Journal of Eating Disorders

RESEARCH

Open Access

Investigating the impact of causal attributions on anorexia nervosa stigma

Rebecca Forde[1*] and Helen O'Shea[2,3]

Abstract

Background Stigmatisation of eating disorders can have debilitating consequences for individuals experiencing such conditions, such as reduced help-seeking and physical and mental deterioration. Dispositional attribution of blame appears to be central to this stigmatisation. Currently, it remains unclear as to whether precise aspects of blame, such as control over and responsibility for the disorder, specifically contribute to these negative dispositional attributions. So, the current study sought to explore causal attribution patterns towards individuals with AN among an adult population.

Methods One-hundred and forty-six participants ($M = 36.52$ years; $SD = 14.45$; 118 female) completed an online survey where they were initially randomly assigned to read either a blameworthy ($n = 61$) or unblameworthy ($n = 85$) vignette describing a fictional character with AN. Following this, participants completed two self-report inventories (Causal Attribution Scale and Eating Disorder Stigma Scale) measuring their causal attributions and stigma levels regarding the character. Mann–Whitney *U* tests were completed to evaluate attitudinal differences across groups.

Results Participants in the blameworthy condition significantly attributed more control over the illness to the AN character and held greater mean levels of stigma than participants in the unblameworthy condition. No significant differences were found between conditions for attributions of responsibility and blame. Finally, total causal attribution scores significantly predicted total stigma scores.

Conclusion The findings indicate that stigma towards those with AN may result in part from negative attitudes where individuals experiencing AN are viewed as being in control of their condition. Erroneous attribution of dispositional control can influence interpretations of the cause of AN and trigger inappropriate behavioural responses such as stigmatisation, which can have serious consequences for help-seeking in those with AN. Responsibility-based attributions demonstrated less influence on stigma levels.

Keywords Eating disorder, Anorexia nervosa, Causal attribution, Stigma, Attribution theory

Plain English summary

People with anorexia nervosa (AN), an eating disorder that can be debilitating and lifelong, often experience stigma (i.e., negative labelling or stereotyping) within the community. Stigma can take the form of blame where the individual is accused of being responsible for their illness or of having control over their eating habits. Yet, little is understood about whether there are aspects of blame that influence the level of stigma held towards individuals experiencing AN more than others. So, this study sought to understand how perceptions of control, responsibility, and blame affect

*Correspondence:
Rebecca Forde
rebecca.forde@rehabcare.ie
Full list of author information is available at the end of the article

levels of stigma held by the public towards a character with AN. The findings show that participants who viewed the individual as having control over their disorder demonstrated more stigmatising attitudes than individuals who perceived the individual as having less control over their illness. Overall, blameworthy information, whereby the individual with AN has control over and/or is to blame for their AN condition, augments stigmatisation towards those individuals. Understanding the impact of these perceptions may be the first step towards developing programs to dismantle the stigma surrounding AN, particularly in relation to erroneous views where sufferers are considered in control of their condition.

Investigating the impact of causal attributions on anorexia nervosa

Extensive research exists demonstrating the pervasive stigma surrounding mental illness (e.g., [4, 5, 7, 18, 22, 32, 41]). Goffman [19] classically defined stigma as an attribute that is deeply discrediting, and which reduces the stigmatised individual to a tainted status. Stigma is a social manifestation concerning the negative effects of a label placed on a group (e.g., negative stereotyping that leads to discrimination), resulting in negative and erroneous attitudes towards the group and power asymmetry [3, 9, 20]. For instance, research investigating stigmatising attitudes demonstrates that individuals affected by depression may be perceived as lazy, while individuals affected by schizophrenia may be perceived as violent [31]. Eating disorders (EDs), including anorexia nervosa (AN), appear particularly vulnerable to stigmatisation [30], however, the subject of ED-related stigma currently does not have a prominent place in the current literature [26]. This trend is somewhat worrying, particularly as one study found that EDs are significantly more stigmatised, and sufferers attributed greater dispositional responsibility for their disorder, than mental and physical illnesses such as depression and Type 1 diabetes, respectively [30]. Stigma associated with EDs can have a detrimental impact on the affected individual and the prognosis of their condition [7, 30]. Stigma can lead to depressive symptoms, self-esteem issues, social alienation and social withdrawal, poorer physical health, increased ED symptomology, as well as a decrease in treatment seeking behaviour, worsening the overall prognosis of the illness [7]. With this information in mind, it is important that we investigate stigmatising attitudes towards such disorders. A better understanding of the stigma associated with EDs will facilitate increased public awareness and may assist in decreasing stigma levels, thereby improving the well-being of individuals affected by EDs [29]. To our knowledge, no published research has explored the impact of causal attributions on stigmatising attitudes towards AN in the general adult public. So, this study addresses this gap in the literature by investigating the patterns underlying adults' causal explanations for the condition AN. We firstly briefly outline AN as a specific ED. We then discuss attribution theory in relation to stigma, and finally, we discuss stigma in relation to AN.

Anorexia nervosa

EDs are severe and often chronic mental health problems that are associated with impaired cognitive and emotional functioning, lower quality of life, chronic physical and psychosocial morbidity, psychiatric comorbidity, and a significantly increased risk of mortality [1]. A common form of ED is AN, a psychological disorder characterised by significant low body weight for age, sex, and developmental trajectory, resulting from severe restriction of food intake relative to that required [2]. AN can also involve an intense fear of gaining weight and perceptual disturbances in relation to weight and shape ([2, 17]).

Stigma and anorexia nervosa (AN)

Stigma has been internationally recognized as a significant public health issue due to the immense social and psychological impairment experienced by stigmatised individuals [14].

