

Eating disorder literacy and stigmatising attitudes toward anorexia, bulimia and binge eating disorder among adolescents

Shortened title: Eating disorder literacy and stigmatising attitudes

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Abstract

Little research has investigated adolescents' understanding of eating disorders (EDs) or attitudes towards people affected by EDs. This impedes the development of targeted health promotion interventions. In the current study, 290 adolescents viewed a vignette depicting a target with either Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Depression or Type 1 Diabetes. Subsequent questionnaires assessed understanding of and attitudes towards the disorder described. Adolescents recognised the symptoms of depression significantly more frequently than any ED. Relative to depression and Type 1 diabetes, participants held targets with EDs more personally responsible for their illness and ascribed them more negative personality characteristics. The data revealed a particularly unfavourable view of Binge Eating Disorder, which was conceptualised as a failure of self-discipline rather than a medical condition. The results confirm previous findings that EDs are more stigmatised than other mental or physical health conditions and extend the findings to an adolescent cohort.

KEYWORDS

Eating disorders, anorexia nervosa, bulimia nervosa, binge eating disorder, stigma, attitudes, adolescents

INTRODUCTION

Eating Disorders (EDs) comprise a significant portion of the mental health morbidity of children and adolescents, with the vast majority of EDs commencing before the age of 20 (National Association of Anorexia Nervosa and Associated Disorder, 2000; Preti et al., 2009; Woodside & Garfinkel, 1992). As for all mental illnesses, early intervention is critical to prevent disordered eating from becoming a chronic condition with serious personal, social and economic consequences. Chronic forms of EDs have particularly poor morbidity and mortality outcomes (Hay, Touyz, & Sud, 2012). However, there is strong evidence that ED services in many jurisdictions are underutilised (Darcy & Dooley, 2007; Fursland & Watson, 2014). To reduce ED morbidity and mortality, there is an urgent need to identify the barriers that prevent people from engaging with ED services and develop appropriately targeted interventions.

Booth et al. (2004) suggest that young people can be reluctant to seek help for mental health concerns due to a fear of being judged. The label of ‘mental illness’ attracts considerable stigma in contemporary societies, as does the acknowledgement that one needs professional support to maintain psychological health. While understanding the stigma associated with mental illness has been the focus of significant research effort, EDs have tended to receive less attention relative to disorders such as depression or schizophrenia (Mond, Robertson-Smith & Vetere, 2006; Zwickert & Rieger, 2013). This is despite the fact that the evidence that does exist suggests that EDs are stigmatised to a greater extent than other mental or physical disorders. Roehrig and McLean (2010) compared undergraduate students’ responses to vignettes describing individuals with Anorexia Nervosa (AN), Bulimia Nervosa (BN) and depression, and found that the AN and BN targets were perceived as more culpable, attention-seeking and fragile than targets with depression. A similar vignette-based design by

Stewart et al. (2006), using an older community-based sample, found that participants were more likely to blame the AN target for their illness and to believe that they could simply ‘pull themselves together’. A further study by Stewart et al. (2008) found that relative to targets suffering from depression or infectious disease, female undergraduate students attributed less positive characteristics to and anticipated greater discomfort interacting with an individual affected by AN.

Nationally representative survey data confirms that the attitudes identified by vignette-based studies are prevalent in the general population. Crisp (2005) reports that approximately one-third of the British public see people with EDs as hard to talk or empathise with, while a similar proportion view EDs as self-inflicted. Such attitudes can lead to a desire for social distance from people with EDs (Zwickert & Rieger, 2013). This compounds the sense of isolation experienced by individuals with EDs and impedes their ability to seek help. Recent research by Griffiths, Mond, Murray, and Touyz (2014a) reports that greater experience of stigmatisation is associated with higher levels of ED psychopathology, a longer duration of disorder, lower self-esteem, and more negative attitudes to seeking help. Understanding and tackling stigma is therefore critical in promoting the wellbeing and recovery of people with EDs.

While previous research provides valuable insight into the attitudes to EDs held by the adult population, very little research has illuminated the attitudes held by young people. This is a serious oversight, as this is the cohort most at risk of developing EDs. Additionally, because young people compose such a large proportion of the population with acute EDs, the attitudes held by their peers are likely to be pivotal in their experience of social stigmatisation or support. A small amount of research has examined young people’s ED literacy, generally finding that it is poor. For instance, a survey of 942 French adolescents found relatively low recognition of the behavioural and physiological signs of AN and BN (Rousseau, Callahan, &

Chabrol, 2012), while research with Australian schoolgirls shows them to considerably overestimate the prevalence of BN (Mond & Marks, 2007). However, minimal research has investigated the prevalence of stigmatising attitudes among young people. Some research has focused on university populations, within which vignette-based designs reproduce findings that EDs are more stigmatised than other disorders (Griffiths, Mond, Murray & Touyz, 2014b; Roehrig & McLean, 2010). Stigma research with school-age adolescents remains lacking. It is this gap that the current study seeks to address.

