The treatment of adolescents with bulimia nervosa

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Abstract
Background: Bulimia nervosa appears to be quite common among adolescents and poses high rates of psychiatric and medical morbidity. Yet, no published accounts of treatment for this population are available.
Aims: To briefly describe the clinical presentation of bulimia nervosa in adolescents and review the available information regarding psychological and pharmacological treatments from the adult literature.
Method: A narrative review of the available literature.
Results: Relatively little information about the treatment of adolescents with bulimia nervosa are available. Family-based treatments as well as cognitive behavioural guided self-help are both promising interventions. Except for one small open trial of fluoxetine, pharmacotherapy remains entirely unexplored.
Conclusion: Most of what is known regarding the treatment of adolescents with bulimia nervosa is based on the adult literature, which does not specifically allude to the applicability of these data for adolescent populations. While we await the publication of two current randomized controlled trials, much more work is needed to establish the best treatments for adolescent bulimia nervosa.
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Introduction

Full and partial-syndrome bulimia nervosa (BN) affect as many as 5% of young women (Kotler & Walsh, 2000; Van Hoeken, Seidell & Hoek, 2004). The disorder usually arises in adolescence with a peak age of onset between 15.7 years and 18.1 years (Herzog, Keller, Sacks, Yeh & Lavori, 1992; Fairburn, Cooper, Doll, Norman & O'Connor, 2000; Lahortiga-Ramos et al., 2005). Pre-menarchal onset is relatively rare (Kent, Lacey & McClusky, 1992). Key features are binge eating followed by inappropriate compensatory behaviors such as self-induced vomiting, laxative or diuretic misuse, fasting, and excessive exercise. Episodes of overeating are accompanied by feelings of loss of control, guilt and remorse. Patients overvalue shape and weight, and, as in anorexia nervosa (AN), often present with repeated

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attempts to lose weight (Steiger & Seguin, 1999; Fairburn & Harrison, 2003). BN is a major source of psychiatric morbidity and impaired functioning in most areas of life. Common comorbid features include depression and anxiety, personality disorders, disturbances in social functioning, alcohol and drug abuse, and suicide attempts. Significant medical complications are also common and typically result from poor dietary habits, and dangerous weight loss behaviours. Two thirds of patients with BN have reproductive problems, more than half have fluid or electrolyte disturbance, and gastro-intestinal and dental problems are also common (Pomeroy & Mitchell, 2001). As many as one quarter of patients may require hospitalization for medical reasons (Palla & Litt, 1988; Kreipe et al., 1995).

There are few reports available specifically describing the clinical presentation of BN among adolescents (Le Grange, Loeb, Van Orman & Jellar, 2004). Full syndromal BN might be more common among young adults than among adolescents (Nicholls, Chater & Lask, 2000) and young adults presenting for eating disorder report more binge eating and laxative use than their adolescent counterparts (Fisher, Schneider, Burns, Symons & Mandel, 2001). In terms of comorbid psychiatric symptoms, however, adolescents with BN experience significantly lower self-esteem (Crowther, Post & Zaynor, 1985) and report more suicidal ideation and suicide attempts than other adolescents (Hoberman, Opland & Garfinkel, 1990).

What happens to adolescents with BN over time?

The fact that partial syndromes or milder symptoms of BN might be more prevalent among adolescents than adults by no means indicates that BN in adolescents is a trivial or self-limiting problem, as evidence from longitudinal community studies demonstrates. One of these studies found that adolescents with partial syndrome BN have a significant risk of developing the full syndrome (Striegel-Moore, Seeley & Lewinsohn, 2003). Moreover, without treatment BN in adolescents tends to persist into adulthood (Newman et al., 1996; Lewinsohn, Striegel-Moore & Seeley, 2000; Kotler, Cohen, Davies, Pine & Walsh, 2001). For example, in one study BN in early adolescence was associated with a 20-fold increase in risk for adult BN, whereas BN in late adolescence was associated with a 35-fold increase in risk for adult BN (Kotler et al., 2001). Secondary physical and mental disorders also develop in these young people. Thus in one longitudinal study 62% of adolescents with eating disorders had more than two chronic physical health problems during early adulthood compared to only 22% of those without psychiatric disorders and 32% of adolescents with other psychiatric disorders (Johnson, Cohen, Kasen & Brook, 2002). Psychosocial adjustment in adulthood in young women who had BN as adolescents is associated with significant impairments in health, self-image, and important areas of social functioning (Striegel-Moore et al., 2003). In a longitudinal birth cohort study of 15 psychological disorders in young adults aged 21, BN was amongst the disorders with the highest levels of impairment (100%), attempted suicide rates (23%), treatment seeking (46%), and use of psychotropic medication (23%). In the vast majority of these cases (90%) their bulimia had started in adolescence (Newman et al., 1996).