Stigma research relating to AN demonstrates that the public tend to draw negative assumptions about individuals affected by the condition [14]. Dimitropoulos et al. [14] found that the public tended to believe that those with the condition "only have themselves to blame for their difficulties" (p.1), while Crisp et al. [12] found that the public perceived eating disorders as "self-inflicted" (p.148). Additionally, in a study of medical professional and nursing student attitudes towards AN, it was found that 59.4% of respondents believed that individuals experiencing AN were responsible for their condition, in comparison to only 17.7% of respondents believing the same for individuals affected by schizophrenia [16]. In the same study, perceived causes of AN were examined, with "self-induced" being the fourth most cited cause, which can be contrasted again with schizophrenia, where the most cited causes included biological and genetic factors [16]. In a later study, Roehrig and McLean [33] found that individuals with AN were perceived as more fragile, more responsible for their condition, and more likely to use their disorder for attention than individuals with

depression. Furthermore, Stewart et al. [36] found that evaluations of personal characteristics were most negative for individuals with AN in comparison to individuals with schizophrenia, asthma, and healthy controls. Findings from this study concluded that respondents believed the individual with AN was to blame for their condition, was best able to pull themselves together if they wanted to, was acting this way for attention, and that biological factors were least relevant in developing AN in comparison to the other evaluated conditions [36]. Importantly, such negative attitudes towards individuals diagnosed with AN can have debilitating consequences, influencing when or if the individual seeks help for their condition. Indeed, stigma has been identified as a leading perceived barrier to help-seeking [1].

Research has found that a multifactorial model seems to be the most appropriate explanatory model for the pathogenesis of AN [8, 13, 25], involving interaction between biological, psychological, and social factors [40]. However, findings from AN related stigma as mentioned above demonstrates that the lay public tend to ignore the multifactorial nature of AN and instead view AN as a method to garner attention and view biological factors as less relevant in the development of AN than in other physical and psychological conditions [36]. Accordingly, it is perhaps unsurprising that there is widespread stigmatisation of individuals afflicted by AN [7, 30].

Attribution theory and stigma

Attribution theory has been widely applied to understand the bases of stigma towards mental illness [41]. Within this theory, attribution can be defined as an individual's explanation for the causes of various outcomes and events in their lives [28]. Individuals try to establish causal attributions when they are presented with an event or outcome, such as an individual suffering from AN [39], in order to better understand and control one's social environment [21]. Attribution theory posits that people have an innate drive to assign cause to outcomes in their own and other's lives, and that the type of attributions they apply will influence how they respond to these outcomes or events [28]. Cause can be attributed to internal or dispositional factors, that is, factors within one's control, such as ability and effort, or to external or situational factors, that is, factors beyond one's control, such as luck [28].

Attributional process can be applied to understanding mental illness stigma, in that people typically search for a cause as to why someone is suffering from a psychological disorder ([34, 41]). The result of the attributional process in mental illness stigma is often that people attribute the cause of the disorder to dispositional factors, leading to a belief that the person suffering with the mental illness is to blame for, responsible for, or in control of their disorder (Ryan 2007, [27]). For instance, individuals with AN are often perceived as being able to pull themselves together if they want to [11], for example, by increasing food intake or by engaging in psychological treatment for their disorder. This perception places attributions of controllability, responsibility, and blame on individuals with an AN condition, largely ignoring the complex multifactorial aetiology of the disorder. In accordance with attribution theory, AN is often perceived as being within the individual's control, and consequently they are likely to elicit higher levels of stigmatisation for their illness than if the disorder was attributed as being beyond their control [41]. As yet, however, it remains unclear as to whether causal attributions relating to blame, such as control over the condition or responsibility for the condition, drive stigmatisation of individuals with AN.

Given this, the current study sought to explore causal attribution patterns towards individuals with AN among a non-clinical adult population and investigate the associated impact of these attributions on stigmatising attitudes towards individuals diagnosed with AN. Attribution theory was exploited to examine the bases of stigma towards AN and participants were presented with one of two vignettes describing either a dispositional or a situational explanation for the target's AN condition. The blameworthy vignette described the cause of an individual's AN to be largely due to factors within the target's control, while the unblameworthy vignette described the cause of an individual's AN to be largely due factors beyond the target's control. We predicted that participants who received an unblameworthy description of a fictional individual with AN (i.e., the target) would be less likely to rate the target as in control of their condition, as being responsible for their condition, and as being to blame for their condition on a causal attribution scale than participants who received a blameworthy description of the target's condition. Further, in relation to stigmatising attitudes, we made two predictions. Firstly, participants who received the unblameworthy description of the target's condition would score lower on stigmatising attitudes, as measured by a stigma scale, towards the target individual than participants who received the blameworthy description of the target's condition. Secondly, participants who rate the target higher on the causal attribution scale will demonstrate higher levels of stigmatising attitudes towards the target than participants who rated the target lower on the causal attribution scale.

Methods

Participants

Ethical approval was received from the Faculty of Education and Health Science Research Ethics Committee at the University of Limerick prior to recruiting participants, and all participants provided informed consent. Voluntary response sampling was used to recruit participants, who were invited to take part in an online survey through public posts on social media platforms such as Facebook, Instagram, Snapchat, and LinkedIn. Of the 225 participants who participated in the survey, 17 (7.5%) participants were excluded for not meeting the study criteria, as they did not currently live in Ireland (1.7%) or had personal experience with AN (5.7%). Of the remaining 208 participants, an additional 62 (29.8%) participants failed to complete the entire survey, resulting in a final total of 146 participants completing the study. This sample size was in accordance with previous similar research (e.g., [10] [N = 173]; [41] [N = 152]). The current sample ranged in age from 18 to 75 years with a mean (SD) of 36.52 (14.45) years.