In considering ED stigma, two issues must be taken into account. First, attitudes to EDs are complicated by their highly gendered nature. Internationally, disordered eating is more prevalent among girls than boys (Hudson, Hiripi, Pope, & Kessler, 2007). However, EDs are rapidly increasing among men, with some disordered eating practices (such as purging) increasing at a faster rate among males than females (Mitchison, Mond, Slewa-Younan, & Hay, 2013). Male ED cases may be under-detected in research and clinical practice due to standard assessment instruments' concentration on drive for thinness rather than muscularity, which characterises many male presentations of EDs (Compte, Sepulveda, & Torrente, 2015; Griffiths, Murray, & Touyz, 2013). While body image concerns are increasingly pertinent to boys (Grogan & Richards, 2002), these pressures are often more subtle in male peer-groups, within which openly discussing body image can be stigmatised as reflecting feminine or homosexual tendencies (Hargreaves & Tiggemann, 2006). EDs are commonly stereotyped as 'female' disorders (Griffiths et al., 2014b), and males with EDs frequently report feeling that they are 'less of a man' (Griffiths et al., 2014a). Thus, boys may face particularly severe social or emotional barriers to divulging eating concerns. Although girls also perceive EDs as disabling and shameful, evidence suggests that for some women, this can be tempered by a belief that it 'might not be too bad' to have an ED, due to its signification of discipline and attainment of the thin ideal (Mond & Hay, 2008; Mond, Hay, Rodgers, Owen, & Beumont,

2004; Roehrig & McLean, 2010). Mond and Marks' (2007) study of Australian schoolgirls suggests that this representation of EDs as desirable begins in adolescence. Holding positive attitudes towards EDs is associated with ED symptoms for both males and females (Griffiths, Mond, Murray, & Touyz, 2015). Thus, it is crucial to consider the gender dynamics that influence young people's responses to EDs, because girls' ambivalent attitudes to disordered eating and boys' inhibitions about expressing body concerns may both be risk factors for the development of mental health problems and reluctance to seek help.

A second issue that requires attention relates to the specific ED in question. Current clinical guidelines stipulate four main categories of ED: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED) and Eating Disorder Not Otherwise Specified (EDNOS). Each has a unique complex of psychological, behavioural and physiological symptoms, which may provoke different social responses. AN may particularly resonate with the aforementioned tendency for EDs to elicit a level of admiration, due to its congruence with the cultural values of self-control and self-discipline (Joffe & Staerklé, 2007). However, the skeletal bodies that are prominent in media representations of AN may induce a disgust response, as might the purging patterns that are central to a BN diagnosis. Public attitudes to cases of BED are particularly interesting, due to the relatively recent establishment of this diagnostic category. Levels of public awareness of BED are low (Mond & Hay, 2008). As such, the disorder might not be afforded the same legitimacy as more established disease categories. Additionally, because individuals with BED are often overweight, they face the double stigma of obesity and mental illness (Mond & Hay, 2008). Furthermore, BED is more common among men than AN or BN (Smith, Marcus, Lewis, Fitzgibbon, & Schreiner, 1998; Hudson et al., 2007), which means that the gender dynamics at play in attitudes to BED are likely to be distinctive. For these reasons, research should explore the potentially differing responses to each ED subtype rather than focus exclusively on AN or BN.

To understand the barriers to young people's engagement with ED services and develop targeted health promotion interventions, we need concrete information about how EDs are viewed by adolescents. Currently, there is very little research that illuminates young people's knowledge of or attitudes towards EDs. The current study delivers the first evidence of this kind, obtained through a nationwide survey of 15-19 year-old secondary school students in Ireland, which assessed their ED literacy and their attitudes towards individuals with EDs. The study predicted that attitudes towards individuals with EDs would be negative relative to other mental or physical illness. Beyond this, the study did not make any specific *a priori* predictions regarding the content of the illness schemas held by adolescents, given the dearth of previous research with this population.

