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## Beliefs of adolescent girls concerning the severity and prevalence of bulimia nervosa\*

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### Abstract

The beliefs of adolescent girls concerning an eating disorder problem were investigated. A vignette describing a fictional 16-year-old girl meeting diagnostic criteria for bulimia nervosa (BN) was presented to 522 high school students, followed by a series of questions concerning the severity and prevalence of the problem described. Most respondents believed that BN is a serious problem whose sufferers are deserving of sympathy. However, BN was perceived to be common among adolescent girls, far more common than estimates from epidemiological research would suggest, and many participants had at some stage thought that it “might not be too bad” to have such a problem. In addition, participants with a high level of eating disorder symptoms considered the prevalence of BN to be higher, and its symptoms more acceptable, than asymptomatic participants. These findings suggest that the perception of bulimic behaviours as normative and/or desirable may need to be addressed in prevention programs.

Research has shown that members of the public tend to stigmatise individuals affected by mental disorders through identification, separation, attribution of undesirable characteristics and discrimination (Link & Phelan, 2001). Investigating and promoting public awareness of these attitudes is important because stigma associated with mental disorders detracts from the quality of life of individuals affected and also from the likelihood that treatment is sought, in turn increasing the burden of these disorders on society as a whole (Andrews, Sanderson, Slade, & Issakidis, 2000).

Whereas lay attitudes towards individuals affected by psychotic disorders, depression and anxiety disorders have been extensively researched (Jorm, Angermeyer, & Katschnig, 2000), few studies have considered public attitudes towards individuals affected by eating disorders, notwithstanding the profound personal and societal costs of these disorders and low rates of treatment-seeking (Crow & Peterson, 2003; Mond, Rodgers, et al., 2004). In part, this may reflect the fact that the eating disorders, anorexia nervosa (AN) and bulimia nervosa (BN), do not fit the “dangerous/unpredictable” stereotype

typically associated with psychotic disorders. Further, assessment of negative attitudes towards individuals affected by eating disorders is complicated by the fact that certain eating disorder behaviours, such as the pursuit of thinness by individuals of normal or low body weight, may be considered “normative” or even desirable (Mond, Hay, Rodgers, Owen, & Beumont, 2005). Perceptions of this kind are reinforced by the media, in which eating disorders often are portrayed as problems of celebrities, associating them with affluence, beauty and fame (Striegel-Moore & Franko, 2003).

Recently, we tested the hypothesis that stigma towards individuals affected by eating disorders might be evident in the perception that eating-disordered behaviour is “normative” immediately even desirable (Mond, Hay, et al., 2004a). In this research, a vignette describing a fictional person meeting diagnostic criteria for BN according to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* (American Psychiatric Association [APA], 1994) was presented to a community sample of women aged 18–45 years. A series of questions followed in which participants

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were asked their opinions as to the severity and prevalence of the problem described, as well as its desirability. BN was chosen (in preference to AN) because it is more common, but still associated with marked impairment in psychosocial functioning (Hay, 2003). Female participants were chosen because the prevalence of BN and its variants is far higher among women than among men (Hay, 1998).

Contrary to our hypothesis, most respondents viewed BN as a distressing condition that is difficult to treat and whose sufferers are deserving of sympathy. However, more than one third of respondents had at some stage believed that it "might not be too bad" to be like the person described in the vignette. Further, most respondents believed that BN is common among women in the community, far more common than estimates from epidemiological studies would suggest (Mond, Hay, et al., 2004a). An interesting additional finding was that participants with a high level of eating disorder symptoms were more likely to perceive the symptoms of BN as being acceptable, and its prevalence higher, than asymptomatic individuals. This finding raises the possibility that certain beliefs and attitudes may place the individual at risk, or increased risk, of developing an eating disorder. Alternatively, individuals endorsing higher levels of eating disorder symptoms may adjust their attitudes, perceiving bulimic behaviours to be "normative" and/or desirable, in order to alleviate dissonance between attitudes and behaviours (Vander Wal & Thelen, 1997).