Design

A between-subjects design was used with participants randomly assigned to one of the two levels of the independent variable. The independent variable was blameworthiness with two conditions, a blameworthy and an unblameworthy condition. The dependent variables in this study were levels of causal attributions of control, responsibility, and blame measured on a causal attribution scale and levels of stigmatising attitudes measured on a stigma scale.

Vignettes

This study used two vignettes which were adapted from a study by Zwickert and Rieger [41]. The vignettes differed in their blameworthiness towards the vignette target "Kelly" for developing and maintaining her AN. The first vignette described the target as being responsible for her AN (blameworthy condition) with the second vignette describing genetic influences as responsible for target's AN (unblameworthy condition). For instance, the blameworthy vignette described Kelly as deliberately choosing to restrict her food intake and engaging in excessive exercise to achieve weight loss, as well as disregarding the advice of her friends, family, doctor, and dietitian. The unblameworthy vignette described Kelly as being driven by her illness to restrict her eating, engage in excessive exercise, and describes the influence of genetics in Kelly's illness, as well as describing Kelly's attempts to recover by engaging in psychotherapy and eating despite intense feelings of anxiety. Each vignette was approximately 150 words in length. The full vignettes can be found in the online supplementary file.

Causal attribution scale

The causal attribution scale, adapted from Mantler et al. [27], was utilised to assess attributions of control, responsibility, and blame on the target for their AN condition. This scale was slightly modified to coincide with the vignettes used in this study, with the target's name being changed to "Kelly" and pronouns being changed to "she/her". This scale consists of 12 items (e.g., "It is her own fault that Kelly is ill"), with three subscales assessing attributions of control, responsibility, and blame, and with 4 items in each subscale. Items on this scale were rated using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher scores on this scale indicate higher levels of causal attributions to the target for their condition. Cronbach's alpha for the causal attribution scale in the current sample was 0.850, demonstrating very good reliability. Cronbach's alpha for the control subscale was 0.607 and Cronbach's alpha for the responsibility subscale was 0.673, both demonstrating an acceptable level of reliability. Cronbach's alpha for the blame subscale in this sample was 0.806, demonstrating very good reliability for this subscale.

Eating disorder stigma scale (EDSS)

Participants completed the Eating Disorder Stigma Scale (EDSS) to assess stigmatising attitudes towards the target regarding their AN. This questionnaire was created by Crisafulli et al. [10] to measure ED stigma. This scale was also slightly modified to coincide with the vignettes used in this study, with the target's name being changed to "Kelly" and pronouns being changed to "she/her". The EDSS consists of 20 items (e.g., "Kelly caused her illness"), with four subscales to assess perceptions of blame, trivialisation, vanity/selfishness, and weakness. Items on this scale were rated using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher scores indicated higher stigmatising attitudes toward the target and their condition. Cronbach's alpha for the EDSS in the current sample was 0.935, demonstrating excellent reliability. Cronbach's alpha for the EDSS in similar research was found to be at 0.912, also demonstrating excellent reliability [42]. To note, blame as conceptualised under stigma relates to negative perceptions of the target [42], whereas blame as conceptualised in relation to attribution relates to an explanation of the cause of the target's illness [27].

Procedure

Following ethical approval, the study was shared to the public through public posts on social media platforms

such as LinkedIn, Facebook, Instagram, and Snapchat. The post explained that there is currently a gap in our understanding of the public's opinions towards AN, and that the purpose of the current study was to examine the public's opinions on an individual with a diagnosis of AN. Participants were provided with a link to the survey within the social media post and were invited to complete two online questionnaires. The study survey was conducted using the online survey platform Qualtrics [37]. Participants were provided with an on-screen informational sheet to read prior to beginning the survey. Then, following provision of informed consent, participants answered two demographic questions (i.e., age and gender) and an inclusion question (i.e., whether the participant had any personal experience with AN). Participants were then randomly assigned to either a blameworthy or an unblameworthy condition.

Participants were given instructions to carefully read the vignette provided to them stating the content of the vignette would be relevant for subsequent questions. Following this, participants were asked to complete two self-report inventories assessing their attitudes towards the target in terms of causal attributions of control, responsibility, and blame towards the target (i.e., the causal attribution scale) and their attitudes toward the target in terms of stigma (i.e., the EDSS). Participants were presented with an on-screen debriefing sheet following their participation.

Data processing

Eligibility criteria

Individuals were required to satisfy certain eligibility criteria to participate in the present study. Individuals were required to be aged 18 or over and were required to currently reside in Ireland. Individuals were excluded from the present study if they did not meet these criteria and/or if individuals had personal experience with AN.

Missing data

Participants were required to complete the entire survey, and if they did not do so, they were excluded from all analyses. Data from 62 participants who did not complete the entire survey were removed from the data set. Our final data set contained information from 146 participants.

Assumption tests

Assumptions for parametric analyses were tested prior to main data analyses. A Shapiro–Wilks test revealed that not all data were normally distributed (Shapiro–Wilks $p < 0.05$). The assumption of homogeneity of variance was also violated (Levene's $p < 0.05$). Given these violations of assumptions for parametric tests, non-parametric inferential analyses were performed.

Comparison of groups

A total of 85 (57.8%) participants were randomly assigned to the unblameworthy condition and 61 (41.8%) to the blameworthy condition, meaning that the unblameworthy description was read more by participants than the blameworthy description.

Results

Descriptive statistics

Initial inspection of descriptive statistics shows that the total scores for the attribution scale (see Table 1) in the blameworthy condition were higher in blame, responsibility, and control attributions toward the target than those in the unblameworthy condition. Additionally, mean scores for the EDSS (see Table 1) also revealed that those in the blameworthy condition were higher in stigma than those in the unblameworthy condition.

