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RESEARCH ARTICLE

Triggers for Children and Adolescents with Anorexia Nervosa: A Retrospective Chart Review

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Abstract

Introduction: Anorexia nervosa may arise from a wide range of influences, often involving an interplay of biological, psychological, and sociocultural factors. The present study examines the nature of triggers for children and adolescents with anorexia nervosa at the time of diagnosis. **Method:** A qualitative retrospective chart review of 50 patients diagnosed with anorexia nervosa-restrictive subtype was conducted, revealing both specific and non-specific themes for triggers of anorexia nervosa. **Results:** Specific themes revealed triggers pertaining to internalization of the thin ideal, healthy eating education, sports performance motivations, and weight-related teasing. Non-specific factors included general preoccupations about weight, shape, and healthiness. **Conclusions:** Examining adolescent perceptions of healthy messages from key players, including teachers, family, and peers, can better inform researchers and policy makers of the impact of health-focused messages on child and adolescent populations.

Key Words: *anorexia nervosa, adolescent, trigger*

Résumé

Introduction: L'anorexie mentale peut venir d'une vaste gamme d'influences, comportant souvent une interaction de facteurs biologiques, psychosociaux et socioculturels. La présente étude examine la nature des déclencheurs pour les enfants et les adolescents souffrant d'anorexie mentale au moment du diagnostic. **Méthode:** Une revue rétrospective qualitative des dossiers de 50 patients ayant reçu un diagnostic d'anorexie mentale, du sous-type restrictif, a été menée, révélant des thèmes spécifiques et non spécifiques pour les déclencheurs de l'anorexie mentale. **Résultats:** Des thèmes spécifiques ont révélé des déclencheurs relatifs à l'internalisation de l'idéal de minceur, de l'éducation en alimentation saine, de la motivation de performance sportive, et des taquineries liées au poids. Les facteurs non spécifiques incluaient des préoccupations générales sur le poids, la forme et la santé. **Conclusions:** L'examen des perceptions qu'ont les adolescents des messages de santé lancés par les principaux acteurs, notamment les enseignants, la famille et les pairs est plus apte à informer les chercheurs et les décideurs de l'impact des messages axés sur la santé sur les populations des enfants et des adolescents.

Mots clés: *anorexie mentale, adolescent, déclencheur*

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There exists an abundance of research into eating disorder risk factors and outcomes. Incidence rates of eating disorders tend to peak during the adolescent period, particularly for young women ages 15-19 years (Pinhas, Morris, Crosby, & Katzman, 2011; Smink, Van Hoeken, & Hoak, 2012; Weaver & Liebman, 2011). The exact etiology has not yet been elucidated, but the present literature points to a complex interplay of genetic, biologic, environmental, and sociocultural influences (Campbell & Peebles, 2014; Mazzeo & Bulik, 2009; Striegel-Moore, R. H. & Cachelin, 2001).

From an early age, children and youth are exposed to a number of messages that directly or indirectly influence body dissatisfaction. Messages from the media may contribute to heightened body self-awareness and perpetuate eating disorders by promoting thinness and normalizing a lifestyle surrounding dieting and food deprivation (Evans, Rich, & Holroyd, 2004; Greenberg & Hofschire, 2002; Peroutsi, & Gonidakis, 2011; Stice, & Whitenton, 2002). Consequent body dissatisfaction can be predictive of disordered eating (Evans et al., 2004; Hogan & Strasburger, 2008; Stice & Whitenton, 2002).

Increasing attention on the obesity "epidemic" has also been accompanied by increasing obesity prevention efforts (Lobstein et al., 2015). While such initiatives are well intentioned, concern has also been raised about the impact of consequential preoccupations on dietary restraint and body image (Pinhas et al., 2013; Schwartz & Henderson, 2009). School initiatives designed to tackle unhealthy eating and obesity may result in unintended harmful consequences on the mental and physical health of children, such as stigmatization of weight, body dissatisfaction, and social isolation (Hesketh, Wake, & Waters, 2004; Ikeda, Crawford, & Woodward-Lopez, 2006; Latner & Stunkard, 2003; Pinhas et al., 2013). Should educators and health care professionals leading such programs lack sensitivity to diverse body types and weights, there may be consequences for the well-being of their audiences (Patte & Leatherdale, 2016).

