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COMMENTARY

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We are only at the tip of the iceberg: A commentary on higher levels of care for anorexia nervosa

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In reading the article by Thompson-Brenner et al. (2018), we are once again humbled by the potential severity, chronicity, and lethality of eating disorders, such as anorexia nervosa (AN). While outpatient interventions are the recommended first line of care for binge-eating disorder and bulimia nervosa, the acute medical and psychiatric instability associated with AN often warrant the need for more intensive services.

We are going to focus our commentary on the discussion of the treatment of adults with AN in the United States because it has one of the highest psychiatric mortality rates among adolescent and young adult women as well as some of the highest rates of suicide among psychiatric disorders, and in adults, given the empirical data, there is no clearly indicated intervention with proven efficacy. Maintaining an extremely low weight, by restricting, vomiting, and abusing laxatives, diuretics or diet pills, and insulin are all problems that cause direct insult, not just to the psyche, but also to the body. In this respect, extreme weight loss behaviors are analogous only to a handful of other psychological problems including alcohol and substance use disorders, and acute life-threatening crises such as suicidal behavior, any of which may co-occur with AN.

From clients' perspectives, weight restoration is often an immensely aversive experience, not easily appreciated by others. The very act of eating food at a low weight may cause more physical discomfort than not eating in terms of heartburn and gastrointestinal distress—so weight restoration can be experienced as more punishing than rewarding.

To gain weight, clients undergoing weight restoration may have to eat almost double the calories that a healthy-weight individual may eat in a day. Weight restoration can take time—gaining 2–4 lb/week for an individual with AN who needs to gain 30–40 lb to reach a healthy weight range could take many months. Even trying to restore weight can lead to acute medical crises, such as refeeding syndrome, which, although rare, is life-threatening. Weight restoration is a process that often requires clients to constantly think about what and how they will eat—which basically is all the waking hours of their day. Inpatient, day patient (or partial hospital), or residential treatments may be the most supportive environment that clients with AN will find helpful during weight restoration.

AN may be a severe and chronic disorder for some, and caring for a loved one with this disorder can lead to significant caregiver burnout. Higher levels of care may provide the respite caregivers may need from disorders like AN.

Because of these reasons, the treatment of AN often requires the multidisciplinary expertise of physicians, psychiatrists, clinical psychologists, nurses, and dietitians and, at times, requires around-the-clock professional care—services only available at higher levels of care. Higher levels of care may include hospitalization in the form of short-term inpatient stays for medical stabilization in general medical units, psychiatric hospitals, or psychiatric units. These services are often part of academic hospital settings. Alternatively, a higher level of care may include residential treatment programs, which involve living in a non-hospital-

based setting, being treated by a multidisciplinary team, and receiving individual psychotherapy, group psychotherapy, and meal support. These are typically run by for-profit companies. More intensive services may also include partial hospitalization, which involves spending 6–10 hr/day, 3–7 days/week in an intensive outpatient program where meals and therapy are provided.

Study of the implementation of intensive treatments using day patient, residential, and inpatient settings for eating disorders in the United States is in its infancy. Residential eating disorder clinics are growing rapidly, and in a potentially unregulated way, in the United States. The first residential eating disorder program opened in 1985. By 2006, there were 22 such programs, and now, there are more than 75 such programs in operation (Attia, Blackwood, Guarda, Marcus, & Rothman, 2016). As Attia et al. (2016) describe, “there is still no industry consensus about either the care components required to accomplish treatment goals or benchmarks for assessing quality of care” (p. 664). In addition, a call to the field has been made by Attia and colleagues for the use of common assessment measures and follow-up assessment in residential, day patient, and inpatient service modalities.

This current article (Thompson-Brenner et al., 2018) is important because it is part of the attempt to address these important calls in the eating disorder field to report outcomes of the interventions conducted in residential and partial hospitalization settings. By participating in research of this nature, Renfrew is setting an important trend toward accountability and transparency for consumers and their families, insurance companies, treatment researchers, industry regulators, and policymakers. It takes real foresight of the Renfrew leadership to engage in implementation research. We also have to commend the authors for their collaborative efforts that are well described in this article. It is challenging to conduct implementation research where the for-profit motive may conflict with the desire of scientists to reach the truth via empiricism, even if that truth does not yield a profit.

At the same time, we are still only at the tip of the iceberg as far as understanding what we need to know about intensive treatments for eating disorders. We do not yet have a good grasp of the percentage of individuals with eating disorders who have received day patient, inpatient, or residential care for an eating disorder in the public and private health system in the United States, what the outcome of these treatments has been, and how cost-effective these treatments are.