How common is BN in adolescents and who gets it?

BN emerged as a new disorder in the 1970s and incidence rates rose from the 1980s to early 1990s, with concerns being expressed that this disorder might be affecting increasingly larger numbers of adolescents (Schmidt, Tiller, Hodes & Treasure, 1996; Stein, Chalhoub & Hodes, 1998). Recent research used data from a large primary care data base in the UK to

study time trends in the incidence of BN (Currin, Schmidt, Jick & Treasure, 2005). Whilst there had been a large increase in the number of new cases of BN presenting to primary care between 1988 and 1993, the incidence has decreased since. However, the reduction in incidence mostly concerned women in their 20 and 30s, whereas the incidence in adolescents aged 10 to 19 remained stable. By the year 2000 this younger age group constituted the majority of cases presenting to primary care. Thus the notion that BN is a disorder mainly affecting young adults no longer is true.

In terms of prevalence rates, studies applying stringent diagnostic criteria to community samples found that 1–5% of adolescent girls surveyed qualify for a diagnosis of BN (American Academy of Pediatrics, 2003). Partial syndrome eating disorders are even more common with the prevalence ranging from 3–5% of girls (Patton, Selzer, Coffey, Carlin & Wolfe, 1999; Rosenvinge, Sundgot-Borgen & Borresen, 1999) to 15–27% of girls, depending on the age group included and other methodological differences (Patton et al., 1999, Rosenvinge et al., 1999; Jones, Bennett, Olmsted, Lawson & Rodin, 2001; Kjelsås, Bjornstrom & Gotestam, 2003).

Research comparing the demographics of adolescent BN to adult BN has been limited. Recent findings suggest that both patient populations are represented across racial and socioeconomic groups (Rhea, 1999). While males represent approximately one fifth of adolescents with BN (Steiner & Lock, 1998), about one tenth of adults with BN are male (Steiger & Seguin, 1999).

Age at onset, duration and prediction of outcome

In contrast to adolescent AN where there is clear evidence that cases with early onset of illness and short duration have a better prognosis than those with late onset illness (Russell, Szmukler, Dare & Eisler, 1987), the same may not be true for BN, where the evidence concerning younger age at onset as a predictor of outcome is inconclusive, with different studies finding this to be a positive, negative or no predictor of outcome at all (Vaz, 1998; Keel, Mitchell, Miller, Davis & Crow, 1999; Steinhausen, 1999; Reas, Schoemaker, Zipfel & Williamson, 2001).

Moreover, early onset cases of BN may have more family problems prior to onset and higher levels of comorbidity, thus be more complex in their treatment needs. In a series of 32 BN cases with an age at onset of 15 years or younger, deliberate self-harm was more prevalent compared to later onset cases. Nearly twice as many early onset cases were overweight prior to illness when compared to typical, later onset cases. Additionally, parental neglect was nearly twice as common in early onset cases compared to typical onset patients (Schmidt et al., 1996).

Finally, looking across the whole age range of bulimia nervosa most studies find shorter duration of illness to be a predictor of good outcome (Keel & Mitchell, 1997; Keel et al., 1999; Steinhausen, 1999; Reas et al., 2001), with the exception of Turnbull et al. (1997) who found the opposite.

The needs of families and other carers of young people with BN

Several features of the illness are likely to make it hard to care for an individual with BN. The clinical symptoms of BN may be difficult to manage in a family context, e.g., large quantities of food going "missing" from cupboards and the cost of replacing it, or soiled or blocked toilets resulting from frequent purging. Comorbid symptoms such as depression and anxiety or impulsive behaviours such as substance abuse, self-harm or shop-lifting may

also be hard to contend with for families. Thus caring for an individual with BN is likely to be a very challenging and stressful experience. Two qualitative studies (Perkins, Winn, Murray, Murphy & Schmidt, 2004; Winn, Perkins, Murray, Murphy & Schmidt, 2004) examined the impact of caring for a person with bulimia nervosa and found carers (parents, partners) to report major practical, emotional and inter-actional difficulties in relation to the young person with BN. An additional quantitative study focused on the mental health and caregiving experience of carers of adolescents with BN or eating disorder not otherwise specified (EDNOS), aiming to determine: (a) levels of mental health problems in these carers, (b) whether a negative experience of caregiving predicted carer MH status; and (c) which factors predicted a negative experience of caregiving. The study found that over half of the carers surveyed reported some mental problems and a minority (5.4%) were experiencing considerable difficulties. A negative experience of caregiving predicted carer mental health status. Higher weekly contact hours and patient ratings of expressed emotion (EE) predicted a negative experience of caregiving in the parents (Winn et al., submitted).

