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Eating Difficulties in University Students: Friendship and Mental Health Literacy

by

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Abstract

University students are particularly vulnerable to eating difficulties emerging or worsening due to various stressors including moving away from home and navigating increased independence. During this time, friends start to become someone to confide in. Weight-related beliefs and habits also start to be explored, with attitudes and beliefs often influenced by those around them. The level of Mental Health Literacy (MHL) friends and fellow students hold may then influence their own attitudes and likelihood to seek support. This thesis aimed to explore MHL of eating disorders and the factors that may influence this in university students. The thesis also explored friends' experiences in noticing signs, help-seeking and the impact supporting their friend has on themselves and their friendship. Chapter 1 introduced the next two chapters by exploring their rationale.

Chapter 2 consists of a systematic review of the factors associated with MHL of eating disorders in university students. Those at risk of eating disorders, women and Caucasian participants were found to hold higher levels of MHL. In addition, younger targets were rated as less responsible for their eating disorder and less severe eating disorder cases elicited less anger. The review indicates where universities should consider targeting communication and intervention strategies to address poorer MHL outcomes. Chapter 3 explored an empirical project understanding experiences of having a friend with eating difficulties whilst at university. Five themes were developed (a) Friends being the first to notice, (b) The weight of responsibility: The emotional and behavioural impact, (c) Supporting without guidance: Challenges and Strengths, (d) Encouraging help-seeking but facing barriers: Stigma and systemic struggles (e) Bridging the gaps: The need for more training, resources and support. Universities should therefore acknowledge the impact on friends through implementing better support strategies, raising awareness, and improving access to resources for friends.

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Research Thesis: Declaration of Authorship

Print name: Gemma Woodrow

Title of thesis: Eating Difficulties in University Students: Friendship and Mental Health Literacy

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature: Date:

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Definitions and Abbreviations

Anorexia Nervosa (AN)	An eating disorder characterised by the need to keep weight as low as possible through means such as not eating enough food, exercising too much or holding strict rules around food.
Avoidant Restrictive Food Intake Disorder (ARFID)	A condition characterised by avoidance of certain foods or types of foods, having restricted intake in terms of overall amount eaten, or both.
Binge Eating Disorder (BED)	An eating disorder characterised by eating large quantities of food over a short period of time until uncomfortably full and a feeling of having no control over when to stop eating.
Bulimia Nervosa (BN)	An eating disorder in which a person has frequent episodes of eating large quantities of food and using different ways such as vomiting or laxatives to prevent weight gain.
DSM-5	The Diagnostic and Statistical Manual of Mental Illnesses. A manual that mental health professional use to diagnose mental health conditions. It provides detailed definitions of mental health and brain related conditions including the signs and symptoms.
Emerging adulthood	The developmental period between adolescence and young adulthood (typically 18-29 years).
Mental Health Literacy (MHL)	The knowledge and beliefs about mental health conditions that aid their recognition, management and prevention.
Orthorexia	A term used to describe an excessive preoccupation with eating healthy or “clean” foods.
Other Specified Feeding or Eating Disorders (OSFED)	An umbrella term used to describe an eating disorder whereby eating disorder symptoms don’t clearly align with criteria for other specific disorders such as anorexia or bulimia.
PICA	An eating disorder in which a person craves or consumes items not usually considered food such as paint, hair and chalk.
Social contagion	A theory to describe the process by which attitudes, emotions or behaviours spread through a social group or network.

Time to Change (TTC) campaign	A campaign led by the charities “Mind” and “Rethink Mental Illness” with the aim to reduce stigma and discrimination against mental health difficulties.

Chapter 1 - Eating Difficulties in University Students: Friendship and Mental Health Literacy

1.1 Introduction

The overarching aim of this thesis was to explore eating difficulties and disorders within the university context, considering the role of friendship and Mental Health Literacy (MHL). This chapter will provide rationale for a systematic review and empirical project exploring these areas in eating disorders and difficulties. Theoretical positioning and methodological decisions will also be discussed. The chapter will then consider reflexivity, with this section being written in first person from the author’s perspective.

Eating disorders are a common mental health difficulty that affect around 1-5% of the population in their lifetime (Galmiche et al., 2019; Hay et al., 2023; Qian et al., 2021). The prevalence of eating disorders has been of particular concern recently with numbers increasing significantly since the Covid-19 pandemic (Tavolacci et al., 2021). Eating disorders and difficulties often carry a significant personal and societal burden with significant impact on health and a reduced quality of life (Weissman and Roselli, 2017; Winkler et al., 2014). Research has found that the impact on quality of life and psychosocial functioning can be long lasting (Maxwell et al., 2011) with symptoms in young adulthood being associated with impairment in mental health and social development 7-8 years later (Mason & Heron, 2016). Alongside this, some eating disorders, namely anorexia nervosa, are known to be difficult to diagnose and treat (Grave, 2011), making research into the area of paramount concern.

The decision to explore the university context stemmed from an awareness of the prevalence of disordered eating being particularly significant in this population with disordered eating rates in undergraduate students estimated at around 19.5-19.7% (Alhaj et al., 2022; Martinez-Gonzalez et al., 2014). Subthreshold eating difficulties are also frequently reported (Harrer et al., 2020), including risky or extreme dieting and maladaptive beliefs about weight (Fitzsimmons-Craft, 2011; Krahn et al., 2005). A longitudinal study (Eisenberg et al., 2011) showed higher prevalence of pathological eating behaviours and attitudes in college students compared with the general population, with 13% of college women positively screening for an eating disorder. University life can create significant psychological stressors such as adjusting to moving away from home and academic stressors which can increase vulnerability to eating disorders (Pedrelli et al., 2015). Most students navigate this transition during emerging adulthood (Arnett, 2000), a period characterised by instability and uncertainty and where eating difficulties may emerge or worsen (Arnett, 2000; Potterton et al., 2020). Emerging adulthood (18-29 years old) has been described as a distinct period of development since societal changes including increased participation in higher education and delayed independence (Arnett, 2000). During this developmental stage, individuals are starting to explore their identity and form beliefs (Arnett, 2000) including beliefs related to weight, diet and body image (Nelson et al., 2008). Therefore, making university students susceptible to potential unhealthy eating habits or behaviours.

The systematic review focused on MHL in eating disorders in university students considering the potential for MHL to affect the quantity and/or quality of support students may receive. MHL is a term covering knowledge and beliefs about mental health difficulties from recognition to prevention (Jorm et al., 1997). Students with poorer MHL have been found to be less likely to engage in help-seeking (Campbell et al., 2022; Por et al., 2011). Considering how MHL literacy can change over time and being aware of new diagnoses being added to the most recent edition of the DSM-5 (APA, 2013), friends and other students may not recognise signs of these difficulties such as ARFID or binge eating disorder. However, there appears to be a gap in research reviewing MHL since these changes, along with limited research on students' abilities to notice the signs of eating difficulties generally (Fitzsimmons-Craft et al., 2019; Manning & Greenfield, 2022). The researcher was curious as to the different factors that could influence MHL within this population and if there were subgroups that may be more likely to have limited MHL. This is of particular importance with literature around social contagion and the influence of attitudes from those who students surround themselves with (Rosenberg & Kosslyn, 2011; Simon-Boyd & Bieschke, 2003). I hoped the review would help to aid where to target student interventions to help improve MHL.

It is important to consider that the construct of MHL has been criticised for closely aligning with reductionist diagnostic frameworks such as the DSM-5 (APA, 2013), recognising disorders as defined by medical criteria, potentially overlooking the contextual, cultural and social dimensions of distress (Kinderman et al., 2013; Mansfield et al., 2020). More critical narrative frameworks (such as the Power Threat Meaning Framework; PTMF) challenge this notion and understand personal and collective narratives of distress rather than identifying clinical categories (Johnstone et al., 2018). This critique is also important to hold in mind throughout subsequent chapters to consider how different understandings of eating disorders, including cultural and social perspectives may also shape students' recognition of eating difficulties and help-seeking behaviours. Despite critiques, MHL has been used widely in literature and can be a valuable framework for understanding how students perceive and respond to mental health difficulties in the context of eating disorders (Jorm, 2015; Mond, 2014) and provides a lens through which to examine potential gaps in recognition and support (Eisenberg et al., 2011; Nishida-Hikiji et al., 2021).

Exploring the role of friendship within the empirical study stemmed from acknowledging that students spend most of their time together and move away from their main support networks to develop new ones (Collins & Masden, 2006; Falki & Khatoon, 2016). During this time, students are most likely to seek support from friends for any mental health difficulties (Bilello et al., 2024; Rickwood et al., 2007) and therefore friends may be the first to become aware of eating difficulties, however this is yet to be explored.

As friends start to become closer and form bonds, peer attitudes around eating may start to become more influential. Social contagion theory is defined as the process of adapting to attitudes and behaviours from those that influence them (Bovasso, 1996). This process can intensify unhealthy eating practices across peer groups (Dishion & Tipsord, 2011), along with unhealthy focuses on body image, dieting and extreme weight loss (Becker et al., 2011; Eisenberg & Neumark-Sztainer, 2019; Fletcher et al., 2011). Most research exploring social contagion theory has focused on adolescent aged females and those that have explored students have primarily focused on US sorority groups (Becker et al., 2018; Drewnoski et al., 1988; Dishion & Tipsord, 2011). Research into sororities has found that along with dorm mates, there is an elevated risk to adopt attitudes and behaviours of peer groups (Becker et al., 2018; Drewnoski et al., 1988; Edwards-Hewitt & Gray, 1993). A longitudinal study found first year sorority students' eating behaviours initially differed from each other, however by the end of the year, binge eating could be predicted by their friends' levels of binge eating (Crandall, 1988). With the academic pressure, competition and social pressure during the university period, this could suggest young students outside of sorority groups may also be particularly susceptible to social contagion within universities (Rosenberg & Kosslyn, 2011; Simon-Boyd & Bieschke, 2003). Despite the awareness that friends are more likely to seek support from their peers and the influence of peers' attitudes and behaviours, we still do not know much about the impact on peers. There appears to be no current research exploring this within eating disorders and therefore a qualitative approach was taken in the empirical project to gain more valuable insight into friends' experiences of supporting someone with an eating difficulty. The semi-structured interview approach allowed for flexibility and expansion on points that were deemed important by participants (Brinkmann, 2014; Hammersley, 2012).

The decision on how many participants to recruit for the empirical study stemmed from reviewing similar research and considering the information power. Data saturation within qualitative studies is estimated to be around 9-17 interviews (Hennik & Kaiser, 2022). However, Braun and Clarke (2019) argue that saturation is too structured to be consistent with reflexive thematic analysis ideas. They suggest estimating a provisional lower and upper sample size and considering the information power (Malterud et al., 2016) through considering aspects such as the diversity, methods of data collection and scope and constraints of the project. Participants from meta-analyses qualitative interview studies exploring experiencing of siblings and parents supporting someone with eating difficulties have ranged between 5-24 participants (Fox et al, 2017; Maon et al., 2020) and this was used as a guide for sample size. The final sample size was 16 participants as it was felt within the research team that there was richness and complexity in participant answers that addressed the research aims (Braun & Clarke, 2019). Pragmatic constraints such as the research being a thesis project and limitations with recruitment and analysis were also a consideration.

1.2 Ontology and epistemology

Within the empirical paper, a qualitative approach was utilised embedded in a critical realism ontology (Archer et al., 1998). Reality was recognised as existing around mental health and eating difficulties but unlike approaches such as simple realism, there is not just one singular reality (Maxwell, 2022). A constructivist epistemological stance was embedded as these approaches compliment each other and situate experiences as being within a broader social and cultural context (Braun & Clarke, 2021). The idea that knowledge is socially constructed and co-constructed by how researchers interpret and give meaning to what constitutes as certain phenomena such as eating difficulties was held. The researchers recognised they held their own realities around what they understood eating difficulties to be and what support might typically look like but acknowledged that friends may hold different meanings around this. Taking this stance of subjective meaning and experiences allowed rich empirical data to be collected and to stay in line with the qualitative methodology and reflexive thematic analysis.

The systematic review utilised a quantitative approach as the majority of the available literature in MHL used quantitative methodology. A meta-analysis was not conducted due to methodological heterogeneity within outcomes and measures all measuring differing aspects of MHL. A critical realist ontology was still able to be held through recognising that while an objective reality exists, such as the presence of factors influencing MHL in eating disorders, there is still potential for bias and the reality is limited by methodological constraints and contextual influences. Studies included in the review provide empirical data on associations and trends, but findings were shaped by the ways that constructs like MHL were defined, measured and interpreted within specific contexts. The systematic review aimed to synthesise quantitative findings and identify patterns while remaining aware of the limitations in measurement tools and study designs in fully capturing the complexity of MHL in university students.

1.3 Reflexivity

Reflexivity is a crucial part of qualitative research as it increases the quality of work by ensuring rigor and transparency through recognising the influence of the researcher (Teh & Lek, 2018). Shacklock and Symth (1998) define reflexivity as the conscious uncovering of the researcher’s underpinning beliefs and values. Reflexivity is in line with my critical realist and constructivist positioning as it recognises knowledge as being co-constructed and influenced by my own biases, experiences and assumptions and how these may have influenced my collection and interpretation of the data (Berger, 2015).

I thought about my own experience and how I was approaching my research as someone who does not have lived experience of an eating disorder neither personally nor through a close friend which may have impacted the research in several ways. Firstly, it may have meant I was approaching the topic from more of an outsider perspective, potentially being more objective and making fewer assumptions, however this may have meant that there were areas I missed or may not have explored in as much depth as someone with lived experience. I managed this through reflexive practice and keeping logs as well as involving people with lived experience of having a friend with eating difficulties in the development of my interview guide and amending this based on their feedback.

Being a trainee clinical psychologist and potentially being seen as an NHS mental health professional, I wonder how this led my participants to perceive me. Considering the current context of the lack of funding and resources in the NHS, I wonder if participants, particularly those who had sought support for their own difficulties, may have been more reserved in sharing information or being honest about their views on help-seeking. A couple of participants did express barriers in mental health services, how they felt support had not been helpful and the frustration this led them to feel. However, I wonder if there were other participants who felt this way but because of the potential power imbalance did not feel comfortable sharing this. As a current university student, my perspective was shaped by my familiarity with the academic environment and the challenges students commonly face. This may have led me to strongly relate to participants’ frustrations and to focus on what universities and staff could be doing, without maybe fully appreciating constraints and pressures that staff themselves operate under. As mentioned above, I am also acutely aware of the high thresholds for accessing specialist eating disorder services. I have also observed how university support often centres more around academic concerns, highlighting gaps in provision. Holding both a student and clinician role brought a dual perspective that evoked a sense of hopelessness about the system and may have heightened my resonance with participants' feelings of burden and isolating when supporting a friend.

To try to mitigate these influences, I remained reflexive throughout the research process through use of a reflective journal and supervision. I intended to be as transparent throughout the process as possible by including participant quotes and excerpts from the coding process to help readers to understand where my interpretations came from. I also tried during the interview process to create an environment where participants felt comfortable to speak openly through active listening, reflecting and paraphrasing and providing validation of the current difficulties faced in mental health and university services.

I also wonder the extent to which my position as a female researcher may have influenced the absence of male participants in my study. As a female researcher, male participants may have felt less comfortable sharing their experiences. My own underlying biases around recruitment strategies or materials may have unintentionally discouraged males from participating. Reflecting on this, I could have explored more targeted recruitment strategies and ways to encourage male perspectives and future research may consider this along with potentially a more gender-diverse research team.

1.4 Dissemination plans

I intend to publish the two research papers in peer-reviewed journals and the papers have been written in accordance with the author guidelines for each. For my empirical paper, the journal I intend to submit to is the "European Eating Disorder Review (Appendix A)." The journal focuses on international research related to the nature, management and care of eating disorders with an interest in research advancing the understanding of eating disorders and abnormal eating and wellbeing. After reviewing previous publications in the journal, I noted there were several articles that utilised qualitative methodology and used semi-structured interviews and thematic analysis. There were articles that also explored experiences beyond those directly affected by eating disorders, such as clinicians. I therefore felt my study through qualitatively examining friends' experiences of supporting someone with eating difficulties, would align well with the journal's scope and make a meaningful contribution to the existing literature.

The journal I intend to submit my systematic review to is the "International Journal of Eating Disorders (Appendix B)." This journal was chosen as the scope includes research on the understanding, treatment and prevention of eating disorders including research on clinical practice and policy related to eating disorders. The journal welcomes submissions internationally and covers a broad range of methods and approaches. Through reviewing the journal, I noticed reviews that explored interventions for eating disorders including focusing on interventions reducing stigma. Other reviews also used synthesis without meta-analysis or more narrative approaches. I therefore felt that as my systematic review was exploring MHL of eating disorders and associated factors and utilised a synthesis without meta-analysis approach, my review would fit well with the journals aims and scope.

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Chapter 2 – Systematic Review of Mental Health Literacy of Eating Disorders in University Students

Abstract

Objective

During university, eating difficulties can emerge or worsen, with limited Mental Health Literacy (MHL) acting as a barrier to help-seeking. Researching factors associated with MHL may help inform where to target communication and intervention strategies in universities, in turn increasing early recognition and reducing barriers to help-seeking. This systematic review aimed to explore factors associated with MHL of eating disorders in university students.

Method

A systematic search for quantitative vignette studies of university student participants between 2013-2024 was conducted with no exclusion criteria for eating disorder condition. Factors associated with MHL were explored using Systematic Review Without Meta-Analysis (SWIM) guidelines.

Results

The 14 eligible studies explored 9 factors with mixed findings. Participant gender, ethnicity, own levels of psychopathology, vignette age and eating disorder severity were found to be associated with MHL. Those at risk of eating disorders, along with women and Caucasian participants, were found to hold higher levels of MHL. Younger vignette characters were rated as less responsible for their eating disorder and less severe cases elicited less anger. Participant age, BMI and vignette ethnicity were not found to be associated with MHL. Familiarity with eating disorders, vignette condition and gender showed mixed results. Most studies were rated as low or very low certainty of evidence due to limited numbers of studies and inconsistencies in findings.

Discussion

Future research should consider replication of studies to increase precision and consistency in findings and investigate recommended university interventions targeted at subgroups identified as having lower levels of MHL.

Highlights

- University students are particularly vulnerable to eating difficulties and strengthening mental health literacy may help with early identification and increasing help-seeking behaviours in students.
- Identifying factors associated with MHL could aid with targeting interventions for subgroups found to hold poorer MHL outcomes.
- Those at risk of eating disorders, women and Caucasian participants were found to hold higher levels of MHL, however studies were limited and assessed different aspects of MHL.
- The review highlights a need for a validated measure of eating disorder MHL to reduce varying definitions and outcome measures within studies, as well as a need for replication of studies exploring associated factors to increase consistency and precision of findings.

2.1 Introduction

Mental Health Literacy (MHL) is crucial for early recognition, help-seeking and effective intervention in eating disorders (Eisenberg et al., 2011; Miles et al., 2020). This introduction will explore the concept of MHL, highlighting its importance within eating disorders, particularly during university years, when students may be especially vulnerable (Baranouskas et al., 2022; Fitzsimmons et al., 2019; Galmiche et al., 2019). The definition of MHL, as defined by Jorm et al. (1997), is "knowledge and beliefs about mental health disorders which aid their recognition, management or prevention" (p.182). The term was introduced due to health literacy ignoring mental health conditions and interventions not expanding beyond increasing mental health knowledge in primary care workers (Jorm, 2015). MHL comprises multiple aspects including knowledge and beliefs about causes, symptoms, treatment, awareness of signs and assisting those with difficulties, as well as attitudes and beliefs associated with stigma and discrimination (Jorm, 2012). Studies exploring aspects of MHL in various populations have been significantly increasing (Bullivant et al., 2020). These studies often explore MHL within the public through use of vignettes describing fictional characters. Participants are presented with a series of questions assessing their knowledge and beliefs of a mental health problem presented in the vignette (Mond, 2014). Vignettes are commonly used where experimental manipulation is often not ethical or possible (Evans et al., 2015). Vignettes also have the benefit of reducing socially desirable responses, reducing confounding variables and increasing internal validity compared to observational or clinical studies (Gould, 1996). The use of vignettes can therefore be beneficial for exploring MHL due to the sensitive nature of the topic, the limited ability to ethically and practically use alternative methods (e.g. observation or self-report) and when designed well, their high generalisability to real-life behaviours seen in mental health difficulties (Evans et al., 2015; Schoenberg & Ravdal, 2000).

MHL appears to be increasing over time (Pescosolido et al., 2021), particularly with interventions aimed at reducing stigma such as the “Time to Change (TTC)” national campaign (Henderson et al., 2013; Lien et al., 2019). Following this campaign, stigmatising attitudes and experiences of discrimination appeared to reduce (Henderson et al., 2013), thus highlighting the importance of continuously monitoring current and future attitudes and levels of knowledge as anti-stigma efforts progress (Bullivant et al., 2019; Pescosolido et al., 2021). However, most studies and reviews exploring MHL focus on conditions such as depression and/or schizophrenia (Miles et al., 2020) and MHL within eating disorders is often not given the same level of attention (Mond, 2014). In addition, the diagnostic manual is constantly being updated with the most recent DSM-5 (APA, 2013) including introductions of binge eating disorder (BED), avoidant/restrictive food intake disorder (ARFID) and other specified feeding or eating disorders (OSFED) as distinct diagnoses (Vo et al., 2017). Reviews exploring these diagnoses since their introduction have been limited and therefore difficult to understand how they are viewed amongst the public (Bullivant et al., 2020).

