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ORIGINAL ARTICLE

Inpatient medical stabilization for adolescents with eating disorders: patient and parent perspectives

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Abstract
Purpose The serious physical complications of eating disorders in adolescents may necessitate inpatient medical stabilization, yet little is known about how patients and their parents perceive the hospitalization experience.
Methods We identified 82 patients admitted to a large urban hospital for medical stabilization between January 1, 2010 and June 30, 2013. Twenty-three patients and 32 parents completed directed telephone interviews. Respondents rated components of the inpatient protocol using five-point Likert scales and answered open-ended questions regarding hospitalization. Quantitative and qualitative analyses were performed.
Results The mean age of patients at admission was 14.9 years (range 9–21) and the average stay was 8.4 days (range 2–25). Patients rated "massage therapy" most helpful and "cell phone limits" least helpful. Parents rated "nursing staff" most helpful and "seeing other patients in the hospital" least helpful. Protocol components viewed differently by parents and patients included parents more strongly endorsing "staff supervision of meals" (4.34 vs 2.82, $p < 0.001$) and "limits on physical activity" (4.34 vs 3.23, $p = 0.001$). The two most common themes identified in open-ended questions were need for hospitalization as a signifier of eating disorder severity and desire for mental health services on the medical unit. Parents emphasized the value of dietician-directed meal planning.
Conclusions Inpatient medical stabilization for adolescent eating disorders may play an important role not only in addressing acute medical complications, but also in activating the patient and family regarding the need for ongoing treatment. Parents particularly appreciate staff supervision of meals and having a respite from meal planning.

Keywords Eating disorders · Hospital utilization · Medical complications · Patient interview

Abbreviations
AN Anorexia nervosa
BN Bulimia nervosa
NG Nasogastric

Introduction

Eating disorders, including anorexia nervosa (AN) and bulimia nervosa (BN), significantly impact the health and well-being of many adolescents. The vast majority of patients with eating disorders develop their symptoms during the adolescent years, and a recent population-based study estimated the lifetime prevalence of AN to be 0.9 % for women and 0.3 % for men. The risk of BN is even higher, with 1.5 % of all women and 0.5 % of men developing the disorder at some point in their lives [1].

Many patients with eating disorders, particularly those with AN, do not believe they require treatment, and this

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ambivalence toward treatment and recovery is often the greatest challenge in caring for these patients [2]. Whereas most illnesses are egodystonic, AN is often egosyntonic. Simply stated, dystonic means that patients do not like their illnesses—they go to the doctor to find a treatment to help them feel better. In such cases, the doctor and the patient are on the same side: both looking for an explanation as to the cause of the problem and working together to find ways to ameliorate the suffering, i.e., the dystonia. Eating disorders, on the other hand, present different dynamics. Because eating disorders are egosyntonic, they may reinforce how the patient views herself—they may make her, on some level, feel better rather than worse, and often put the patient in conflict with her treatment team. The syntonic nature of the disorder can create dynamics in which patients adamantly disagree with the need for treatment. For example, a previous study of a behavioral inpatient and partial hospital eating disorders program revealed that, at the time of hospital admission, 33 % of patients did not think they required hospitalization. However, after 2 weeks of treatment, the percentage of patients who disagreed with the need for hospitalization had fallen to 19 % [3]. This study examined both adults and adolescents, and the authors noted, perhaps unsurprisingly, that adolescents were less likely to agree with the need for hospitalization than adults. Adolescents may disagree not only with clinicians about the need for treatment, but also with their parents regarding such needs. Adolescents often insist that they do not require medical care, even when faced with a host of physical health problems that may be severe enough to merit medical hospitalization. These physical health problems include severe bradycardia, hypotension, hypothermia, dehydration, and severe malnutrition, among others [4]. Ideally, the potential for inpatient medical stabilization should be discussed early in the treatment process and should be viewed as a safety net rather than as a punishment. Yet medical stabilization is often urgent, and patients are frequently admitted directly from the medical office or emergency room with little planning beforehand. This is in contrast to inpatient psychiatric or residential treatment, which usually occurs in a more planned fashion. Despite the clear necessity of hospitalization for many patients, there is little agreement among physicians regarding admission criteria, and, once admitted, there is significant variability regarding inpatient medical management [5].