METHOD

Design

Ethical approval for this research was granted by the researchers' institution. The study adopted a between-subjects design. All participants were randomly assigned to read one of five vignettes describing a fictional, gender-neutral young person named Alex. In total, 19.1% ($n=54$) read a vignette describing the symptoms of AN, 17% ($n=48$) BN, 22.6% ($n=64$) BED, 16.3% ($n=46$) Type 1 diabetes, and 25.1% ($n=71$) depression. The latter two vignettes were included to facilitate comparison of EDs with another mental illness common among adolescents (depression) and a physical illness also involving eating and weight issues (T1 diabetes). Participants were asked to identify the illness as well as indicate their beliefs regarding illness duration, level of personal control over the illness, treatment efficacy, and potential causes of the illness. They were also asked about their anticipated emotional

reaction to interacting with the target and their perceptions of the target's personal characteristics.¹

Data collection procedures

Two hundred and sixty Irish second-level schools were randomly selected from national lists and invited by telephone and follow-up emails to participate in the research. Sixty-three schools (24% response rate) agreed to recruit students to the study. After confirming a school's willingness to participate, schools were sent information sheets, parental consent forms and student assent forms. Information letters explained that the purpose of the research was to gain information about young people's ideas about EDs and that the findings would contribute to scientific research and the development of health campaigns. No financial incentives were offered. School principals distributed information sheets, consent and assent forms to students. Completed consent forms and participant email addresses were returned to the researchers, who then emailed individualised survey links to study participants, who would be randomly assigned by the survey programme to a particular vignette condition. Students who had not completed the survey after several weeks were sent one reminder email. A small number of schools chose to administer paper versions of the survey. In these cases, the researchers assigned a vignette to each consenting student using random number generation and sent these personalised surveys to the school for distribution to the students.

Participants

In total, 319 responses to the survey were collected (263 online and 56 paper). After removal of online responses whose unique link did not match completed consent forms, the dataset contained a usable sample of 290 respondents. Of those participants who indicated their gender, 51.1% ($n=145$) were male and 48.9% ($n=139$) female. Their ages ranged between 15

¹ The survey also included measures of participant's personal experiences with EDs, their own eating concerns, and their typical help-seeking patterns. This data is discussed elsewhere (McNicholas, O'Connor, McNamara, & O'Hara, in press).

and 19 years, with a mean of 16.76 ($SD=0.89$). Reflecting the popularity of single-sex schooling in the Irish education system (Department of Education & Science, 2007), just under half (46.3%, $n=132$) of participants were enrolled in all-girls schools, with 20.7% ($n=59$) in all-boys schools and 33% ($n=94$) in mixed-gender schools.

Seven participants (2.4%) reported that they themselves had been affected by an ED. Since running the analysis without these seven cases did not alter the size or direction of any result, they were retained in the main sample.

Measures

Understanding of the problem

An open-ended item, adapted from Mond and Hay (2008), asked participants to indicate what they believed Alex's 'main problem' was. Following this, participants were provided with eleven potential causes of Alex's problem and asked to rate their importance on a 5-point scale from 'strongly disagree' to 'strongly agree'. A principal components analysis was performed on this data, and a scree plot indicated a three-factor solution (accounting for 50.9% of the total variance). Varimax rotation was performed to aid interpretation. The rotated solution showed simple structure, with all factors having several strong loadings and all items loading substantially on one factor. Table 1 presents the item loadings. Four items relating to stress or emotion loaded onto the first factor (19.8% variance), four items relating to Alex's behaviour or personal traits loaded onto the second factor (17.7% variance), and three items relating to factors beyond Alex's control (chance, poor medical care, hereditary factors) loaded onto the final factor (13.4% variance). The items corresponding to each factor were averaged to create three composite variables labelled 'Life Stress Factors' ($\alpha =.69$), 'Internal Factors' ($\alpha =.57$) and 'Incidental Factors' ($\alpha =.43$).