Specialized attention must be placed on health interventions for the adolescent demographic particularly, given the pressures to conform and desires for peer acceptance that generally emerge during this period (Abraham, Boyd, Lal, Luscombe, & Taylor, 2009; Larkin & Rice, 2005; Pinhas et al., 2013). Disordered attitudes and behaviours surrounding eating have been found to be present in 27% of 12-18 year old girls, and tend to gradually increase throughout adolescence (Jones, Bennett, Olmsted, Lawson, & Rodin, 2001). Sexual harassment and other body and weight-related teasing, coming from a number of sources, also play a significant role on body perceptions (Barker & Galambos, 2003; Eisenberg, Neumark-Sztainer, & Story, 2003; Yager & O'dea., 2008). For instance, family members may be a source of diet and weight talk that contribute towards body dissatisfaction (Neumark-Sztainer et al., 2010).

The present study aims to explore the initial triggers under which anorexia nervosa-restrictive subtype (AN-R) may arise from the school, home, or community environments in children and adolescents, as captured in the medical chart at time of diagnosis. "Triggers" have been internally defined as the initial stimuli and/or situations in which AN-R may arise. The majority of etiological research is drawn retrospectively from stakeholders themselves, but a qualitative chart review may be able to further elucidate triggers closer to time of onset (at diagnosis). Understanding how child and adolescent populations perceive healthy initiatives and messages may also help guide future prevention policy around education and supports and diminish unintended health consequences.

Methods

This study was a retrospective qualitative chart review of children and adolescents diagnosed with AN-R and receiving care at a tertiary care centre in Ontario, Canada. It was reviewed and approved by the research ethics board at our organization. This program features an interdisciplinary team with both inpatient and outpatient services for children and adolescents with moderate to severe eating disorders. A convenience sample of 50 charts of patients diagnosed with AN-R between June 2015 to September 2016 was examined in order to determine possible illness triggers. Initial reasons for disordered eating behaviours are captured through interview at intake for all youth.

For inclusion in the study, patients had to meet the following criteria: 1) participants <18 years of age, 2) diagnosed with AN-R at assessment as per DSM-5 criteria, and 3) attending a public or private school. Patients with comorbid disorders and those taking other medications were not excluded. As we were interested in children and adolescents with AN-R, all patients that were 18 years of age and/or meeting criteria for other eating disorders (i.e. AN - binge purge subtype, avoidant/restrictive food intake disorder, bulimia nervosa, other specified feeding or eating disorder) were excluded. While etiology for other disordered eating behaviour is also of interest, it is possible that the biological, sociocultural, and genetic influences of other types of eating disorders may manifest differently. Thus, this study focuses solely on AN-R.

Charts were reviewed for demographic data, comorbidities, age of diagnosis, median BMI, percentage of treatment goal weight, patient admission status, and history of presenting illness. All personal and health information was collected and recorded using a data abstraction sheet in Microsoft Excel. All consultation notes made by psychiatrists and paediatricians, as well as admission notes and discharge summaries from the hospital, were reviewed first by a research assistant (AC). Information detailing triggers prior to assessment were captured into the spreadsheet. Initial

Table 1. Patient demographics	
Characteristics	N=50
Mean age (years) (SD, range)	13.63 (±1.81, 10-17)
Gender	
Male (%)	10 (n=5)
Female (%)	90 (n=45)
Mean % Treatment goal weight (SD, range)	79.5 (±8.52, 59.6-93.0)
Status (%)	
Inpatient	78 (n=39)
Outpatient	22 (n=11)
Psychiatric comorbidities (%)	
Anxiety disorder	46 (n=23)
Mood disorder	24 (n=12)
Cannabis use disorder	4 (n=2)
Attention deficit hyperactivity disorder	2 (n=1)
Personality disorder	2 (n=1)
Somatization	2 (n=1)
None	36 (n=18)
SD = standard deviation	

codes were matched to data extracts and subsequently organised into broader, overarching themes. To ensure validity and rigour, the research assistant (AC) first reviewed all charts and a second blind reviewer (JC) then double coded a random sample of ten charts (20%) to ensure consistency of coding. A discussion of the codes between these authors followed in order to arrive at a consensus.