In this earlier research, young adult women were sampled because eating disorders meeting formal diagnostic criteria for BN are most common in this population (Fairburn & Harrison, 2003). However, in early and mid-adolescent girls, and whereas full-syndrome BN is comparatively less common, partial-syndrome forms of BN are common and associated with high levels of distress and impairment (Patton et al., 1997; Shisslak, Crago, & Estes, 1995). Further, individuals affected by these conditions have a greatly increased risk of progression to a clinical eating disorder (Patton, Selzer, Coffey, Carlin, & Wolfe, 1999). Clearly it would be beneficial to identify attitudes towards individuals affected that might hasten this transition and/or reduce the likelihood of treatment being sought in those with early symptoms. Further, identification of stigmatising attitudes among adolescents is a first step in the implementation of programs designed to prevent young persons from developing into adults who may have stigmatizing attitudes (Corrigan et al., 2005).

Hence, the aim of the present research was to examine attitudes towards BN in a community sample of adolescent girls. As in our earlier research, we focused on perceptions of severity, desirability

and prevalence and on the relationships between individuals' beliefs and attitudes and levels of actual eating disorder psychopathology. We also were interested to consider the effects of age on participants' responses, because associations with age might be of interest from a developmental perspective. In view of the lack of prior research in an adolescent population, however, specific hypotheses were not formulated.

## Method

### *Design and participants*

Participants were female secondary school students (aged 12–18 years) who had attended the annual Forum on Youth Issues as part of their curriculum. The 2003 Forum consisted of a series of brief presentations in which topics relating to the central theme of "promoting a healthy body image" were covered. Eating-disordered behaviour per se was not, however, a focus of the Forum and questions that might have been influenced by material presented as part of the Forum, such as the influence of the media on body image, were explicitly excluded from the survey. The 2003 Forum was attended by 1,640 students, primarily female, representing a wide cross-section of schools in the greater metropolitan Sydney area.

Following the final presentation, a request was made to each of the schools represented inviting participation in a research project concerning adolescent "mental health literacy". Appropriate numbers of questionnaires were made available to those teachers who, on behalf of their school, agreed to participate. A cover letter, instruction sheet and reply-paid envelope were included with each questionnaire pack. Signed consent forms for participation in both the Forum and the survey were obtained from both participants and their parents or guardians.

A total of 1,450 questionnaires were collected by teachers on the day. Completed questionnaires were subsequently received from 537 students, representing a response rate of 37.0%. This is likely to be a conservative estimate of true response because it could not be verified that all questionnaires collected by teachers were subsequently distributed to students. For the purpose of the present analysis, a small number of questionnaires completed by male students ( $n = 15$ ) were disregarded.

Of the final sample ( $N = 522$ ), 16.3% attended public single-sex schools, 57.8% private single-sex schools, 20.6% public coeducational schools and 5.3% private coeducational schools. Most were born in Australia (83.4%) and had English as a first language (87.4%). The mean age of participants was

15.1 years ( $SD = 1.1$ ). Their mean body mass index was  $20.8 \text{ kg/m}^2$  ( $SD = 3.0$ ). While no information was available concerning the characteristics of non-respondents, comparison of Eating Disorder Examination Questionnaire (EDE-Q) scores with those of a normative sample (Carter, Stewart, & Fairburn, 2001) suggested that the sample was representative with respect to height, weight and levels of eating disorder psychopathology.

#### *Mental Health Literacy Survey*

The survey was modelled on the mental health literacy paradigm developed by Jorm et al. (1997), with modifications by the authors for the study of eating-disordered behaviour (Mond, Hay, et al., 2004b) and for self-report completion by an adolescent sample. A vignette describing a (fictional) 16-year-old girl ("Kelly") who met criteria for BN (purging subtype), as outlined in *DSM-IV*, was presented, followed by a series of questions in which respondents were asked to give their opinions on a range of issues concerning the problem described. The purging form of BN (i.e., involving the use of self-induced vomiting and/or laxatives as a means of controlling weight or shape) was chosen in order to clearly distinguish the condition described from a "subclinical" disorder. The vignette is given in Appendix A.