Inferential analyses

Between-groups non-parametric inferential analyses were completed (see data processing section) to investigate the effects of blame condition (blameworthy vs unblameworthy) on participants' attribution scores, including control, responsibility, and blame subscales, and overall stigma scores. To investigate the impact of causal attributions on overall stigma scores, a between-groups Mann–Whitney *U* analysis was also conducted. All statistical analyses were conducted using IBM SPSS software (Version 28). Significance level (alpha) was set at $p < 0.05$ for all analyses.

Table 1 Descriptive statistics for scales

	Blameworthy ($n = 61$)		Unblameworthy ($n = 85$)	
	M	*SD*	*M*	*SD*
Full attribution scale	25.21	9.40	21.36	7.20
Control attribution subscale	9.88	3.35	8.14	3.13
Responsibility attribution subscale	9.28	3.93	8.11	3.49
Blame attribution subscale	6.15	3.31	5.12	1.83
Full EDSS	33.88	15.82	28.87	9.71
EDSS trivialisation subscale	7.26	4.55	6.26	3.04
EDSS vanity/selfish subscale	9.62	4.72	7.99	3.16
EDSS weak subscale	7.15	3.82	6.39	2.59
EDSS blame subscale	8.33	4.06	7.01	3.11

Total attribution scores

A Mann–Whitney *U* test revealed statistically significant differences in total attribution scores between the blameworthy condition ($Mdn = 24.00$, $n = 61$) compared to the unblameworthy condition ($Mdn = 22.00$, $n = 85$), $U = 1947.00$, $p = 0.010$, $z = -2.66$, with a small effect size $r = 0.22$. This indicates that those in the blameworthy condition had higher total attribution scores than those in the unblameworthy condition.

Control attributions

A Mann–Whitney *U* test revealed statistically significant difference in control attribution scores of the blameworthy condition ($Mdn = 10.00$, $n = 61$) compared to the unblameworthy condition ($Mdn = 8.00$, $n = 85$), $U = 1876.00$, $p = 0.004$, $z = -2.85$, with a small effect size $r = 0.24$. This indicates that those in the blameworthy condition had higher control attributions than those in the unblameworthy condition.

Responsibility attributions

A Mann–Whitney *U* test indicated no statistically significant differences in responsibility attribution scores between the blameworthy condition ($Mdn = 9.00$, $n = 61$) compared to the unblameworthy condition ($Mdn = 8.00$, $n = 85$), $U = 2143.00$, $p = 0.072$, $z = -1.80$, with a small effect size $r = 0.16$. This indicates that those in the blameworthy condition did not have higher responsibility attributions than those in the unblameworthy condition.

Blame attributions

A Mann–Whitney *U* test indicated no statistically significant differences in blame attribution scores between the blameworthy condition ($Mdn = 5.00$, $n = 61$) compared to the unblameworthy condition ($Mdn = 4.00$, $n = 85$), $U = 2225.50$, $p = 0.11$, $z = -1.60$, with a small effect size $r = 0.14$. This indicates that those in the blameworthy condition did not have higher blame attributions than those in the unblameworthy condition.

Stigma scores

A Mann–Whitney *U* test revealed statistically significant differences in the stigma scores of the blameworthy condition ($Mdn = 1.48$, $n = 61$) compared to the unblameworthy condition ($Mdn = 1.35$, $n = 85$), $U = 2100.50$, $p = 0.05$, $z = -1.98$, with a small effect size $r = 0.16$. Participants in the blameworthy condition had higher mean stigma scores than participants in the unblameworthy condition.

Causal attributions as a predictor of stigma

Pearson product correlation coefficient of causal attribution score and stigma score was found to be positively statistically significant, with a large effect size ($r = 0.69$, $p < 0.001$). The coefficient of determination showed that the total causal attribution scores explained 47% of the variance ($R^2 = 0.47$).

Gender differences in stigma

A Mann–Whitney *U* test revealed no statistically significant differences in the stigma scores of males ($n = 25$) compared to the stigma scores of females ($n = 118$), $U = 1440.00$, $p = 0.85$, $z = -0.19$.

Mediation analysis

Given the significant difference between blame conditions in stigma scores and total causal attribution scores, and the result showing that the latter significantly predicted stigma, mediation analyses were completed to better understand the mechanisms through which blame condition impacts stigmatisation**.** The aim of the mediation analyses was to explore whether specific dispositional causal attributions could explain the association between blameworthiness and stigma held. Using Hayes PROCESS macro, attributions of control, responsibility, and blame were examined as mediators of the association between blameworthy condition and stigma.

The results of component path analyses revealed a significant indirect effect of blameworthiness condition on control attributions ($b = -1.6457$, $t = -3.0442$, $p = 0.0028$) and on blame attributions ($b = 3.1863$, $t = 8.8128$, $p < 0.001$). There was no significant effect of blameworthiness condition on responsibility attributions ($b = -1.1728$, $t = -1.8972$, $p = 0.0598$). Regarding the effects of specific attributions on stigmatising attitudes, there was a significant effect of blame attributions ($b = 3.1863$, $t = 8.8128$, $p < 0.001$), but no significant effect of control attributions ($b = 0.5544$, $t = 1.8454$, $p = 0.0671$) or responsibility attributions on stigmatizing attitudes towards individuals with AN ($b = 0.1042$, $t = 0.3920$, $p = 0.6956$).