Understanding MHL of eating disorders among university students is particularly important, given the substantial body of research indicating higher prevalence of eating disorders in this population compared to the general population (Fitzsimmons-Craft et al., 2019; Lipson & Sonneville, 2017). University life brings with it stressors such as academic pressure, moving out from the family home and navigating new independence which may lead to development or exacerbation of symptoms (Pedrelli et al., 2015). Some students may also be prone to financial burden, poor eating habits and social support, creating psychological stress (Baranauskas et al., 2022). Most university students are around the developmental age of emerging adulthood, (Arnett, 2000), a period described as falling between adolescence and young adulthood (Tanner & Arnett, 2016). Evidence suggests that characteristics displayed during this life stage can contribute to eating disorder aetiology (Potterton et al., 2020). During this period, individuals often feel a sense of being “in between” and are exploring their identity through trying new activities, learning new skills, meeting new people (Schwartz et al., 2013). This period also evokes instability through experimentation, self-focus with less obligations to others and is a time for considering future possibilities (Arnett, 2000). Although this may be an exciting stage for some, it can often feel daunting for those who are unsure which choices and paths to take (Arnett et al., 2014). The increase in independence as well as decrease in family and school support during this stage can also exacerbate the feeling of instability, particularly in those with preexisting mental health difficulties, and lead to emotional and interpersonal difficulties (Wood et al., 2018). Those with preexisting difficulties may also be faced with challenges in care transitions when they start university (Potterton et al., 2020). Characteristics associated with emerging adulthood, along with stressors faced at university, may therefore lead to students being classed as one of the highest risk groups (Baranauskas et al., 2022; Galmiche et al., 2019).

Levels of MHL can be an additional factor contributing to mental health difficulties during this period (Bjørnsen et al., 2019; Jorm, 2012). Students with poorer MHL are often less able to identify any potential mental health concerns and are less likely to seek help (Campbell et al., 2022; Gorczynski et al., 2017; Por et al., 2011). Aspects related to a lack of MHL that may prevent students seeking help can include shame, stigma and perceptions around help-seeking (Ali et al., 2017; Radez et al., 2021). Strengthening MHL around eating disorders is therefore crucial for early recognition and help-seeking. (Nishida-Hikiji et al., 2021). The help-seeking framework (Rickwood et al., 2005) offers an understanding of how students may progress through the process of seeking help for mental health difficulties. The model includes several key stages including problem recognition and expression of need, where limited MHL could act as a barrier to help-seeking. In the first stage, problem recognition, individuals must be able to identify changes in their thoughts, feelings or behaviours as indicative of eating difficulties. If students are unable to distinguish between normal eating behaviours and symptoms of eating disorders, they may not recognise that these symptoms require further attention and support. Thus, they may not start the process of help-seeking. In the second stage, expression of need, individuals must acknowledge to themselves or others that they are struggling and may benefit from support. This often involves internal reflection or external disclosure. If students do not believe their symptoms are valid or serious enough, or if they fear judgement due to stigma (which can be influenced by limited MHL), they may avoid expressing the need for help. Therefore, limited MHL, which includes lack of knowledge of symptoms or awareness that symptoms warrant help, may impede help-seeking in students (Gagnon et al., 2017).

Universities have the benefit of having many channels to distribute information that students can access including halls of residence, campus health services and through academia (Eisenberg et al., 2011). Reviewing MHL around eating disorders and how knowledge is distributed across campuses can aid with recognising areas that need targeting or adapting current strategies (Eisenberg et al., 2011). MHL around eating disorders has been shown to differ depending on characteristics such as demographics and eating disorder symptom levels (Mond, 2010; Mond & Arrighi, 2011). Exploring these demographic differences as well as other potential factors associated with MHL is important in identifying targets for health promotion and intervention within specific student groups and in turn helping to improve MHL in this at-risk population (Miles et al., 2020).

There is a gap in reviews synthesising research on eating disorder MHL among university students. The Bullivant et al. (2020) scoping review on eating disorder MHL offers some insights into eating disorder MHL research conducted between 1997 and 2017. The scoping review found that eating disorder MHL significantly increased over that period, with most studies focusing on recognition, attitudes and knowledge related to anorexia nervosa and bulimia nervosa. The review also identified key gaps in literature, including a limited understanding of MHL related to other eating disorders such as binge-eating disorder and Other Specified Feeding or Eating Disorders (OSFED), as well as an underrepresentation of male participants in the literature. The current systematic review hopes to build on this by including more recent literature since the updated DSM-5 (APA, 2013) criteria and including studies beyond those solely focused on anorexia nervosa and bulimia nervosa (Bullivant et al., 2020). The current systematic review will also focus solely on university students using vignette study designs for reasons listed above and will exclusively investigate the factors associated with MHL, rather than only exploring levels of MHL in the general population, to aid more targeted intervention. Therefore, the aim of this systematic review is to explore the factors associated with MHL around eating disorders in university students.

2.2. Method

The protocol for this systematic review was preregistered with Prospero (Prospero CRD42024566054; Appendix C), the international prospective register for systematic reviews. Prospero was searched prior to starting the review to ensure that there were no other planned reviews in this area. The methods and findings of this systematic review are reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). A PRISMA checklist is available in supporting information Appendix D.

2.2.1 Eligibility Criteria

Initially, inclusion criteria were any empirical quantitative studies including vignette, cross-sectional, observational, longitudinal, intervention or case studies which examine MHL, knowledge or attitudes in university students. However, there appeared to be a large quantity of eligible studies and for a more refined and focused review, the eligibility criteria were amended. The amended inclusion criteria were (a) quantitative vignette studies (b) intervention studies where vignettes were used, however the intervention itself was not the focus of the review (c) participants were full time or part time university students, either undergraduate or postgraduate (c) outcomes related to factors associated with MHL in eating disorders (d) studies that were published or accessible in English (e) studies published between 2013-2024.

Vignette quantitative studies were defined as studies involving short, hypothetical scenarios that presented realistic situations to explore participants’ MHL (Schoenberg & Ravdal, 2000). These studies were used as they provided real-life scenarios in a controlled and ethical way, gaining insight into attitudes, beliefs, knowledge and stigma without requiring personal disclosure or direct observation (Evans et al., 2015; Schoenberg & Ravdal, 2000).

Both peer reviewed studies and grey literature were included to reduce publication bias and access diverse perspectives.

Mental health literacy was defined as “knowledge and beliefs about mental health disorders which aid their recognition, treatment or prevention” (Jorm et al., 1997) and therefore any studies researching stigma, beliefs, attitudes or knowledge of eating disorders were included.

This systematic review included studies investigating all aspects of MHL including knowledge, awareness, beliefs, attitudes and stigma.

Studies were excluded if they were (a) qualitative studies, reviews, letters, comments, editorials and opinion articles (b) quantitative studies that did not include vignettes, (c) studies that included participants below university entry level, university staff or where a majority of participants were not university students (d) studies where eating disorders were not the main phenomena being explored (f) studies where factors associated with MHL were not explored.

There were no exclusion criteria for year of study at university, university degree subject, university ranking, geographical location or type of eating disorder.

2.2.2 Data Sources and Search Strategies

PsycINFO, Medline and CINAHL databases were searched for eligible studies initially in June 2024 and then rechecked just before finalising the review in March 2025. Proquest was used to search for grey literature. Publication dates for searches were limited from 2013 to 2024 to reflect changing attitudes over time following campaigns such as the Time to Change (TTC) campaign and the updated DSM-5 criteria (APA, 2013) reflecting new diagnoses including binge eating disorder (Regier et al., 2013). Due to the quantity of studies that did not appear relevant, searches were restricted to title and abstract.

Searches were carried out using the following terms:

1. Universit* OR colleg* OR “higher education” OR polytechnic OR undergraduate* OR postgraduate*
2. “Eating disorder*” OR “disordered eating” OR “eating problem*” OR “eating difficult*” OR “anorexia nervosa” OR “bulimia nervosa” OR EDNOS OR “eating disorder not otherwise specified” OR “binge eating disorder” OR OSFED OR “other specified feeding and eating disorder” OR Pica OR orthorexia
3. understanding* OR knowledge OR awareness OR recognition OR perspectives OR perception* OR view* OR attitude* OR opinion OR stigma* OR “mental health literacy” OR “MH literacy”

During initial searches, the term “BED” was used to search for studies using abbreviations of binge eating disorder, however this was removed from the final search terms due to populating a large number of unrelated articles.

2.2.3 Study selection

In the initial stage of study selection, databases were searched and all references were exported to the software, Rayann. Duplicates were identified and removed. Titles and abstracts of studies were assessed for eligibility against inclusion and exclusion criteria. A second reviewer independently assessed 10% of screened studies for eligibility. The initial inter-rater reliability was assessed using Cohen’s Kappa ($\kappa = 0.75$, $p < 0.05$; 88% agreement rating), indicating a substantial level of agreement between reviewers. Full texts were retrieved for further review where potentially eligible studies were identified. The final included studies were screened by the same independent second reviewer (100% agreement rating). In case of any discrepancies, reviewers met to discuss further to come to a consensual decision and where relevant eligibility criteria made clearer. If a consensual decision could not be made, studies were brought to the research team for further discussion. No issues in inclusion criteria were identified.

2.2.4 Data Extraction

Characteristics from all included studies were extracted and recorded in Microsoft Excel. The following data were extracted: Author, year of publication, title, country, participant characteristics, type of eating disorder, outcome measures, factors explored, method of analysis and findings.

When relevant information was not available, corresponding authors were contacted to obtain necessary information. Articles were excluded if authors did not respond and/or the information given was insufficient to be able to analyse. However, no studies required exclusion on this basis.

2.2.5 Risk of Bias assessment

The quality of included studies was assessed using the quantitative version of the QualSyst Tool (Kmet et al., 2004; Appendix E). This is a validated tool developed specifically to evaluate a broad range of study designs and produces an overall quality score. Overall quality scores were calculated as a percentage of the total possible score with higher scores indicating better methodological quality and less risk of bias. A suggested cut-off score of 75% was used to determine acceptable quality (Kmet et al., 2004). Of the included studies, 10% were quality assessed independently by a second reviewer and any discrepancies were discussed further to arrive at a collaborative decision. The initial inter-rater reliability was assessed using Cohen’s Kappa (κ =0.53, $p< 0.5$; 86% Agreement rating), indicating a moderate level of agreement between reviewers.

2.2.6 Data Synthesis

Meta-analysis not completed due to significant heterogeneity within the study populations therefore Synthesis Without Meta-analysis (SWiM; Campbell et al., 2020) guidelines were followed. Heterogeneity was investigated through visual examination of extraction tables identifying methodological heterogeneity with continuous and binary outcome measures and inclusion of standardised and non-standardised outcome measures. There was also clinical diversity in outcomes with different measures of MHL e.g. stigma, bias, affective reaction.

As per the SWiM guidelines (Campbell et al., 2020), studies were grouped by outcomes with similar factors associated with MHL. The SWiM used direction of effect as a standardised metric to explore whether each grouped factor had an effect on MHL (Thomson and Campbell, 2020). Vote counting of studies was used as the synthesis method to explore where there was evidence of an effect (Boon and Thomson, 2021). An effect direction table was used as a visual display of results and results were prioritised in terms of risk of bias. The GRADE (Guyatt et al., 2011) framework was used to assess certainty of the synthesis findings considering risk of bias, imprecision, inconsistency, indirectness and publication bias.

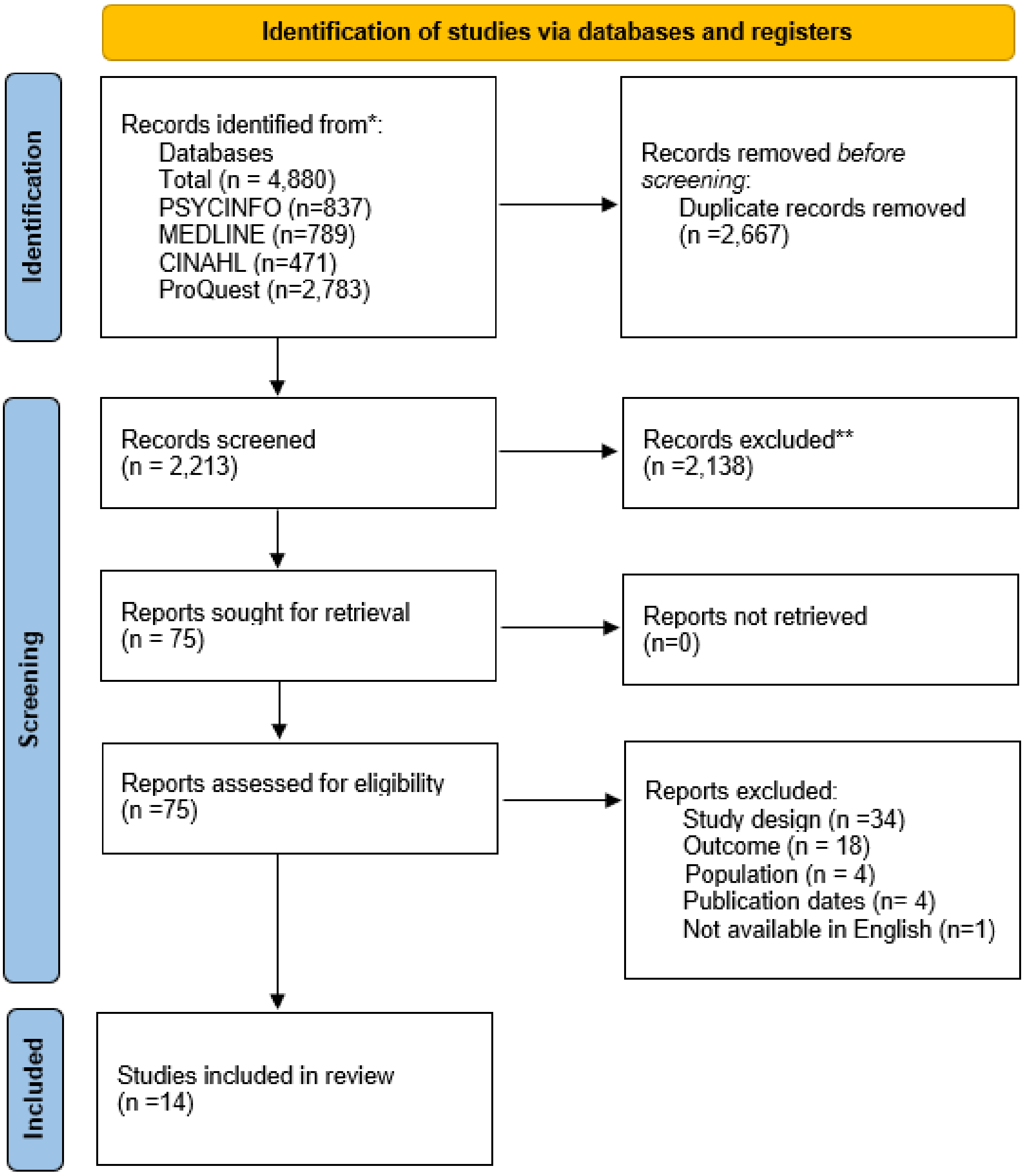
2.3. Results

2.3.1 Study Selection

A total of 4,880 relevant studies published between 2013 and 2024 were identified. The studies were then screened for duplicates and 2,667 were excluded. Abstracts from 2,213 were screened leading to 75 full studies being assessed. After reviewing full texts, 61 articles were excluded. Reasons for exclusion were population (e.g. the majority of participants were not university students), study design (e.g. qualitative studies), outcome (e.g. did not explore factors associated with MHL), publication dates (e.g. published prior to 2013) and not available in English. A total of 14 studies met full eligibility criteria (See Figure 1).

Figure 1

PRISMA diagram



2.3.2 Study Characteristics

Characteristics of the included vignette studies are included in Table 1. A further overview of these characteristics is provided below.

Table 1

Study Characteristics

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Sebastian et al. (2017)	n=122, mean age=19.66 years 49%F, 51%M 60.7% White, 16.4% Asian, 22.9% other	Australia	Anorexia Nervosa	Vignette, RCT	Social Distance Scale *Assessment of volitional stigma*	Women significantly more familiar with AN than men, X^2 (10) =18.8, $p < .042$. Men had higher initial levels of negative volitional stigma than women $F(1,120) = 8.565$, $p = .004$, $\eta p^2 = 0.067$. Negative and positive volitional stigma decreased over time as a result of the contact interventions ($\eta p^2 = 0.447$) for both men and women. However, no significant differences in traditional stigma at baseline or following intervention.
Ellis et al. (2020)	n=1147, mean age=18.47 67.2%F, 32.2%M, 0.7% transgender or non-binary 72.2% white, 14.2% black, 3.6% Hispanic, 1.7% Asian, 8.3% other/multiple ethnicities Mean BMI-24.27	US	Anorexia Nervosa Bulimia Nervosa Avoidant Restrictive Food Intake Disorder Subthreshold Eating Disorder	Vignette	Universal Measure of Bias, Universal Stigma Scale *Perceived Psychology 3 item scale*	No significant main effects for BMI or target gender. Participants exhibited significantly more bias towards AN compared to all other eating presentations ($\eta p^2 = 0.041$). Blame was significantly lower for AN in comparison to all other presentations ($\eta p^2 = 0.044$). Men endorsed more bias ($\eta p^2 = 0.010$) and blame ($\eta p^2 = 0.045$) across all eating presentations compared to women.

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Gratwick-Sarll et al. (2013)	n=756, mean age=27.2 100% F 80.2% born in Australia	Australia	Bulimia Nervosa	Vignette	Eating Disorder Examination Questionnaire Medical Outcomes Study Short-Form Kessler Psychological Distress Scale *Questions assessing knowledge*	Participants who recognised an eating problem had higher levels of some eating disorder psychopathology and general psychological distress. Those who recognised a problem were more likely to report self-induced vomiting, ($x^2=9.67$, p<.01.), as well as extreme dietary restriction ($X^2=3.73$, p=.05). However, no other eating disorder behaviours were associated with self-recognition. BMI and age not significantly associated with self-recognition.
Yan et al. (2018)	n=163, age range 17=25 years All F 66 F from Australian University 97 F from Central China University	Australia	Anorexia Nervosa	Vignette, RCT	Social Distance Scale Characteristics Scale Affective Reaction Scale The Severity Scale	Australian participants scored significantly higher than Chinese participants on baseline levels of the Social Distance Scale Characteristics Scale, Affective Reaction Scale, and Severity Scale Australian participants scored significantly lower on the blameworthiness scale. Following the social consensus intervention, MHL improved but was not moderated by nationality, suggesting cross cultural effectiveness.

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Sebastian and Richards (2017)	n=245, mean age= 19.55 49%F, 51%M 62% White, 15.1% Asian, 11% other, 8.6% Multicultural, 2% Hispanic, 0.4% Black	Australia	Anorexia Nervosa Bulimia Nervosa	Vignette, RCT	*Questions assessing AN MHL Questions assessing BN MHL*	Males were found to hold more Negative Volitional Stigma than females at pre-intervention, F(1,241)=138.9, pp <0.001, post-intervention 1 F(1, 241) =128.9, p <0.001). Significant improvement in recognising AN at post intervention 1 (79%) compared to baseline (41%), $X^2 = 86.4$, p <0.001. However, no significant difference between post-intervention 1 and post-intervention 2. Positive volitional stigma was significantly lower at post-intervention 1 compared to pre-intervention, F(1, 241) = 103.81, p > 0.001, as well as at post-intervention 2 compared to pre-intervention 1, F(1, 241) = 15.77, p < 0.001.
Varnado-Sullivan et al. (2020)	n=867, mean age=19.84 66%F, 33%M Primarily Caucasian (76.6%M, 72.7%F Mean BMI=24.84	US	Anorexia Nervosa	Vignette	Stigma scale *MH literacy survey*	Significant main effect for sex and vignette Males rated AN more favourably than females (enthusiastic, sociable, friendly), p<.05. Females rated the AN vignette as more of a problem than males and less likely to get better (p<.05). No significant findings for BMI. No significant main or interaction effects for familiarity were noted for MHL
Murakami et al. (2016)	n=318, mean age=21.58 73.6%F, 26.4%M 48.7% Asian, 25.8% Caucasian, 10.7% Pacific Islander, 3.5% Hispanic, 3.5% African or African American, 6.6% other ethnicity mean BMI=23.2 6.9% endorsed a past diagnosis of AN, BN and/or BED	US	Bulimia Nervosa Anorexia Nervosa Binge Eating Disorder	Vignette	Universal Measure of Bias Questionnaire Universal Stigma Scale *Perceived psychopathology 4 item scale*	Significant main effects were found for target diagnosis Wilks' λ= 0.548, F(21,709) = 7.88, p < .001), $\eta^2p = .181$). Targets with BED were less stigmatised than targets with AN or BN. Targets with AN or BN were considered less attractive. Target gender was found to be non-significant (p = .904).