*****Table 1*****

Attitudes towards the target

- i. Illness perceptions:** Participants completed an adapted 12-item version of the Illness Perceptions Questionnaire (Moss-Morris et al., 2002). This instrument comprised three 4-item subscales assessing beliefs about illness duration, personal control and treatment efficacy. Responses were made on a 5-point scale, with higher scores on the different subscales indicating (i) greater belief that the problem will last a long time, (ii) greater belief that the individual can control the problem, and (iii) greater belief that treatment can improve the problem. Cronbach's α was .68 for the timeline scale, .64 for personal control, and .50 for treatment.
- ii. Affective reaction:** Participants were asked to rate the likelihood using a 5-point scale that interacting with 'Alex' would produce a range of ten emotions, of which five were negative (anxious, fearful, disgusted, irritable, nervous) and five positive (optimistic, supportive, empathic, comfortable, relaxed). Items were adapted from Penn et al. (1994). The negative and positive items were combined to create two scales. One item (empathic) was removed from the positive scale since this substantively improved the Cronbach's α (from .59 to .70). Cronbach's α for the negative emotion scale was .69.
- iii. Personality characteristics:** Participants were asked to rate their impression of 'Alex' on a number of personality characteristics, of which five were positive (strong, sociable, kind, intelligent, open) and five negative (insensitive, emotional, awkward, insecure, cold). Items were adapted from Penn et al. (1994) and responses were made on a 5-point scale ('strongly disagree' to 'strongly agree'). The negative and positive items were combined to create two scales. Cronbach's α for the positive scale was .55 and for the negative .44. These coefficients are lower than would be desired, and analysis showed that α could not be increased by removing any individual items. Due

to their surface validity and basis in previous research, it was decided to retain the scales in their original form.

- iv. **Target gender:** Participants were asked to indicate whether ‘Alex’ was male or female and to give a reason for their response.

Analysis

The data were imported into SPSS (Version 22) for statistical analysis. On continuous variables, analyses of variance with post hoc SPSS Bonferroni-corrected comparisons were used to identify differences related to target type. Normality was assessed with normal Q-Q plots and homogeneity of variance was evaluated using Levene’s tests. When these assumptions were violated, Kruskal-Wallis H tests were used instead of ANOVAs. On categorical variables, chi square tests of independence were used. As recommended by Agresti (2013), post hoc analysis of significant chi square tests was performed by inspecting the standardised residuals to identify those that exceeded ± 2 . Open-ended responses were analysed using content analysis, whereby two coders independently coded the data and compared responses. Inter-coder differences were minimal and were resolved through discussion with the whole research team. In the statistical analyses reported below, all missing cases were excluded pairwise, and all proportion figures were derived from the subset of the sample who responded to that item.

RESULTS

Definition of problem

After reading the vignette, participants were asked to specify what they believed Alex’s main problem to be. Statistical analysis showed that the different vignettes produced significantly different rates of correct categorisation with diagnostic labels, $\chi^2(4, N = 283) = 36.13, p < .001, V = .36$. The symptoms of depression were more frequently correctly recognised

(39.4%) than those of AN (20.4%), T1 Diabetes (17.4%), and BN (12.5%). No participant identified the clinical category of BED. Inspection of the standardised residuals, using the significance criterion of $>\pm 2$, confirmed that relative to the other vignettes, depression was significantly more likely to be correctly named and BED significantly less likely to be recognised.

The majority of respondents (72.4%) did not provide a diagnostic label, instead responding with general characterisations of Alex's psychological, behavioural or social problems. A content analysis was performed to capture these responses. Table 2 shows that the AN and BN vignettes were mainly described as problems of self-esteem and unhealthy eating habits. AN was distinctive in its frequent characterisation in terms of anxiety, obsession or phobia, and also in its attribution to deficits of nutritional knowledge. Interestingly, the BED vignette elicited consistently different interpretations from the other ED vignettes, most obviously in the major focus on deficiencies of self-control. The behavioural patterns described in the BED vignette were also often attributed to maladaptive cognitive or emotional patterns, or difficulties with social relationships. In contrast, the depression and T1 diabetes vignettes were more frequently framed as the result of nutritional deficiency, stress/exhaustion, or an organic illness.

Table 2

Cause of problem

A one-way ANOVA detected significant differences between the vignettes in causal attribution to Internal Factors, $F(4, 269) = 18.53, p < .001, \eta_p^2 = .22$. Post hoc tests with Bonferroni corrections showed that all three EDs were rated as significantly more internally-caused than either depression or T1 diabetes. The three ED vignettes did not differ from each other on attribution to Internal Factors. There were no significant differences between any

vignettes on endorsements of Life Stress Factors ($F(4, 266) = .96, p = .43, \eta_p^2 = .01$) or Incidental Factors ($F(4, 268) = .97, p = .43, \eta_p^2 = .01$). Descriptive statistics are presented in Table 3.

****Table 3****

Attitudes

Table 4 displays the means and standard deviations recorded on all attitude measures (Illness Perceptions Questionnaire (IPQ) subscales, Affective Reaction, Personality Characteristics), for each of the vignette conditions.