Although there have been many studies describing medical complications seen during hospitalization [6] as well as post-hospitalization outcome studies [7], we are unaware of studies examining patient or parent perception of inpatient medical stabilization. The protocols frequently used for medical stabilization [8] have been created by physicians with little input from patients or parents. While the overriding goals of medical admission are driven by physiologic concerns (improving weight, stabilization of vital signs, and normalization of laboratory values), we have no guidance as to which specific components and processes involved in the medical hospitalization are perceived as helpful, and which are not. The purpose of this study is to describe parent and patient impressions of inpatient medical stabilization, both qualitatively through directed interviews, and quantitatively through parent and patient evaluation of specific components of an inpatient eating disorders medical stabilization protocol.

Methods

Our program's inpatient treatment is based on an inpatient protocol that was developed and refined at a number of centers over the past 10–15 years [8]. Briefly, the overriding theme of the hospitalization is that, because the patient has been unable to properly care for herself, the inpatient team will take over as much control as is necessary. Nutritional intake is not negotiable—food is the patient's most important medicine. The primary focus is on physical health and safety, emphasizing the medical nature of the admission, and the team explicitly differentiates medical stabilization from acute psychiatric inpatient and residential admission. In our institutions, most patients are provided 1500 calories on the first day of admission, and the meal plan is increased by 200–300 calories each day, until the patient reaches her calculated requirements. If the patient does not gain weight at her calculated calorie level, caloric content of the meal plan will continue to be increased. Patients either sit within view of the nurse's station in the doorway of their hospital room to eat, or have a constant attendant with them to monitor their meals. Patients have 30 min to consume meals. If they are unable to consume the entire meal, the calorie content of any leftover food is estimated by the nursing staff, and equivalent calories are given to the patient to drink as a liquid nutritional supplement, such as Ensure or Boost. Patients then have 30 min to consume the nutritional supplement under direct supervision, and if they are unable to, then the supplement is delivered via nasogastric (NG) tube. The NG tube is then removed, and the cycle may be repeated at each meal if necessary. Occasionally, patients have such difficulty consuming enough food to gain weight that longer-term NG supplementation becomes necessary, particularly using overnight feeds. In these cases, the NG tube may be left in place. Weight and vital signs are closely monitored in a consistent and predictable manner that minimizes the patient's temptation to falsely alter these measurements. Patients are weighed at the same time each morning after voiding while wearing a hospital gown.

Weights are assessed on the same scale, privately in the hospital room with the patient facing away from the display. Disclosure of the patient's weight is on a case-by-case basis as determined by the care team. Orthostatic blood pressure and pulse measurements are performed each morning with the patient in the recumbent, sitting, and standing positions. The usual length of stay for medical hospitalization is between 1 and 2 weeks, but often varies by institution. Patients may be discharged to outpatient care, a partial hospital program, or to a residential eating disorder treatment facility depending on local resources. [9].

We identified 82 patients admitted under the inpatient protein calorie malnutrition protocol at a large urban children's hospital between January 1, 2010 and June 30, 2013. We attempted to contact all patients and a parent to administer a 20 min telephone survey; the patient and parent were interviewed separately. Participants were asked to rank the usefulness of various components of the hospital protocol on a five-point Likert scales ranging from 1="very unhelpful" to 5="very helpful" ("unsure" and "do not know" responses not conforming to the scale were coded separately); parent and patient responses were compared using *t* tests via the SPSS v21. Descriptions of the various components of the inpatient medical protocol are summarized in Table 1. Participants were also asked a series of open-ended questions about the hospitalization: (1) Describe, in your own words, the importance of being admitted to the hospital for the eating disorder. (2) What was most helpful about being admitted to the hospital? (3) What was least helpful about being admitted to the hospital? (4) What was missing from the treatment during the admission? (5) In what ways (if any) did the hospitalization change your perception of eating disorders? (6) Would you recommend admission to this hospital for others with eating disorders? (7) Is there anything else you would like to add? Interview responses were transcribed in real time and then coded into thematic categories [10]. If patients and/or their parents granted permission, we reviewed the medical record to identify medical admission length of stay; height and weight at admission, discharge, and 1 year later; and information regarding additional eating disorder treatment. The study was approved by the Nationwide Children's Hospital Institutional Review Board.