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Griffiths et al. (2013)	n=342, mean age=19.24 67.2%F, 32.8%M 60.9% Australian, 11.1% North-East Asian, 9.4% European, 6.1% Southern and Central Asian, 12.5% indicating other nationalities BMI mean 22.6	Australia	Anorexia Nervosa, Muscle Dysmorphia	Vignette	*Assessment of stigmatising attitudes and beliefs*	Characters with muscle dysmorphia were rated as more masculine than characters with anorexia nervosa F(1,334) = 101.54, p < 0.001, η^2= 0.23. Effect of character diagnosis on perceived masculinity was more pronounced for male participants, F(1,334) = 8.43, p = 0.004, η^2= 0.03. Characters with AN were rated as less intelligent, F(1,334) = 13.36, p < 0.001, η^2= 0.04, less competent than their peers, F(1, 344) = 12.78, p < 0.001, η^2= 0.04, than characters with muscle dysmorphia. Participants believed female characters were more likely to be watched or monitored by others, F(1,334) = 10.79, p = 0.001, η^2=0.03, more uncomfortable to talk to about their problem, F(1,334)= 9.45, p= 0.002, η^2=0.03, less likely to recover easily than male characters, F(1, 334) = 7.33, p= 0.007, η^2= 0.02. Male characters were rated as less likely to be discriminated against in the community, F(1,334) = 12.93, p < 0.001, η^2= 0.04. Male participants rated characters as more weird, F(1,334) = 18.55, p < 0.001, η^2= 0.05, more narcissistic, F(1, 334) = 11.72, p = 0.001, η^2= 0.03, and more likely to be trying to get attention for themselves, F (1, 334) = 7.51, p= 0.006, η^2= 0.02, compared with female participants.

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Vaughn and Lowe (2020)	n=360, mean age=18.7 81%F, 19%M 38% White, 32% Latinx American, 18% Asian American/Pacific Islander, 9% bi/multiracial and 3% African American 68% freshmen, 25% sophomores, 3% juniors, 4% seniors 95% not a parent Majority didn't know someone with eating disorder 31% knew someone with BN, 43% knew someone with AN 23% knew someone with BED	US	Bulimia Nervosa	Vignette	*Questions assessing stigma and responsibility* *Questions assessing coping, emotions and perceived control* *Questions assessing perceptions of improvement*	12-year-old Jared was rated as much less responsible for the onset of bulimia nervosa (M=3.03) compared to the 15-year-old Jared (M=4.04, p=0.031) or the 24-year-old Jared (M=4.17, p=0.011). Jared's mother was rated as more responsible for the onset of Jared's bulimia nervosa (M=3.48) compared to his father (M=3.09), t(356)= 4.71, p<0.001.
Sala et al. (2013)	n=663, age not reported 77.1% F, 22.9% M 79% Caucasian 8.4% Asian American, 5.9% African American, 3.9% more than one race, 1.1% Native Alaskan or American Indian, 0.2% Native Hawaiian or Pacific Islander, 1.5% as other 82.7% middle class, 6.8% lower class, 10.6% upper class	US	Anorexia Nervosa Bulimia Nervosa Binge Eating Disorder	Vignette	*3 Questions assessing MHL*	AN was the most recognised condition (p < .0001). AN was most likely to be referred for healthcare compared to BN and BED (p< .0001). For 8 out of 9 of questions, race/ethnicity did not significantly influence the responses to the questions in the vignette. However, in the BED vignette Caucasian participants were more likely to identify BED in patient portrayed in vignette (p = .01). Males were less likely to recognise an eating disorder (p= .02) and suggest health care referral (p= .011) than females. There was no significant effect for target ethnicity

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
White (2016)	n=257, mean age=22.51 72.8% F, 28.2%M White 88.3%, Black/African American (.3%), Hispanic/Latino (3.5%), Asian (1.6%), Mixed/Multiracial (5.1%) 35.4% Freshman, 18.7% sophomore, 21.4% Junior, 22.2% Senior mean BMI= 24.82 5.4% previously diagnosed with an ED	US	Anorexia Nervosa	Vignette	Photographic Figure Rating Scale Eating Disorder Stigma Scale Assessment of Perceived Acceptability (APA) Eating Attitudes Test-26	Participants at risk for having an ED (high symptom level) reported significantly greater acceptance of AN, t(255) = -5.25, p= .000, d= .658. Participants in high ED symptom level group also reported viewing AN as significantly more severe than participants in the low ED symptom level group. T(255) = -2.05, p < .05, d= .257. No significant correlation between eating disorder symptom level and eating disorder stigma. Relationship between higher ED symptom levels and greater acceptance of AN was stronger among females (r =.45, p < .01) compared to males (r = .247, p < .05). A significant positive association between eating disorder symptom level and perceived severity of AN was also found in women (r =.146, p < .05). Main effect of weight was non-significant (p =.252) Significant gender differences on overall level of ED stigma (p= .003, ηp^2= .036) and APA severity (p= .000, ηp^2 =.075, but not APA acceptability (p= .186, np^2= .007). Females had higher scores than males on both APA severity scale (M=12.54 for females; M= 11.47 for males) and the APA acceptability subscale of AN (M=12.54 for females; M= 13.25 for males), but lower scores on EDSS total (M= 42.0 for females; M= 46.31 for males).

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Schoen et al. (2018)	n=237, mean age=19.10 59.5% F, 41.5%M 84.5% White 70.5% first year students	US	Unspecified Feeding and Eating Disorder Other Specified Feeding and Eating Disorder	Vignette	*Questions assessing MHL*	Participants endorsed the female character as having an eating disorder to a greater extent than the male character, regardless of the severity of the condition (p<.001). Participants endorsed the female character as having a food addition to a greater extent than the male; however there was less of that perception in the higher severity condition (p<.001). More gender bias was present when ratings were made by male participants (p<.001) Males were more likely to endorse the female vignette as having an eating disorder than the male vignette character (p<.001).
Sangiorgio et al. (2020)	n=489, mean age=20.4 79.5% F, 21.5%M 85.5% White 30% experienced an ED80% interpersonal contact with someone who has/had an ED 39.8% freshman, 15.7% sophomores, 19.7% juniors, 24.1% seniors	US	Anorexia Nervosa Bulimia Nervosa Binge Eating Disorder	Vignette	Bystander Intervention Scale Universal Stigma Scale *Questions assessing knowledge* *Questions assessing action and perceptions of vignettes*	Gender (b =.14; p<.01), experience with ED (b =.14, p<.01) and interpersonal contact (b = .15, p <.01) were found to be significant factors. Women scored higher than men on bystander attitudes measure. Familiarity with Eds and stigmatising attitudes, specifically blame, contributed to likelihood to intervene in peer disordered eating. Total variance explained (19%) suggests other, unmeasured factors explain bystander attitudes regarding disordered eating. No significant differences between conditions and age.

Study	Sample	Location	Condition	Study Design	Outcome measures	Brief description of findings
Geerling and Saunders (2015)	n=102, mean age=19.86 100%F Ethnicity not specified 70.6% reported knowing someone diagnosed with AN	US	Anorexia Nervosa	Vignette	*Biological attributions scale* *Vanity attributions scale Self-responsibility attributions scale* *Scales assessing emotional reactions* *Scales assessing behavioural dispositions*	A significant main effect was found for AN severity and admiration. The mild AN target most admired ($p<0.001$), whilst the severe AN target elicited the most anger. No significant differences found across mild to severe AN for social distance, sympathy or attributions scales.

Note. RCT= Randomised Controlled Trial, n= number of participants, F= female, M= male, ED= Eating Disorder, AN= Anorexia Nervosa, BN= Bulimia Nervosa, BED= Binge Eating Disorder

As per inclusion criteria, all studies used a vignette design. Only two studies were also intervention studies (Sebastian et al., 2017; Sebastian & Richards, 2017). All studies were conducted in developed countries with nine being conducted in the US (Ellis et al., 2020; Geerling & Saunders, 2015; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2018; Varnado-Sullivan et al., 2020; Vaughn & Lowe, 2020; White, 2016) and five being conducted in Australia (Griffiths et al., 2013; Gratwick-Sarll et al., 2013; Sebastian et al., 2017; Sebastian & Richards, 2017; Yan et al., 2018). Eleven studies recruited both men and women (Ellis et al., 2020; Griffiths et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2018; Sebastian et al., 2017; Sebastian & Richards, 2017; Vaughn & Lowe, 2020; Varnado-Sullivan et al., 2020; White, 2016), however of these studies, nine appeared to be majority female (Ellis et al., 2020; Griffiths et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2018; Vaughn & Lowe, 2020; Varnado-Sullivan et al., 2020; White, 2016). The other three included studies recruited only women (Geerling & Saunders, 2015; Gratwick-Sarll et al., 2013; Yan et al., 2018).

The sample size ranged from 102-1,147 participants. The mean age of participants in studies ranged between 18-27. However, one study did not report the age of participants (Sala et al., 2013) and another study did not include the mean age, only an age range of 17-25 years (Yan et al., 2018). All apart from one study (Geerling & Saunders, 2015) reported ethnicity. In ten studies, most participants identified as white (Ellis et al., 2020; Gratwick-Sarll et al., 2013; Griffiths et al., 2013; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2018; Sebastian et al., 2017; Sebastian & Richards, 2017; Varnado-Sullivan et al., 2020; White, 2016), in two studies the majority identified as Asian (Murakami et al., 2016; Yan et al., 2018) and one study showed highest percentages for White and Latin-American (Vaughn & Lowe, 2020).

Out of the 14 studies, 11 examined MHL related to anorexia nervosa (Ellis et al., 2020; Geerling & Saunders, 2015; Griffiths et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Sebastian et al., 2017; Sebastian & Richards, 2017; Varnado-Sullivan et al., 2020; White, 2016; Yan et al., 2015) and 7 related to bulimia nervosa (Ellis et al., 2020; Gratwick-Sarll et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Sebastian & Richards, 2017; Vaughn

& Lowe, 2020). Whilst only three studies explored MHL related to binge eating disorder (Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020), one explored Other Specified Feeding and Eating Disorders (OSFED; Schoen et al., 2018), one explored muscle dysmorphia (Griffiths et al., 2013), one explored subthreshold eating disorder (Ellis et al., 2020) and one explored Avoidant Restrictive Food Intake Disorder (ARFID; Ellis et al., 2020).

Five studies also reported BMI under participant demographics (Ellis et al., 2020; Griffiths et al., 2013; Murakami et al., 2016; Varnado-Sullivan et al., 2020; White, 2016), with the mean BMI being within the healthy range for all studies. Four studies also reported year of study (Sangiorgio et al., 2020; Schoen et al., 2018; Vaughn & Lowe, 2020; White, 2016) with all being majority first year students. All three studies that reported past diagnoses showed a majority did not have a past diagnosis (Murakami et al., 2016; Sangiorgio et al., 2020; White, 2020) and the one study that reported class showed the majority were middle class (Sala et al., 2013). Three studies also reported whether participants knew someone with an eating disorder (Geerling & Saunders, 2015; Sangiorgio et al., 2020; Vaughn & Lowe, 2020), with two studies showing most participants did know someone (Geerling & Saunders, 2015; Sangiorgio et al., 2020) and the other showing the majority did not (Vaughn & Lowe, 2020).

2.3.2.1 Assessment of MHL

Outcome measures across studies varied significantly with studies measuring different aspects of MHL. Levels of stigma were measured in 11 studies with stigma (Ellis et al., 2020; Geerling & Saunders, 2015; Griffiths et al., 2013; Murakami et al., 2016; Sangiorgio et al., 2020; Sebastian et al., 2017; Sebastian & Richards, 2017; Varnado-Sullivan et al., 2020; Vaughn & Lowe, 2020; White, 2016; Yan et al., 2018) incorporating volitional stigma, traditional stigma, bias, social desirability, social distance, rated characteristics and acceptability. Standardised measures included the Universal Stigma Scale (Ebneter et al., 2011) Eating Disorder Stigma Scale (Crisafulli et al., 2010), Universal Measure of Bias (Latner et al., 2008), Social Distance Scale (Link et al., 1987), Characteristics Scale (Penn et al., 1994) and Perceived Acceptability Scale (Mond & Arrighi, 2012). Unstandardised measures assessing stigmatising attitudes and beliefs were used in 6 of the 11 included studies

(Griffiths et al., 2014; Sebastian & Richards, 2017; Sebastian et al., 2017; Sangiorgio et al., 2021; Varnado-Sullivan et al., 2020; Vaughn & Lowe, 2020). Three studies explored participants' emotional reactions to vignettes (Geerling & Saunders, 2015; Vaughn & Lowe, 2020; Yan et al., 2018), with two studies (Geerling & Saunders, 2015; Vaughn & Lowe, 2020) using their own measures and one using the affective reaction scale (Yan et al., 2018).

Several components of knowledge of eating disorders were used to measure MHL in 11 studies (Ellis et al., 2020; Geerling & Saunders, 2015; Gratwick-Sarll et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2019; Sebastian et al., 2017; Varnado-Sullivan et al., 2020; Vaughn & Lowe, 2020; Yan et al., 2018). Knowledge of the symptoms and condition itself was measured in nine studies (Ellis et al., 2020; Gratwick-Sarll et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2019; Sebastian et al., 2017; Varnado-Sullivan et al., 2020; Yan et al., 2018), however only one study (Yan et al., 2018) used a standardised outcome measure with using the Severity Scale (Mond et al., 2006). Only two studies (Geerling & Saunders, 2015; Vaugh & Lowe, 2020) explored knowledge around the causes, both using their own outcome measure. One study used the bystander intervention scale to explore knowledge in assisting with difficulties (Sangiorgio et al., 2021) and another measured knowledge about treatment and improvement through their own independent measures (Vaughn & Lowe, 2020).

Two studies used standardised measures (Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994); Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) to assess participants risk of disordered eating (Gratwick-Sarll et al., 2013; White, 2016), with one of these studies (Gratwick-Sarll et al., 2013) also using the standardised Kessler Psychological Distress Scale (Kessler et al., 2002) to measure general psychological distress.

2.3.3 Quality Assessment

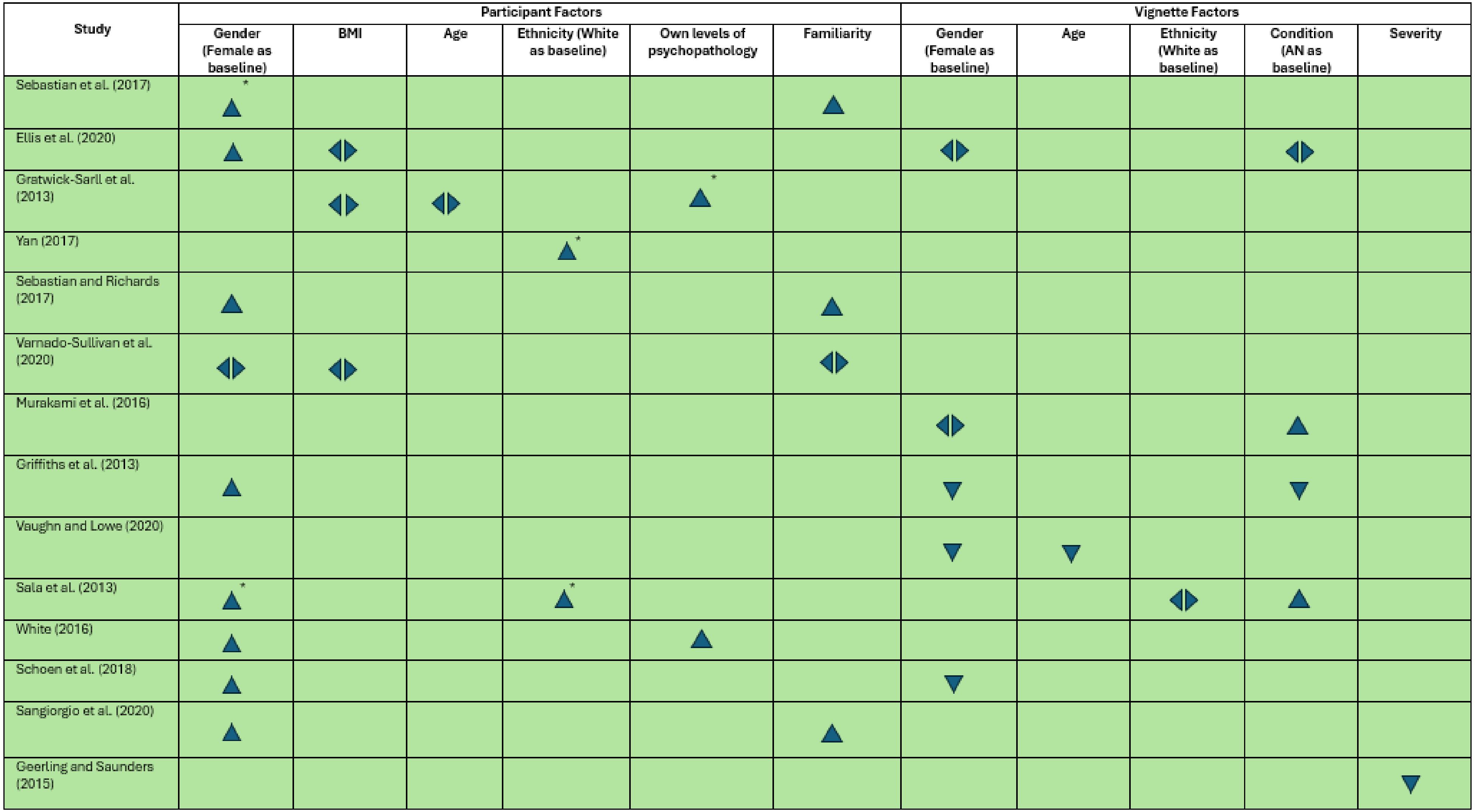
The QualSysTool (Kmet, 2004) checklist was used to assess methodological quality of the 14 eligible studies. Total scores ranged from 86% to 100% based on the frequency of responses of "yes." All included studies scored over the cut off at 75% and were rated as being high quality. The most common area that was scored as "no" or "partial" was controlling for confounding factors.

2.3.4 Synthesis of results

Factors identified as being associated with MHL in eating disorders in university students were analysed using vote counting and direction of effect, with an effect direction plot being used to visually aid findings (Figure 2). These showed the factor and the number of studies that found positive, negative, mixed or no effects.

Figure 2

Effect Direction Plot



Study	Participant Factors						Vignette Factors				
	Gender (Female as baseline)	BMI	Age	Ethnicity (White as baseline)	Own levels of psychopathology	Familiarity	Gender (Female as baseline)	Age	Ethnicity (White as baseline)	Condition (AN as baseline)	Severity
Sebastian et al. (2017)	▲*					▲					
Ellis et al. (2020)	▲	◀▶					◀▶			◀▶	
Gratwick-Sarll et al. (2013)		◀▶	◀▶		▲*						
Yan (2017)				▲*							
Sebastian and Richards (2017)	▲					▲					
Varnado-Sullivan et al. (2020)	◀▶	◀▶				◀▶					
Murakami et al. (2016)							◀▶			▲	
Griffiths et al. (2013)	▲						▼			▼	
Vaughn and Lowe (2020)							▼	▼			
Sala et al. (2013)	▲*			▲*					◀▶	▲	
White (2016)	▲				▲						
Schoen et al. (2018)	▲						▼				
Sangiorgio et al. (2020)	▲					▲					
Geerling and Saunders (2015)											▼

Results presented in effect direction plot adapted from Fukui Innes et al (2024)

Effect direction: upward arrow ▲ = increased mental health literacy, downward arrow ▼ =decreased mental health literacy, sideways arrow ◀▶ = no effect/mixed effects

Table ordered in terms of quality of study. Study quality denoted by colour: green=acceptable quality

Note: *=direction of effect dependent on other variables

2.3.4.1. Participant factors

2.3.4.1.1. Gender

Nine studies explored participant gender as a factor associated with MHL (Ellis et al., 2020; Griffiths et al., 2013; Sala et al., 2013; Sangiorgio et al., 202; Schoen et al., 2019; Sebastian et al., 2017; Sebastian & Richards, 2017; Varnado-Sullivan et al., 2019; White, 2016). Eight of nine studies indicated that women had higher levels of MHL than men (Ellis et al., 2020; Griffiths et al., 2014; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2019; Sebastian et al., 2017; Sebastian & Richards, 2017; White, 2019). Women scored higher on acceptability scales (White, 2016) and displayed lower levels of stigma (Sangiorgio et al., 2021; Sebastian et al., 2017; Sebastian & Richards, 2017). However, there were no gender differences in relation to traditional stigma, only negative volitional stigma (NVS) and positive volitional stigma (PVS; Sebastian et al., 2017; Sebastian & Richards, 2017). Volitional stigma is the perception that an eating disorder is a personal choice or controllable by the person (Easter, 2012). Volitional stigma can either be negatively charged (i.e. choices are viewed as a character flaw) or positively charged (i.e. choices are viewed as admirable). Males were shown to hold higher initial NVS (Sebastian et al., 2017; Sebastian & Richards, 2017), suggesting they viewed eating disorders as a result of negatively perceived choices. However, following contact intervention, levels of PVS and NVS decreased for both men and women (Sebastian et al., 2017; Sebastian & Richards, 2017). Women also showed less blame (Ellis et al., 2020), less gender bias (Schoen et al., 2019) and less negative character attributes (Griffiths et al., 2014). Women were found to be more likely to recognise an eating disorder and suggest health care referrals (Sala et al., 2013), however this was only significant for the Anorexia Nervosa (AN) vignette; no significant differences between gender were found for the BED vignette. One of the nine studies exploring the role of participant gender (Varnado-Sullivan et al., 2019) reported mixed findings with women demonstrating higher levels of MHL by being more likely to recognise AN as a problem, yet also displaying less positive attitudes towards the condition compared to men.

2.3.4.1.2. Body Mass Index (BMI)

Three studies explored the influence of participants' BMI on MHL (Ellis et al., 2020; Gratwick-Sarll et al., 2013; Varnado-Sullivan et al., 2019). All three studies found BMI did not have a significant effect on MHL, including when recognising their own disordered eating (Gratwick-Sarl, 2013).