The perceived severity of the problem described was assessed with the questions: "How distressing do you think it would be to have Kelly's problem?", "How sympathetic would you be towards someone suffering from Kelly's problem?" and "How difficult do you think Kelly's problem would be to treat?". Response options for each of these questions were: "not at all", "a little", "moderately", "very" and "extremely".

The perceived acceptability of bulimic symptoms was addressed with the question: "Have you ever thought that it might not be too bad to be like Kelly, given that, at times, she has been able to lose a lot of weight?" ("never", "rarely", "occasionally", "often", "always"). The phrase "not too bad" conveys a weakly positive affirmation in colloquial usage.

Perceived prevalence was assessed with the question "How many girls in your school do you think might have Kelly's problem?" ("very few girls/less than 10%", "more than 10% but less than 30%", "more than 30% but less than 50%", "about 50%", "more than 50% but less than 70%", "more than 70% but less than 90%" and "most girls/90% or more").

The survey ended with questions concerning participants' personal experience of the problem described, namely: "Do you think that you might

currently have a problem like Kelly's?", "Do you think you have ever had a problem like Kelly's?" and "Has anyone in your family or circle of friends ever had a problem like Kelly's?".

#### *Assessment of eating disorder psychopathology*

Eating disorder psychopathology was assessed using the EDE-Q (Fairburn & Beglin, 1994). The EDE-Q is a 36-item self-report measure derived from the Eating Disorder Examination interview, the latter being the accepted gold standard in the field (Garner, 2002). The EDE-Q focuses on the past 28 days and is scored using a seven-point, forced-choice, rating scale. Subscale scores (relating to dietary restraint, eating concerns, concerns about weight and concerns about shape) and a global score may be derived from the 22 items addressing attitudinal aspects of eating disorder psychopathology. A high level of agreement between EDE-Q and EDE subscale scores has been demonstrated in community samples (Mond, Hay, et al., 2004c). Reliability ( $\alpha$ ) coefficients for EDE-Q subscales in the present sample ranged from .84 (Restraint) to .92 (Shape Concern) (global score = .96). Eating disorder (i.e., overeating and compensatory) behaviours are assessed in terms of the number of episodes occurring during the past 28 days (Mond, Hay, et al., 2004c).

#### *Statistical analysis*

Data are presented as the percentage of respondents choosing particular options for each question. The effects on responses of participant age, levels of eating disorder psychopathology and personal experience of the problem described were examined by means of chi-square tests. A significance level of .05 was adopted for these tests.

## **Results**

#### *Beliefs about severity, acceptability and prevalence*

Most respondents believed that it would be very distressing (40.0%) or extremely distressing (45.0%) to have a problem like Kelly's. Most respondents reported that they would be moderately (35.1%), very (34.9%) or extremely (21.6%) sympathetic towards someone suffering from Kelly's problem. Most respondents also believed that the problem described would be moderately difficult (36.8%), very difficult (44.9%), or extremely difficult (12.4%), to treat.

Whereas 41.7% of respondents reported that they had never thought that it "might not be too bad" to be like Kelly, significant proportions reported that

they had rarely (24.8%), occasionally (19.8%), or often (9.4%) thought this. A small proportion of respondents (4.3%) reported having always thought this. When asked about the prevalence of the problem described among girls at their school, the modal response was “more than 10% but less than 30%”, chosen by 36.7% of respondents (Figure 1).

#### *Effects of eating disorder psychopathology on responses*

Probable cases of eating disorders were identified based on the combination of high scores on subscales of the EDE-Q and the regular occurrence of one or more eating disorder behaviours, namely, episodes of binge eating and/or extreme weight control behaviours (Mond, Hay, et al., 2004c). A total of 36 participants (6.9%) met these criteria. Inspection of the EDE-Q profiles of individuals in this subgroup suggested that most would be classified as cases of partial-syndrome BN, as would be expected (Patton et al., 1997). The mean EDE-Q global score of individuals in this subgroup was 4.62 ( $SD = 0.43$ ), as opposed to a mean ( $SD$ ) score of 1.42 (1.12) among non-cases.