Bootstrapping was used to analyse the significance of the indirect effect of blameworthiness condition on stigma through the attributions of control, responsibility, and blame. Results revealed significant total indirect effects of control attributions ($b = -0.9125$, SE = 0.5693, 95% CI [−2.2492, −0.0283]) and of blame attributions ($b = -3.2815$, SE = 1.6942, 95% CI [−6.9444, −0.4231]). The total indirect effects of responsibility attributions were non-significant ($b = -0.1222$, SE = 0.3103, 95% CI [−0.8177, 0.4764]). A significant direct effect of dispositional causal blame on stigmatising attitudes in the presence of mediators was also found ($b = -5.0147$, $t = -2.3682$, $p = 0.0192$). Control and blame attributions partially mediated the relationship between blameworthiness and stigmatising attitudes towards individuals with AN. Control attributions significantly

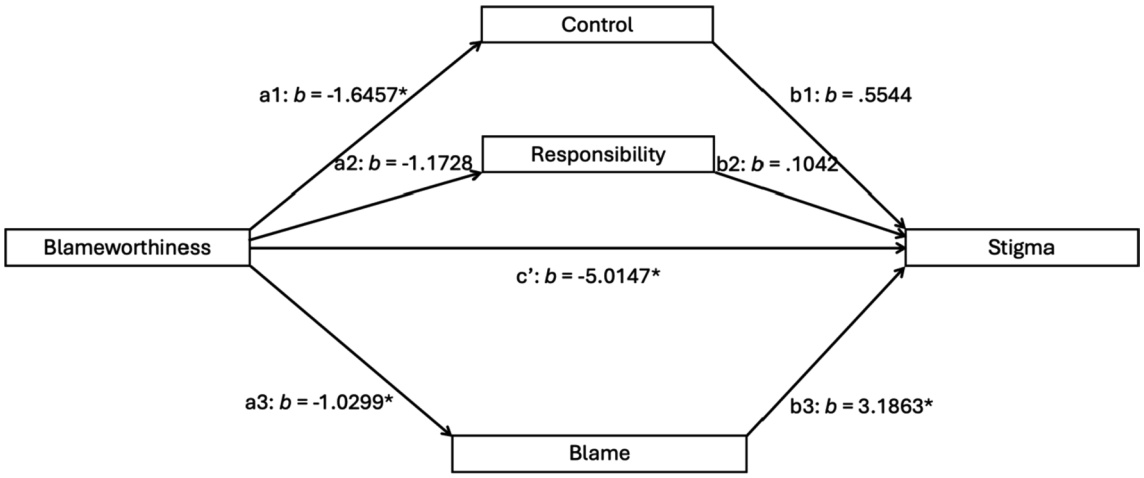

Fig. 1 Path diagram of direct and indirect effects of blameworthiness on stigma. *Note.* *$p < .05$. a^1, a^2, and a^3 are paths of the effects of blameworthiness condition on the specific attributions (i.e., mediators) of control, responsibility, and blame, respectively. b^1, b^2, and b^3 are paths of the effects of the specific attributions (i.e., mediators) of control, responsibility, and blame, respectively, on stigma. c' is the path of direct effect of blameworthiness condition on stigma

predicted participant's stigma scores ($R^2 = 0.06$, F (1, 144) = 9.27, $p < 0.05$), and indicates that 6% of the variance in stigma scores can be explained by control attributions. Additionally, the results revealed that blame attributions significantly predicted stigma scores ($R^2 = 0.04$, F (1, 144) = 5.78, $p < 0.05$), and indicates that 4% of the variance in stigma scores can be explained by blame attributions. Figure 1 displays the path schematic.

Discussion

To our knowledge, this is the first study to investigate whether specific dispositional causal attributions could explain an association between blameworthiness and adults' stigmatising attitudes towards individuals with AN. In particular, this study investigated the impact of blameworthiness condition (i.e., influence of un/blameworthy information) on the general public's attributions of control, responsibility, and blame, and the subsequent impact of these causal attributions on stigmatising attitudes towards a fictional character with AN. We predicted that participants reading a blameworthy description of such a fictional individual would be more likely to attribute blame, control over, and responsibility to them for their AN, and thus would also self-report more stigmatising attitudes, than those who read an unblameworthy description. The current study contributes to the small but advancing body of research examining stigmatising attitudes towards AN in several ways.

Firstly, we found a significant effect of blame condition on controllability attributions of the vignette target's AN. Despite a lack of significant effect of blame condition on responsibility and blame attributions, a significant effect was found for the total attribution score, that is, the total score of the control, responsibility, and blame attributions, demonstrating a significant effect of blame condition on overall attribution scores in this sample.

Secondly, our findings provide support for the impact of blame condition on stigmatising attitudes towards the target. We found that participants who read the blameworthy description had significantly higher average stigma scores than participants who read the unblameworthy condition. This finding suggests that stigma could potentially be manipulated based on whether participants receive a blameworthy or unblameworthy vignette describing the target's AN. This could have implications, for example, of how the media discusses and portrays individuals with EDs such as AN [6].

Interestingly, a notable finding was that it appears that participants who attributed greater control to individuals with AN over their condition following exposure to blameworthy information in the vignette, demonstrate higher stigma towards those individuals. This highlights a mechanism underlying the link between interaction with blameworthy information and elevated stigma levels, indicating that dispositional causal attributions following exposure to blameworthy information elicit stigmatising attitudes towards individuals with AN.

The findings of the current study are supported by previous research and theory in this area. Our finding that blameworthy condition has a significant effect on control attributions is consistent with previous research assessing the impact of blameworthiness on beliefs of the individual being in control of their condition [10]. Further, our

finding that participants in the blameworthy condition had significantly higher stigma than participants in the unblameworthy condition was consistent with previous research [41]. Importantly, our final finding that higher causal attributions elicit higher stigmatising attitudes towards AN is supported by the postulation of attribution theory, that if an individual's illness is perceived as within their control, they will be more stigmatised than if their illness is perceived as beyond their control [41]. This is an important finding for better understanding and addressing real-world implications of dispositional control attributions, for example, educational interventions aimed at stigma reduction may be more effective in reducing stigma towards specific EDs such as AN if they target specific subcomponents of blame (such as the facet of control), rather than the overall construct of blame. Further research will be required to investigate this prospect.