2.3.4.1.3 Age

Only one study explored the influence of the participants age on MHL (Gratwick-Sarll et al., 2013), however this found participant age did not have a significant effect on recognition of eating disorders (Gratwick-Sarl, 2013).

2.3.4.1.4 Ethnicity

Two studies explored the influence of ethnicity of participants (Sala et al., 2013; Yan et al., 2018) on MHL. Both studies found that Caucasian participants showed higher levels of MHL through having less negative reactions and less blame towards AN (Yan et al., 2018) and being more likely to recognise BED (Sala et al., 2013). However, within the first study (Sala et al., 2013), the other eight questions assessing knowledge of AN and BN across different ethnicities did not appear to be significant, suggesting ethnicity may only be a factor depending on the diagnosis. In this study, there were also no significant interactions between race/ethnicity in the vignette and race/ethnicity of the participant. Yan et al. (2018) also found that following a social consensus intervention, MHL improved and was not moderated by nationality, suggesting cross cultural effectiveness.

2.3.4.1.5. Own levels of psychopathology

Two studies (Gratwick-Sarll et al., 2013; White, 2016) explored participants own levels of psychopathology and risk of eating disorder as a factor associated with MHL. Both studies found that those with more risk of eating disorders, through displaying higher EAT (Garner & Garfinkel, 1979) and EDE-Q scores (Fairburn & Beglin, 1994), had higher levels of MHL. Those at risk of eating disorders were able to identify AN as an eating disorder and hold greater acceptance of AN (White, 2016). In addition, those with higher levels of general psychological distress and eating disorder psychopathology including those who had sought prior treatment for an eating problem were associated with increased likelihood of self-recognition (Gratwick-Sarll et al., 2013).

2.3.4.1.6 Familiarity with eating disorders

Four studies explored familiarity and contact with eating disorders as a factor associated with MHL (Sebastian et al., 2017; Sebastian & Richards, 2017; Sangiorgio et al., 2020; Varnado-Sullivan et al., 2019). One study (Sangiorgio et al., 2020) found experience with eating disorders and interpersonal contact was significantly associated with likelihood to intervene, suggesting higher levels of MH literacy. Another two studies exploring the influence of interventions involving contact with eating disorders (Sebastian et al., 2017; Sebastian & Richards, 2017) found contact with someone with an eating disorder helped increase MHL through reducing positive and negative non-volitional stigma. One study (Varnado-Sullivan et al., 2019) showed differing results and found that familiarity was not a significant factor.

2.3.4.2 Vignette factors

2.3.4.2.1 Gender

Five studies explored the influence of gender of the target described in the vignette (Ellis et al., 2020; Griffiths et al., 2014; Murakami et al., 2016; Schoen et al., 2019; Vaughn & Lowe, 2020). Three studies found there was an effect on vignette gender (Griffiths et al., 2014; Schoen et al., 2019; Vaughn & Lowe, 2020) with women being more discriminated against (Griffiths et al., 2014), rated as more responsible for the onset (Vaughn & Lowe, 2020), and more likely to have a food addiction problem (Schoen et al., 2019). However, two studies (Ellis et al., 2020; Murakami et al., 2016) found there was no significant effect for vignette gender on MHL.

2.3.4.2.2. Age

One study explored the influence of age of the target described in the vignette on MHL and found vignette age was significant, with the younger target being viewed as less responsible for the onset of bulimia nervosa (Vaughn and Lowe, 2020).

2.3.4.2.3 Ethnicity

One study explored race/ethnicity of the target described in the vignette (Sala et al., 2013), however found that race/ethnicity did not significantly influence recognition of an eating disorder.

2.3.4.2.4 Eating disorder diagnosis/condition

Four studies explored the influence of eating disorder diagnosis (Ellis et al., 2020; Griffiths et al., 2014; Murakami et al., 2016; Sala et al., 2013). Two studies indicated higher levels of MHL for AN compared to BN (Murakami et al., 2016; Sala et al., 2013), as reflected in greater recognition and a higher likelihood of referral for AN (Sala et al., 2013). In contrast, BN was found to be more heavily judged and to evoke greater discomfort (Murakami et al., 2016). Murakami et al (2016) did find however that AN and BN were both rated as unattractive. One study suggested lower levels of MHL with AN vignettes receiving the most stigma and bias (Griffiths et al., 2014). One study showed mixed results (Ellis et al., 2020), with AN and BN being higher in MHL in terms of recognition but also showed lower MHL of AN with higher levels of stigma and bias.

2.3.4.2.5 Perceived severity of the eating disorder

One study (Geerling & Saunders, 2015) explored the role of severity of the eating disorder on MHL, finding higher levels of MHL in mild AN targets compared with severe. Mild AN was more admired, whilst severe AN elicited the most anger.

2.3.5 Certainty of evidence

To assess certainty of evidence, the Grading of Recommendations, Assessment, Development, and Evaluations (GRADE; Guyatt et al., 2011) was used. This tool assessed risk of bias, inconsistency, indirectness, imprecision and publication bias for associations between MHL and identified factors. As per GRADE guidelines (Guyatt et al., 2011) a low certainty of evidence rating at baseline was given for all factors due to the lack of randomised controlled trial (RCT) studies. The only factor that had two included RCT studies (Sebastian et al., 2017; Sebastian & Richards, 2017) was familiarity, however both these were downgraded due to imprecision through recruiting solely psychology students and an absence of placebo from baseline. Gender, BMI and familiarity remained at low certainty of evidence. Age, ethnicity, severity and own levels of psychopathology were downgraded to very low certainty of evidence due to imprecision. Diagnosis of eating disorder was downgraded to very low certainty of evidence based on inconsistency. Vignette demographics including target gender, age and ethnicity were downgraded to very low due to imprecision and inconsistency.

2.4 Discussion

The current systematic review was the first to explore factors associated with MHL in eating disorders in university students. The current systematic review added to current literature by solely exploring MHL in university students using vignette study designs and exclusively investigating the factors associated with MHL, rather than only exploring levels of MHL in the general population (Bullivant et al., 2020), to hopefully aid more targeted intervention. The 14 eligible studies explored 9 factors with mixed findings across demographic variables of participants (gender, age, BMI, ethnicity), demographic variables of the vignette target (gender, age, ethnicity, condition, severity).

2.4.1 Summary of findings

2.4.1.1 Participant factors

Consistent with prior research in the wider population (Bullivant et al., 2020; Mond and Arrighi, 2011; Napolitano et al., 2019), this review found participant gender to be a significant factor associated with MHL in eating disorders. Eight out of the nine studies exploring gender showed that women demonstrated higher levels of MHL (Ellis et al., 2020; Griffiths et al., 2014; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2019; Sebastian et al., 2017; Sebastian & Richards, 2017; White, 2019), particularly in relation to stigma as well as recognition of AN. This could be explained through the harmful notion that eating disorders are a condition that primarily affects only women and girls and is therefore an inherently female experience (Bomben et al., 2022; Coelho et al., 2021; Murray et al., 2017). This message is often perpetuated by media through articles portraying men experiencing eating disorders as “atypical” (Bomben et al., 2022; MacLean et al., 2015) and could explain the lesser recognition from males. In addition, stigmatising attitudes could be perpetuated by social pressures to conform to gender roles and maintain masculinity through negatively evaluating any threats to this (e.g. stereotypically feminine behaviour) in other people (Vandello & Bosson, 2013). Research has found that men perceive stereotypically more feminine conditions such as AN as a threat and is positively associated with stigma towards AN (Austen & Griffiths, 2019). These social pressures to conform to masculinity may be particularly high during emerging adulthood and transition to university, where the need to belong, create new social connections and integrate into a new community is especially pronounced (Maunder, 2018; Pedler et al., 2022). However, participants from nine included studies in this review were majority female (Ellis et al., 2020; Griffiths et al., 2013; Murakami et al., 2016; Sala et al., 2013; Sangiorgio et al., 2020; Schoen et al., 2018; Vaughn & Lowe, 2020; Varnado-Sullivan et al., 2020; White, 2016) and three studies solely recruited females (Geerling & Saunders, 2015; Gratwick-Sarll et al., 2013; Yan et al., 2018), suggesting an overrepresentation of female participants. This is consistent with Bullivant et al.'s (2020) finding of a significant underrepresentation of male participants in eating disorder MHL research. Findings may not reflect true population differences and therefore future research should aim for a more balanced representation of gender. One study included in this review (Varnado-Sullivan et al., 2020) showed mixed findings, and despite women holding more knowledge of AN, women indicated less positive attributes towards AN than men.

This review found most other participant demographics including age and BMI were not significant factors associated with MHL in eating disorders. The non-significant findings within age could be explained through university students in included studies all being around the age of emerging adulthood, with the mean age being between 18-27 years. This is understandable with participants all being in a similar transitional age in their life, a similar generation and being exposed to the same media. Wider research in the general population has found that younger adults show higher levels of MHL through increased knowledge and less stigmatising beliefs than older adults (Farrer et al., 2008; Hadjimina & Furnham, 2017; Reas, 2017), which may be partly due to beliefs changing over time following national campaigns (Henderson et al., 2013; Pescosolido et al., 2021). This review focused on the younger generation of students, it would be interesting to see whether there are MHL differences between emerging adulthood students and mature students. In addition, only one study explored age as a factor, leading to concerns about imprecision and meaning that findings should be interpreted with caution. Future research would benefit from exploring age as a factor further to increase confidence in findings.

Ethnicity of the participant was only found to be significant for BED vignettes, where Caucasian participants were more likely to recognise BED as an eating disorder (Sala et al., 2013; Yan et al., 2018). In addition, as MHL for all participants improved following a social consensus intervention, ethnicity was not found to be a moderator (Yan et al., 2018). Findings related to ethnicity should also be interpreted with caution with all studies being conducted in Westernised contexts (US or Australia). This raises questions about whether participants cultural background- including upbringing, values and social norms- was adequately accounted for. In addition, it is important to acknowledge that MHL is a Westernised construct and could lead to misinterpretation of behaviours or underestimation of knowledge that exists in Non-Western cultures. Culture plays a crucial role in shaping how mental health difficulties are perceived, how emotions are expressed and differences in coping through spirituality and religion (Gopalkrishnan, N. 2018). Cultural differences have been found in relation to expression of eating disorder behaviours, namely restriction, bingeing and body dissatisfaction (Gordon et al., 2006; Levison & Brosof, 2016). These contexts may therefore mean that symptom recognition and diagnostic criteria may not translate across cultures and may affect how body dissatisfaction and eating behaviours are interpreted and whether they are seen as problematic. For instance, low recognition of BED among non-Caucasian participants could be incorrectly attributed to a lack of knowledge, when in fact it may reflect cultural interpretations of overeating or body image. It is therefore crucial to avoid drawing broad conclusions or making assumptions about the role of ethnicity. Future research should aim to include diverse cultural contexts and consider culture as a distinct and/or intersecting factor. This would help to better understand the ways in which cultural beliefs, values and norms shape MHL of eating disorders across different populations.

Another factor identified was participants' own levels of psychological distress and eating disorder psychopathology. Those at risk of an eating disorder were found to hold higher levels of MHL through recognition (Gratwick-Sarll et al., 2013; White, 2016), particularly where they had sought prior treatment for an eating disorder or reported self-induced vomiting or dietary restriction. This is interesting given literature has contradicted this in the wider population, with those with eating difficulties having a lack of insight into their difficulties or denial of the symptoms being a problem (Gale et al., 2006; Mond et al., 2010). Significant changes for most students during university years and emerging adulthood often leads students to being vulnerable to inadequate eating habits or those deemed as unhealthy in relation to food intake. Despite this, those with disordered eating patterns often view their diet quality as adequate and maintain this, placing them at risk for the development of eating disorders (Castelao-Naval et al., 2019; De-Mateo-Silleras et al., 2019). Research has found those with eating disorders may be more likely to consider eating disorder symptoms in others potentially to alleviate cognitive dissonance and rationalise their own behaviours (Mond et al., 2006; Van der Wal and Thelen, 1997).

Familiarity and contact with eating disorders was found in three out of four of the included studies as a factor associated with MHL (Sangiorgio et al., 2020; Sebastian et al., 2017; Sebastian & Richards, 2017), including interventions involving contact aiming to reduce stigma (Sebastian et al., 2017; Sebastian & Richards, 2017). This is in line with research showing personal contact with someone with a mental health difficulty increases knowledge of general mental health (Abi Doumit et al., 2019; Lee et al., 2023), as well as being negatively associated with stigma around eating disorders (Mond & Arrighi, 2011). The high prevalence of eating disorders among university students (Fitzsimmons-Craft et al., 2019; Upson & Sonneville, 2017) highlights the need for awareness, particularly regarding the importance of support networks during this period (Ali et al., 2020; Falki & Khatoon, 2016). This review further reflects this, as most participants in studies that reported it knew someone with an eating disorder. One study in this review found no association between familiarity and MHL (Varnado-Sullivan et al., 2020). This aligns with conflicting evidence in other mental health difficulties, where having a family member with a condition may increase recognition, however does not necessarily enhance knowledge or attitudes (Gulliver et al., 2012). However, the study included in the review (Varnado-Sullivan et al., 2020) did not report on the number of people that knew someone with an eating disorder, therefore meaning there may have been potential for bias.

2.4.1.2 Vignette factors

Demographics of the target described in the vignette (gender, age, ethnicity, condition, severity) were identified as another factor associated with MHL. Gender of the vignette showed inconsistent results with three out of the five included studies finding women were viewed as more discriminated against and viewed as more responsible (Griffiths et al., 2014; Schoen et al., 2019; Vaughn & Lowe, 2020), however a couple of studies found no effect on vignette gender (Ellis et al., 2020; Murakami et al., 2016). Age of the target was identified as having an influence on MHL with younger targets being viewed as less responsible (Vaughn and Lowe, 2020). Ethnicity did not appear to have a significant effect on MHL of eating disorders (Sala et al., 2013), contradicting a previous finding that eating disorder recognition was higher for the vignette describing a Caucasian target (Gordon et al., 2002). This may suggest the finding is not applicable to university students or may reflect how attitudes have changed over time. However, only one study explored ethnicity of the target in the vignette as a factor (Sala et al., 2013), so this would be beneficial to be explored further.

The presentation of the eating disorder was also found to be a factor associated with MHL, however for diagnosis as a factor, the direction of effect appeared to be inconsistent. In two out of the four studies AN appeared to be most recognised (Murakami et al., 2016; Sala et al., 2013), with one study showing mixed results (Ellis et al., 2020) or in one other study less recognition of AN (Griffiths et al., 2014). The inconsistency found could be due to the variability in measurement of MHL and outcome measures. MHL encompasses many aspects including knowledge and beliefs about causes, symptoms, treatment, assisting with difficulties, as well as stigma and discrimination (Jorm, 2012). Not all studies measured the same aspects of MHL, with some focusing on knowledge and others on stigma, making comparison difficult. This was a similar trend for other factors and is a common difficulty found within MHL research (Bullivant et al., 2020), with MHL being defined differently and some using the even broader term of health literacy. In addition, there was also variability in relation to eating disorder presentations, with some studies comparing AN, BN and BED, whilst others compared AN with other presentations such as muscle dysmorphia or ARFID.

Severity as part of the presentation of the eating disorder was also found to be a factor associated with MHL, with higher levels of stigma found in more severe presentations of eating disorders (Geerling & Saunders, 2015). This review found milder cases of AN were viewed as acceptable and in some cases admirable, however in more severe cases this appeared to induce anger (Geerling & Saunders, 2015). This outcome would support findings related to views of the public that AN is self-inflicted (Crisp et al., 2000) and individuals with AN have greater personal control compared with other diagnoses (Mond et al., 2006; Wingfield et al., 2011). Anorexia Nervosa has also been conceptualised by lay persons in research as a “slimming disease” (Holliday et al., 2005) and with Western society media emphasising weight loss (Bordo, 2023; Farrell, 2011), this could support the idea that mild cases are viewed more positively. This may be particularly prevalent in the student population, with increasing use of social media (Bach et al., 2020) and exposure to diet culture and the thin-ideal (Anixiadis et al., 2019; Pryde & Prichard, 2022). Exposure to diet culture videos may then in turn be exacerbating internalisation of the thin-ideal (Fiuza & Rodgers, 2023). This could therefore have implications when assessing MHL through potential normalisation of unhealthy eating behaviours.

2.4.2 Clinical Implications

Although this systematic review could not implicitly make recommendations for specific intervention strategies, the findings suggest important implications for clinicians working in university settings. Drawing on the help-seeking framework (Rickwood et al., 2005), limited MHL appears to hinder both the recognition of eating disorder symptoms and the subsequent expression of need for support. For example, the review found men may be less likely to recognise eating disorder symptoms and as reflected in the help-seeking framework (Rickwood et al., 2005) may in turn be less likely to seek support (Gagnon et al., 2017) potentially due to views of masculinity and of eating disorders being a female difficulty (Bomben et al., 2022; Coelho et al., 2021). This highlights the need for clinicians to develop and promote outreach campaigns that are gender-inclusive and challenge myths surrounding eating disorders. Efforts could include disseminating service information in male spaces and collaboration with males with lived experience. Within clinical practice, incorporating psychoeducation into early sessions may help build understanding around eating disorder symptoms, causes and treatments, whilst also challenging internalised stigma. Furthermore, outreach and prevention campaigns could aim to specifically address gaps in MHL, such as the under-recognition of presentation such as BED and OSFED.

Cultural factors must also be considered when interpreting findings and applying to interventions. All studies in the review were conducted in Western contexts, raising concerns about the cultural applicability of MHL measures and concepts. MHL is rooted in Western understandings of illness and may not reflect how individuals from non-Western backgrounds conceptualise distress or disordered eating. Low recognition of BED among non-Caucasian students (Sala et al., 2013; Yan et al., 2018) could reflect differing cultural interpretations of symptoms such as overeating rather than reflecting a gap in knowledge (Gordon et al., 2006; Levison & Brosof, 2016). Clinicians should be mindful of this throughout assessment and formulation, being cautious about not pathologizing culturally normative behaviours or misinterpreting coping mechanisms that may be influenced by spirituality, religion or values (Gopalkrishnan, 2018). To further support this, Clinical Psychologists could offer staff training and education in cultural humility and increasing cultural awareness to avoid pathologizing behaviours that may be shaped by diverse cultural contexts.

2.4.3 Strengths and Limitations

A strength of the review was the broad inclusion criteria for the phenomena of eating disorders, which allowed studies beyond those focusing solely on AN to be included. This helped address a gap identified within previous research (Bullivant et al., 2019), which highlighted that most studies have primarily focused on AN and BN (Bullivant et al., 2019). By incorporating a wider range of eating disorder diagnosis, including BED and OSFED, this review contributes to a more comprehensive understanding of MHL across different presentations of eating disorders. The findings suggest that knowledge and attitudes may vary dependent on the eating disorder condition, for example, BED was generally less well-recognised and often associated with higher levels of stigma compared to AN (Murakami et al., 2016; Sala et al., 2013). However, studies addressing these presentations were limited and therefore future research is needed to better understand how MHL differs across different eating disorder presentations and to inform the development of more targeted interventions.

A strength of the review was using SWiM (Campbell et al., 2020) approach, which provided a more structured and transparent method for synthesising findings compared to a traditional narrative synthesis (Campbell et al., 2020). SWiM offers a systematic framework for grouping, comparing, and analysing results across heterogeneous studies, thereby enhancing the rigour and reproducibility of the review process (Campbell et al., 2020). It allowed for a clearer identification of patterns and trends across the recent literature on MHL in eating disorders, despite methodological variation across included studies (Campbell et al., 2020). However, the substantial heterogeneity in outcomes and measures meant that a formal meta-analysis was not feasible (Higgins et al., 2021). This precluded the calculation of effect sizes for each factor, limiting the ability to quantify the overall strength of associations and the extend to which each factor influenced MHL in eating disorders (Higgins et al., 2021). As discussed throughout this review, studies varied in how the conceptualised and measured MHL, with studies lacking standardised measures (e.g. Sangiorgio et al., 20201; Varnado-Sullivan et al., 2020; Vaughn & Lowe, 2020) often without rigorous reliability or validity calculations. This highlights the need for a validated measure of eating disorder MHL and future research may benefit from exploring this.

Including solely vignette studies had the benefit of research contribution where experimental manipulation may not be ethical or possible (Evans et al., 2015) as well as reducing socially desirable responses and reducing confounding variables (Gould, 1996). While vignettes have been critiqued for potentially introducing a disconnect between participants' stated intentions in hypothetical scenarios and their real-world behaviours (Bradbury-Jones et al., 2014; Paddam et al., 2010), their fictional framing made them a useful and ethical approach for exploring the sensitive topic of eating difficulties in this review. However, the lack of RCT's meant the methodological quality of studies was rated as suboptimal (Guyatt et al., 2011). The GRADE assessment (Guyatt et al., 2011) revealed low certainty of findings for gender (e.g. Ellis et al., 2020; Griffiths et al., 2013), familiarity (e.g. Sangiorgio et al., 2020; Varnado-Sullivan et al., 2020) and BMI (e.g. Gratwick-Sarll et al., 2013) and very low certainty of findings for all other factors (e.g. vignette factors, severity and familiarity). This was also attributed to imprecision and inconsistency, as defined by GRADE criteria (Guyatt et al., 2011), due to low sample size, limited studies per factor (e.g. target age and ethnicity), as well as mixed directions of effect (e.g. target gender). These findings indicate the need for further research in this area to increase confidence in results.