****Table 4****

i. Illness Perceptions

One-way ANOVAs detected significant differences between the vignettes in relation to timeline ($F(4, 267) = 6.21, p < .001, \eta_p^2 = .09$) and personal control ($F(4, 264) = 3.56, p = .01, \eta_p^2 = .05$) but not treatment efficacy ($F(4, 265) = .86, p = .49, \eta_p^2 = .01$). Post hoc tests with Bonferroni corrections showed that depression was rated significantly shorter in duration than all three EDs. In addition, the BED target was rated as having significantly more personal control over their disorder than the targets in either the depression or T1 diabetes vignettes.

ii. Affective reaction

The vignettes did not differ in their likelihood of eliciting negative emotions, $F(4, 263) = .84, p = .5, \eta_p^2 = .01$. However, a one-way ANOVA detected a significant difference between the vignettes' likelihood of eliciting positive emotions, $F(4, 261) = 2.95, p = .02, \eta_p^2 = .04$. Post hoc tests with Bonferroni corrections indicated that significantly greater positive emotion was

anticipated for BED than depression. The depression vignette also elicited significantly less positive emotion than T1 diabetes.

iii. Personality Characteristics

A one-way ANOVA detected a significant difference between the ascription of positive personality traits to the various vignettes, $F(4, 255) = 12.91, p < .001, \eta_p^2 = .17$. Bonferroni-corrected post hoc tests on the positive variable showed that all three ED targets were rated significantly less positively on personal characteristics than the T1 diabetes target. Additionally, the BED target was ascribed significantly less positive traits than either the depression or AN targets.

For the measure of negative characteristics, a significant Levene's test indicated that the assumption of homogeneity of variance was violated. A Kruskal-Wallis H test was therefore performed to assess whether the target characters in the various vignettes were evaluated differently. This test revealed a significant difference between the vignettes, $\chi^2(4, N = 104) = 44.58, p < .001$. Post hoc pairwise comparisons with Bonferroni corrections showed that the BN, BED and AN targets' personal characteristics were all rated significantly more negatively than the depression and T1 diabetes targets.

iv. Target Gender

Participants were asked to indicate their assumptions about the gender of the character they had encountered in the vignette. Figure 1 displays the proportion of participants for each vignette who imagined Alex to be male or female. The vignettes differed significantly in their tendency to be interpreted as describing a male or female, $\chi^2(4, N=262) = 16.055, p < .005, V = .25$. The T1 diabetes vignette was about equally likely to be interpreted as describing a male or female character. However, the behavioural patterns described in the BN and AN vignettes were more likely to encourage an inference that the individual was female, while

the depression and BED vignettes were construed in more masculine terms. Inspection of the standardised residuals, using the conventional significance criterion of $>\pm 2$, suggested that relative to the other vignettes, the AN target was significantly more likely to be judged female.

*****Figure 1*****

Participants were asked to elaborate on the reasons for their inference about Alex's gender. A content analysis was performed to codify these responses. Table 5 shows the results of this content analysis. Most commonly, participants inferred Alex's gender by matching the vignette details to gender-typed behavioural scripts (for example, the notion that women are more concerned about their appearance, or that men don't talk about their feelings). The AN and BN vignettes also regularly prompted a statement that EDs were more prevalent among females.

*****Table 5*****

Summary of results

Analysis indicated that respondents showed poor recognition of the symptoms of EDs relative to depression. In conceptualising the causes of illnesses, the three EDs were more likely than either depression or T1 diabetes to be attributed to factors internal to the individual, such as their personality or choices. The three EDs were seen as more chronic conditions than depression, and significantly more personal control was assigned to the target with BED than either depression or T1 diabetes. People with EDs were ascribed more negative and less positive personality traits than people suffering from depression and T1 diabetes. Relative to the other vignettes, the AN vignette was significantly more likely to be interpreted as describing a female character.

DISCUSSION

There are very few published studies that explore young people's knowledge or attitudes regarding EDs. Previous research investigating the lay beliefs and stigma associated with EDs has tended to recruit adult community or university samples rather than adolescents, despite the fact that most EDs commence during this stage of life. This study has addressed this gap in the literature by specifically targeting adolescents in the 15-19 year age group, a cohort at particularly high risk of developing eating problems. Its illumination of young people's ED literacy and attitudes towards individuals with EDs will help inform the development of targeted health promotion initiatives.