As demonstrated by the present study's results, causal attributions can have a significant effect on eliciting stigmatising attitudes towards AN. In particular, the control attribution appears to be particularly relevant in explaining the relationship between blame and stigmatisation. Therefore, addressing these causal attributions, particularly the control facet, may be a preliminary step in decreasing the stigma towards AN. As suggested by Stewart et al. [36], a lack of awareness regarding the biological and genetic contributors to AN could be one reason as to why individuals with AN tend to be attributed as personally responsible for their disorder. An increased awareness of the more nuanced explanations of the pathogenesis of AN may help reduce the attribution of cause to the affected individual and may shift attribution of cause to situational factors. In particular, emphasising that AN is a complex, serious psychological disorder which can be influenced by a multitude of uncontrollable factors, including physical, psychological, and social factors [23, 40], may reduce causal attributions of blame control, therefore reducing stigmatising attitudes towards individuals with AN. With this information in mind, informative campaigns enhancing the public's awareness of the uncontrollable pathogenesis of AN may be a preliminary step towards destigmatising AN.

These findings are significant in not only reducing stigma towards AN, but potentially also in improving positive prognoses of the disorder. One of the most harmful and consistently reported consequences of stigma towards AN is that it has been found to be a barrier to seeking treatment for EDs (Ali et al. 2016, [24, 36]). Early treatment initiation is essential for a good prognosis for individuals suffering from eating disorders, including AN [24]. Removing the barrier of stigma may help increase positive prognoses of AN and lead to an improvement of the psychological and physical well-being of individuals afflicted by this disorder. Removing the barrier of stigma is the first step in improving outcomes for individuals suffering with AN.

It is important to acknowledge the limitations of this study. The results of this study are limited in their generalisability due to the gender disparity of participants, with female participants constituting 81% of the study's sample. Due to such a significant number of female participants, the results from this study may be more representative of causal attributions and stigmatising attitudes of females towards AN than of the population as a whole. However, despite the current study's gender disparity which limits generalisation of findings across genders, the age range of participants (ranging from 18 to 75 years) potentially allows for the generalisability of our findings across the lifespan. It should be noted, that while the response rate of this study was lower than would be desirable for obtaining a representative sample, previous studies with similarly low sample sizes obtained robust results (e.g., [10] [$N=173$]; [36] [$N=91$]; [41] [$N=152$]), adding support to the validity of the results from the present study. Future research could rectify these limitations by ensuring a large and representative sample when examining causal attributions and the impact of these attributions on stigmatising attitudes. It is acknowledged that the online survey questionnaire was self-report in nature and answered by participants without oversight from the researchers and so the data generated are dependent on the integrity of the participants' responding. Notwithstanding this, given the anonymity afforded to participants and the inclusion of screening questions that captured a valid study sample, we are confident that responses were candid. Relatedly, because we cannot be certain that all participants diligently read the vignettes, future research would benefit from capturing, for example, mean reading time for the vignettes, as such data could act as a validity check for attention to vignette detail (e.g., examination of reading duration data falling outside or within two standard deviations of the mean, or as outliers to the mean, might be considered in/valid data). Finally, we recognise that in the current study detailed participant demographic information and participants' pre-existing attitudes to AN were not collected, and so, it cannot be discounted that these potentially biasing factors, combined with the lack of control condition, may have contributed to the observed effects. Future research should seek to replicate our findings addressing such methodological shortfalls.

A strength of the current study is its use of experimental manipulation of blame condition, evaluating causal role of blameworthy attributions in eliciting stigmatising attitudes towards individuals with AN. Additionally, a

lesser but important strength of this study is the addition of exclusion criteria, whereby participant data relating to those who have had experience with AN or who have had close contact with an individual with AN was removed. This is an important aspect, as research suggests that experience with EDs such as AN can lead to a reduction in stigmatising attitudes towards such conditions [15, 35]. While the number of participants who were excluded due to this criterion in the current study is relatively small, and therefore may not have significantly impacted the results had they been included, it is nonetheless an important exclusion criterion to gain an accurate understanding of the general public's attitudes towards AN.

Future directions

Given that little research has sought to specifically investigate the impact of different facets of blame on the stigmatisation of EDs such as AN, future research is needed. One interesting direction for future research might be to replicate the current study with other forms of EDs, such as bulimia nervosa, binge-eating disorder, and orthorexia nervosa, as these disorders have been largely neglected in the current stigma research. Furthermore, it would be interesting for future research to utilise this study's design to compare causal attributions and stigmatising attitudes between the different forms of EDs, establishing similarities and differences in how and why these EDs are stigmatised.

It would also be helpful to examine the impact of causal attributions on AN stigma in specific and relevant populations, such as in parents of young children. Due to the increase in AN in younger children and adolescents [38], this demographic of parents may become future caregivers and therefore become an integral resource and support for recovery for their child should they fall victim to an ED. A deeper understanding of causal attributions and stigmatising attitudes of such a demographic could contribute significantly to campaigns to raise awareness of AN and other EDs, as well as helping to educate on and reduce stigmatisation of such disorders. This in turn may lead to earlier recognition of an illness in one's child or lead to earlier help and treatment-seeking behaviours in the child themselves. The removal of the social barrier of stigma, as previously mentioned, may result in individual's seeking help earlier in their illness, resulting in more positive prognoses of AN, and lead to a reduction in the mortality rate of the illness. Finally and importantly, it would be useful to extend the current findings by examining the impact of AN disorder-specific educational programs on reducing dispositional causal attributions, such as control attributions, towards affected individuals, which could potentially lead to a reduction in the stigmatisation of AN.

