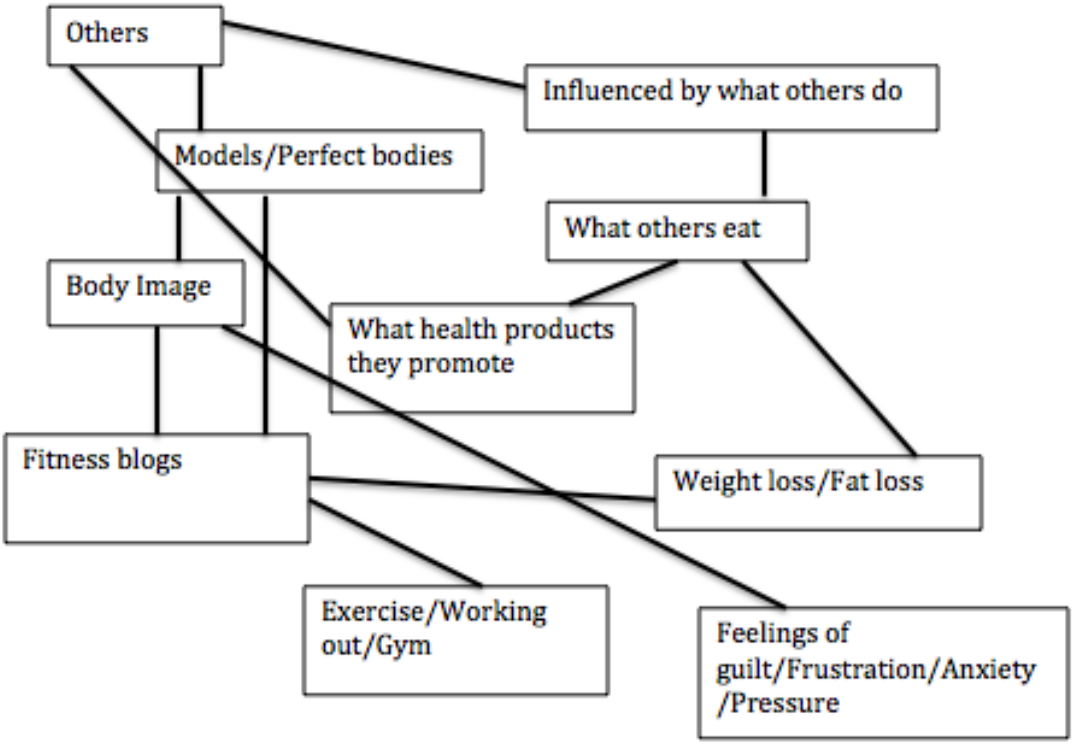
Mind Maps For Each Question

“Do you think social media affects your eating? If so how? Please elaborate.”