Results

Twenty-three patients and 32 parents completed the interviews. Clinical information from chart review was available for 19 of the patients. The average age of patients at admission was 14.9 years (range 9–21) and the average length of stay for the medical admission was 8.4 days (range 2–25 days). All but two patients were female. Mean body mass index increased during the hospital stay (15.3 kg/m^2 at admission to 16.0 kg/m^2 at discharge, $p < 0.001$). For the 16 patients for whom follow-up information was available 1 year after admission, BMI also increased significantly (to 17.3 kg/m^2, $p = 0.002$).

Patient and parent Likert scales regarding the helpfulness of various protocol components are summarized in Table 2. Patient responses ranged from a high of 4.57 for "massage therapy" to a low of 2.28 for "cell phone limits". Parent Likert scales ranged from a high of 4.71 for "nursing staff" to a low of 2.71 for "seeing other patients in the hospital". Many respondents were unsure of the impact of various components of the hospitalization, with only "talking with the physician" being ranked by all patients and parents. "Homework limits" and "seeing other patients in the hospital" elicited the fewest opinions. Parents felt that staff supervision of meals (4.34 vs 2.82, $p < 0.001$) and the use of liquid nutrition supplements such as Ensure were more helpful (4.37 vs 3.65, $p = 0.046$) than patients did. Parents also perceived that limits on physical activity (4.34 vs 3.23, $p = 0.001$) and the use of electronics such as cell phones (3.54 vs 2.28, $p = 0.006$) and computers (3.77 vs 2.41, $p = 0.005$) during the hospitalization were more helpful than did patients.

All of the parents and 17 patients responded to the series of open-ended questions. Both patients and parents frequently mentioned that the need for hospitalization was the first time that they realized the seriousness of the eating disorder, and that they were concerned about cardiac complications. Parents were also frequently appreciative of having a respite from meal planning and from the responsibility for making their children eat at home. Many patients and parents desired mental health services to be consistently provided in the hospital, and patients frequently complained of being bored with nothing to do other than eat. The themes identified in the open-ended responses are summarized in Table 3, and examples of patient and parent responses for each identified theme are provided in Table 4. Of the 23 patients interviewed, 14 continued to be in treatment for their eating disorders 1 year following admission. Nineteen of 23 patients and 27 of 32 parents would recommend medical hospitalization in our program for others with eating disorders.

Conclusions

This is the first study to examine patient and parent perceptions of inpatient medical hospitalization for adolescent eating disorders. We found it striking that many patients and parents indicated that the hospitalization was for the first time that they had to confront the seriousness of the

Table 1 Components of inpatient medical stabilization protocol

Component	Description
Blood test monitoring	Daily monitoring of serum electrolytes and phosphorus for first 3 days, then as clinically indicated
Cell phone limits	Patients are not allowed to use cell phones. They were allowed phone contact with parents, but only using the hospital phone
Child life	Trained staff provide an approved range of recreational activities on weekdays
Computer limits	Computers are allowed solely for schoolwork
Daily meal planning	Patients meet daily with a registered dietitian. Patients are allowed 3 "food exclusions", but may not choose specific meals
Desire to not to return to the hospital	Although the medical hospital is framed in a supportive manner, some patients may find the experience aversive
Heart monitoring	Patients are on continuous bedside cardiac monitor for the length of the admission
Homework limits	Patients are allowed to do schoolwork for a maximum of 3 h daily
Liquid nutrition supplements	If unable to complete full meals in the allotted time, patients consume the calories via liquid nutrition supplements
Massage therapy	Certified massage therapists offer 30–60 min sessions on weekdays
Medication	Psychopharmacology management is performed on an individual basis
Nursing staff	Nursing staff have received protocol training and determine the quantity of liquid nutrition required for any food left on the meal tray
Nutritional counseling	Registered dietitians provide counseling during daily meal planning
Physical activity limits	Bed rest is required for heart rates <50/min; otherwise, patients remain in their rooms. They may be escorted off the unit in a wheelchair for up to 30 min daily with physician approval
Seeing other patients in the hospital	Patients are admitted to medical rehabilitation unit or a general medical unit
Staff supervision of meals	Nurses or patient care associates sit with patients at each meal
Talking with the physician	Resident physicians and fellows go on rounds daily with supervising faculty
Therapeutic recreation	Meet with patients on weekdays to help identify and practice recreational activities that do not perpetuate the eating disorder