Analysis

The analysis of text followed the approach described by Braun and Clarke (2006). Text from all consultation, progress, admission, and discharge notes were read and re-read several times before being condensed into codes. Codes were created to capture patients' existing attitudes, beliefs, and perceptions of healthy eating influences and initial perceived reasons for their disordered eating in the history of their developing disorder at time of assessment with additional provider notes examined to provide context. These codes were then categorized to form themes, with themes being further revised and discarded if too diverse. Themes were analyzed inductively without a pre-determined framework to classify them. Themes were given a definition and name in consideration of the context in which they emerged. Frequency counts were completed with respect to the number of times each theme was mentioned. Patients often made reference to several themes and these were counted independently of one another. Demographic and clinical characteristics of the patient sample were summarized using descriptive statistics.

Results:

Among the 50 charts, demographics, patient admission status, and comorbidities were characterized (Table 1). Themes were categorized into "specific" and "non-specific" triggers in order to distinguish between a potential precipitating event near the time of onset versus those where no mention was made of such an event. With respect to the specific triggers, 16% referenced a thin-ideal internalization, which included peer, family, and media reinforcement of a particular body weight or shape. Fourteen percent of charts made reference to motivations arising from healthy eating education, 14% made reference to motivations related to sports performance, and 12% made reference to weight-related teasing. Non-specific triggers were those that did not explicitly reference a specific reason. These themes included general preoccupations surrounding weight, shape, and healthiness. With respect to the non-specific triggers, 34% of charts mentioned a motivation to change appearance or specific areas of the body, 32% of charts referenced a preoccupation with losing weight, and 20% subscribed to a restricted diet in the pursuit of being "healthy". Other triggers for the onset of the eating disorder were unexplained by the other themes, with one patient describing merely getting used to consuming less and becoming less hungry as a

Table 2. Themes and examples

Themes	N (%)	Examples
		Specific triggers
Internalization of thin ideal	8 (16)	Self-comparison of weight and shape to other relatives/friends
		Influenced by thin celebrities (e.g. models/Korean pop celebrities) or others on social media
		Peer/family praise of weight loss
		Influenced by peers engaging in weight loss, dieting behaviours, fashion
Education re: eating healthy	7 (14)	Suggestions by dieticians to follow Canada's Food Guide or avoid carbohydrates
		Informed of health eating habits in sports nutrition class
		Taught label reading in health and nutrition class in school/grocery store
Sports Performance	7 (14)	Goal to make physical activity easier
		Goal to lose weight or improve fitness for sports team
Peer/family weight-related teasing	6 (12)	Called names by family/classmates
		Non-specific triggers
Shape concerns	17 (34)	Wanted to be smaller
		Unhappy with appearance
Weight concerns	16 (32)	Felt overweight
		Had goal to be below certain number
Health concerns	10 (20)	Wanted to only eat low-calorie foods
		Restricted to become healthier
		Engaged in healthy eating challenges with peers
Other	1 (2)	Had gradual decrease of appetite

result. Themes and supportive examples are summarized in Table 2.

Internalization of the Thin Ideal

Influences praising thinness came from a variety of sources among this sample. Twelve percent of patient charts described an experience wherein there was an interpretation of another's body type, shape, or weight as desirable, and internalization of this ideal occurred as motivation for goals around weight and shape. Dieting behaviours by surrounding peers and were also cited as additional pressure for weight loss. Some patients referenced significant body dissatisfaction and preference for thinness by comparing their own bodies to other individuals, citing them as an example of who they wanted to become. Individuals had described wanting to look like thin family members, friends, or self-comparison to other close family members who embodied a certain image or weight. Subsequent restrictive behaviours were described in efforts to become "skinny" like those around them or avoid becoming "fat" like others in their environment.

Media was also mentioned as a reinforcer of the concept of the thin ideal. Among this sample, patient charts mentioned the use of social media (e.g. online bloggers, Instagram) to compare their own bodies to other thin friends, models and celebrities.