2.4.4 Conclusion

In conclusion, this review suggests that several factors are associated with MHL in eating disorders within the university student population, including students' gender, severity of the eating disorder and the diagnosis. It is important for universities and clinicians to be aware of this to view lower levels of MHL as a barrier to accessing support and to target campaigns and interventions. Key issues emerged around limited studies in factors associated with eating disorder MHL and low certainty of findings, suggesting the need for further research in this area to increase confidence in results. Future research would also benefit on exploring a validated measure of eating disorder MHL to reduce heterogeneity and varied definitions across studies and allow for meta-analysis.

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Chapter 3 – Experiences of having a friend with eating difficulties at university: A qualitative empirical study

Abstract

Objective

University is a time when eating difficulties can develop or worsen and a time where students rely on friendships; however research is yet to understand friends' experiences of supporting their friend. The study aimed to explore experiences of having a friend with eating difficulties whilst at university.

Method

Semi-structured interviews were conducted with 16 friends of those with eating difficulties at university currently or in the past 10 years. Interviews were transcribed and reflexive thematic analysis was used to explore patterns across the data and identify key themes.

Results

Five key themes were developed with 11 subthemes: (1) Friends being the first to notice, (2) The weight of responsibility: The emotional and behavioural impact, (3) Supporting without guidance: Challenges and strengths (4) Encouraging help-seeking but facing barriers: Stigma and systemic struggles (5) Bridging the Gaps: The need for more training, resources and support.

Conclusions

Friends can be the first to notice and support with eating difficulties but often felt unprepared yet took on a high level of responsibility. Findings highlight need for more guidance for friends, enhancing university staffs' knowledge and additional support for individuals with difficulties and their friends whilst at university.

Highlights

- University students are particularly vulnerable to eating difficulties, and with friends taking on a more crucial role during this time, they can be the first to notice the early signs of difficulties becoming apparent or worsening.
- Friends can take on a high level of responsibility in supporting their friend at university but can often feel unsupported and unprepared.
- Universities and wellbeing services should acknowledge the emotional toll on friends and implement better support strategies, including raising awareness, training staff and improving access to resources.

3.1 Introduction

The transition to university usually occurs during emerging adulthood (18-29 years; Arnett, 2007), a period when eating disorders and subthreshold eating difficulties may develop or worsen (Harrer et al., 2020; Tavolacci et al., 2021). Increased participation in higher education and delayed independence has led to emerging adulthood being considered a distinct life stage, characterised by identity exploration, instability and uncertainty (Arnett, 2007; Arnett, 2010). Increased self-sufficiency during this period (Arnett, 2010), particularly in university students who move away from home, brings uncertainty and frequent changes in relationships and education (Arnett, 2014). These transitions can be exciting but also daunting and can contribute to mental health difficulties as emerging adults navigate increasing responsibilities whilst often not feeling “fully adult” (Arnett et al., 2014). These challenges are often overlooked (Arnett et al., 2014). During this period, weight-related habits and beliefs start to be explored (Nelson et al., 2008), particularly with novel experiences such as planning and preparing meals at university, increasing vulnerability to unhealthy eating habits (De-Mateo-Silleras et al., 2019; Navarro-Gonzalez et al., 2014). As described in social contagion theory, these attitudes and beliefs can become shared across different student groups (Dishion & Tipsord, 2011). Tavolacci et al. (2015) found loss of control over food quantity and students perceiving their bodies to be larger than they were, was present in 25% and 20% of students respectively, highlighting the level of vulnerability in the student population.

As students start to rely less on parental support, friends start to play a more important role (Ali et al., 2020; Harrer et al., 2020). During emerging adulthood, attachment functions shift from parents to friends, who become key sources of intimacy and can be referred to as “families of choice” (Donovan et al., 2003; Hojjat & Moyer, 2017; Markiewicz et al., 2006). Friendships help navigate adjustments to university life such as moving away from home and can act as a buffer for practical, emotional and social stressors commonly experienced (Falki & Khatoon, 2016; Takasaki, 2017). Social Identity Theory (Tajfel et al., 1979) suggests that group membership shapes self-concept and self-esteem (Tajfel et al., 1979; Terry et al., 1999), with support based on shared identity during university fostering acceptance, self-worth and stability (Branscombe et al., 1999; Jetten et al., 2015). This level of connectedness can create an overall sense of belonging and self-importance (Demir et al., 2011). Longitudinal research has shown that in students transitioning to university in the UK, identification with new friendship groups helped mitigate the negative impact of this change on their well-being (Iyer et al., 2009). However, there is limited research on the influence of friendships in eating disorders during this transitional stage. Friends during this period become sources of support to share emotional problems with (Collins & Madsen, 2006) and to seek advice (Demir et al., 2011). Attitudes and responses from friends during this time also become influential in the help-seeking process and the ultimate decision to reach out for support from mental health services (Rickwood et al., 2007; Vogel et al., 2007; Zimmer-Gembeck, 2016). Friends could therefore play a crucial role in helping or hindering the recovery process for friends with mental health difficulties (Linvelle et al., 2012).

Most of the current research focuses on carers and family members of individuals with eating difficulties. Research has indicated that parents of children under 18 are often the first to recognise signs of an eating disorder (Wilksch, 2023), however parents of young adults have described feelings of guilt and anger for not initially recognising symptoms (Coelho et al., 2021). This may, in part, reflect the shifting dynamics during emerging adulthood, where individuals begin to rely more on friends or “families of choice” for emotional support (Donovan et al., 2003; Hojjat & Moyer, 2017; Markiewicz et al., 2006). Carers of individuals with eating disorders have also reported high levels of emotional burden (Cribben et al., 2021; Martin et al., 2015), as well as feeling excluded from treatment as well as a lack of guidance or information on how to help their child (Mitrofan et al., 2019). These challenges are particularly prominent when their child is legally an adult and can often lead to feelings of helplessness and distress (Coelho et al., 2021; Cribben et al., 2020). While these studies provide valuable insights, they primarily focus on family members experiences and therefore overlook perspectives of others within an individual’s social networks such as peers.

Despite the crucial role of friends for improving wellbeing during university, research into experiences of supporting friends with eating difficulties is missing. While some studies explore the challenges of supporting peers, they appear to focus on other mental health difficulties, namely suicidal feelings and self-harm (Byrom, 2019; Migliorini et al., 2023). Byrom (2019) found that although social support can be a positive experience, students feel high levels of responsibility when supporting a friend with mental health difficulties, which is often overlooked by professionals. However, as the study included a broad range of mental health difficulties, the author highlighted the limited ability to conclude the impact in different types of mental health difficulties including eating disorders. A more recent study (Migliorini et al., 2023) found supporting a friend with mental health difficulties can bring up difficult feelings of guilt, helplessness and overwhelm and these feelings can be enhanced by lack of resources or unfamiliarity. The findings highlighted the need for professionals to gain further understanding of the needs of friends to better support the wider network as well as the individual. However, similarly this study primarily explored suicidal thoughts and behaviours with findings limited to this subgroup (Migliorini et al., 2023), recommending research in other contexts. To date, there does not appear to be any disorder-specific research into the experiences of supporting a friend with eating difficulties or an eating disorder. With the crucial role of friendships at university as well as a recent review (Alhaj et al., 2022) identifying rates of eating disorder symptomology at around 19.5%, it is therefore important to explore the impact on friends and friendships. The aim of the current study was therefore to explore friends’ experiences of having a friend with eating difficulties whilst at university.

3.2 Method

3.2.1 Design

The study was approved by the University of Southampton Ethics Committee (ERGO number 92181; Appendix F). A qualitative design was implemented using semi-structured interviews to explore friends' experiences of supporting their friend with eating difficulties in the context of university. A qualitative approach offered the opportunity to provide an in-depth insight into friends' experiences and their role in noticing signs and help-seeking, as well as the impact on themselves and their friendship.

3.2.2 Participants and recruitment

Participants were university students who had a friend with an eating difficulty. Participants were eligible for the study if: (a) they were currently supporting a friend with eating difficulties OR had a friend with eating difficulties at university in the last 10 years (b) they were 18 years and over (c) they spoke fluent English. Eating difficulties were defined by symptoms on the NHS website including trying to control weight by not eating enough food, overexercising, making themselves sick or taking laxatives after eating, having very strict habits around food, dramatic weight loss or gain due to food intake. Formal diagnosis, assessment or treatment was not required. There were no exclusion criteria for the type of eating difficulty to allow for a broad understanding of the phenomena.

A total of 16 female participants were recruited for the study aged between 19-30 (M=23.44, SD=3.67). The majority of participants identified as White British (69%). See Table 2 for further demographics.

Table 2

Participant Demographics (n=16)

Demographic	Response	Frequency	Percentage
Ethnicity	White	11	69%
	Asian	3	19%
	Black	1	6%
	Mixed	1	6%
Currently at university	Yes	10	63%
	No	6	38%
If no, year graduated	2016	1	17%
	2018	2	33%
	2019	1	17%
	2021	2	33%
Where they met friend	Uni	12	75%
	School	4	25%
Years known friend	Less than a year	1	6%
	1-2 years	4	25%
	3-4 years	2	13%
	5+ years	9	56%
Do/did they live with friend?	Yes	8	50%
	No	8	50%
Friend has an eating disorder diagnosis	Yes	11	69%
	No	3	19%
	Unsure	2	33%
Friend is currently receiving support for their difficulties	Yes	6	38%
	No, but they have in the past	9	56%
	Unsure	1	6%

Recruitment ended when it was felt within the research team that there was richness and complexity in participant answers that addressed the research aims (Braun & Clarke, 2019). Braun and Clarke (2019) argue that saturation is too structured to be consistent with reflexive thematic analysis and therefore diversity, methods of data collection, scope and constraints of the project were considered to determine information power (Malterud et al., 2016).

3.2.3 Materials

Interviews were semi-structured to create a balance between structure and flexibility, allowing research questions to be explored whilst providing opportunities for participants to explore other areas they deemed relevant to gain novel insights (Edwards & Holland, 2013). An interview guide (Appendix G) was developed based on the aims of the study. Three PPI contributors with personal experience of supporting a friend with eating difficulties were recruited through social media. Their feedback was used to refine questions and ensure they were appropriate and relevant for the target group. Interviews focused on experiences of supporting a friend with eating difficulties including the signs they noticed, the process of help-seeking for themselves and their friend and how their friends' eating difficulties affected themselves and their friendship. A screening questionnaire and demographics form was also developed (Appendix H).

3.2.4 Procedure

Recruitment took place between May and December 2024. Participants were recruited through the university psychology participant pool (SONA) and through displaying posters across the university. Study adverts (Appendix I) were also posted to social media platforms including Facebook, Twitter and LinkedIn. Participants were also recruited through snowball effect with initial participants being asked to share the study with their peers. A local eating disorder charity was also contacted and they agreed to share the study on their website.

Participants who agreed to take part were provided with an online information sheet (Appendix J) detailing what the study involved and an online consent form (Appendix K). Participants also completed an online survey collecting demographic details about themselves, information about their friends' eating difficulties as well as screening questions to identify their friends' eating behaviours. If screening questions indicated their friend displayed symptoms of eating disorders as defined by the NHS website, they were invited to attend an interview over Microsoft teams. Interviews lasted around 45-50 minutes and were video and audio recorded. Verbal consent for the interview and recording was reestablished at the start of the video in addition to prior completion of the online consent form.

Following the interview participants were sent a debrief form (Appendix L) which reiterated the aims of the study and provided information on support services and resources. Participants were awarded either a £25 Love2Shop voucher or participant pool credits if they were psychology students at the University of Southampton.

3.2.5 Analysis

Interviews were transcribed verbatim using Microsoft teams and auto transcriptions were reviewed for errors, anonymized and third-party information was removed (i.e., names and identifying places).

Data was analysed using inductive reflexive thematic analysis (Braun & Clarke, 2021) to explore patterns across the data. The approach provided guidance but allowed for flexibility due to this area not being researched prior and limited existing theories (Braun & Clarke, 2021; Salmon, 2013). Steps for thematic analysis outlined in Braun and Clarke (2006) were followed (Table 3).

Table 3

Steps for thematic analysis

Step	Description
Step 1. Familiarisation	Transcriptions were initially read through for familiarisation of data. Memos and ideas were kept throughout this stage.
Step 2. Generating initial codes	The data was re-read and codes were identified with quotes linking to each code. NVivo software was used to assist with coding.
Step 3. Searching for themes	Codes were then reviewed and themes developed from similar codes.
Step 4. Reviewing themes	Themes were then reviewed to ensure they were appropriate and relevant to the data set.
Step 5. Naming themes	To help shape the narrative, themes were then revised and named.

A critical realist ontological and contextualism epistemological position were held as the concept of truth was recognized but that this truth is shaped by context and how people interpret their experiences (Braun & Clarke, 2021). A reflective log was kept throughout the interview and coding process to consider how the researcher's positioning may have influenced data collection and interpretation. The primary researcher was a White British Female without lived experience of an eating disorder but had clinical experience and was also a student. This dual perspective, as both clinician and student, may have increased sensitivity to participants' frustrations, particularly around support systems, while also potentially biasing focus towards university responsibilities. Supervision and research team discussions helped mitigate personal influences during analysis.

3.3 Results

Five key themes and 11 subthemes were developed (Table 4; Appendix M).

Table 4

Identified themes and subthemes.

Themes	Subthemes
1. Friends being the first to notice	
2. The weight of responsibility: The emotional and behavioural impact	2a) The sense of responsibility 2b) How friends' difficulties impacted on their own thoughts and behaviours around food
3. Supporting without guidance: Challenges and Strengths	3a) Not knowing what to do to support their friend 3b) The importance of a supportive, non-judgemental approach 3c) Ultimately, the difficulties brought them closer together
4. Encouraging help-seeking but facing barriers: Stigma and systemic struggles.	4a) Holding different perceptions of the difficulties 4b) Stigma 4c) Barriers and strains within services
5. Bridging the gaps: The need for more training, resources and support	5a) University staff require more training 5b) The need for more resources for friends 5c) The university need to offer more support

3.3.1 Friends being the first to notice

Friends spoke about how they were often the first to notice signs of their friends eating difficulties developing or worsening, particularly housemates where they shared mealtimes, as it was difficult for their friend to hide their difficulties. Some participants spoke of how they were the first to recognise it was a problem.

"…Yeah, I was the first one that was worried and was like, actually I think some of these behaviours where she's avoiding social situations, she's lying to me about what she's eaten, that's telling me there's a bigger problem here" (PP15).

Some friends shared feeling anxious about bringing their concerns up with their friend, with some feeling this way currently, over worries about how this might be perceived “I get nervous then start rambling and end up switching topics” (PP11).

Although a few participants mentioned their friend’s family were aware, in most cases participants shared that friends would hide their difficulties or the severity of them from their parents. “I noticed that she sort of brushed it off to her family…she’d be like oh no, I’m fine” (PP4). In some cases, friends were asked to not say anything “She’d asked me not to tell them, which I found difficult because I did get to know her family” (PP5).

3.3.2 The weight of responsibility: The emotional and behavioural impact

Participants spoke about how their friends’ eating difficulties brought up difficult feelings, a sense of responsibility, as well as influencing of their own thoughts and feelings towards food. Friends shared speaking to other friends as a means of support.

3.3.2.1 The sense of responsibility

Most participants spoke about how they felt there was a level of responsibility in supporting their friend whilst at university. They spoke of the differences between school and university and feeling there wasn’t someone to turn to. “At school if you’re worried you tell a grown up but when you’re at uni, we are the grown-ups and that’s weird, who gave me permission to be a grown up?” (PP9). One participant went on to talk about how they felt the university didn’t take any responsibility:

> “ …but the uni, I got the impression they treated our friendship group as her watchers and we were responsible for her until she wanted to get help…they were kind of all like oh well you know, she’s not alone and you’re all keeping an eye on her…we kind of became indirectly responsible for her” (PP7).

Those who felt lesser responsibility shared having their own eating difficulties and the importance of holding boundaries. “Boundary setting, I think that really helped otherwise it could become really stressful and I could feel like I had lots of responsibility…We had to sort of check in with ourselves like is this triggering now?" (PP14). For some, this involved taking time away from the friendship or taking a step back. "We were very good at saying I need to take a step back now, it's too much for me" (PP9).

Friends shared the difficult feelings that came with the responsibility of supporting their friend including feeling "overwhelmed" (PP13) and "helpless" (PP9). "At the time, it's tiring…It's very hard to watch someone self-destruct like that" (PP15).

3.3.2.2. How their friends' difficulties impacted on their own thoughts and behaviours around food

Most participants reported that their friends eating behaviour affected their thoughts and relationship with food. Most did not feel this was problematic and felt it made them more conscious of leading a healthier lifestyle. "I'd make a bit more effort to take a packed lunch or get some fruit rather than chocolate, those sorts of changes" (PP3). However, some did share how their friend constantly checking calories made them more conscious of this and they still find themselves sometimes thinking about this now "I've never checked like calories in meals out before but I started doing that as well…I still sometimes do" (PP7).

For one participant, supporting their friend could sometimes be triggering for their own eating difficulties. "A little bit triggering for me…if she's eating a certain way and I'm eating very differently, there's a bit of guilt in what I'm doing but luckily that didn't get too bad" (PP15).

A couple of participants, however, did report that their friends eating behaviours did not impact on their thoughts or behaviours at all, with one stating their "habits never got to my head" (PP1).

Participants spoke about how they sought support from other friends and housemates to manage difficult feelings. "My friends experienced it with me so…we got support from each other" (PP7). One friend went on to describe how they did not seek any professional support as they did not feel like it was their problem to seek help for. "I wouldn't have known who I could go to because I saw it as her mental health challenges" (PP15)

3.3.3 Supporting without guidance: Challenges and strengths

Participants spoke of the difficulties that arose with not feeling they had much support or guidance on how to help their friend. However, they felt that taking a supportive and non-judgemental approach helped to bring them closer to their friend.

3.3.3.1 Not knowing what to do to support their friend

Most participants shared not being sure how to best support their friend with there being a lack of guidance on what to do or where to go. Some described learning about eating difficulties but not ever being "taught how to support them (PP4)." Participants shared fears around approaching conversations, particularly where it was their first experience of supporting a friend with eating difficulties. "I didn't want her to be uncomfortable by me bringing it up…it's a very difficult thing to bring up to someone" (PP2).

Friends spoke about difficulty finding balance and wanting to help their friend but not wanting to trigger their friend or push them away. "It's like I've got the power to sort of help her but then there is a lot of strain on what I'm doing because I'm trying to make sure I'm not doing anything to trigger her" (PP6).

3.3.3.2 The importance of a supportive, non-judgemental approach

A majority were able to share what they felt may have been helpful including "having open conversations (PP14)," being "supportive (PP8)" and "non-judgemental (PP6)," checking in with their friends, offering help and support and recognising what they need in the moment. "I offered to take on some of her responsibilities around food in the house in terms of doing her online shop or the cooking for everybody if she felt that was too much know she found that helpful" (PP5).

Those with their own experiences of mental health or eating difficulties felt sharing resources they had learnt in the past was valuable. "I've had CBT in the past but that actually really helps me to be able to support her and be like I've learned this, let's see how it works for you" (PP10).

3.3.3.3 Ultimately, the difficulties brought them closer together

Most participants described how their friend sharing their eating difficulties and being at university brought them closer together. “I definitely think it made us closer. Being at uni, being so far away from home and our parents and support network, you have to come up with a new one” (PP10). Those who had not known their friend for long, spoke of how it made them “close really quickly” (PP16).

For those with their own mental health difficulties, the experience brought a sense of connection. “It made us closer in a healthy way because we could be honest with each other and she could speak to me in a way I think she struggled with other people” (PP5). These friends felt a “shared experience (PP9)” and were “able to empathise more” (PP9).

3.3.4 Encouraging help-seeking but facing barriers: Stigma and systemic struggles

Participants spoke of their role in supporting their friend to seek help through having open and encouraging conversations. Participants described how someone else highlighting their concern gave them permission to open up to professionals about their eating difficulties but were often faced with barriers.

3.3.4.1 Holding different perceptions of the difficulties

Friends noticed they held different perceptions of the problem to their friend, including their friend not feeling they had eating difficulties or not being aware of the severity of the problem. “She felt she was very overweight…she was very unhealthy and that really wasn’t the case” (PP3). Friends described this being a barrier to accessing support.

“…It is a barrier…in their opinion it’s not serious enough…they wouldn’t categorize themselves as someone who has an eating disorder but they definitely do have difficulties…to them it’s relatively normal, whereas when I see them I’m like what? What are you doing?” (PP8).

3.3.4.2 Stigma

Stigma appeared to be another barrier with participants describing their friend feeling it was “taboo to have those discussions (PP2)” around their eating difficulties. One friend reflected on cultural stigma, sharing that eating disorders were not as accepted or understood within their cultural context and felt “if we did unpick the stigma, I think she’d be more willing to go and seek support or maybe speak to others (PP11).” Stigma also extended to views held by the university around eating difficulties with a couple of participants speaking about fitness to study and how their friends found it difficult to come forward over fears of the implications of this. “The uni are quite keen where there’s any risk to jump on fitness to study…and so it’s like such a big barrier to actually ask for support because they have so much power to kick you out if they decide to” (PP9).

3.3.4.3 Barriers and strains within services

Sources of support at the university often required the person to “call up for help” (PP11) and participants felt their friends would not “seek those types of support” (PP11). They described services as being more reactive rather than proactive with limited outreach. “It was more like we’re just here…come to us if you need us…rather than sort of reaching out and actively trying to get people to engage if they need support” (PP3).