What we do know are these things. Higher-level services for eating disorders are expensive. The treatment costs for AN and bulimia nervosa are comparable to that of schizophrenia. This finding comes from the first large-scale study of 12-month medical record claims of approximately 4 million individuals in the United States by Ruth Striegel-Moore and colleagues in 2000, see Supporting Information. A recent article by Guarda et al. (2017) using data from a

study of 18 residential centers in the United States and from a national insurance claims database estimated the cost at approximately \$1,200 per day per client for a residential treatment stay for AN. Short-term stays are unlikely to result in weight restoration in AN—and are most likely for acute medical or psychiatric care. These figures are similar to that from a Healthcare Costs and Utilization Project statistics report showing that inpatient (state-funded) short-term stays of an average of 8 days cost an average of \$1,135 per day from 2005 to 2009 in the United States.

A recent review of residential treatment studies (Friedman et al., 2016) estimated that the average length of stay ranges from 28.5 to 105 days. If we assume that an inpatient or residential stay for weight restoration is for 45 days, at \$1,200 per day, this could amount to \$54,000 for one stay. Canadian costs per day for inpatient stays for AN are similar, averaging US\$1,494 (CAN\$1,450) per day (see Weissman & Rosselli, 2017). Both Canadian and U.S. average costs per day for inpatient stays for AN appear greater than that reported in Germany at EUR224 or US\$314 per day (see Weissman & Rosselli, 2017). What we are trying to get at with crude and dated statistics is that residential care and inpatient hospitalization for AN are often very expensive—particularly in the United States. Unfortunately, we do not have good recent estimates of how many individuals have accessed residential care for eating disorders in the United States or how often. Recent German figures show that the annual costs of untreated eating disorders were on the order of almost 2.5 billion EUR for AN and that for each Euro invested in treatment for eating disorders, double to four times this investment could be saved (see Supporting Information). We do not know what these figures are for the United States. In addition, there are only a couple of studies (including that by Guarda et al., 2017) that examine the cost-effectiveness of higher levels of care for adults with AN in the United States, where the rate of weight gain and increase in weight at discharge are calculated relative to the daily cost of treatment. These studies suggest that day patient intervention may cost half of what residential or inpatient care does in the United States. Given these costs, clients with AN, their families, insurance companies, and taxpayers deserve treatments that work. Understanding how to implement treatments, as illustrated in Thompson-Brenner et al. (2018), and how to test these in residential and day patient settings is crucial in this effort.

We only have limited information about what types of interventions are offered in residential treatments and how effective these are. A recent review by Kaye's group (Friedman et al., 2016) showed that the six adult residential and 22 day patient programs for eating disorders, which reported outcome after treatment, typically delivered cognitive-behavioral or dialectical behavioral interventions with eclectic additions. At discharge, for the most part, residential and day

patient programs showed weight gain and improvement, although, as the authors note, these are the criteria typically required for discharge. Only three of the six adult AN residential programs and nine of the 22 day patient programs reported follow-up, making it difficult to draw conclusions about the longer-term effects of these interventions after treatment.

In the studies reviewed, three were randomized controlled trials, two conducted in Germany (one with adolescents with AN, the other with adults with bulimia nervosa), and another from South Korea with adults with a range of eating disorders. The German trial with adolescents with AN, who initially all had a 3-week inpatient stay, showed that weight regain was similar in continued inpatient care or partial hospitalization after the initial 3-week stay, and this was maintained at 12-month follow-up. In addition, there was greater improvement in self-reported mental well-being and psychosexual adjustment in the partial hospitalization program relative to the inpatient program. To date, this is the only well-powered randomized controlled trial that has been conducted with clients with AN to assess the outcome of higher levels of care. This review concludes that more studies are needed to confirm or disconfirm these findings. We do not know if these findings generalize to adults with AN, nor do we know if residential care has effects similar to inpatient hospitalization.

It is unclear what is the best type of intervention at higher levels of care for adults with AN. This article (Thompson-Brenner et al., 2018) starts to fill one of the important gaps in the area. There is a real tension between the amount of evidence that is sufficient and the amount of evidence necessary to support the implementation of an intervention, especially for AN, at higher levels of care. This leads to a competition between an urgent need to establish the best intervention to implement relative to the speed of accumulation of basic and clinical science to support the implementation of an intervention. On one hand, we may need another decade to build an adequate knowledge base to support the implementation of an intervention where the mechanisms of the intervention are well articulated. Other clinical research fields have shown that it is necessary to understand underlying biological and behavioral mechanisms in order to develop effective treatments. However, while the study of other problem behaviors has used this approach to identify targets, the field of eating disorders lags behind. On the other hand, there are clients who may die while waiting for us to develop a better knowledge base to justify the further testing of interventions. The urgency is exacerbated by an unstable health coverage environment, where the loss of healthcare privileges may lead to the further erosion of treatment options for clients.

Our best course of action is probably somewhere in between—working out in the field utilizing what we know

about this iceberg, working out what we do not know, and then establishing what part of the iceberg the ship may crash into and requires urgent attention, and determining what part requires steady, incremental work over time.

CONFLICT OF INTERESTS

The first author discloses annual royalties from Guilford Press and has consulted for Shire Pharmaceuticals.

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SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

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