Healthy Eating Education

Among specific triggers, 14% of charts made reference to some form of healthy eating education as an initial trigger. This theme captures patients who referenced some form of education regarding healthy eating as a precursor to restrictive eating behaviours. It appears that nutrition classes may act as a trigger as adolescents will use this information as justification for restrictive eating behaviours. In one such example, a youth provided an example of a dietician's recommendation of Canada's Food Guide, after which she began to rigidly follow the guide, prioritizing low-calorie items. Workshops and classes surrounding health topics may also be taken as encouragement to pay greater attention to certain health information, such as nutrition facts. Following participation in a health education class, a patient stated she then "felt like [she] needed to pay attention to something [she] was not previously worried about", and described becoming obsessed with eating according to the labels. These are patients that, in describing healthy eating education classes or messages, described subsequent obsessions with eating healthier and strict avoidance of what

was perceived to be unhealthy foods. Some of these individuals were also those who are already pursuing healthy habits when further health classes "triggered" subsequent preoccupations around healthy eating and restrictive eating behaviours.

Sports Performance Motivations

Fourteen percent of charts referenced motivations arising from a desire to improve physical fitness. Patients described wanting to be healthier for the purposes of making physical activity easier or improving their fitness level to participate in teams or physical activities. One patient described her decision to cut out fatty foods and preoccupation with food labels when underperformance on the track was met with criticism. For these individuals, the sports environment introduced additional pressures and expectations where having a particular appearance or being a certain weight could hold more value, either to the individual or to the team. Examples that appeared in the charts included swimming and ballet – sports that may value certain body shapes or weights as more advantageous.

Peer/Family Weight-related Teasing

Twelve percent of charts referenced triggering comments from family, friends, and peers that were seen to play a role in the development of disordered and restrictive behaviours among this sample. Chart descriptions of peer teasing and name calling by family were referred to as reasons for subsequent restrictive behaviours. For instance, a patient seeing herself as overweight described comments such as "you are fat" and remarks of "neck rolls" from family members.

Non-Specific Triggers

Where no explicit triggers were mentioned, charts also revealed general preoccupations surrounding shape, weight, and health. Thirty-four percent of patient charts referenced a preoccupation with appearance or desire to change specific areas of the body. Chart excerpts would describe "size 0 as being desirable", wanting to achieve an ideal body image, preoccupation with certain body areas like the abdominal area and thighs, and overall body dissatisfaction. Thirty-four percent of patient charts also described a desire to lose weight without any explicit mention of a cause. Weight preoccupations included comments focused on being the "right" weight, fear and anxiety around gaining weight, believing the "lower the number on the scale, the better", with greater body satisfaction reported once losing weight. Twenty percent of the sample also subscribed to a strict and limited definition of what they considered to be "healthy", and began restricting and cutting out sweets, treats, junk food in their goals to become healthier. Others described their choice to become "healthy" by removing food groups such as carbohydrates and meat. Individuals expressed difficulty with accessing healthy foods in their home environment. Some set explicit rules for themselves, voicing that they were under the impression that they weren't supposed to eat anything after 8pm; others just stated they refused to eat food that wasn't healthy. One patient explicitly stated, "I do not know what is healthy." These examples may suggest that restrictive behaviours and rules around food may emerge from inaccuracies or misunderstandings of what healthy diet and lifestyles entail.

One patient chart was labelled as an unspecified trigger, as it did not fall under the other themes. This patient chart (2%) indicated merely "getting used to [eating less]" and "[becoming] less hungry".

Discussion

Themes drawn from the patient charts are consistent with current etiology and risk factor research, which describes individual, familial, and social pressures for thinness (Hawkins, Richards, Granley, & Stein, 2004; Haynos, Watts, Loth, Pearson, & Neumark-Stzainer, 2016; Martínez-González et al., 2003). Many of these may contribute to underlying risk factors that develop into eating disorders once presented with a particular insult. Non-specific preoccupations around weight, shape, and healthiness may also be potential sequelae of some of the specific themes described above.