In a related investigation, adolescents with BN who did not involve their parents in treatment rated their parents higher in EE (Perkins et al., in press). Whilst those who chose not to involve their parents in treatment did not differ in terms of the severity of their eating disorder symptomatology, they exhibited more co-morbid and impulsive behaviours than the group who were happy to involve their parents.

Review of treatment

It is clear from the above that BN in adolescents has the potential to severely affect physical, emotional and social development and often follows a chronic and severe course (Maddocks, Kaplan, Woodside, Langdon & Piran, 1992; Steiner & Lock, 1998). Moreover, the burden on families is considerable (Winn et al., submitted) and these young patients now form the majority of those presenting for treatment (Currin et al., 2005). Treatment is likely to be complex and requires attention to broad psychiatric, medical, nutritional and developmental aspects of the disorder (Yager et al., 1993). Unfortunately, whilst over 70 randomized controlled trials (RCTs) of treatments of BN exist, none of these have focused on adolescents (Bacaltchuk, Hay & Trefiglio, 2001; Bacaltchuk & Hay, 2003; Hay & Bacaltchuk, 2004; Hay, Bacaltchuk & Stefano, 2004; NCCMH, 2004). Findings from adult studies are not necessarily generalizable to children and adolescents. However, to provide a context for the limited adolescent data, we will first briefly review the status of treatment of adults with BN.

What do we know about the treatment of adults with bulimia nervosa?

Psychotherapy

Key findings of the existing research are summarized in the recent United Kingdom (UK) National Institute for Clinical Excellence (NICE) guideline for eating disorders, based on an exceptionally comprehensive and thorough systematic review of the literature (NCCMH, 2004). Clinical recommendations in the NICE guideline are given a grade from A (strong empirical support from several well-conducted randomized trials) to C (expert consensus). Over 100 recommendations were made, most of which were given a C grade. Cognitive-behaviour therapy (CBT) for BN was assigned grade A because of a solid body of research showing that it is superior to other psychological and drug treatments. The NICE guideline recommends that most adults with BN should receive 16 to 20 sessions of CBT.

Alternatively, interpersonal therapy (IPT) may be considered, but patients should be informed that this treatment might take longer to achieve similar outcomes. As a first step in the management of BN the use of an antidepressant or of an evidence-based cognitive-behavioural self-care programme preferably with guidance from a therapist, may be considered.

However, despite clear evidence pointing to the usefulness and efficacy of CBT for the treatment of BN, there is no reason for complacency, as currently 40–60% of patients with BN, remain clinically symptomatic after treatment and drop-out rates, even under optimal conditions in randomised controlled trials, can be high (Agras, Walsh, Fairburn, Wilson & Kraemer, 2000). Several researchers have recently developed improved models of CBT for BN (e.g., Fairburn, Cooper, & Shafran, 2003; Cooper, Wells & Todd, 2004) focusing on different maintaining factors. Preliminary results suggest that the revised model by Fairburn and colleagues may improve outcomes for people with BN and binge eating disorder, and EDNOS (Fairburn, 2004).

It is important to note that CBT-models and treatments for BN (including the more recent updates) have not been designed around the developmental issues of adolescence, making it unlikely that they can be used for adolescents in their present form. A number of adaptations to content and delivery may be required: (a) Briefer treatment than that typically used for adults may be more appropriate for this age group, (b) Involvement of families in treatment is desirable, (c) Lastly, treatment for adolescents needs to be easily accessible.

Antidepressant medication

Besides CBT and IPT, the most intensively researched treatment for adult BN has been the use of antidepressant medication. The most convincing evidence supports the use of antidepressant medications. Investigations were prompted by observations that there is an increased frequency of mood disturbance associated with BN. These observations led to a series of double-blind, placebo-controlled trials of antidepressants among adults. Most classes of antidepressant medication have been examined, including the tricyclics, MAO inhibitors, specific seretonin reuptake inhibitors, and atypical antidepressants such as bupropion and trazadone. In almost all the controlled trials, both tricyclics and fluoxetine have proven superior to placebo for reduction of binge frequency. Generally, mood disturbance and preoccupation with shape and weight also show greater improvement with medication than with placebo (Mitchell & de Zwaan, 1993).