Conclusion

In conclusion, the present research demonstrates a relationship between dispositional blameworthiness for AN condition and elevated stigmatising attitudes towards individuals with AN. Additionally, this relationship appears to be in part explained by blame attributions of control over the condition towards individuals with AN. The findings of this study are consistent with much of the previous research in this area and can also be supported by the claims of attribution theory. Armed with the knowledge gained from the current study and future studies in this area, campaigns to lessen stigma towards AN and other psychological disorders can use addressing and amending causal attributions as a preliminary step in reducing stigmatising attitudes towards such disorders.

Abbreviations

ED Eating disorder
AN Anorexia nervosa

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s40337-025-01192-3.

Additional file 1

Author contributions

RF wrote the initial draft of the manuscript. HOS reviewed and edited the initial draft of the manuscript. RF prepared all figures and tables in manuscript. Both authors read and approved the final manuscript.

Funding

No funding is associated with this research.

Availability of data and materials

Data and materials will be made available upon request.

Declarations

Ethics approval and consent to participate

Ethical approval for the present study was granted by the Faculty of Education and Health Science Research Ethics Committee at the University of Limerick, Ireland prior to recruiting participants, and participants provided informed consent.

Competing interests

The authors declare no competing interests.

Author details

[1]Aspect A.S. Support Service, 32 Penrose Wharf, Penrose Quay, Cork, Ireland. [2]University College Dublin, Belfield, Dublin, Ireland. [3]South East Adult Cognitive Assessment, The Smithlands Centre, Kilkenny, Ireland.

Received: 28 February 2024 Accepted: 13 January 2025
Published online: 07 April 2025