The results of this study show that despite the high prevalence of disordered eating among their age cohort (McNicholas et al., 2010), young people in Ireland show poor awareness of the various categories of EDs. Only a small minority of participants correctly classified the symptoms described in the three EDs vignettes, with participants considerably better at recognising the signs of depression. The high proportion of respondents who framed the ED vignettes as problems of self-esteem, self-control, social relationships and poor eating choices may indicate a normalisation of these behavioural patterns, which are attributed to commonplace adolescent problems rather than psychopathology *per se*. This reflects the phenomenon of 'normative discontent', whereby weight/body dissatisfaction is so prevalent throughout the population (as previous research with Irish adolescents demonstrates, Department of Children and Youth Affairs, 2012; McNicholas et al., 2010), that the distinction between typical and pathological body-image becomes tenuous. The normalisation of body discontent, as evident in the responses to this survey, implies that young people may be slow to define patterns of disordered eating as clinically problematic and necessitating professional intervention. This would undoubtedly hinder their likelihood of identifying and seeking help for emerging eating problems in themselves or their peers.

Help-seeking is also likely to be undermined by the negative attitudes to people with EDs that this research revealed. The results confirm previous international findings that among the general population, EDs are stigmatised to a greater extent than other mental or physical health conditions (Roehrig & McLean, 2010; Stewart et al., 2006, 2008; Crisp, 2005; Griffiths et al., 2014b). The differential responses to the various vignettes show that unfavourable attitudes were present in this adolescent sample. Specifically, and consistent with previous research in other jurisdictions (Roehrig & McLean, 2010; Stewart et al., 2006, 2008; Crisp, 2005), young people tended to hold individuals with EDs personally responsible for their illness and ascribe more negative characteristics to them compared to those with depression and T1 diabetes.

The results show that in considering ED stigma, it is critical to attend to the unique illness representations of the different categories of ED. In particular, responses to the BED vignette were distinctive on a number of dimensions. Firstly, the absence of any mention of BED in respondents' characterisations of 'Alex's main problem' reflects a very low awareness of this diagnostic category. Participants' free responses intimated that the behavioural patterns described in the BED vignette were not seen as a medical condition, but rather as a failure of self-discipline. Consistent with this, the BED target was ascribed significantly more personal control over their condition than the targets with other illnesses. The data also revealed an unfavourable view of the personal character of the BED target, who was ascribed significantly fewer positive traits than the depression or AN vignettes incurred. Despite this, however, participants anticipated most positive emotion interacting with the BED target. This result is puzzling, but may reflect the greater perceived 'normality' of the BED behavioural patterns, or the relatively non-threatening nature of an overweight person who is unable to control their food intake. Given that BED is a recent introduction to diagnostic classification

systems, more focused public education campaigns may be necessary to raise awareness of this type of eating disturbance.

The distinctive emotional and attitudinal responses elicited by the BED vignette may also be linked to the different gender assumptions that it prompted. The individual in the BED vignette was the most likely of all targets to be judged male, whereas the other ED vignettes were mostly interpreted as describing females. This is consistent with research by Griffiths et al. (2014b) which found that AN was perceived as a quintessentially ‘female’ disorder (while muscle dysmorphia was represented as ‘male’). In the explanations participants offered for their gender assumptions, young people mobilised a wide range of prevailing gender stereotypes regarding men and women’s differential values, communication patterns, activity preferences, and relationships with food and bodies. Representations of men as incommunicative and emotionally inhibited, and women as appearance-obsessed and emotionally volatile, were both reflected in and reinforced by people’s readings of cases of ED. These findings illustrate that attitudes to EDs in Ireland cannot be abstracted from their embeddedness in a highly gendered society.

The research thus suggests that in interacting with their peers, young people living with EDs are likely to be confronted with numerous stereotypes and stigmatising attitudes. This is problematic for numerous reasons. As well as inhibiting help-seeking, stigma could compound the distress of young people living with EDs. Individuals with EDs report awareness of ED stereotypes and often expect to be negatively treated if they reveal their stigmatised status to others (Evans et al., 2011; Hepworth & Paxton, 2007; McNamara, 2014). This stigma-consciousness (Pinel, 2002) functions as a significant barrier to accessing appropriate support and treatment (Griffiths et al., 2014a). Furthermore, it can undermine the effectiveness of the support systems that are available: poor ED literacy can result in family members, friends and even health professionals offering advice that is based on

misconceptions of the nature of EDs and the recovery process (Linville, Brown, Sturm & McDougal, 2012; McNamara, 2014). If such well-intentioned advice is judged inappropriate by recipients, it may hinder rather than help recovery (Linville et al., 2012) and provoke tensions between ED-affected individuals and their support network (McNamara, 2014).