Several studies have directly evaluated the relative and combined effectiveness of CBT and antidepressant drug treatment in controlled studies (Mitchell et al., 1990; Fichter et al., 1991; Agras et al., 1992; Leitenberg et al., 1994; Walsh et al., 1997) summarized in several recent systematic reviews (Whittal, Agras & Gould, 1999; Bacaltchuk et al., 2001; Bacaltchuk & Hay, 2003; NCCMH, 2004). Taken together, these studies indicate that CBT is superior to medication alone and that combining CBT with medication is significantly more effective than medication alone. Combining CBT and medication provide only modest incremental benefits over CBT alone. Also favoring CBT are the findings that it is more acceptable to patients and results in fewer dropouts during treatment (Wilson & Fairburn, 2001). In contrasting CBT and medication, perhaps the most important finding is that there is virtually no evidence of the long-term effect of pharmacological treatment. There have been two exceptions to this paucity of evidence on the durability of drug treatment (Agras et al., 1994; Schmidt et al., 2004). Agras et al. (1994) showed that six months of treatment with desipramine produced lasting improvement even after the medication was withdrawn, whereas another study comparing short-term fluvoxamine

(eight weeks), with long-term fluvoxamine and placebo for one year found no benefits of either short -or long-term fluvoxamine (Schmidt et al., 2004).

What is known about treatments of bulimia nervosa in adolescents?

Psychotherapy – family and individual treatments

In contrast to the more individually focused treatments for adults with BN, considerable overlap in symptomatology between adolescent AN and BN (Le Grange et al., 2004), as well as developmental factors concerning the younger age and dependency of adolescents, give rise to family treatments being considered for adolescents with BN. Early indirect support for family-based treatment for adolescent BN, albeit preliminary, comes from adolescent AN studies where adolescents with binge/purge type AN treated with this approach improved to the same degree as purely restrictive patients (Eisler et al., 2000). Many adolescents report that parental involvement is helpful to them when it is supportive rather than judgmental and critical. It is possible that family-based treatment may contribute to a reduction of shame and guilt that commonly co-occur with BN by highlighting that symptomatic behaviours are due to an illness rather than indulgent and willful adolescents.

In one small pilot study of eight adolescents with BN, family-based treatment (FBT) produced significant reductions in bulimic behaviours (Dodge, Hodes, Eisler & Dare, 1995). Specifically, family education about BN and parents helping to disrupt binge eating and purging episodes were identified as important contributions to improved outcomes using family treatment. Progression through FBT in an adolescent with BN was outlined in a recent case study (Le Grange, Lock & Dymek, 2003). In this report, these authors indicate how FBT for this patient population differs from that in adolescent AN; the emphasis is on regulating eating and curtailing purging as opposed to weight restoration, treatment is more collaborative between the adolescent and her/his parents whereas in AN parents take charge of refeeding, the secretiveness of BN as well as the guilt and shame that it causes the adolescent is acknowledged as opposed to the emaciated state of the AN sufferer that is often viewed with pride, and finally, both parents and therapist have to confront the challenges of co-morbid illnesses in BN which more easily derail treatment in BN as opposed to AN.

Other pilot studies have utilized parents in CBT for adolescents with BN and suggest that family involvement may be an important contributor to future enhancement of CBT for this population (Lock, 2002). Because many adolescents with BN do not control their environments at home or school, nor the food choices available to them, parents can facilitate changes in these settings and thereby support behavioural change. For example, parents can be employed in CBT and assist in regulating meal patterns, disrupting binge eating or purging episodes, providing emotional support, and help with behavioural experiments. In addition, family therapy in the context of CBT allows the adolescent to explore pertinent family issues. For instance, behaviours and attitudes on the part of parents or other family members can contribute to heightened feelings of shame and guilt and thereby reinforce symptomatic behaviour.