eating disorder. Cardiac impairments were frequently cited as being an anxiety-provoking and observable complication, and clinicians should specifically address how these impairments (typically bradycardia and hypotension) improve or worsen through the course of the hospitalization. Additionally, the benefit that parents report in having a respite from supervision of meals at home and the modeling they observe from hospital staff regarding meal planning/supervision cannot be overstated. Additionally, parents and patients are desperate for mental health services even while admitted to a medical inpatient unit, and these services should be integrated into standard protocols.

Although we could not identify previous research studies examining patient and parent perspectives regarding inpatient medical stabilization for eating disorders, a few papers have described adolescents' perceptions and attitudes about their experiences in residential and inpatient eating disorders treatment settings using semi-structured interviews. Adolescents frequently stated a desire to be seen as individuals and not treated like just "another anorexic" [11, 12], which was a desire mentioned by a few of our respondents. Others alluded to the syntonic nature of the eating disorder and the difficulties externalizing the eating disorder while still identifying it as part of their personal identity [13]. Others emphasized the conflicting desire to be a "perfect patient" while still resisting treatment and physicians' definitions of what it means to be "healthy" [14, 15]. While all of these structured interviews provide important observations in the experience of adolescents in the treatment for eating disorders, they offer less insight into how to construct an inpatient treatment program, and none address the important issue of physical health stabilization in the inpatient medical setting.

The findings of this study must be interpreted within the context of a number of limitations, most prominent of which is that we surveyed a relatively small number of patients who were admitted to a single hospital under a single inpatient medical stabilization protocol, thus potentially limiting the generalizability. Although we administered both evaluation scales and open-ended questions, parents and patients who had particularly strong opinions provided more detailed qualitative answers. Finally, surveys were administered up to 18 months following the patient's hospitalization, leading to concerns about possible recall bias.

Inpatient medical stabilization of adolescents with eating disorders, particularly AN, is often the first small, yet

Table 2 Patient and parent Likert scale values for various components of the inpatient medical stabilization protocol

Item	Patient ($n = 23$)		Parent ($n = 32$)	
	Mean value	Number unsure	Mean value	Number unsure
Massage therapy	4.57	9	4.25	16
Child life	4.44	5	4.24	7
Nursing staff	4.36	1	4.71	1
Desire to not return to the hospital	4.35	0	4.45	1
Heart monitoring	4.17	0	4.53	2
Medication	4.00	4	4.30	9
Therapeutic recreation	4.00	8	3.95	12
Talking with the physician	3.87	0	4.47	0
Blood test monitoring	3.77	1	4.21	3
Liquid nutrition supplements*	**3.65**	**6**	**4.37**	**5**
Daily meal planning	3.58	4	4.27	2
Nutritional counseling	3.27	1	3.90	2
Physical activity limits***	**3.23**	**1**	**4.34**	**3**
Seeing other patients in the hospital	3.00	12	2.71	15
Homework limits	3.00	15	3.77	19
Staff supervision of meals***	**2.82**	**1**	**4.34**	**0**
Computer limits**	**2.41**	**6**	**3.77**	**10**
Cell phone limits**	**2.28**	**5**	**3.54**	**8**

1 very unhelpful, *2* unhelpful, *3* neither helpful nor unhelpful, *4* somewhat helpful, *5* very helpful, *number unsure* number of respondents indicating "not sure/do not know"