Individuals identified as cases were more likely than non-cases to have occasionally (29.7% vs. 19.0%), often (32.4% vs. 7.7%), or always (27.0% vs. 2.0%) thought that it “might not be too bad” to be like Kelly ( $\chi^2_4 = 97.9, p < .001$ ) and more likely to believe that the prevalence of the problem described was “more than 30% but less than 50%” (43.2% vs. 21.1%), “about 50%” (10.8% vs. 6.0%), “between 50% and 70%” (8.1% vs. 4.0%), or

“between 70% and 90%” (5.4% vs. 1.3%;  $\chi^2_6 = 22.0, p < .001$ ).

#### *Effects of familiarity on responses*

Participants who reported currently suffering or having suffered from a problem such as the one described were considered to have “high familiarity”. Those who had not suffered from such a problem themselves, but who were aware of a family member or close friend having suffered from such a problem, were considered to have “medium familiarity”. Participants who had neither direct nor indirect experience of the problem were designated “low familiarity”. There were no effects of familiarity on responses to questions concerning perceived severity (all  $p > .05$ ), however, high-familiarity participants were more likely to consider the problem described as being “not too bad”, and more likely to perceive a higher prevalence, than low- and medium-familiarity participants ( $\chi^2_8 = 125.3, p < .001$ ;  $\chi^2_{12} = 99.3, p < .001$ ; respectively).

As would be expected, participants in the high-familiarity subgroup had higher levels of eating disorder symptoms than those in the other subgroups (EDE-Q: high familiarity,  $M = 2.9, SD = 1.4$ ; medium familiarity,  $M = 1.4, SD = 1.2$ ; low familiarity,  $M = 1.2, SD = 1.1$ ;  $F_{2,488} = 78.2, p < .001$ ). In order to separate the effects on perceptions of acceptability and prevalence of eating disorder psychopathology from familiarity, responses to these questions were recoded to have dichotomous outcomes and the effects of the two independent variables examined by means of logistic regression. Whereas both eating

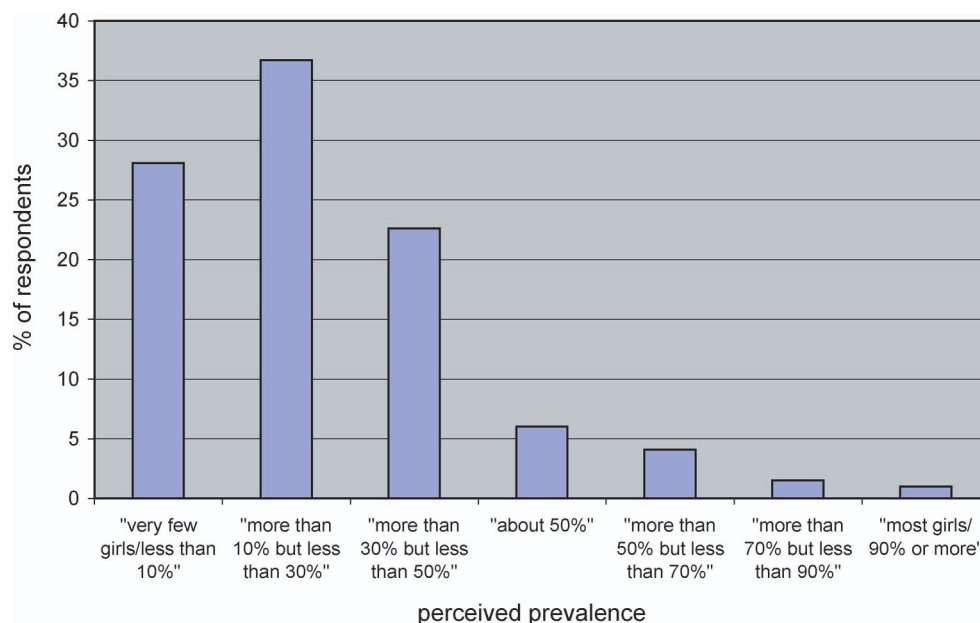


Figure 1. Perceived prevalence of “Kelly’s problem”: Percentage of respondents endorsing each option

disorder psychopathology and familiarity had significant effects on perceptions of acceptability, only level of familiarity had a significant effect on perceptions of prevalence. The interaction term was non-significant in both analyses (details available from the first author upon request).