References

1. Ali K, Farrer L, Fassnacht DB, Gulliver A, Bauer S, Griffiths KM. Perceived barriers and facilitators towards help-seeking for eating disorders: a systematic review. Int J Eat Disord. 2017;50(1):9–21. https://doi.org/10.1002/eat.22598.
2. American Psychiatric Association. Feeding and eating disorders. In: Diagnostic and statistical manual of mental disorders. 5th ed., text rev. 2022. https://doi.org/10.1176/appi.books.9780890425787.
3. Andersen MM, Varga S, Folker AP. On the definition of stigma. J Eval Clin Pract. 2022;28(5):847–53. https://doi.org/10.1111/jep.13684.
4. Angermeyer MC, Dietrich S. Public beliefs about and attitudes towards people with mental illness: a review of population studies. Acta Psychiatr Scand. 2006;113(3):163–79. https://doi.org/10.1111/j.1600-0447.2005.00699.x.
5. Barney LJ, Griffiths KM, Jorm AF, Christensen H. Stigma about depression and its impact on help-seeking intentions. Aust N Z J Psychiatry. 2006;40(1):51–4. https://doi.org/10.1080/j.1440-1614.2006.01741.x.
6. Bassett L, Ewart M. Discrepancies between media portrayals and actual demographics of eating disorders in TV and film: implications of representation. J Eat Disord. 2023;11(161):1–4. https://doi.org/10.1186/s40337-023-00892-y.
7. Brelet L, Flaudias V, Désert M, Guillaume S, Llorca PM, Boirie Y. Stigmatization toward people with anorexia nervosa, bulimia nervosa, and binge eating disorder: a scoping review. Nutrients. 2021;13(2834):1–29. https://doi.org/10.3390/nu13082834.
8. Connan F, Campbell IC, Katzman M, Lightman SL, Treasure J. A neurodevelopmental model for anorexia nervosa. Physiol Behav. 2003;79(1):13–24. https://doi.org/10.1016/s0031-9384(03)00101-x.
9. Corrigan PW, Penn DL. Lessons from social psychology on discrediting psychiatric stigma. Am Psychol. 1999;54(9):765–76. https://doi.org/10.1037/0003-066X.54.9.765.
10. Crisafulli MA, Thompson-Brenner H, Franko DL, Eddy KT, Herzog DB. Stigmatization of anorexia nervosa: characteristics and response to intervention. J Soc Clin Psychol. 2010;29(7):756–70. https://doi.org/10.1521/jscp.2010.29.7.756.
11. Crisp AH, Gelder MG, Rix S, Meltzer HI, Rowlands OJ. Stigmatisation of people with mental illness. BJPsych. 2000;177(1):4–7. https://doi.org/10.1192/bjp.177.1.4.
12. Crisp A. Stigmatization of and discrimination against people with eating disorders including report of two nationwide surveys. Eat Disord Rev. 2005;13(3):147–52. https://doi.org/10.1002/erv.648.
13. Del Casale A, Adriana B, Modesti MN, Virzì S, Parmigiani G, Vento AE, Speranza AM. Anorexia nervosa and familial risk factors: a systematic review of the literature. Curr Psychol. 2023;42:25476–32584. https://doi.org/10.1007/s12144-022-03563-4.
14. Dimitropoulos G, Freeman VE, Muskat S, Domingo A, McCallum L. "You don't have anorexia, you just want to look like a celebrity": perceived stigma in individuals with anorexia nervosa. J Ment Health. 2016;25(1):47–54. https://doi.org/10.3109/09638237.2015.1101422.
15. Doley JR, Hart LM, Petrovic K, Bouguettaya A, Paxton SJ. Interventions to reduce the stigma of eating disorders: a systematic review and meta-analysis. Int J Eat Disord. 2017;50(3):210–30. https://doi.org/10.1002/eat.22691.
16. Fleming J, Szmukler GI. Attitudes of medical professionals towards patients with eating disorders. Aust N Z J Psychiatry. 1992;26(3):436–43. https://doi.org/10.3109/00048679208072067.
17. Fogarty S, Ramjan LM. Factors impacting treatment and recovery in anorexia nervosa: qualitative findings from an online questionnaire. J Eat Disord. 2016;4(18):1–9. https://doi.org/10.1186/s40337-016-0107-1.
18. Fox AB, Earnshaw VA, Taverna EC, Vogt D. Conceptualizing and measuring mental illness stigma: the mental illness stigma framework and critical review of measures. Stigma Health. 2018;3(4):348–76. https://doi.org/10.1037/sah0000104.
19. Goffman E. Stigma: notes on the management of spoiled identity. New York: Simon & Schuster; 1963.
20. Hayward P, Bright JA. Stigma and mental illness: a review and critique. J Ment Health. 1997;6(4):345–54. https://doi.org/10.1080/09638239718671.
21. Heider F. The psychology of interpersonal relations. New York: Wiley; 1958.
22. Hoftman GD. The burden of mental illness beyond clinical symptoms: impact of stigma on the onset and course of schizophrenia spectrum disorders. AJP-RJ. 2016;11(4):5–7. https://doi.org/10.1176/appi.ajprj.2016.110404.
23. Kask J, Ekselius L, Brandt L, Kollia N, Ekbom A, Papadopoulos F. Mortality in women with anorexia nervosa: the role of comorbid psychiatric disorders. Psychosom Med. 2016;78(8):910–9. https://doi.org/10.1097/PSY.0000000000000342.
24. Kästner D, Weigel A, Buchholz I, Voderholzer U, Löwe B, Gumz A. Facilitators and barriers in anorexia nervosa treatment initiation: a qualitative study on the perspectives of patients, carers and professionals. J Eat Disord. 2021;9(28):1–11. https://doi.org/10.1186/s40337-021-00381-0.
25. Kaye WH, Fudge JL, Paulus M. New insights into symptoms and neurocircuit function of anorexia nervosa. Nat Rev Neurosci. 2009;10(1):573–84. https://doi.org/10.1038/nrn2682.
26. Kurdak H, Tiyekli E, Özcan S, Özer ZY, Nur TA. Eating disorders, primary care, and stigma: an analysis of research trends and patterns. Front Psychiatry. 2023;14:1–13. https://doi.org/10.3389/fpsyt.2023.1243922.
27. Mantler J, Schellenberg EG, Page JS. Attributions for serious illness: are controllability, responsibility and blame different constructs? Can J Behav Sci. 2003;35(2):142–52. https://doi.org/10.1037/h0087196.
28. Martinko MJ, Harvey P, Dasborough MT. Attribution theory in the organizational sciences: a case of unrealized potential. J Organ Behav. 2020;32(1):144–9. https://doi.org/10.1002/job.690.
29. Mond JM, Robertson-Smith G, Vetere A. Stigma and eating disorders: is there evidence of negative attitudes towards anorexia nervosa among women in the community? J Ment Health. 2006;15(5):519–32. https://doi.org/10.1080/09638230600902559.
30. O'Connor C, McNamara N, O'Hara L, McNicholas F. Eating disorder literacy and stigmatising attitudes towards anorexia, bulimia, and binge eating disorder among adolescents. Adv Eat Disord Theory Res Pract. 2016;4(2):125–40. https://doi.org/10.1080/21662630.2015.1129635.
31. Overton SL, Medina SL. The stigma of mental illness. J Couns Dev. 2011;86(2):143–51. https://doi.org/10.1002/j.1556-6678.2008.tb00491.x.
32. Pal A, Saxena V, Avinash P. Stigma in bipolar affective disorder: a systematic quantitative literature review of Indian studies. Indian J Psychol Med. 2021;43(3):187–94. https://doi.org/10.1177/0253717621996618.
33. Roehrig J, McLean CP. A comparison of stigma toward eating disorders versus depression. Int J Eat Disord. 2010;43(7):671–4. https://doi.org/10.1002/eat.20760.
34. Ryan C. Attribution theory and perceptions of mental illness in a university population (unpublished master's thesis). University of Windsor, Canada. 2007. https://scholar.uwindsor.ca/etd/7001.
35. Sebastian J, Richards D, Bilgin A. Education and contact strategies to reduce stigmatising attitudes towards anorexia nervosa among university students. Health Educ J. 2017;76(8):906–22. https://doi.org/10.1177/0017896917724181.
36. Stewart MC, Keel PK, Schiavo RS. Stigmatization of anorexia nervosa. Int J Eat Disord. 2006;39(4):320–5. https://doi.org/10.1002/eat.20262.
37. Qualtrics, Provo, UT, USA. https://www.qualtrics.com
38. Van Eeeden AE, van Hoeken D, Hoek HW. Incidence, prevalence and mortality of anorexia nervosa and bulimia nervosa. Curr Opin Psychiatry. 2021;34(6):515–24. https://doi.org/10.1097/YCO.0000000000000739.
39. Weiner B. Judgements of responsibility: a foundation for a theory of social conduct. New York: Guilford Press; 1995.
40. Woerwag-Mehta S, Treasure J. Causes of anorexia nervosa. Psychiatry. 2008;7(4):147–51. https://doi.org/10.1016/j.mppsy.2008.02.010.
41. Zwickert K, Rieger E. Stigmatizing attitudes towards individuals with anorexia nervosa: an investigation of attribution theory. J Eat Disord. 2013;1(5):1–10. https://doi.org/10.1186/2050-2974-1-5.
42. Þórarinsdóttir, S. Stigma towards eating disorders: differences in age, gender, and education in an Icelandic sample, 2022. https://skemman.is/bitstream/1946/43264/1/BSc%20Thesis%20-%20SteinunnÞórarinsdóttir.pdf. Accessed 18 Nov 2024.

Publisher's Note