Figure 1: Thematic analysis map for Question 1

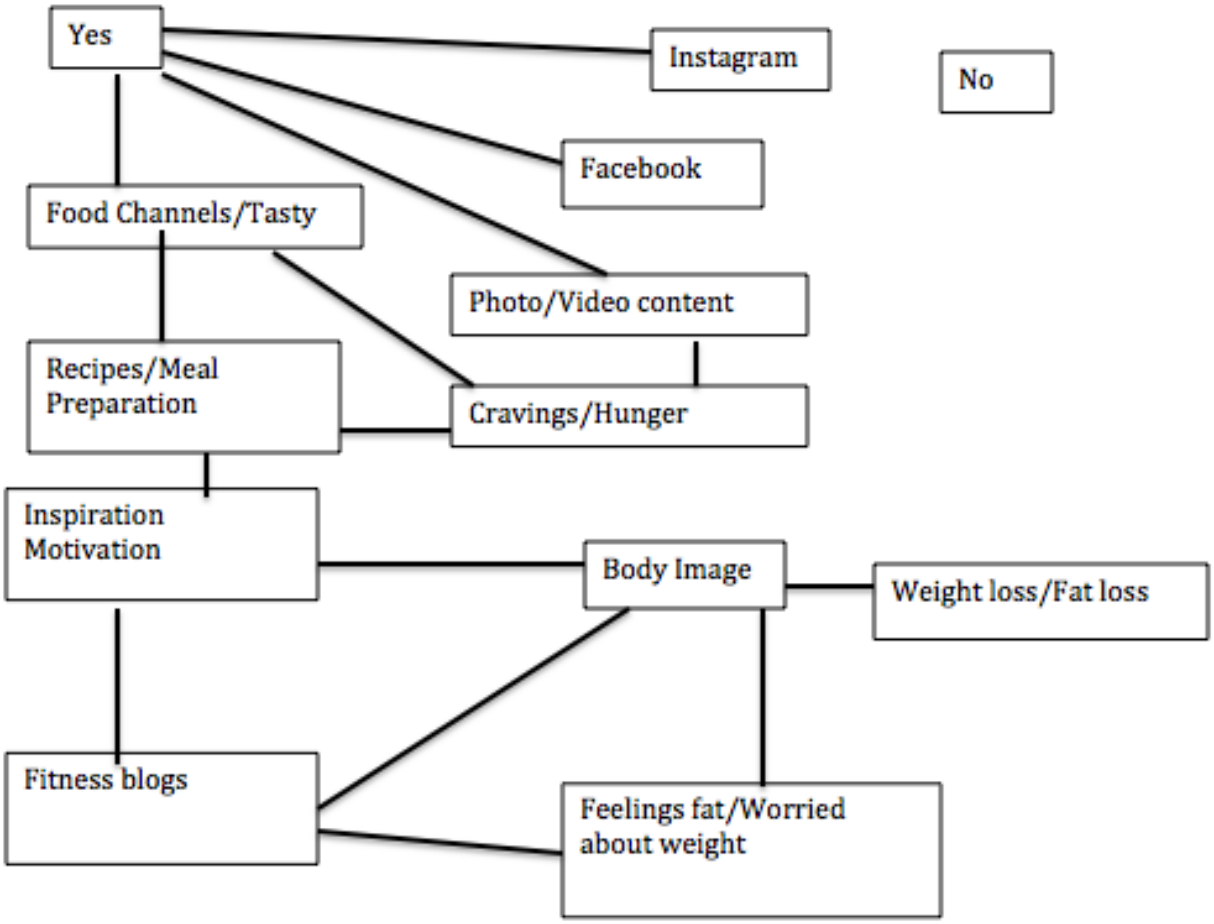





Others
Influenced by what others do
Models/Perfect bodies
What others eat
Body Image
What health products they promote
Fitness blogs
Weight loss/Fat loss
Exercise/Working out/Gym
Feelings of guilt/Frustration/Anxiety /Pressure

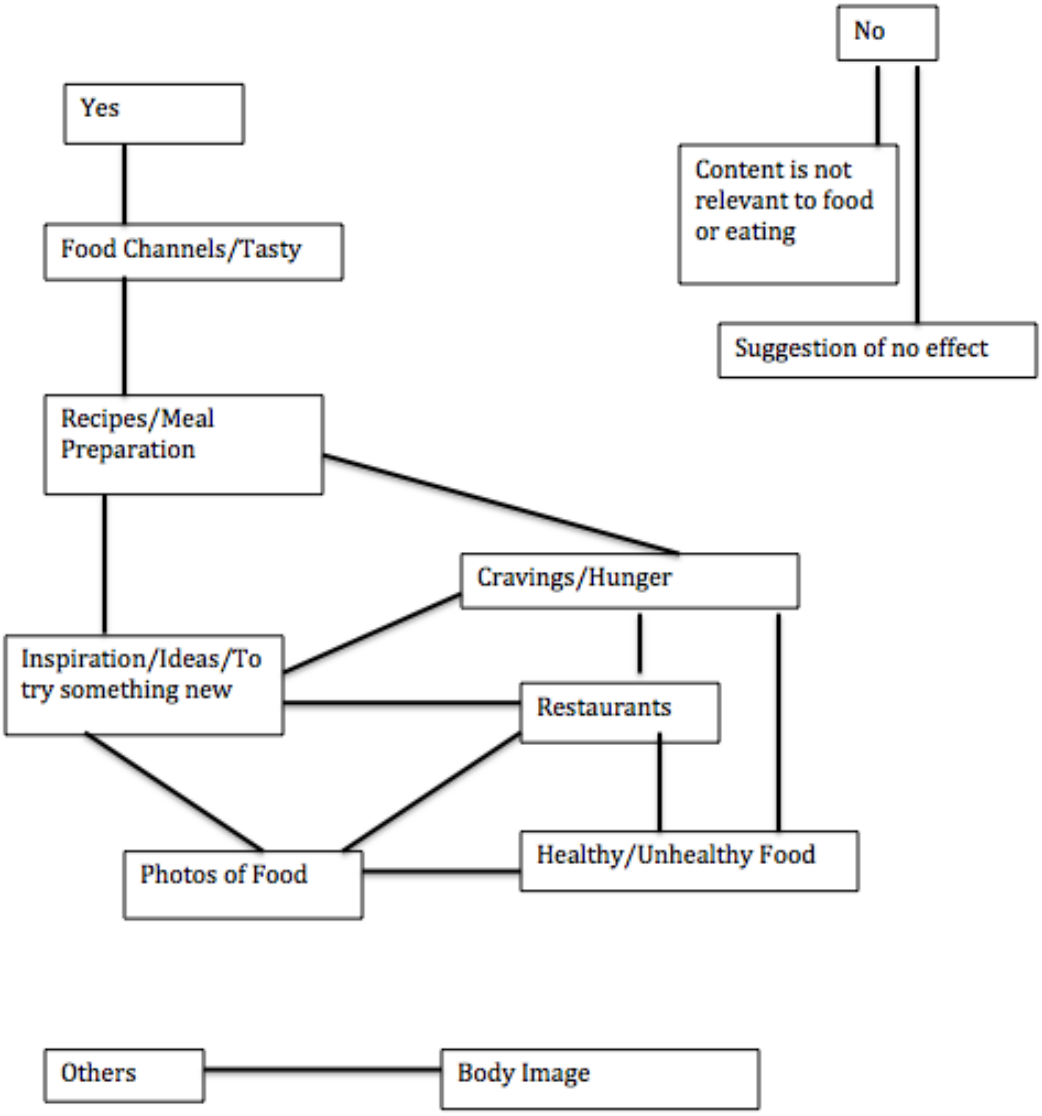
“Do you think certain social media channels have a larger effect on your eating? If so how? Please elaborate.”