Participants added that they felt that as much as they could encourage their friend to seek help, they felt bad to suggest seeking support when they were aware of lack of resources and gaps in services.

“I feel like kind of a very classic thing…tell them to reach out for support…that can be frustrating when you know that services are just awful…if you’re outside the remit of uni but you’re not yet unwell enough for mental health services on the NHS you’re just in that limbo gap” (PP9).

3.3.5 Bridging the Gaps: The need for more training, resources and support

Participants identified ways to address gaps in support including more specific resources for friends and the university offering more support for themselves and their friend. Participants highlighted a need for more staff training with friends reporting staff often lacked awareness and could not spot signs.

3.3.5.1 University staff require more training

Some participants felt staff should have noticed the signs and staff would benefit from training. “Raising awareness so that staff know how to spot the signs and how to actually approach individuals that they potentially feel are really struggling” (PP3). They felt staff should be more prepared and be aware of the options when someone comes forward. “Training around eating disorders but also training around risk management and knowing other options rather than just saying go speak to your GP” (PP9).

3.3.5.2 The need for more resources for friends

Participants described most resources being “targeted at the person themselves” (PP11) or “family members” (PP12) and not much available for “what to do if you are a friend of a person” (PP11). Where information was available, the helpfulness of it appeared to be mixed, but friends felt there should be “something out there for supporting the supporters around what you can say and what you shouldn’t say” (PP12). Participants also spoke about how other people in the same position sharing “first hand experiences” (PP9) would be helpful.

3.3.5.3 The university need to offer more support

Participants felt when their friend did reach out for support at university, they felt it was not enough. “It was months [wait], and they couldn’t really offer anything specialist and it was only like six sessions…it wasn’t that helpful…they just didn’t know how to support with anything like that” (PP5). They felt that the university should be offering more support for people with eating disorders “rather than just being focused on academic stress” (PP3).

Participants felt a way to share concerns would be beneficial to alleviate some of the responsibility they held. “A way of contacting the university to say I’m concerned about a friend or a housemate…obviously they could never share information but as a friend a way that you could report because I don’t remember that being possible” (PP5). Participants also highlighted that support for themselves is needed. “If you do have a friend, what should you do and how to get help and how to get help for yourself because it can be quite difficult on yourself” (PP10).

Further suggestions from participants included “informal support groups” (PP5) for both their friends and themselves. However, a couple of participants added that treatment for eating disorders may be out of the university’s remit. “The support she need is quite a high level and not something that would be appropriate for university to offer unless her physical health needs were monitored.” (PP14). However, the university could still support more with certain areas such as “flexibility with attendance…as education can be really valuable to someone” (PP14).

3. 4 Discussion

This study explored the experience of supporting a friend with eating difficulties at university, identifying five key themes around being the first to notice, the weight of responsibility, supporting without guidance, encouraging help-seeking but facing barriers and bridging the gaps.

Findings highlighted that friends are often the first to notice the signs of eating difficulties. This makes sense given that friends, particularly housemates, spend a lot of time together, especially around mealtimes (Ali et al., 2020; Harrer et al., 2020), where struggles may become apparent and strain relationships (Fox et al., 2017). With most students navigating emerging adulthood and living away from home (Byrom, 2019), friends become a primary support network (Markiewicz et al., 2006; Hojjat & Moyer, 2017). Consequently, students are more likely to be open with and confide in trusted friends than mental health professionals (Bilello et al., 2024; Rickwood et al., 2007). This study is the first to explore friends’ experiences specifically within eating disorders, contributing new insights to the literature.

Research on supporting friends with general mental health conditions suggests that friends feel the need to “step up” and take on significant responsibilities but often feel unprepared and burdened due to lack of resources or suitable support (Bilello et al., 2024; Byrom, 2019; Migliorini et al., 2023). The present study echoed these concerns, with friends describing how the responsibility lay solely on them with little support from universities or family. These findings are also supported by the developmental theory of emerging adulthood through highlighting challenges faced during the “in-between” stage of adolescence and young adulthood, where emerging adults are navigating moving away from home, becoming more self-sufficient and holding increased responsibilities whilst not yet having reached adulthood (Arnett 2010; Arnett, 2014). Friends highlighted this realisation which was heightened through not knowing what to do and describing needing more support. This absence of guidance and lack of direction echoes findings from studies on carers of individuals with eating difficulties (Mitrofan et al., 2019) and peers supporting friends with mental health difficulties more broadly (Migliorini et al., 2023). However some participants, particularly those with lived experience of eating difficulties, felt they were able to take a step back. These participants described holding boundaries in order to protect their own wellbeing. Future research could explore how lived experience shapes the support role and strategies for managing potential triggers.

Despite the challenges described with supporting a friend experiencing eating difficulties, many participants shared how their friendship strengthened as a result of the experience. This sense of deepened connection reflects the concept of friends as "families of choice" during emerging adulthood, a period where peer relationships often become central sources of emotional support and identity formation (Donovan et al., 2003; Hojat & Moyer, 2017; Markiewicz et al., 2006). Friends reflected on how they felt they were the main source of supports to confide in and seek advice from (Demir et al., 2011), consistent with broader mental health literature suggesting students are most likely to turn to friends rather than professionals (Bilello et al., 2004; Rickwood et al., 2007). These findings highlight the importance of universities and support services acknowledging and engaging with friends, recognising their central role in students' support network and ensuring they have access to guidance and resources.

The barriers to help-seeking found in this study mirror those identified in general mental health research (Garcia-Williams & McGee, 2016), with feelings of stigma and stigma from universities being a significant factor (Broglia et al., 2021; Eisenberg et al., 2009). Unique barriers specific to eating difficulties, such as lack of insight and symptom recognition, were highlighted in the study. Research suggests that individuals with eating difficulties often struggle to identify their behaviours as problematic, which can delay the help seeking process (Gale et el., 2006; Gratwick-Sarll et al., 2013; Gratwick-Sarll et al., 2013). Given the critical role of early intervention, raising awareness and improving MHL within university communities is essential (Gagnon et al., 2017).

Friends reported that their own thoughts and feelings around food could become affected by supporting their friend. This aligns with social contagion theory, which proposes that attitudes and beliefs can become shared within peer groups (Dishion & Tipsord, 2011). In the context of eating behaviours, this process may contribute to increased disordered patterns across social networks, as peer groups can be at elevated risk of adopting similar maladaptive behaviours and beliefs (Becker et al., 2018; Dishion & Tipsord, 2011). However, friends did not perceive these changes as reaching a problematic level but rather becoming more aware of their own eating habits and reflecting on their lifestyle.

3.4.1 Clinical Implications

Despite their central role, friends are often overlooked by universities and professionals working with students with mental health difficulties (Byrom, 2019). Participants in this study highlighted the need for better signposting, self-help materials, resources and peer support groups. Future research should explore how these strategies could be effectively implemented with input from those with lived experience. Findings also align with broader research on university mental health which calls for clearer referral procedures, increased awareness-raising of support services and improved outreach (Piper & Emmanuel, 2019; Priestley et al., 2022). Clinical psychologists could also collaborate with counselling services to offer specialist assessments, intervention or support groups.

However, the extent of the university's responsibility in managing student mental health remains debated (Cage et al., 2021). Some participants questioned whether universities should be responsible for treating eating disorders, given the medical complexities, such as physical health monitoring. However, these participants did acknowledge staying in academia was important to their friend and the university could provide more flexibility with attendance policies. Under the Equality Act (2010), universities are required to make reasonable adjustments for students with mental health difficulties, including eating disorders. Implementing flexible options with learning, attendance, and extensions could foster a more inclusive learning environment, reducing distress and encouraging help-seeking (Brown & Leigh, 2018; Grimes et al., 2017).

Participants expressed a desire for university staff to receive more training in noticing signs of eating difficulties, hoping this may alleviate some of the responsibility they felt in supporting friends. While this reflects a valid concern, staff often oversee large cohorts and have limited contact with individual students and may not be in a position to notice subtle or early signs. However, this highlights a broader need to support students in managing the developmental demands of emerging adulthood, including balancing independence, responsibilities and complex social roles. Fostering students' ability to manage these challenges through psychoeducation and building skills may offer a more feasible and sustainable approach, and future research could explore how best to support this development.

3.4.2 Limitations

While the study included some participants from diverse ethnic backgrounds, cultural factors potentially influencing stigma and parental attitudes were not explored. In addition, there was no demographic information on the cultural identity of individual with eating difficulties. One participant shared how she felt cultural stigma did influence her friend's ability to share information with parents and others around her, as eating disorders were not as widely understood or accepted within their culture. Future research should therefore examine how friends' experiences may vary across cultural contexts. Additionally, the study was only able to recruit female participants, reflecting the broader underrepresentation of males in eating disorder research (Bullivant et al., 2020; Murray et al., 2017). Existing research suggests gender differences in eating disorder literacy, with females being more likely to recognise symptoms (Armstrong & Young, 2015; Schoen et al., 2019). Future studies should seek perspectives from other genders to explore whether noticing signs, help-seeking and support differ. Additionally, as a female researcher, my identity may have influenced the lack of male participants, potentially affecting recruitment and how comfortable male students may have felt in sharing their experiences. Another potential limitation was the inclusion of participants recalling experiences from up to 10 years ago, as university support systems are likely to have changed, particularly following COVID-19. Although current students were included, these changes may not be fully reflected.

3.4.3 Conclusion

Despite the high prevalence of eating difficulties at university and the important role of friendship during this period, this is the first qualitative study to explore friends' experiences in this context. Findings suggest that friends can be the first to notice signs, feel a sense of responsibility and encourage help-seeking but face barriers. Universities and wellbeing services should acknowledge the emotional toll on friends and implement better support strategies, including raising awareness, improving access to resources and supporting students through the developmental stage of emerging adulthood. Future research should explore how these strategies can be effectively implemented, ensuring they are tailored to the unique challenges of eating difficulties.

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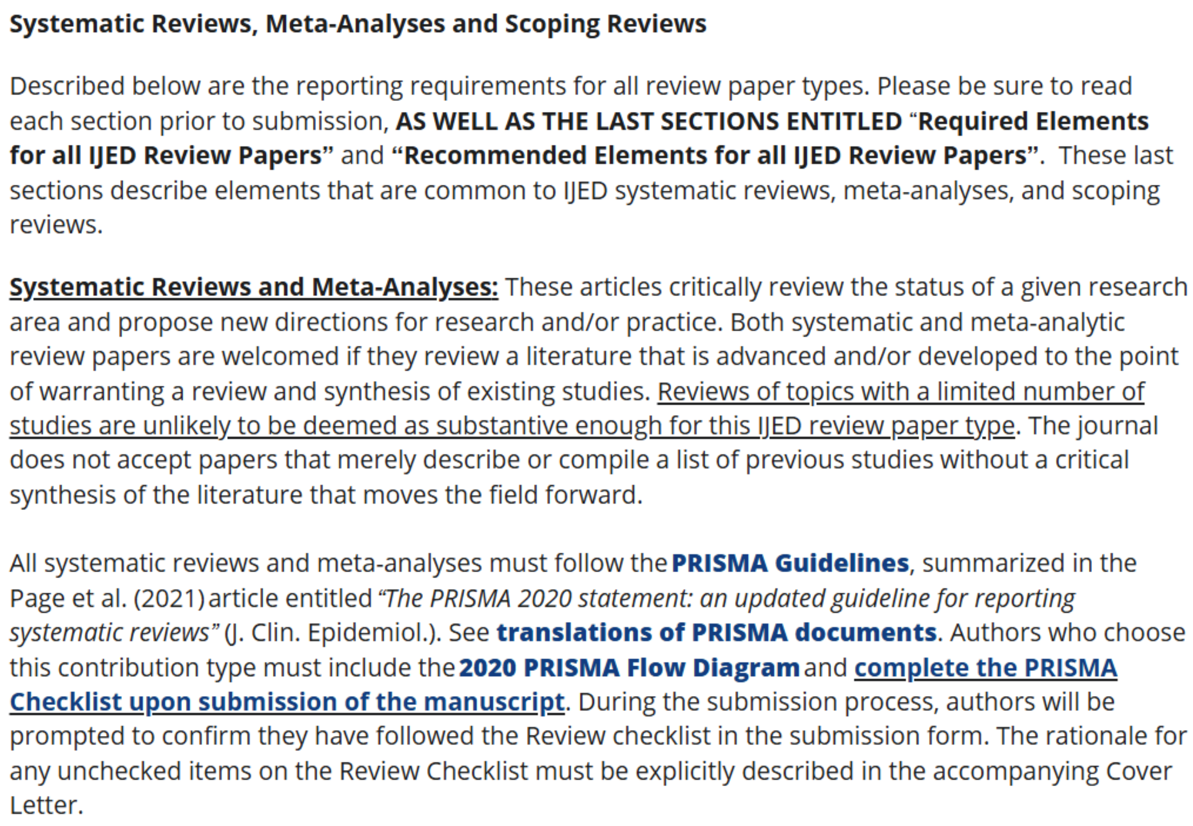
Appendix A International Journal of Eating Disorders journal guidelines

		Word Limit	Abstract	Other Recommendations
Review	Systematic Reviews, Meta-Analyses, and Scoping Reviews	7,500	Structured 250 words	Key Points/Summary (2-4 bullet points reflecting the key points of the study)



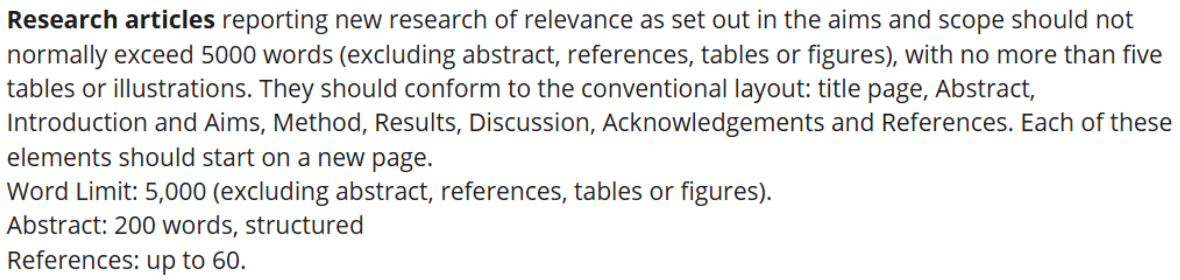
Systematic Reviews, Meta-Analyses and Scoping Reviews

Described below are the reporting requirements for all review paper types. Please be sure to read each section prior to submission, **AS WELL AS THE LAST SECTIONS ENTITLED** "**Required Elements for all IJED Review Papers"** and **"Recommended Elements for all IJED Review Papers"**. These last sections describe elements that are common to IJED systematic reviews, meta-analyses, and scoping reviews.

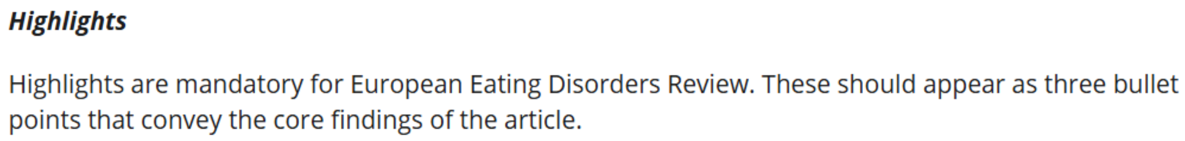
Systematic Reviews and Meta-Analyses: These articles critically review the status of a given research area and propose new directions for research and/or practice. Both systematic and meta-analytic review papers are welcomed if they review a literature that is advanced and/or developed to the point of warranting a review and synthesis of existing studies. Reviews of topics with a limited number of studies are unlikely to be deemed as substantive enough for this IJED review paper type. The journal does not accept papers that merely describe or compile a list of previous studies without a critical synthesis of the literature that moves the field forward.

All systematic reviews and meta-analyses must follow the **PRISMA Guidelines**, summarized in the Page et al. (2021) article entitled *"The PRISMA 2020 statement: an updated guideline for reporting systematic reviews"* (J. Clin. Epidemiol.). See **translations of PRISMA documents**. Authors who choose this contribution type must include the **2020 PRISMA Flow Diagram** and **complete the PRISMA Checklist upon submission of the manuscript**. During the submission process, authors will be prompted to confirm they have followed the Review checklist in the submission form. The rationale for any unchecked items on the Review Checklist must be explicitly described in the accompanying Cover Letter.

Appendix B European Eating Disorder Review journal guidelines



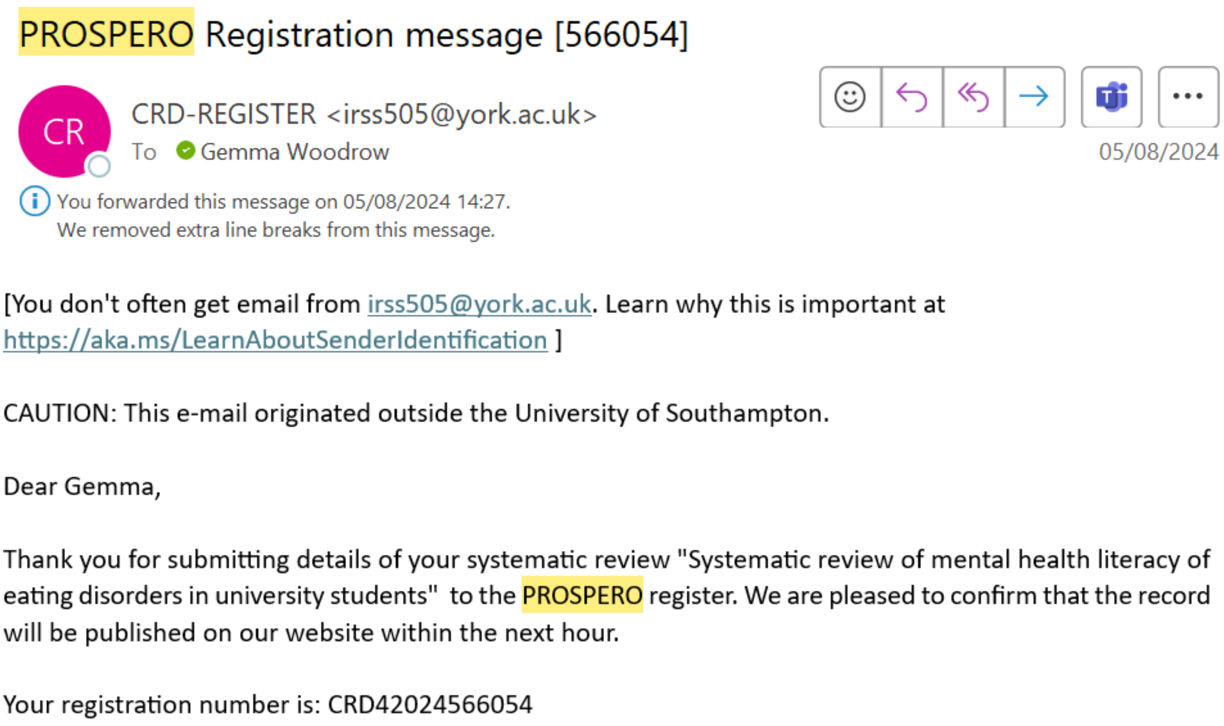
Research articles reporting new research of relevance as set out in the aims and scope should not normally exceed 5000 words (excluding abstract, references, tables or figures), with no more than five tables or illustrations. They should conform to the conventional layout: title page, Abstract, Introduction and Aims, Method, Results, Discussion, Acknowledgements and References. Each of these elements should start on a new page.
Word Limit: 5,000 (excluding abstract, references, tables or figures).
Abstract: 200 words, structured
References: up to 60.



Highlights

Highlights are mandatory for European Eating Disorders Review. These should appear as three bullet points that convey the core findings of the article.

Appendix C Prospero confirmation email



PROSPERO Registration message [566054]

CR

CRD-REGISTER <irss505@york.ac.uk>

To Gemma Woodrow

05/08/2024

You forwarded this message on 05/08/2024 14:27.
We removed extra line breaks from this message.

[You don't often get email from irss505@york.ac.uk. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

CAUTION: This e-mail originated outside the University of Southampton.

Dear Gemma,

Thank you for submitting details of your systematic review "Systematic review of mental health literacy of eating disorders in university students" to the PROSPERO register. We are pleased to confirm that the record will be published on our website within the next hour.