The present research will prove particularly valuable in informing the design of future psycho-educational initiatives. Our findings have highlighted gaps in adolescents' knowledge of EDs that health promotion initiatives should address, particularly in relation to BED. It is interesting to note that although participants displayed poor recognition of the symptoms of EDs, the vignette responses revealed relatively good awareness of depression. This is perhaps testament to the effectiveness of recent national awareness campaigns in Ireland, which have highlighted the symptoms of depression and urged young people to divulge mental health concerns to others. Similar campaigns targeting EDs may prove beneficial in increasing the general population's ED literacy, both in terms of recognising maladaptive behavioural patterns and highlighting how to seek help. Such campaigns should not restrict themselves to raising awareness, but must also tackle stereotypes in order to encourage disclosure and help-seeking on the part of those affected. In particular, our data suggest the specific misconceptions that need to be addressed include the notions that EDs are 'female' disorders, that EDs are self-inflicted and that the individual has a high level of control over their behaviour, and that EDs are fundamentally about eating choices rather than underlying psychological, social and biological factors.

It is important to acknowledge the limitations of the study. Most notably, the response rate is lower than would be desired to claim a nationally representative sample. The rather drawn-out process of obtaining school, student and parental approval may have contributed to the rates of attrition. Additionally, although the online nature of the study helped promote anonymity and honest responding, some responses had to be discarded because parental

consent could not be verified. On a positive note, however, the relatively small size of the sample is partly mitigated by its demographic balance. The sampling strategy obtained good representation of students of different ages, genders and school-types. This provides confidence that the research is not biased or unrepresentative. The validity of the results is also supported by their correspondence with previous similar research with adult samples (Griffiths et al., 2014b; McNicholas, O'Connor, O'Hara, & McNamara, 2015; Roehrig & McLean, 2010; Stewart et al., 2006, 2008). Further research is necessary to discern the potential effects of participant characteristics (e.g., gender and personal eating or weight concerns), which would help tailor and target destigmatisation initiatives.

Further considerations pertain to the vignette design. While vignettes have the advantage of producing more valid, realistic responses than content-free survey questions, there is a risk that relatively superficial features of the vignette content can influence responses. One such factor is the name given to the vignette target. A similar study previously conducted with health professionals, which also asked participants to judge the gender of the vignette target, reported gender judgements that were more male-oriented than in the current study (McNicholas et al., 2015). The difference can be attributed to the previous study's use of the name 'Morgan', which in national naming conventions is more heavily skewed towards males than 'Alex' (Central Statistics Office, 2015). The use of a more gender-neutral name in the current study made the feminising effects of the AN and BN vignettes more apparent. The implications of these gendered representations for stigmatisation processes remain unclear; Griffiths et al. (2015) found no relation between target gender and attitudes towards the target. However, the widespread feminisation of EDs could impede the detection and exacerbate the suffering of the rising numbers of males with eating problems. Future research should explore whether the gendered nature of ED representations also emerges in non-vignette-based methodologies and clarify the implications of this for society and policy.

Conclusion

Investing in service infrastructure and professional training for EDs will have limited success in encouraging service engagement, if social barriers to service use are not also addressed. For young people struggling with disordered eating, their own peer-group is a key line of defence in promoting early identification and support for emerging EDs. This resource should be harnessed in health promotion strategies. However, encouraging young people to ‘just talk’ about their eating concerns is of limited use (and could indeed be counterproductive) if their chosen confidantes have poor understanding of EDs or negative attitudes towards those affected. The results of this research emphasise the need for concerted public awareness campaigns targeted at young people. An effective campaign would strive to both increase awareness of EDs and available support services, and dispel damaging stereotypes about individuals with EDs. This would support young people in recognising and seeking help for the signs of EDs in themselves and others.