This study speaks to the diverse interpretations and perceptions of healthiness that may emerge from a number of sources, whether intentionally or unintentionally. Given the triggering content identified in these health messages, experts in health education should be wary of their delivery of health education. Training for key stakeholders (i.e. parents, coaches, teachers, mentors) may be beneficial in improving knowledge and intervening when children begin to show signs of disordered eating, as their positions allow them both formal and informal opportunities for educating youth (Yager & O'Dea, 2005). While the nature of the content of the educational programming in the present study cannot be commented on, youth may nonetheless benefit from additional supports and information to guide their approach to healthy eating. Media can be one such means by which people are exposed to images that encourage a particular body type; such hidden messages are internalized by adolescents and may impact their own self-esteem and views of body image. The ubiquity of media only further reinforces and perpetuates the belief of an "ideal" image or shape, and may act synergistically with additional pressures to be thin from the behaviour or comments of family and peers. Some have suggested potential protective and preventative factors that may be more universal in supporting youth include lessons on media literacy and body functionality with opportunities to discuss the diversity of body shapes and characteristics (Levine & Smolak, 2015; Ciao, Loth, & Neumark-Sztainer, 2014).

Our study also revealed a number of individuals who cited motivations to be healthy prior to greater restrictive eating rules and behaviours. This may suggest that there is some confusion regarding what healthiness means. Misunderstandings of the "healthiness" of food and an over-preoccupation on low-calorie foods may contribute to the development of an unhealthy relationship with food. Increasing attention on the developing "culture of healthism" is suggestive that the rise of healthy eating lifestyles may be accompanied not only by internalization of a thin ideal, but also a "healthy" ideal, consisting of behaviours driven to an extreme (Rich & Evans, 2005). It is possible that an initial focus on healthy eating may then lead to AN-R in youth vulnerable to these messages.

While many patients described a desire to lose weight, change shape, or be healthy without identification of an external cause, it is possible that other external factors may have played a role in encouraging a thin-idealization, unbeknownst to the patients themselves. The results also suggest the complexity and potential interplay of contributing factors, given that multiple themes were referenced within a single chart. Many of these triggering factors may snowball into individual perceptions and beliefs that then contribute to disordered eating behaviours and mindsets. The results of the present study suggest that triggers manifest themselves in many different ways and for this reason, preventative programs must adopt a multifaceted approach.

It must be noted that this study has several limitations. Findings are limited by the retrospective and self-report design of the study, particularly as patients may be unaware of the specified triggers or find difficulty identifying the sources. The qualitative and exploratory nature of the chart review also makes it difficult to discern the significance of the findings. Despite frequencies of reported themes in this sample, patients may not have necessarily reported certain themes, even if applicable to them. For this reason, caution is advised in drawing significance of certain themes based on these frequencies. Furthermore, the retrospective design makes it difficult to define the temporal relationships between the identified themes and the symptoms of the eating disorder itself. Nonetheless, the breadth of triggers suggests a very diverse interpretation of explicit and implicit health messages from a number of sources, suggesting that more specific research may be done looking at the influence of positive role models, peers behaviours, and environment as important factors playing a contributory and potentially preventative role in the development of eating disorders and other disordered eating patterns.

Future studies may also involve qualitative interviews or focus groups with patients diagnosed with AN-R to build upon the themes of this study. A larger sample may also allow for further analyses of specific themes as risk factors for development of anorexia nervosa or other eating disorders among subpopulations, such as particular genders (ie. males, transgendered youth or eating disorder subtypes). Moreover, with the release of the 2019 revisions to the Canadian Food Guide, future research on the interpretation of healthy eating by adolescents through focus group methodology may further supplement the findings of the present study.

Conclusion

Anorexia nervosa is a complex, multidimensional disorder, taking into account physical, cognitive, psychological, social, and family factors into etiology and treatment. Our study findings highlight triggers from thin-ideal internalization, healthy education, weight-related teasing, sports performance, and general preoccupations around weight, appearance and healthiness among a population of adolescents diagnosed with AN-R. Moving forward, healthy initiatives may benefit from adopting an approach that shifts away from an emphasis on certain weights and shapes and instead builds on body acceptance, confidence, and self-esteem. The complexities of potential triggers demand a multidimensional approach for implementing measures for preventing disordered eating behaviours and encouraging a more positive, encompassing definition of "health". The findings of the present study should prompt future research on specified triggers and youth perceptions of health messages. This may be useful in informing researchers, messengers, and creators of health content of the impact of such messages on child and adolescent populations.

Acknowledgements / Conflicts of Interest

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