Your registration number is: CRD42024566054

Appendix D PRISMA checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 49
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 49
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 50-53
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 53
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 53-54
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 54
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Page 54-55
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 55
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 55
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 55
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 55, 58-63
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 55-56
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Page 56
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 56
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	N/A
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 56

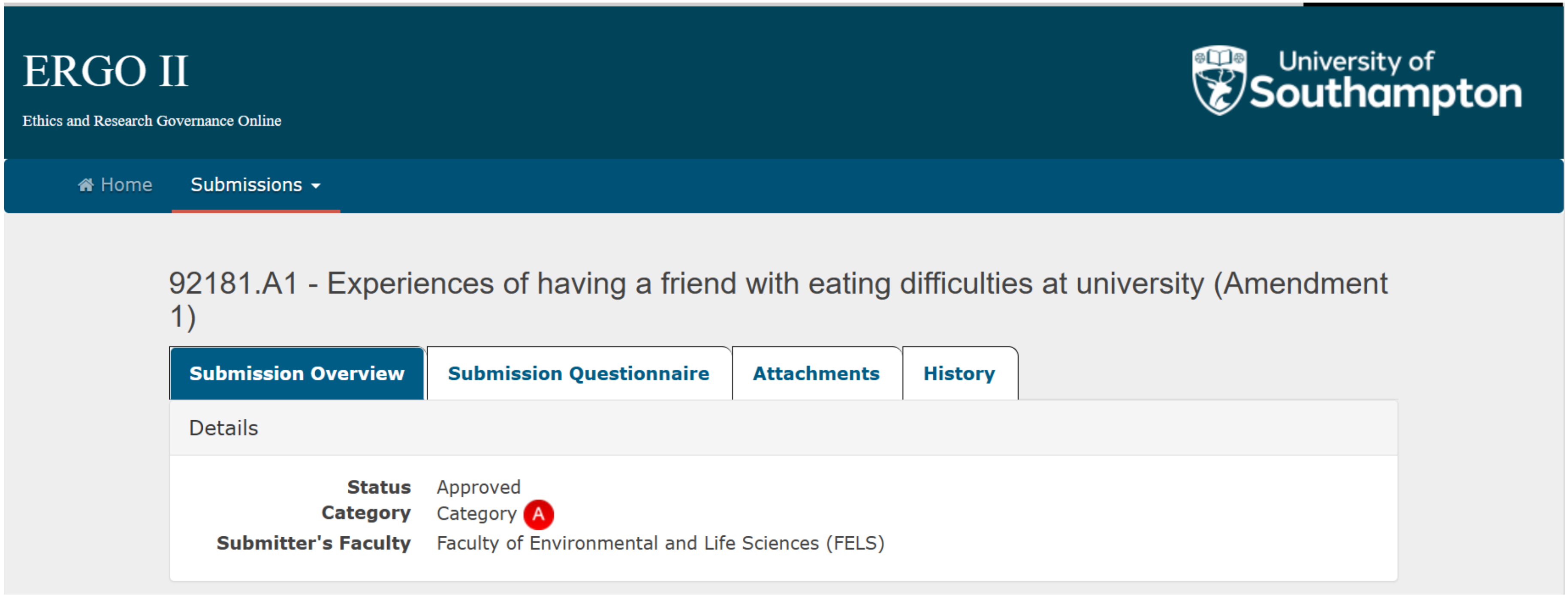
Section and Topic	Item #	Checklist item	Location where item is reported
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 56
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 56
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Page 56
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 56
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 56
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Page 56-57
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	Page 58-67
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Page 68, 110
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Page 68-73
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Page 73
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Page 68-73
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Page 67
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Page 73
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 73
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Page 73
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Page 73-78
	23b	Discuss any limitations of the evidence included in the review.	Page 79-80
	23c	Discuss any limitations of the review processes used.	Page 79-80
	23d	Discuss implications of the results for practice, policy, and future research.	Page 78-79

Section and Topic	**Item #**	**Checklist item**	**Location where item is reported**
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 53
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 53
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	N/A
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	N/A
Competing interests	26	Declare any competing interests of review authors.	N/A
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	N/A

Appendix E Quality Assessment

Author	1. Objective	2. Design	3. Subject Selection	4. Subject characteristics	5.Random Allocation	6. Blinding investigators	7. Blinding subjects	8. Outcomes	9. Sample size	10. Analysis	11. Estimate of variance	12. Confounding	13. Results	14. Conclusion	Total Score
Sebastian et al. (2017)	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Ellis et al. (2020)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Gratwick-Sarll. (2013)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	100
Yan (2017)	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
Sebastian and Richards (2017)	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	96
Varnado-Sullivan (2020)	Yes	Yes	Yes	Partial	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	96
Murakami (2016)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Partial	Yes	Yes	Yes	N/A	Yes	Yes	95
Griffiths et al. (2013)	Yes	Yes	N/A	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Partial	Yes	Yes	95
Vaughn and Lowe (2020)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Partial	95
Sala et al. (2013)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Partial	Yes	Yes	95
White (2016)	Yes	Yes	Partial	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	95
Schoen et al. (2018)	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	92
Sangiorgio et al. (2020)	Yes	Partial	Partial	Yes	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Partial	86
Geerling and Saunders (2015)	Yes	Yes	Partial	Partial	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Partial	Yes	Yes	86

Appendix F Ethical Approval



92181.A1 - Experiences of having a friend with eating difficulties at university (Amendment 1)

Details

Status Approved
Category Category A
Submitter's Faculty Faculty of Environmental and Life Sciences (FELS)

Appendix G Interview guide

Project title: Experiences of having a friend with eating difficulties at university.

Researcher: Gemma Woodrow

Supervisors: Dr Katy Sivyer, Dr Kate Willoughby

Version and Date: 2, 17.04.24

ERGO number: 92181

"Thank you for agreeing to take part in the study today. The aim of today's interview is to learn more about your experiences of supporting a friend with eating difficulties. Everything you say today will be kept confidential. If at any time you want to stop the interview you can and you don't have to answer any questions you don't feel comfortable to. Please could you avoid using the names of other people as you recollect your personal relationship experiences for their privacy and confidentiality. For the purpose of the recording I will ask again that you are happy to proceed with the interview. Do you have any questions before we start?"

Switch on recording

Are you still happy to go ahead with the interview today?

Topic Guide

1) Could you tell me a bit about your friend with eating difficulties and what your friendship with them is/was like?

-Where did you meet?

-How do you know them?

-What were they like?

-What sorts of things did you do together?

2) What were the first signs of any eating difficulties that you noticed in your friend?

-Was there a specific moment that you noticed?

-How much understanding do/did you have of the signs in eating disorders?

-Was there anything you noticed in them that you didn't understand?

-How did you respond when you noticed these signs?

-If you didn't notice signs, what was it like if they told you?

3) How did your friend find managing life at university? *-How did they find mealtimes and cooking for themselves?*

-How did it impact their attendance at university?

-How did it impact on their social life/going out for meals with people at university?

4) How did you find the difficulties impacted on your friendship with them?

-Was there anything within your friendship that you feel helped or hindered their difficulties or recovery?

5) How did noticing the signs in them change your behaviours or eating behaviours?

6) If they sought help, how did you find the process of help-seeking for your friend?

-How much awareness did you have prior to their difficulties of places to go for support?

-What were the barriers that you or your friend faced?

-If you or them didn't seek help, why not?

7) How did you find the support offered at the university?

-Do/Did you feel the university have/had much awareness of eating disorders?

-What support was available/did the university offer?

8) Was there anything you feel you did to support your friend?

-How do you feel your friend perceived this?

9) Are there any forms of support or resources you feel would enable/would have enabled you to better support your friend?

-Is there anything you feel the university could have done or could do differently?

10) Is there anything else you would like to add?

Appendix H Screening and Demographics Questionnaire

Study title: Experiences of having a friend with eating difficulties at university.

Researcher: Gemma Woodrow

Supervisors: Dr Katy Sivyer, Dr Kate Willoughby

Version and date: V2, 22.03.24

ERGO number: 92181

Demographics form

Please answer the following questions about yourself:

Age

____

Gender

- ○ Male
- ○ Female
- ○ Transgender
- ○ Non-binary
- ○ Other
- ○ Do not wish to say

Ethnicity

- ○ Asian or Asian British
- ○ Black, Black British, Caribbean or African
- ○ Mixed or multiple ethnic groups
- ○ White
- ○ Other
- ○ Do not wish to say

Are you currently at university?

- ○ Yes
- ○ No

If no, when did you graduate?

_____

Please answer the following questions in relation to your friend with eating difficulties:

Did you meet your friend at university?

- ○ Yes
- ○ No

If no, where did you meet your friend

____ [open answer]

How long have you known your friend?

- ○ Less than 1 year
- ○ 1-2 years
- ○ 3-4 years
- ○ 5+ years

Did you live with your friend at university?

- ○ Yes
- ○ No

Has your friend had a diagnosis of an eating disorder?

- ○ Yes, they currently have one
- ○ Yes, they have had one in the past
- ○ No
- ○ Unsure

Has your friend accessed support for their eating difficulties?

- ○ Yes, they are currently accessing support
- ○ Yes, they have accessed support in the past
- ○ No
- ○ Unsure

Are there any further details you would like to provide?

____

____

Please could you include your email to arrange an interview to ask further questions about your experiences:

Email:

Screening Questions

Please answer the following questions in relation to eating behaviours you noticed in your friend:

1. Constantly restricting the amount of food that they eat.	Yes	No	Unsure
2. Linking the amount of exercise that they do to how much food they have eaten.	Yes	No	Unsure
3. Putting lots of effort into their body image.	Yes	No	Unsure
4. Going on a diet.	Yes	No	Unsure
5. Having ‘cheat’ days where they eat lots of unhealthy food.	Yes	No	Unsure
6. Avoiding food related activities with others, like going for lunch with friends.	Yes	No	Unsure
7. Being a ‘picky’ eater (not liking many different types of food).	Yes	No	Unsure
8. Exercising regularly.	Yes	No	Unsure
9. Going straight to the toilet after eating.	Yes	No	Unsure
10. Giving/throwing away all of their food.	Yes	No	Unsure
11. Being overweight for their age.	Yes	No	Unsure
12. Becoming vegetarian or vegan as a result of certain beliefs about eating animal products.	Yes	No	Unsure
13. Very sensitive to comments about their body.	Yes	No	Unsure
14. Unable to control the amount of food they eat.	Yes	No	Unsure
15. Thinking they are more overweight than they actually are.	Yes	No	Unsure
16. Always eating healthy food.	Yes	No	Unsure
17. Regularly exercising till they are exhausted	Yes	No	Unsure
18. Having an unhealthy diet.	Yes	No	Unsure
19. Using laxatives after eating (used for constipation to loosen stools or increase bowel movements).	Yes	No	Unsure
20. Being sick after eating on a regular basis.	Yes	No	Unsure

Appendix I Recruitment Advert

Do you have a friend who has or had eating difficulties whilst at University?

University of Southampton

This study has been approved by the University of Southampton Research Ethics Committee (ERGO number): 92181
Study end date: April 2025

What does it involve?

You will be asked to complete a survey about yourself and your friends eating behaviours

You may then be invited to 50 minute interview over Microsoft Teams

The interview will ask questions about your experiences of supporting your friend

You can help if you:

Are aged 18 or over

Speak fluent English

Are currently supporting a friend with signs of eating difficulties at University

OR

Have supported a friend with signs of eating difficulties whilst at Univeristy within the last 10 years

Signs might include:

- Limiting what they eat
- Overeating
- Following certain rules around eating or exercise

Why participate?

Provided you meet criteria and attend the interview you will receive a £25 Love2Shop voucher

Southampton University psychology students can earn up to 11 credits through SONA

You will be contributing to knowledge in this area which could help support offered

To find out more please follow this link https://southampton.qualtrics.com/jfe/form/SV_a5FQ1r7ho1ljoge
scan the QR code:

If you have any questions, please contact
Gemma Woodrow
(Trainee Clinical Psychologist)
gw5n22esoton.ac.uk

Appendix J Information sheet

Participant Information Sheet

Study Title: Experiences of having a friend with eating difficulties at university

Researcher: Gemma Woodrow

Supervisors: Dr Katy Sivyer Dr Kate Willougby

Version and Date: V5 03.05.24

ERGO number: 92181

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. You may like to discuss it with others but it is up to you to decide whether or not to take part. If you are happy to participate you will be asked to consent to taking part through tick box statements on an online consent form.

What is the research about?

My name is Gemma and I am a Trainee Clinical Psychologist at the University of Southampton. My supervisors are Dr Katy Sivyer and Dr Kate Willoughby, who are Psychologists, working at the University of Southampton. The research is being undertaken as a thesis project as part of completion of the Doctorate of Clinical Psychology (DclinPsy). The study has been reviewed and approved by the University of Southampton Ethics Committee.

The aim of the research is to explore individuals' experiences of spotting the signs and supporting a friend with eating difficulties whilst at university. The study will also explore the impact of supporting a friend on individuals and their friendship as well as experiences of help-seeking. The research will hope to add to existing support for friends and provide further insight into how adults within education handle and interpret stress related to helping their friend. It will also provide an insight into the help-seeking process within universities and any resources or forms of support friends would find beneficial.

Why have I been asked to participate?

You have been asked to participate in this study as you are 18+ and you are currently supporting a friend with eating difficulties at university or you have supported a friend with eating difficulties whilst at university within the last 10 years. Signs of eating difficulties you might have noticed in your friend may include limiting what they eat, overeating or following certain rules around eating or exercise.

What will happen to me if I take part?

If you agree to take part in the study, you will be shown a series of online consent statements with tick boxes to confirm you consent to taking part. You will be asked to complete an online survey. The survey will collect demographic details and ask questions about your friends eating behaviours.

You may then be invited to an interview. We are looking to recruit those with friends who displayed symptoms of an eating disorder and we are also hoping to recruit a diverse range of experiences and therefore we may not interview everyone who has completed the survey. Interviews for the study are due to be completed by April 2025 at the latest. The interview will be with myself and will last around 45-50 minutes. The interview will take place virtually over Microsoft teams please ensure you are in a private and confidential space

The interview will ask questions around your experience of supporting a friend with eating difficulties, any signs you noticed, the process of help-seeking for yourself and your friend and how it affected you and your friendship with them. You do not need to answer any questions you do not feel comfortable with and you will also be given the opportunity to share anything else you would like to.

Interviews will be video and audio recorded over Microsoft teams. The recording of the interview will be used for written transcription and to look for any common themes among answers across all participants. Recordings will be required for participation and the consent form will require you to agree to this.

You will be given a debrief form at the end of the interview which will contain information on support services, further reading and who to contact for any concerns or questions.

Are there any benefits in my taking part?

The research will help develop our understanding of support for friends and provide further insight into how adults within education handle and interpret any stress related to helping their friend. It will also provide an insight into the help-seeking process within universities and any resources or forms of support friends would find beneficial.

If you meet criteria and attend the interview, you will receive a £25 love2shopvoucher. If you are a psychology student at the University of Southampton, you will be given 1 credit for completion of the survey and the option of either a further 10 credits or a £25 love2shop voucher if you are then invited to and complete the interview.

Are there any risks involved?

Some of the questions asked within the interview may cause a level of psychological discomfort or distress as they are exploring potentially sensitive and personal issues around eating disorders.

If you become distressed, you will be free to stop the interview and/or participation in the study. The following support services are also available to access at any point before, during or after the study:

Beat:

www.beateatingdisorders.org.uk

Helpline: 0808 801 0677 (7 days a week 3pm-8pm)

www.beateatingdisorders.org.uk/resource-index-page/guide-for-friends-family/

Mind:

Helpline: 0208 215 2243 (Monday-Friday 9-5)

supporterrelations@mind.org.uk

Samaritans: 116 123

Your GP

University Wellbeing

If you are a student at the University of Southampton, you can also access the wellbeing service:

www.southampton.ac.uk/edusupport/mental_health_and_wellbeing/

Student hub: 023 80599 599

What data will be collected?

We will collect demographic data and data from the online survey about your friends' eating behaviours as well as answers to interview questions. All data will be kept safe and secure, data will be anonymised with all personally identifiable data removed. Codes or pseudonyms will be used instead of names in the study write up. All data and write up will be kept on the University network and only accessed by the named researchers on password encrypted laptops. Two copies of the data will be kept on encrypted devices and network drives. Data will be stored for 10 years before being securely destroyed. Audio and video data will be deleted after transcription.

Will my participation be confidential?

Your participation and the information we collect about you during the course of the research will be kept strictly confidential. Only members of the research team and responsible members of the University of Southampton may be given access to data about you for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your data. All of these people have a duty to keep your information, as a research participant, strictly confidential.

Do I have to take part?

No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to sign a consent form to show you have agreed to take part.

What happens if I change my mind?

You have the right to change your mind and withdraw from the study without giving a reason and without your participant rights being affected.

If you wish to withdraw, you can contact myself, Gemma Woodrow, the researcher or my supervisors, Dr Katy Sivyer and Dr Kate Willoughby. Once the interview is complete you will have **7 days** to withdraw from the study as after this point the interview will have been transcribed and anonymised which means we will not be able to identify your data to remove it from the study.

What will happen to the results of the research?

Your personal details will remain strictly confidential. Research findings made available in any reports or publications will not include information that can directly identify you without your specific consent.

If you wish to receive a copy of the results after completion of the study, please contact the researcher or supervisors.

Where can I get more information?

You can contact anyone from the research team if you have any questions after reading this information sheet:

Gemma Woodrow: g.woodrow@soton.ac.uk

Dr Katy Sivyer: k.a.j.sivyer@soton.ac.uk

Dr Kate Willoughby: k.willoughby@soton.ac.uk

What happens if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions.

If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Head of Research Ethics and Clinical Governance (023 8059 5058, rgoinfo@soton.ac.uk).

You can also contact any of the research team using the contact details above.

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

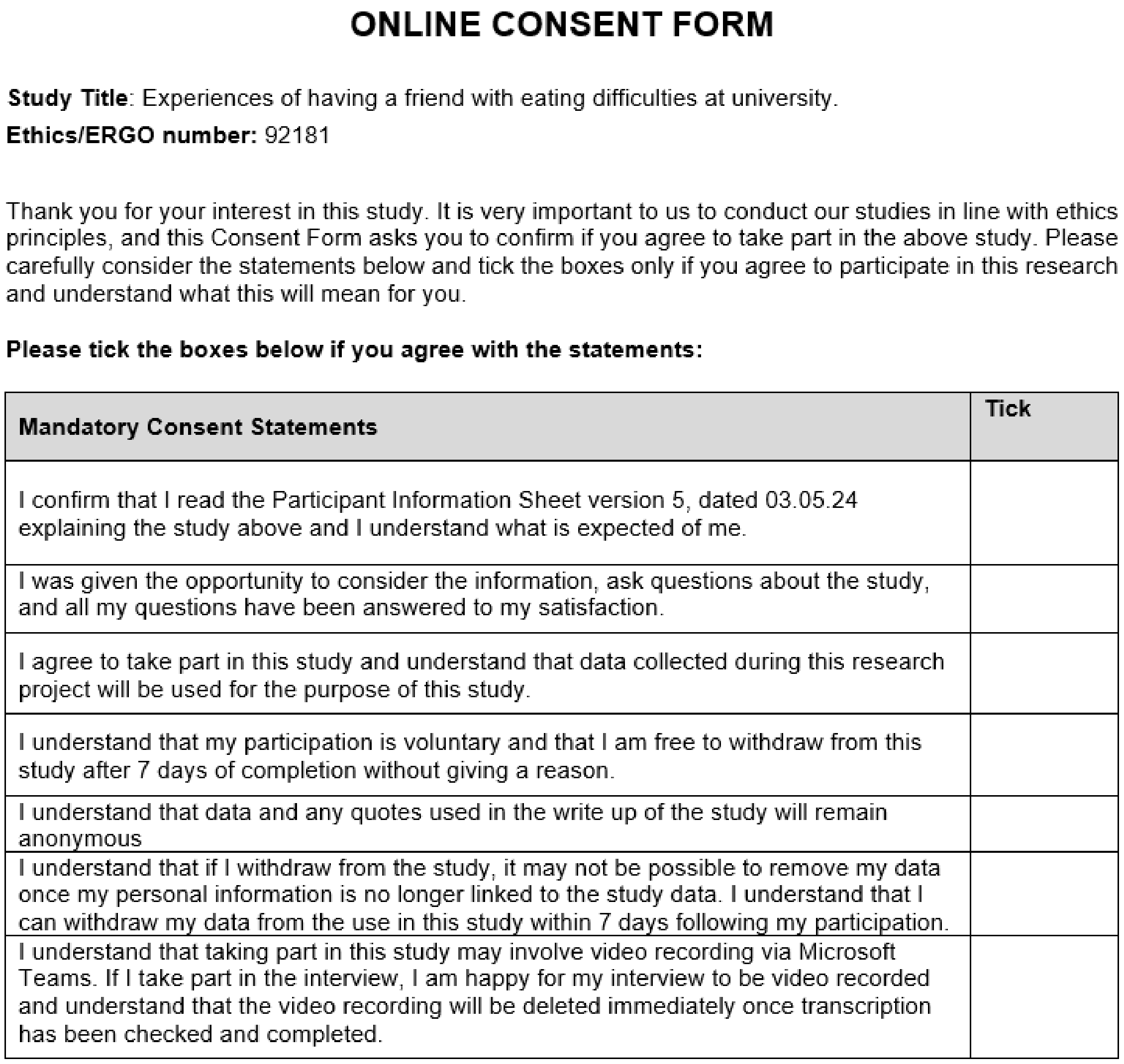
For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk).

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

Appendix K Consent Form



ONLINE CONSENT FORM

Study Title: Experiences of having a friend with eating difficulties at university.
Ethics/ERGO number: 92181

Thank you for your interest in this study. It is very important to us to conduct our studies in line with ethics principles, and this Consent Form asks you to confirm if you agree to take part in the above study. Please carefully consider the statements below and tick the boxes only if you agree to participate in this research and understand what this will mean for you.

Please tick the boxes below if you agree with the statements:

Mandatory Consent Statements	**Tick**
I confirm that I read the Participant Information Sheet version 5, dated 03.05.24 explaining the study above and I understand what is expected of me.	
I was given the opportunity to consider the information, ask questions about the study, and all my questions have been answered to my satisfaction.	
I agree to take part in this study and understand that data collected during this research project will be used for the purpose of this study.	
I understand that my participation is voluntary and that I am free to withdraw from this study after 7 days of completion without giving a reason.	
I understand that data and any quotes used in the write up of the study will remain anonymous	
I understand that if I withdraw from the study, it may not be possible to remove my data once my personal information is no longer linked to the study data. I understand that I can withdraw my data from the use in this study within 7 days following my participation.	
I understand that taking part in this study may involve video recording via Microsoft Teams. If I take part in the interview, I am happy for my interview to be video recorded and understand that the video recording will be deleted immediately once transcription has been checked and completed.	