Figure 2: Thematic analysis map for Question 2



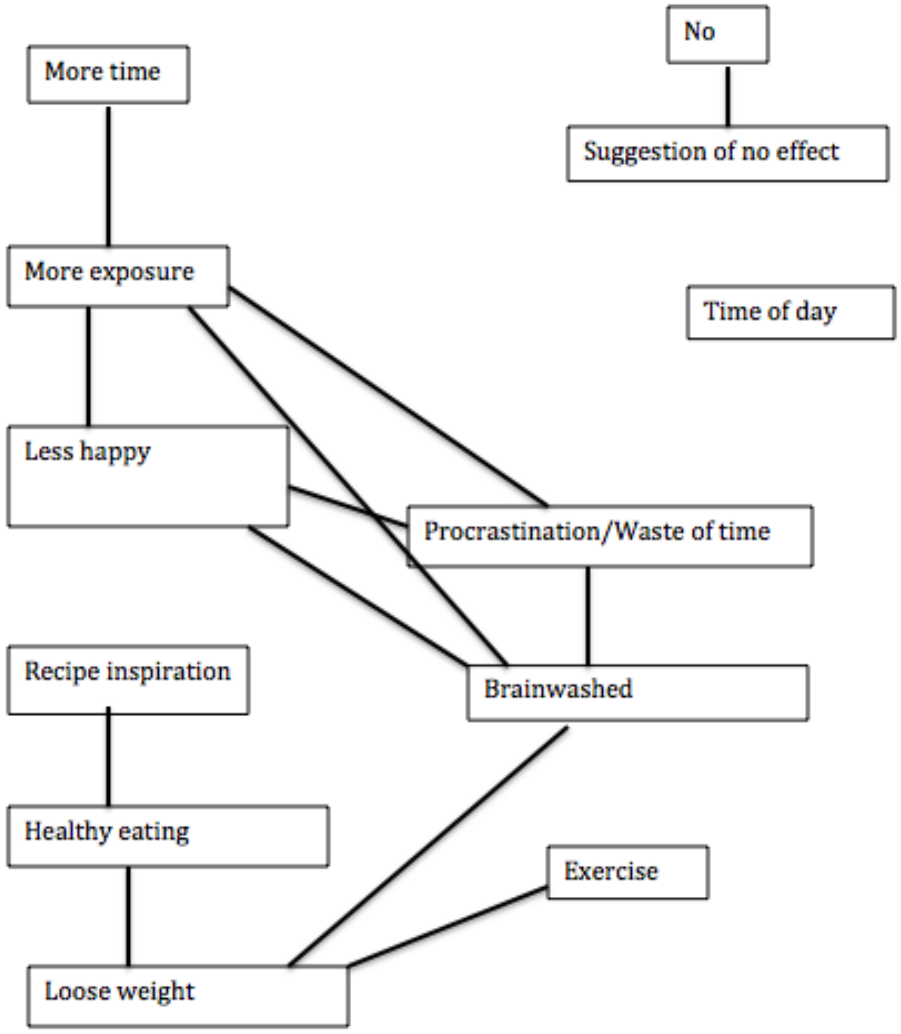
“Do you think the content on your newsfeed or the content you upload has an effect on your eating? If so how? Please elaborate.”