Ongoing psychological treatment research

Two randomized controlled trials, one in the UK (Schmidt et al., submitted) and one in the United States (US) (Le Grange, Walsh, Leventhal & Rathauz, in preparation) are underway examining the use of different psychological treatments in adolescents with BN. The UK study investigated the efficacy and cost-effectiveness of family therapy compared with

cognitive-behavioral guided self-help in adolescent patients aged 13 to 20 with BN and EDNOS. Patients were consecutive referrals to four catchment area based eating disorder services. The main hypothesis was that adolescent patients presenting with partial or full BN would respond better to FBT than to cognitive-behavioral guided self-care (GSC) in terms of cessation or reduction of binge-purge episodes both at post-treatment and at follow-up. Eighty-five patients were included in the study. Patients in both treatment groups showed significant improvement over time from pre-treatment to follow-up. Guided self-care was superior to family therapy in terms of producing higher abstinence rates from bingeing at six months, however this difference was not sustained at one-year and both treatments were indistinguishable at one year. There were no other significant differences between the two treatment groups in terms of abstinence rates from vomiting alone or bingeing and vomiting combined. The direct cost of treatment was lower for guided self-help than for family therapy, however both treatments performed equally on any other cost-categories (Schmidt et al., submitted).

In the US study, which is nearing completion, 80 adolescents aged 12 to 19 still living with their families have been randomly allocated to one of two manualized treatments; FBT or individual supportive psychotherapy (SPT). Both treatments consisted of 20 outpatient visits over a six-month period with assessments pre-treatment, mid-treatment, end-of-treatment and at six-month follow-up. Preliminary data show a favorable response to both treatments with patient drop-out not exceeding 10% (Le Grange et al., in preparation).

Pharmacotherapy

As alluded to earlier, the majority of medication trials for BN have been conducted with adults while no systematic and controlled studies have been conducted for children or adolescents with BN (Kotler & Walsh, 2000). Only one small open label study has examined the feasibility, tolerability, and efficacy of treating adolescents with BN with fluoxetine, a serotonin-reuptake inhibitor. Ten adolescents, aged 12–18 years received eight weeks of fluoxetine 60 mg/day with supportive psychotherapy. Fluoxetine was well tolerated and bingeing and purging decreased significantly with 20% rated as globally much improved, 50% as improved, and 30% as slightly improved (Kotler, Devlin, Davies & Walsh, 2003). The obvious, but familiar, dilemma is that we are left to extrapolate from adult data to a younger population with perhaps a different clinical presentation. Moreover, given recent concerns about the potential of antidepressants for causing suicidality in adolescents it is likely that investigators are going to be very cautious vis a vis exploring the potential of antidepressants in this age group.

Conclusions and future directions

In conclusion, full and partial syndrome BN are highly prevalent in adolescents and constitute a serious health concern effecting adolescents across diverse ethnic and social groups. This disorder is not self-limiting and has the potential to seriously disrupt young people's development. Yet, our current knowledge of appropriate treatment for adolescents with BN remains extremely limited. While we have only just embarked on the first psychological treatment trials for this clinical population, controlled psychopharmacology studies for this patient population are entirely absent. Consequently, there is much work to be done to determine suitable treatments for adolescents with BN. Because many of these adolescents are embedded in their families, and based on successful treatments for adults with BN, future studies for adolescents should explore CBT and IPT that include family

involvement. These treatments could involve a more flexible family involvement depending on developmental stage of the young person with BN. Preliminary findings for family-based treatment, where parents play an integral role in the recovery, are promising and should continue to be a focus going forward.

An additional consideration for future research and clinical practice is the question of how detection can be improved to facilitate early intervention. At present bulimia nervosa is a hidden disorder, and general practitioners typically identify only about 10 to 20% of cases (Hoek, 1991). Those that do present to specialist services often have had a long duration of their disorder, i.e. in treatment studies of adults the typical duration is about 8–10 years. Even in one of the two ongoing RCT of adolescents with BN the mean duration of the eating disorder prior to accessing treatment was approximately 2.5 years (Schmidt et al., submitted). In this study patients were recruited from catchment area based specialist services. However, the number of adolescents with BN referred on to specialist care was lower than that expected by the epidemiology. Screening of young women in schools and colleges and in primary care settings, especially those who present with weight problems, mental health problems, gynaecological complaints, may be a useful strategy for early identification.

Moreover, models from the addictions field where high risk individuals are identified with the help of specially trained peers in schools and colleges and brief interventions are delivered in a school-based setting may be of use for adolescents with BN too (McCambridge & Strang, 2004). Alternatively, models whereby parents are given skills to detect and provide help and/or succeed in engaging their eating disordered offspring into an effective treatment programme may also be invaluable.

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