Appendix L Debrief Form

Debriefing Form

Study Title: Experiences of having a friend with eating difficulties at University

Ethics/ERGO number: 92181

Researcher(s): Gemma Woodrow, Dr Katy Sivyer, Dr Kate Willoughby

University email(s): g.woodrow@soton.ac.uk, k.a.j.sivyer@soton.ac.uk, k.willoughby@soton.ac.uk

Version and date: V1, 04.03.24

Thank you for taking part in our research project. Your contribution is very valuable and greatly appreciated.

Purpose of the study

The aim of this research was to explore individuals' experiences of spotting the signs and supporting a friend with eating difficulties whilst at university. The study aimed to explore the role friends play in supporting their friend with disordered eating and any impact supporting their friend has on them.

Your participation will help develop our understanding of support for friends and provide further insight into how adults within education handle and interpret stress related to helping their friend. It will also provide an insight into the help-seeking process within universities and any resources or forms of support friends would find beneficial.

Confidentiality

Results of this study will not include your name or any other identifying characteristics. Any quotes used in the write up of the findings from the study will remain anonymous to protect your identity.

Study results

If you would like to receive a summary of the results, please let us know by requesting a summary via email using the contact details provided on this form.

Further support

If taking part in this study has caused you discomfort or distress, you can contact the following organisations for support:

Beat:

www.beateatingdisorders.org.uk

Helpline: 0808 801 0677 (7 days a week 3pm-8pm)

www.beateatingdisorders.org.uk/resource-index-page/guide-for-friends-family/

Mind:

Helpline: 0208 215 2243 (Monday-Friday 9-5)

supporterrelations@mind.org.uk

Samaritans: 116 123

Your GP

University Wellbeing

If you are a student at the University of Southampton, you can also access the wellbeing service:

www.southampton.ac.uk/edusupport/mental_health_and_wellbeing/

Student hub: 023 80599 599

Further reading

If you would like to learn more about this area of research, you can refer to the following resources:

B-eat guide for supporting a friend or family member with an eating disorder:

www.beateatingdisorders.org.uk/resource-index-page/guide-for-friends-family/

NHS information about eating disorders:

https://www.nhs.uk/mental-health/feelings-symptoms-behaviours/behaviours/eating-disorders/overview/

https://www.nhs.uk/mental-health/advice-for-life-situations-and-events/how-to-help-someone-with-eating-disorder/

Student mind blog on supporting a friend with an eating disorder:

https://www.studentmindsblog.co.uk/2016/10/top-tips-for-supporting-friend-with.html

Relevant research articles and books

Kuhlman, S. T., McDermott, R. C., Kridel, M. M., & Kantra, L. M. (2019). College students' peer-helping behaviors and stigma of seeking help: Testing a moderated mediation model. *Journal of American college health*, *67*(8), 753-761.

Roach, A. (2020). The Lived Experience of Adolescents Who Provide Support to Friends with Anxiety, Depression or Suicidal Ideation.

Treasure, J. (2024). Supporting Someone Living Through an Eating Disorder: What family and friends can do. In *Eating Disorders: The Basics* (pp. 136-152). Routledge.

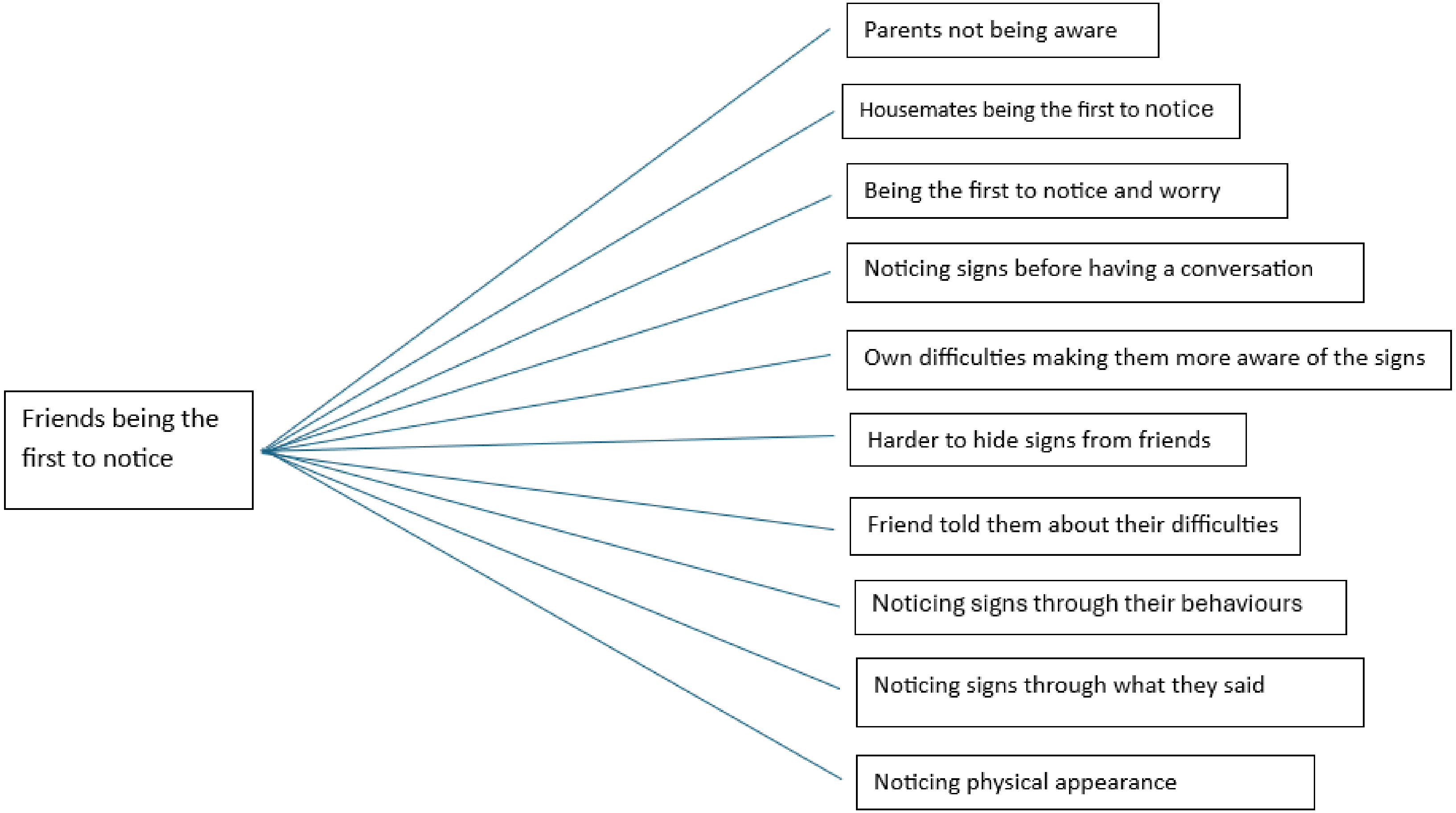
Further information

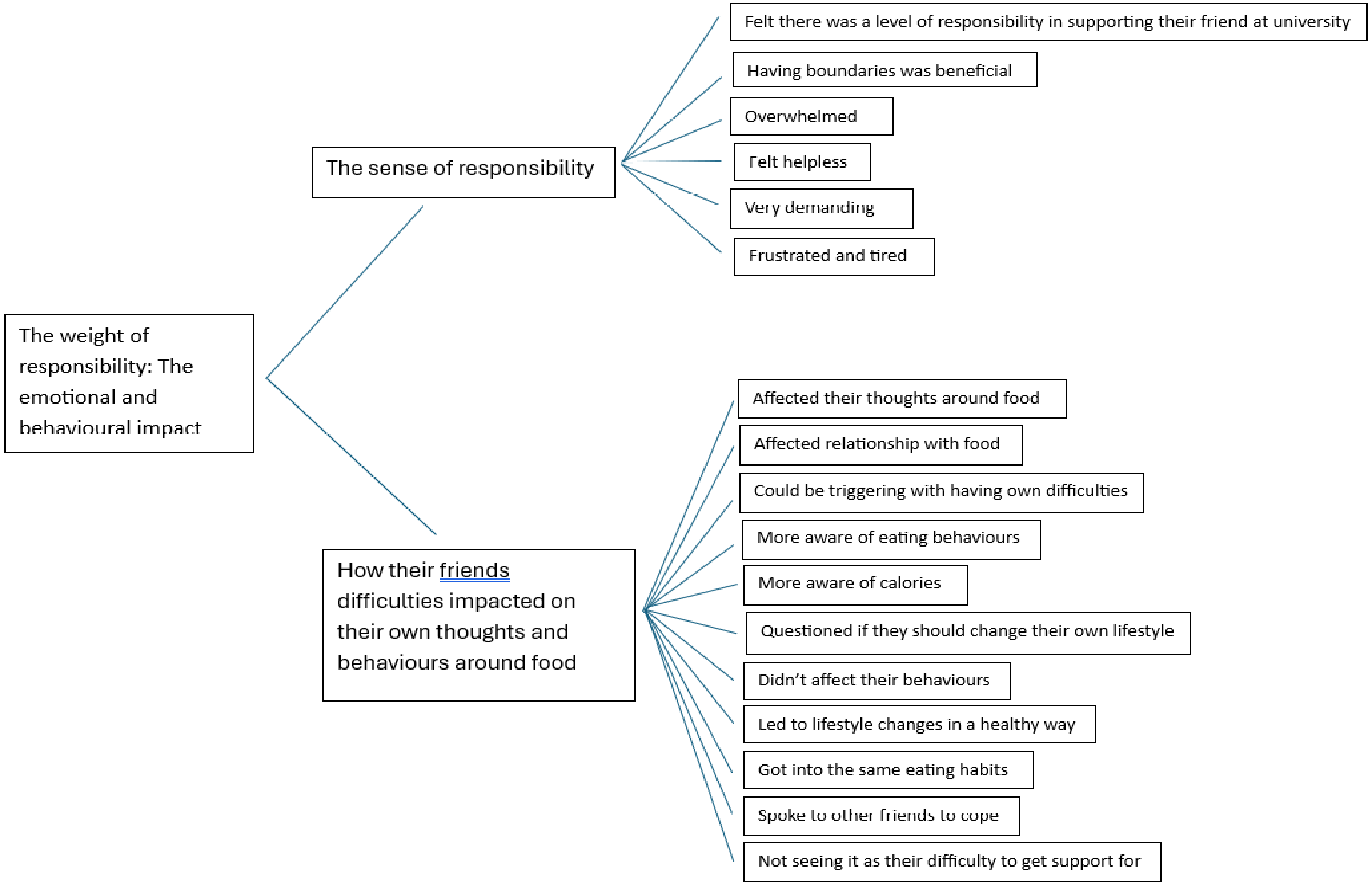
If you have any concerns or questions about this study, please contact Gemma Woodrow at g.woodrow@soton.ac.uk who will do their best to help.

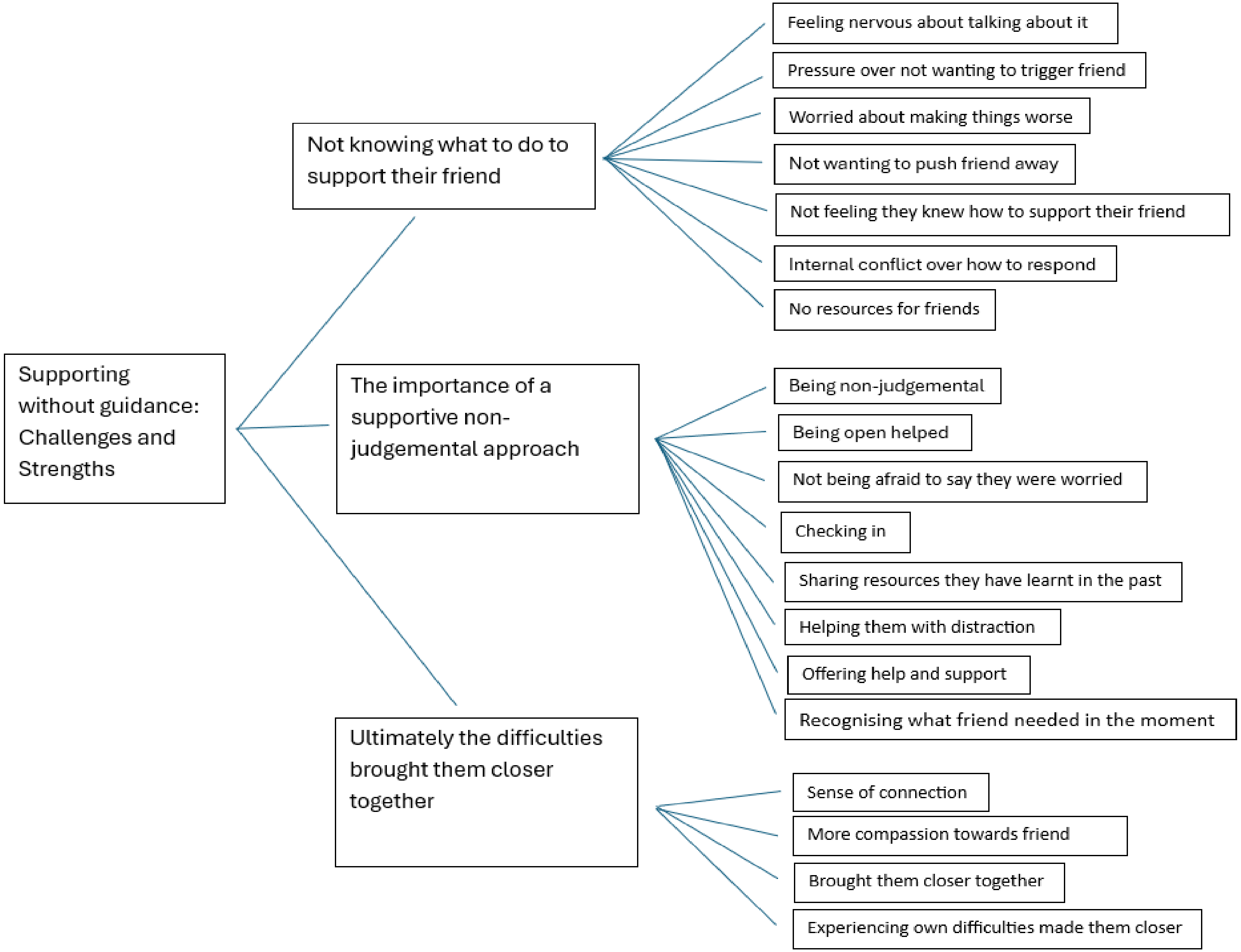
If you remain unhappy or would like to make a formal complaint, please contact the Head of Research Integrity and Governance, University of Southampton, by emailing: rgoinfo@soton.ac.uk, or calling: + 44 2380 595058. Please quote the Ethics/ERGO number which can be found at the top of this form. Please note that if you participated in an anonymous survey, by making a complaint, you might be no longer anonymous.

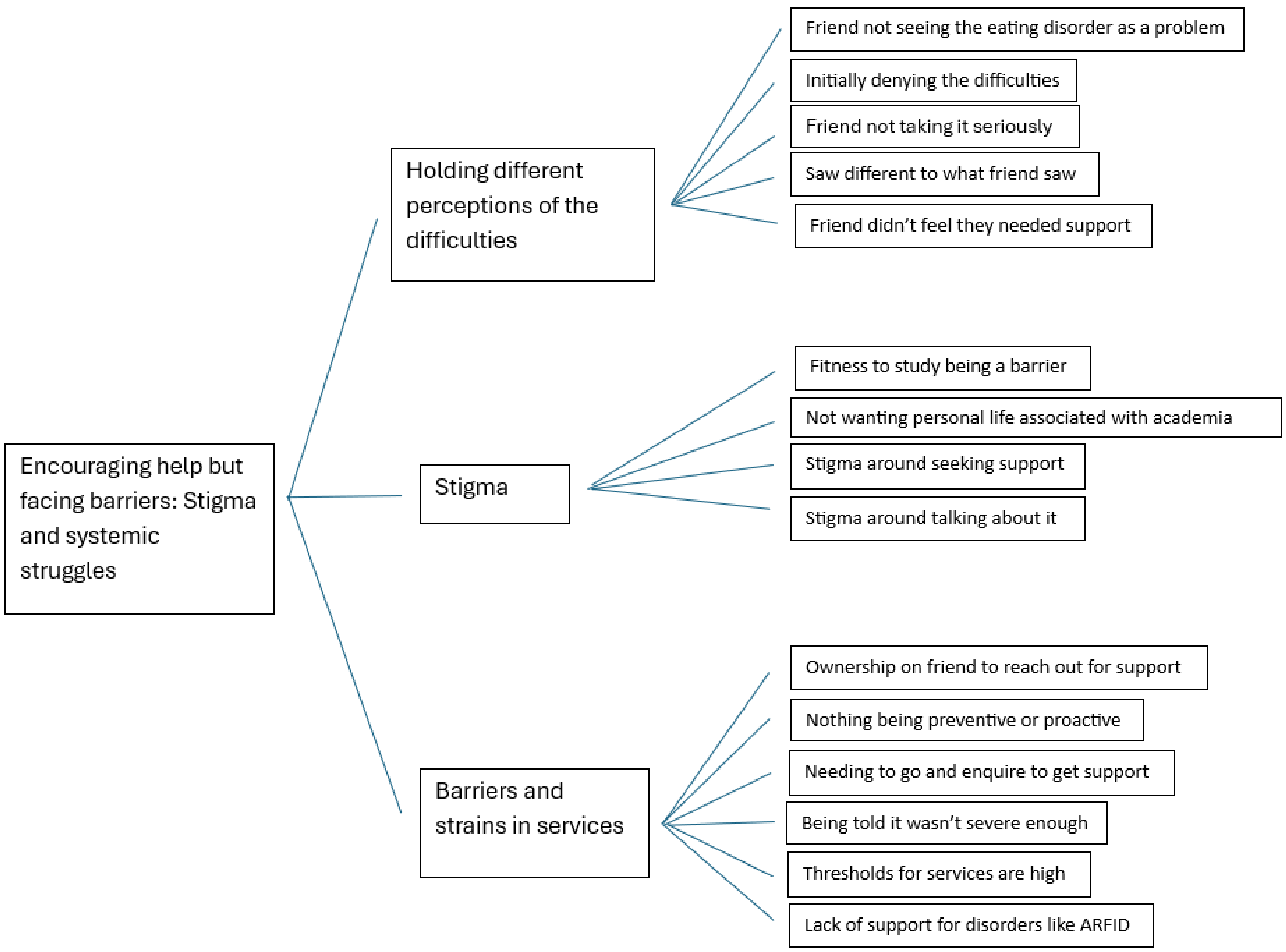
Thank you again for your participation in this research.

Appendix M Thematic Map with Themes, Subthemes and Codes




The weight of responsibility: The emotional and behavioural impact
The sense of responsibility
Felt there was a level of responsibility in supporting their friend at university
Having boundaries was beneficial
Overwhelmed
Felt helpless
Very demanding
Frustrated and tired
How their friends difficulties impacted on their own thoughts and behaviours around food
Affected their thoughts around food
Affected relationship with food
Could be triggering with having own difficulties
More aware of eating behaviours
More aware of calories
Questioned if they should change their own lifestyle
Didn't affect their behaviours
Led to lifestyle changes in a healthy way
Got into the same eating habits
Spoke to other friends to cope
Not seeing it as their difficulty to get support for


Supporting without guidance: Challenges and Strengths
Not knowing what to do to support their friend
Feeling nervous about talking about it
Pressure over not wanting to trigger friend
Worried about making things worse
Not wanting to push friend away
Not feeling they knew how to support their friend
Internal conflict over how to respond
No resources for friends
The importance of a supportive non-judgemental approach
Being non-judgemental
Being open helped
Not being afraid to say they were worried
Checking in
Sharing resources they have learnt in the past
Helping them with distraction
Offering help and support
Recognising what friend needed in the moment
Ultimately the difficulties brought them closer together
Sense of connection
More compassion towards friend
Brought them closer together
Experiencing own difficulties made them closer


Encouraging help but facing barriers: Stigma and systemic struggles
Holding different perceptions of the difficulties
Friend not seeing the eating disorder as a problem
Initially denying the difficulties
Friend not taking it seriously
Saw different to what friend saw
Friend didn't feel they needed support
Stigma
Fitness to study being a barrier
Not wanting personal life associated with academia
Stigma around seeking support
Stigma around talking about it
Barriers and strains in services
Ownership on friend to reach out for support
Nothing being preventive or proactive
Needing to go and enquire to get support
Being told it wasn't severe enough
Thresholds for services are high
Lack of support for disorders like ARFID


Bridging the gaps: The need for more training, resources and support
University staff require more training
Staff need more training in noticing the signs
Being able to share information with staff
Staff need to know where to signpost other than the GP
Staff need to know how to respond when someone comes forward
The need for more resources for friends
Resources for friends rather than just parents
More resources on what to say and what not to say
Shared experiences from other friends would be helpful
Resources on eating difficulties that aren't so visible
The university need to offer more support
University should offer more specific support around eating difficulties
Support for difficulties other than academic stress
The university need more awareness
Broadcasting information more
Awareness weeks
Having groups or drop ins would be helpful
Support for friends
University offered helpful practical support
More flexibility around studies
A way to share information with the university or GP
Not feeling it was the universities responsibility to treat the eating difficulties