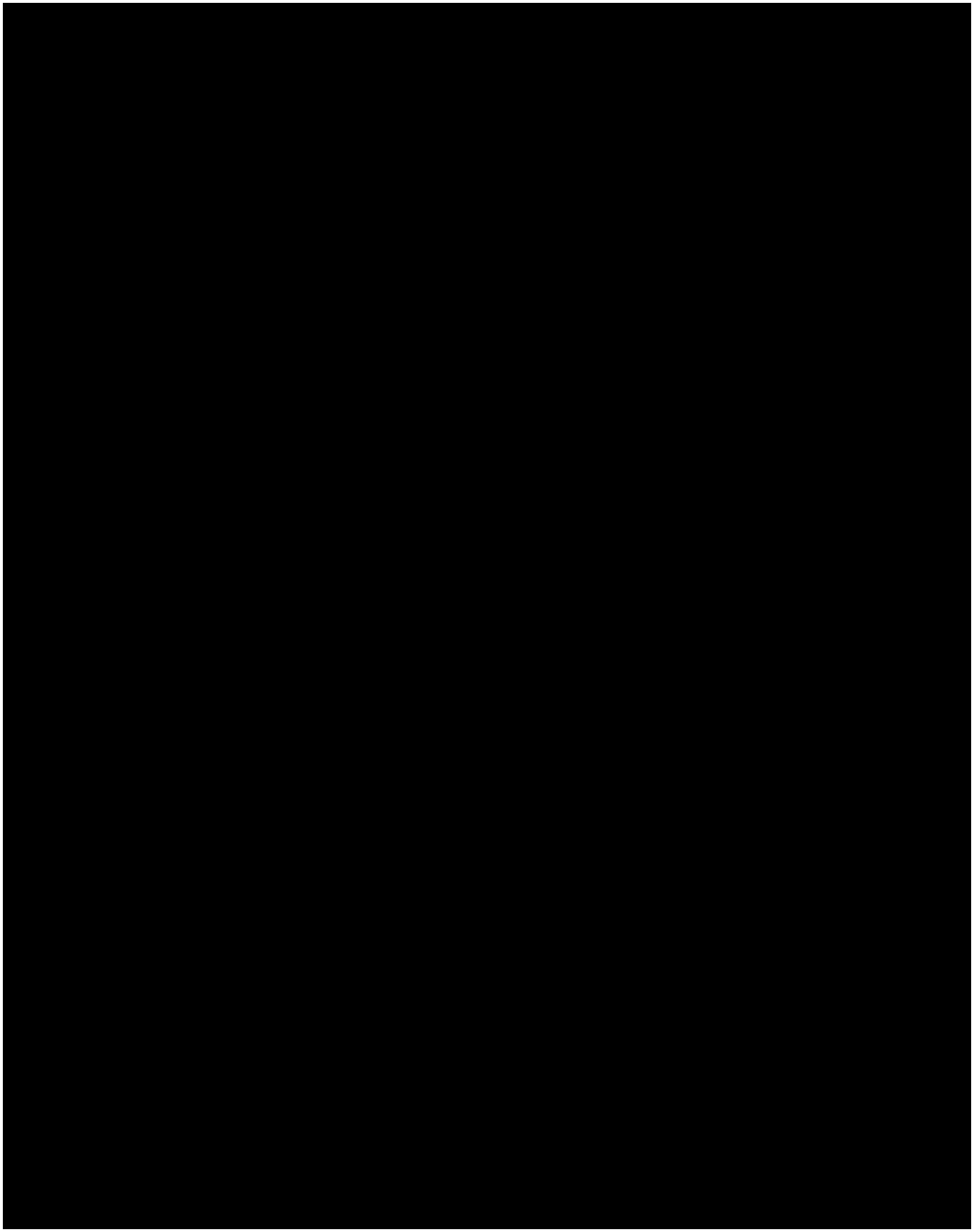
Figure 3: Thematic analysis map for Question 3