#### *Effects of age on responses*

The sample was divided into younger participants ( $n = 172$ , 13.0–14.6 years,  $M = 14.2$  years,  $SD = 0.3$ ) and older participants ( $n = 172$ , 15.3–18.5 years,  $M = 16.3$  years,  $SD = 0.9$ ). There were no differences between these subgroups in responses to the questions concerning distress, sympathy, difficulty of treatment or desirability (all  $p > .05$ ). However, older participants were more likely to report a higher perceived prevalence of the problem described (“more than 10% but less than 30%”, 41.2% vs. 30.4%; “less than 10%”, 21.2% vs. 36.3%;  $\chi^2_6 = 14.37$ ,  $p < .05$ ).

#### **Discussion**

To our knowledge, this is the first study to examine the attitudes of adolescents towards an eating disorder problem. Most respondents believed that BN is a serious problem that is distressing and difficult to treat, and whose sufferers are deserving of sympathy. However, BN was perceived to be common among adolescent girls, far more common than estimates from epidemiological research would suggest, and more than half of participants had at some stage thought that it “might not be too bad” to have such a problem. In addition, participants with a high level of eating disorder symptoms considered the prevalence of the problem described to be higher, and its symptoms more acceptable, than asymptomatic participants.

The present findings are strikingly similar to those of our earlier research in young adult women (Mond, Hay, et al., 2004a) and suggest that beliefs and attitudes concerning eating-disordered behaviour are developed early in adolescence, if not earlier. This interpretation was further supported by the fact that perceptions of severity were similar among younger and older subgroups of participants. We have previously noted that prevention programs for the eating disorders need to include clear information concerning the impact of eating-disordered behaviour on physical health and psychosocial functioning, as well as the greatly increased risk of progression to a clinical disorder associated with subclinical disorders (Mond, Hay, et al., 2004d). The present findings further suggest that programs of this kind need to be implemented early in adolescence, if not earlier (Austin, 2000).

The fact that many participants recognised the severity of BN on the one hand, yet on the other were inclined to consider bulimic behaviours as normative and even desirable, indicates the ambivalence towards eating-disordered behaviour that pervades not only the belief systems of individuals treated for eating disorders (e.g., Vitousek, Watson, & Wilson, 1998), but those of adolescent and young adult women in the community. The results may also reflect, in part, the existence of a “social desirability” response bias, at least in responses to questions concerning perceived severity. Given that AN and BN are largely disorders of adolescent and young adult women, an obligation to express sympathy towards individuals affected may be more strongly felt among female subjects. Whereas gender has not generally been found to affect attitudes to mental disorders in general population surveys of adults (Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000; Jorm et al., 1997), there is some evidence that female secondary school and college students have less negative attitudes towards mental illness than their male peers (Sheffield, Fiorenza, & Sofronoff, 2004).

Also consistent with our previous research, a significant association was observed between perception of prevalence and acceptability and levels of eating disorder psychopathology, such that participants with a high level of eating disorder symptoms perceived both the prevalence of BN and the acceptability of bulimic behaviours to be higher. Whereas the effect of eating disorder psychopathology on perceived prevalence appears to have been mediated by participants’ personal experience of the problem described, independent associations between perceptions of acceptability and both eating disorder psychopathology and familiarity were observed. Vander Wal & Thelen (1997) similarly found that female college students’ perceptions of the acceptability of bulimic symptoms were associated with levels of actual bulimic symptomatology. Whereas prospective research would be required to establish the direction of this relationship, its demonstration in an adolescent sample lends credence to the hypothesis that beliefs of this kind may increase the risk of developing an eating disorder.

The fact that there was no association between familiarity and responses to any of the questions concerning perceived severity of the problem described is of interest because research in community samples of adults has shown that higher levels of contact with individuals affected by schizophrenia tend to be associated with less prejudicial attitudes (e.g., Angermeyer, Matschinger, & Corrigan, 2004). Hence, it might have been expected that participants with personal experience of an eating disorder problem would be more sympathetic to someone suffering from such a problem. It is possible that the generally high

levels of sympathy observed in the present study precluded an effect of familiarity on responses. It also is possible that the effects of familiarity differ for different mental disorders and/or that the variables mediating stigmatisation differ between adults and adolescents (Corrigan et al., 2005).