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TABLES

Table 1. Item loadings for perceived causes of Alex's problem

Item	Loading Factor 1 (Life Stress Factors)	Loading Factor 2 (Internal Factors)	Loading Factor 3 (Incidental Factors)
Overwork	.783	-.203	.114
Family problems	.773	.071	-.021
Stress or worry	.657	.063	.098
Alex's emotional state, e.g. feeling down, lonely, anxious, empty	.604	.463	-.204
Alex's own behaviour	.052	.754	.093
Alex's mental attitude, e.g. thinking about life negatively	.296	.676	-.075
Alex's personality	-.126	.574	.153
Diet or eating habits	-.040	.554	-.201
Chance or bad luck	-.104	-.034	.709
Poor medical care in Alex's past	.006	.107	.724
Hereditary - it runs in Alex's family	.223	-.096	.551

Table 2. Proportion of responses to each vignette that offered various definitions of Alex's problem

Definition of Alex' problem	AN	BN	BED	Depression	T1 Diabetes
Self-control problems	1.9%	4.2%	40.6%	1.4%	0%
Unhealthy eating habits	22.2%	31.3%	35.9%	15.5%	8.7%
Poor self-image/-esteem	35.2%	35.4%	7.8%	1.4%	0%
Stress/exhaustion	0%	0%	1.6%	18.3%	26.1%
Negative cognitive/emotional patterns	0%	2.1%	21.9%	8.5%	2.2%
Social/relationship problems	14.8%	0%	20.3%	16.9%	0%
Anxiety/obsession/addiction/phobia	18.5%	6.3%	3.1%	4.2%	2.2%
Organic illness	0%	6.3%	3.1%	5.6%	13.0%
Lack of nutritional knowledge/education	11.1%	0%	4.7%	0%	0%
Nutritional deficiency	9.3%	10.4%	1.6%	11.3%	10.9%
Lifestyle factors	3.7%	4.2%	4.7%	5.6%	4.3%

Table 3. Descriptive statistics for participant responses to illness causation items. These composite items have a range of 1-5, with higher scores indicating greater causal attribution to Internal, Life Stress and Incidental Factors respectively.

	AN	BN	BED	Depression	T1 Diabetes
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Internal Factors	3.91 (0.57)	3.74 (0.54)	3.77 (0.51)	3.31 (0.52)	3.13 (0.66)
Life Stress Factors	3.72 (0.51)	3.77 (0.61)	3.68 (0.51)	3.87 (0.68)	3.69 (0.68)
Incidental Factors	2.12 (0.58)	2.09 (0.64)	2.24 (0.62)	2.24 (0.64)	2.30 (0.71)

Table 4. Descriptive statistics for all attitude measures for each vignette

Measure	Vignette condition	Valid N	Mean	Standard deviation
IPQ-Treatment	AN	51	3.71	0.57
	BN	46	3.84	0.41
	BED	61	3.86	0.48
	Depression	66	3.74	0.54
	T1 Diabetes	46	3.81	0.53
IPQ-Timeline	AN	52	3.50	0.65
	BN	47	3.48	0.63
	BED	62	3.50	0.52
	Depression	66	3.08	0.65
	T1 Diabetes	45	3.19	0.65
IPQ-Control	AN	53	4.12	0.61
	BN	48	4.08	0.46
	BED	61	4.30	0.53
	Depression	62	3.98	0.59
	T1 Diabetes	45	3.94	0.59
Affective Reaction-Positive	AN	53	3.36	0.75
	BN	47	3.38	0.64
	BED	59	3.54	0.61
	Depression	66	3.18	0.73
	T1 Diabetes	41	3.57	0.69
Affective Reaction-Negative	AN	53	2.54	0.61
	BN	46	2.62	0.66
	BED	60	2.40	0.68
	Depression	67	3.00	0.38
	T1 Diabetes	42	2.45	0.72
Personality Characteristics-Positive	AN	51	2.85	0.41
	BN	44	2.77	0.46
	BED	60	2.57	0.39
	Depression	65	3.00	0.47
	T1 Diabetes	40	3.15	0.47
Personality Characteristics-Negative	AN	51	3.33	0.44
	BN	45	3.32	0.29
	BED	61	3.30	0.31
	Depression	67	3.00	0.38
	T1 Diabetes	41	2.87	0.62

Table 5. Proportion of responses to each vignette that offered various reasons for their gender judgement

Reason for gender judgement	AN	BN	BED	Depression	T1 Diabetes
Behaviour/symptoms more feminine	53.7%	41.7%	20.3%	31%	37.0%
Behaviour/symptoms more masculine	25.9%	18.8%	29.7%	22.5%	28.3%
Disorder more common in females	13.0%	16.7%	6.3%	5.6%	10.9%
Disorder more common in males	0%	0%	3.1%	2.8%	2.2%
Name more masculine	1.9%	2.1%	9.4%	8.5%	6.5%
Name more feminine	0%	0%	1.6%	0%	0%
Could be either gender	9.3%	16.7%	6.3%	9.9%	10.9%

FIGURES

Figure 1. Beliefs about target's likely gender