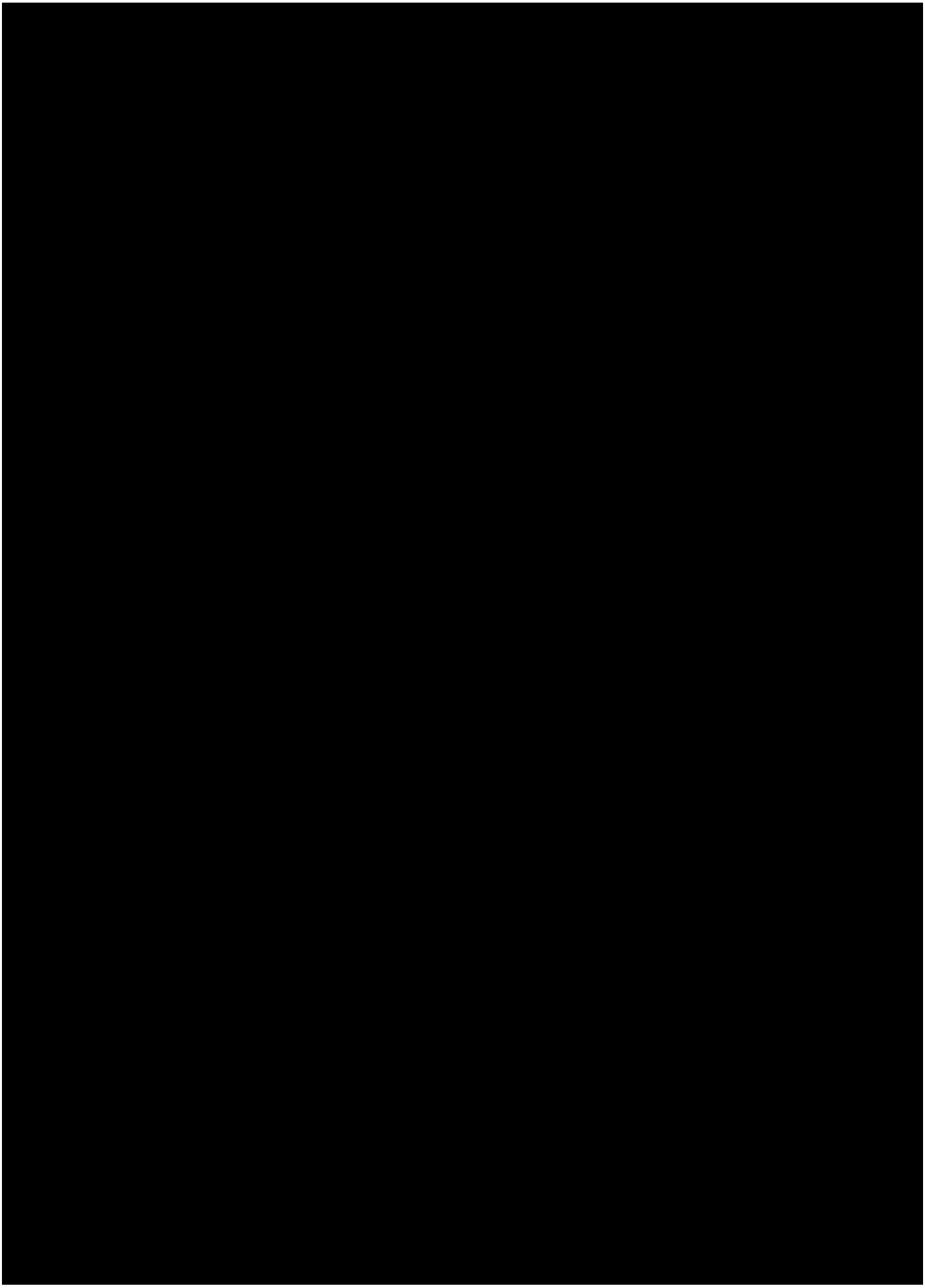


“Do you think the frequency and the time you spend on social media affects your