Findings concerning participant perceptions of the prevalence of BN also are consistent with those of our earlier research, but inconsistent with findings from epidemiological research that have consistently shown a point prevalence for BN on the order of 1.0% (Hoek & van Hoeken, 2003). As we noted previously (Mond, Hay, et al., 2004a), the discrepancy between individuals' perceptions of the prevalence of BN and estimates based on epidemiological research would be easier to explain had a vignette of partial-syndrome BN been presented, but this was not the case. Given the likely influence of non-response bias on findings from epidemiological research, it is likely that the true prevalence of eating disorders among adolescent and young adult women in the community will never be known (Beglin & Fairburn, 1992). The finding that older participants were more likely to perceive the prevalence of the problem described as being higher probably reflects the fact that the onset of bulimic-type eating disorders typically occurs late in adolescence or early in adulthood (Fairburn & Harrison, 2003).

It would be interesting to know if similar perceptions of severity and acceptability would be expressed were a vignette of the non-purging form of BN or the *DSM-IV* trial category of binge eating disorder (APA, 1994) presented. Cases of binge eating disorder and of BN-type disorders characterised by the use of non-purging (but not purging) methods of weight control, namely, excessive exercise, extreme dietary restriction or diet pills, are uncommon among individuals receiving specialist treatment (Tobin, Griffing, & Griffing, 1997). While this might simply reflect higher levels of distress or functional impairment (and in turn a greater likelihood of treatment being sought) associated with the use of purging behaviours, it also is possible that bulimic-type eating disorders not involving the use of purging may not readily be recognised as psychiatric disorders by those affected, or by primary care practitioners, and may therefore be less likely to be referred to specialist treatment (Mond, Hay, Rodgers, & Owen, 2006).

It also would be interesting to know whether similar results would be obtained were a vignette of AN presented. Anecdotal reports suggest that "competition for thinness" is common in clinical samples of eating disorder patients, among individuals participating in sports where body weight and shape are strictly controlled, such as ballet, and among women in the general population (Gordon, 2000). Hence, more negative attitudes may have

been elicited had a vignette of a conspicuously thin individual been presented.

A limitation of the research is that response rate was low and no information was available as to the characteristics of non-respondents. Because the sample was in part self-selected (i.e., eligible students who volunteered to participate), it is possible that respondents differed systematically from non-respondents, for example, with respect to levels of interest in the subject matter. Comparison of the EDE-Q scores of participants with those of a normative sample did not indicate a bias in terms of eating disorder psychopathology, but other differences cannot be excluded. Hence, it will be important to replicate the present findings in a different sample.

To conclude, whereas adolescent girls appear to recognise the severity of the eating disorder bulimia nervosa, a substantial subgroup within this population consider bulimic behaviours to be normative and even desirable. It will therefore be important to provide clear information concerning the impact of eating-disordered behaviour on physical health and psychosocial functioning early in adolescence.

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## Appendix A

### *Vignette used in the mental health literacy survey*

Kelly is a 16-year-old high-school student. Although mildly overweight when she was younger, Kelly's current weight is within the normal range for her age and height. However, she thinks she is overweight. Upon starting year 11, Kelly joined a fitness program at the gym and also started running regularly. Through these efforts, she gradually began to lose weight. Kelly then started to "diet", avoiding all fatty foods, not eating between meals, and trying to eat set portions of "healthy foods", mainly fruit and vegetables and bread or rice, each day. Kelly also continued with the exercise program, losing several more kilograms. However, she has found it difficult to maintain the weight loss and for the past 18 months her weight has been continually fluctuating, sometimes by as much as 5 kg within a few weeks. Kelly has also found it difficult to control her eating. While able to limit her dietary intake during the day, at night she is often unable to stop eating, bingeing on, for example, a loaf of bread and several pieces of fruit. To counteract the effects of this bingeing, Kelly takes laxative tablets. On other occasions, she vomits after overeating. Because of her strict routines of eating and exercising, Kelly has lost contact with most of her friends.