*$p < 0.05$, **$p < 0.001$, ***$p \leq 0.001$

Table 3 Themes identified in open-ended question responses from patients and parents

Theme	Patients ($n = 17$)	Parents ($n = 32$)
Need for hospitalization was the first time that I realized the seriousness of the eating disorder	12	14
Concerns about cardiac complications	6	8
Appreciation for having a respite from meal planning/responsibility	5	9
Desire for mental health services while hospitalized	8	13
Patient boredom with nothing to do, but eat	4	0
Parental desire for resources about how to care for the patient once he/she is home	0	7
Feeling of isolation/desire for contact with family and friends outside the hospital	7	4

critical step to recovery. Many of our patients and their parents stated that the medical admission was the first time that they were confronted with the seriousness of their clinical situation, as well as the first time that they realized eating disorder treatment was even necessary. Patients with higher clinical severity, such as high levels of body dissatisfaction, depression, and poor parental relationships, are less likely to acknowledge problems with their disordered eating behaviors [16]. A crisis, such as the need for medical hospitalization, unambiguously illustrates the need for treatment, and this should be consistently emphasized to families. Because such inpatient stays are often shocking to patients and families, they can create challenges for the hospital staff. By the very nature of the illness, many patients are likely to dislike most aspects of inpatient stabilization protocols. However, listening to the voices of patients and parents who have been through an inpatient medial admission can help improve the quality of the experience and guide improvement in such protocols. We found that most patients and parents agreed that hospitalization was necessary and important and they frequently expressed concerns about cardiac complications. Parents were especially supportive of having meal planning taken over by dietitians while hospitalized. Even in the medical

Table 4 Examples of patient and parent qualitative responses

Theme	Patient response	Parent response
Need for hospitalization was the first time that I realized the seriousness of the eating disorder	"This was the first time I admitted to anyone that I had an eating disorder"	The hospital "was very important—a necessity, a wake-up call"
Concerns about cardiac complications	"I was put in the hospital so I could regain my strength and my heart would start to work again"	"At the time (of admission) it was life or death, because she was almost in heart failure"
Appreciation for having a respite from meal planning/responsibility	It was helpful "to be observed and have the meals already prepared and put in front of me, and to have a certain amount of time to eat them"	"There was nothing that I could do to help him, so I needed somebody else to be in charge"
Desire for mental health services while hospitalized	"It was really overwhelming to eat three full meals and snacks and supplements without any counseling"	"They should have some kind of mental health services, even if (the patient) is not in their right mind"
Patient boredom with nothing to do but eat	"Since I was on bedrest 12 h a day, there wasn't much to do"	"It was like she was in jail and being punished"
Parental desire for resources about how to care for the patient once he/she is home	–	It was "frustrating that they had a hard time finding counselors that could help her" once she was out of the hospital
Feeling of isolation/desire for contact with family and friends outside of the hospital	I wish I had been "able to connect with somebody else and feel like I was in a less isolated environment"	"We all felt alone like no one understood"

setting, mental health services are strongly desired by patients and parents. Addressing these issues by clearly communicating improvements in cardiac function and providing mental health services regularly on the medical unit may improve the patient and family experience and help engage them in the next steps toward recovery. For both patients and families, medical admission appears to not only address the acute physical health complications of eating disorders, but may also serve as a powerful motivating factor in accessing longer-term comprehensive eating disorder treatment. Clinicians should not hesitate to use the patient's physical health status to help improve their motivation for treatment. Hospital units providing medical stabilization for adolescents with eating disorders should frame such an admission as a critical first step in recovery, providing support and education regarding eating disorder diagnosis and long-term treatment while patients and parents are activated and ready to engage in such treatment.

Compliance with ethical standards

Conflict of interest The authors have no conflicts of interest to declare.

Ethical approval All procedures performed in this study were in accordance with the ethical standards of the Nationwide Children's Hospital Institutional Review Board and with the 1964 Helsinki declaration and its later amendments.

Informed consent Informed consent was obtained from all participants who were 18 years and older. For minors, a parent provided informed consent and the adolescent provided assent to participate.

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