eating? If so how? Please elaborate.”.

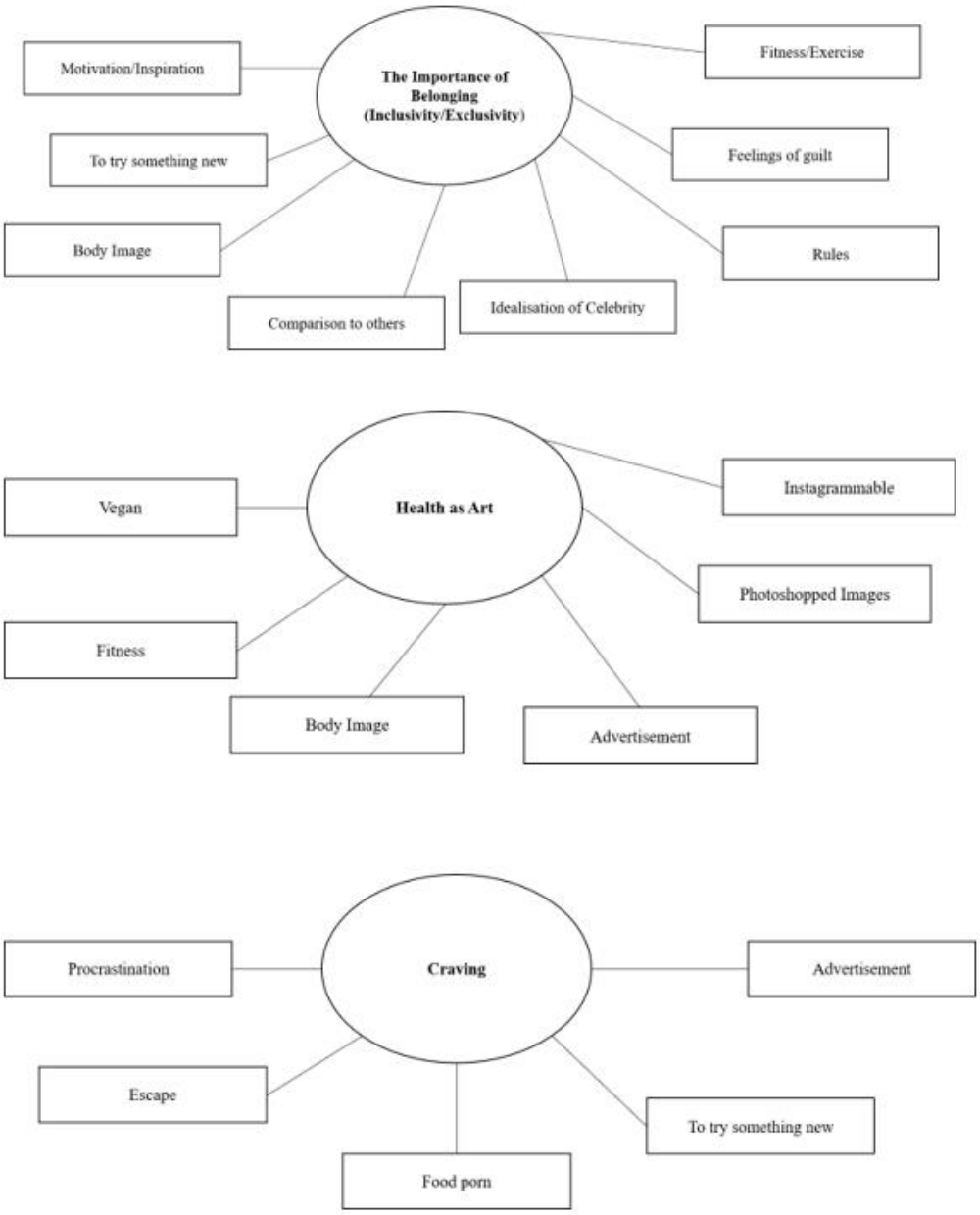
Figure 4: Thematic analysis map for Question 4

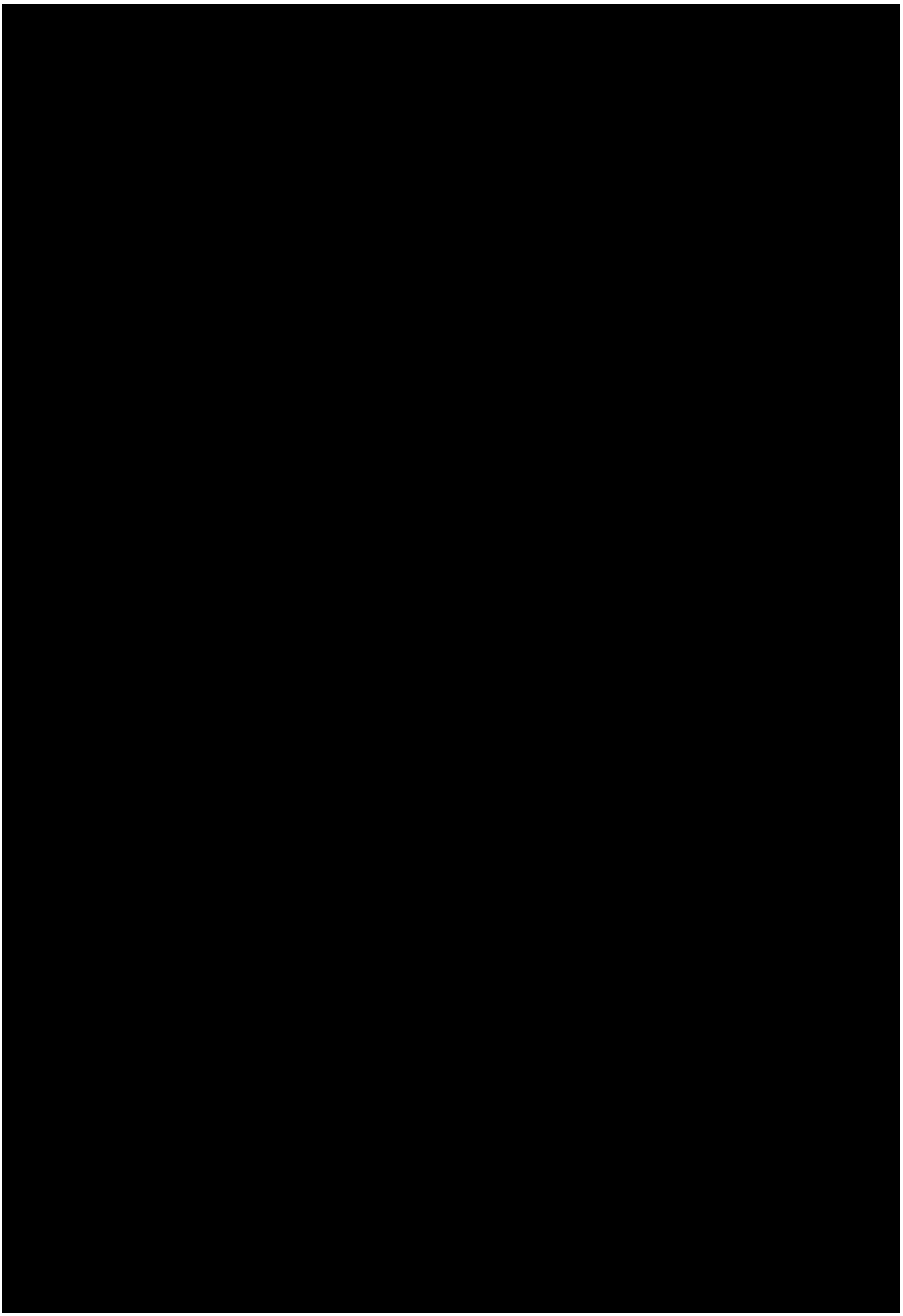






Initial Themes





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Section B: The Publishable Paper

This Publishable Paper has been redacted for publication purposes.

Journal article for submission

This article is intended for submission to the *International Journal of Eating and Weight Disorders.* The publication’s aim of ‘promoting and upholding the progress of Science and Technology through this era of digital revolution of knowledge’ ties in well with the aims of the current study. The journal is online only and open access, which enables various practitioners interested in specific topics ease of access. As one of the aims of the study was to contribute to ON research and ON has been studied by various professionals, it seemed fitting to select this journal for publication.

Is Social Media Contributing to an Unhealthy Fixation with Health?

Antigone Lanitis & Courtney Raspin

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[redacted]

Keywords: Orthorexia Nervosa , Social Media, Instagram

Appendix A: Submission Guidelines for the *International Journal of Eating and Weight Disorders*

Papers may come from any country but must be written in Standard English

Types of Publications

International Journal of Eating and Weight Disorders supports online publication of original research papers, reviews, letters, editorials, case reports and short communications.

General Information

- The study should present the results of primary scientific research and it should not have been published elsewhere.
- Detailed description and high technical standards of experiments, statistics, and other analyses are required.
- Conclusions are to be presented in an appropriate fashion without any ambiguity along with the supported data.
- From the time of submission of article to the publication period is called Embargo period(it is limited). Authors may publish abstracts in conference proceedings, but should not distribute copies of manuscripts, or tables and figures from manuscripts, that are under embargo.
- Plagiarism is considered unethical and a misconduct.

Note: Include a cover letter (Max 500 words), with the submission form. Do not submit a cover letter as a separate file.

Organizing manuscript

» Title of the article
It should contain no more than 30 words. No abbreviations are allowed. Relevance of title to the submitted manuscript is important.
» Contact information
Complete information of authors like Full name, address, phone number, Email address, Fax, Discipline of the author, Affiliations is to be mentioned. Corresponding author is to be mentioned clearly. His address will be used for correspondence during the prepublication and post publication of the manuscript. First author should be mentioned first in the order and follow the priority.
» Running title
Will be at the top of each printed page and cannot exceed 60 characters and spaces.
» Key words
Key words (5-12words) are to be mentioned. Choosing appropriate keywords provide you with a citation advantage since they play a major role when searching huge indexing data bases.
» Abstract
The abstract (250 words maximum, including citations) should be clearly written and readily comprehensible to the broad readership of the Journal. It should provide a concise summary of the objectives, methodology, key results, and major conclusions of the study. It should be written in complete sentences, without subheadings.
» Introduction
The Introduction (500 words maximum, including citations) should briefly indicate the objectives of the study and provide enough background information to clarify why the study was undertaken

and what hypotheses were tested

» Experimental procedure

Brief but sufficiently complete information to permit a qualified reader to repeat the experiments reported. Only truly new procedures should be described in detail. Cite previously published procedures in references. Modifications of previously published procedures are not to be given in detail except when necessary to repeat the work.

» Materials and Methods

The materials and methods section should be brief but sufficient enough to allow other investigators to repeat the research. References should be given for the published procedures wherever possible; this applies to the original description and existing published modifications. The gender of subjects should be stated. All companies from which materials were obtained should be listed. If materials were obtained from an individual, an affiliation for that individual should be listed. A manuscript that presents only a theory can omit the Materials and Methods section.

» Results

This section should present clearly but precisely the experimental findings. Only results essential to establish the actual point of the work should be included. Numerical data should be analyzed using appropriate statistical tests.

» Discussion

The discussion section (1500 words maximum, including citations) should be as concise as possible and should include a brief statement of the principal findings, a discussion of the validity of the observations, a discussion of the findings in light of other published work dealing with the same or closely related subjects, and a statement of the possible significance of the work. Speculations may be included.

» Conclusion

This section gives a precise and summarizing statement of the results and, if relevant, the prospects for application of the results in the various political, social and technical arenas are assessed. The section should begin with a clear statement of the principal findings. The implications of your findings should be discussed within a realistic framework.

» Acknowledgements

Acknowledgements should be used to identify all funding sources. Acknowledgements may also be used to note intellectual, technical or other assistance that does not warrant authorship. Individuals should be informed before the publication of any such acknowledgements and given the opportunity to decline the recognition. Promotional statements are not permitted.

» Conflict of interest

Authors should disclose in a cover letter sent to the editor any associations that represent a potential conflict of interest. These include a current or pending relationship as a consultant for the company supporting the research or manufacturing products being tested, a financial or managerial interest in such a company, or intellectual property rights that might be affected by publication of the results of the research reported in a manuscript. Upon receipt of this information, an editor may require that a footnote disclosing the potential conflict be added to the manuscript.

» Affiliations

Authors affiliations should be their home institutions at the time when their primary contribution to the research was made. If an author's current affiliation differs, the current affiliation may be listed in the Acknowledgements.

» References

References are to be cited in text by number and not by author and date. They are to be numbered consecutively in the order of appearance. References for journals and books should be in the following styles:

1. Sariah A, Rugemalila J, Somba M, Minja M, Makuchilo M et al. (2016) Experiences with disclosure of HIV-positive status to the infected child”: Perspectives of healthcare providers in Dar es Salaam,Tanzania.doi: 10.1186/s12889-016-3749-7.BMC Public Health.16(1),996-1083.

Or

2. Périé S, Fessi H, Tassart M.(2005)Usefulness of combination of high-resolution ultrasonography and dual-phase dual-isotope iodine 123/technetium Tc 99m sestamibi scintigraphy for the preoperative localization of hyperplastic parathyroid glands in renal hyperparathyroidism.45(2), 344-352.

Please list the first five authors and then add "et al." if there are additional authors.
Authors are responsible for the accuracy of the references.
Cite similar publications or partial disclosure

»Footnotes

Footnotes are used to cite manuscripts in preparation, unpublished observations and personal communications. Authors are responsible for obtaining written approval for all personal communications and sending a copy of the manuscript to those cited. The Editor may request proof of such approval.

» Abbreviations

Abbreviations used in the text must be defined in a single footnote immediately after the first abbreviation is cited.

» Tables

The number of tables used to present data essential to illustrate or prove a point should be kept to a minimum. Very complex or large tables should be submitted as figures. A legend and title are to be provided for each table. Tables are to be placed at the end of the manuscript and each in a seperate page. Legends should be at the end of the table.

» Figures

Figures are to be placed at the end of the manuscript and each in a seperate page. Figures should have titles and legends containing sufficient detail to make the figure easily understood. Legends should be right below the figure. Authors are responsible for providing digital art that has been properly sized and cropped. Appropriately sized numbers, letters, and symbols used should be no smaller than 2 mm even after reduction. All figures should be created with applications that are capable of preparing high-resolution files acceptable for publication. Although you will initially submit figures with the text in a single word file, we will require submission of figures as separate files at publication-quality resolution for online publication if your paper is accepted.

» Ethics

Human subjects: Obtain the consent from all involved in study only after disclosing the possible outcome or any other situations, regarding the result of the failure of the experiment also. Privacy and strict confidentiality is to be maintained whenever necessary. Do not influence population or individuals by greatly rewarding them for the manipulation purpose. Animal subjects: Laboratory animals are to be treated according to the rules and are to be handled with care. Precautionary measures undertaken while performing the experiment are to be mentioned. Otherwise it will be treated as violation of law. No scientific fraud and falsely research will be entertained. Serious action will be taken regarding the (fraudulent) scientific misconduct. Copyright violations are also considered unethical.

» Supplemental data

Manuscripts must be complete, stand-alone and NOT dependent on supplemental data. Supplemental data will be reviewed as a part of the normal manuscript review process and will be judged by the same rigorous criteria to be important but not essential to the stand-alone manuscript. Only data that are deemed appropriate for the online journal and substantially

contribute to the manuscript will be accepted. Supplemental data submitted after the paper has been accepted will not be published.

» Copy Right

Open Access pub charges for the authors

Even though we are dependent on the payments from the author publication charges to provide subscription free journals, we tend to charge only the appropriate amount.

Please note that the charges will be levied only for the accepted manuscripts. There are no submission charges.

This content has been removed for data protection reasons

Section C: The Case Study

Enhanced Cognitive Behavioural Therapy for Binge Eating Disorder

This Case Study has been redacted as it contains confidential information.