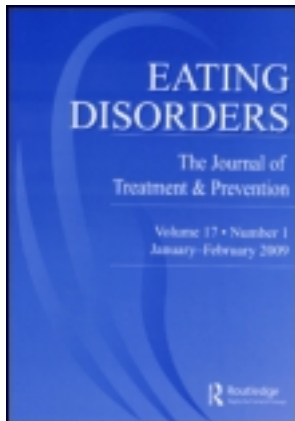


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Trading Health for a Healthy Weight: The Uncharted Side of Healthy Weights Initiatives

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Trading Health for a Healthy Weight: The Uncharted Side of Healthy Weights Initiatives

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Healthy eating and weight initiatives have been incorporated into many schools to combat the growing obesity problem. There is little research, however, on the effectiveness of these programs or any inadvertent harmful effects on children's mental health. Our aims were to report on how school-based healthy weights initiatives can trigger the adoption of unhealthy behaviours for some children. This is a case series of four children seen at specialized eating disorder clinics. Each child attributed eating pattern changes to information garnered from school-based healthy eating curricula. Unanticipated consequences of these initiatives are described and alternative approaches are discussed.

Concerns raised about childhood obesity have led to the roll-out of school-wide prevention initiatives aimed at promoting healthy weights among

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children and youth (Campbell, Waters, O'Meara, & Summerbell, 2001; Schmitz & Jeffery, 2000; Stice, Shaw, & Marti, 2006). Efforts have focused on the delivery of healthy eating/healthy weights curricula with prescriptive recommendations to lower caloric or fat intake and increase calorie burning activities in order to achieve a "healthy weight." At times, weight monitoring practices have been adopted in schools spurred on by local health agencies or provincial mandates (NGA Center for Best Practices & National Governors Association, 2003). Experts in eating disorders worry that assigning educators the role of prescribing healthy eating/healthy weights messaging to children could backfire if educators are not sensitized to the vulnerabilities children have to low appearance esteem, body dissatisfaction, and unhealthy dieting behaviours (Larkin & Rice, 2005; McVey et al., 2008; O'Dea, 2005; Piran, 2004). Children predisposed to develop weight-related disorders might interpret messages about healthy eating and weight in extreme ways resulting in dangerous behaviors. Also at risk are children who are going through the normative transition of early adolescence, where the stressors such as natural increases in body weight and fat, increased desire for peer acceptance, and peer pressure to diet are known to trigger weight and shape preoccupation (Levine & Smolak, 2009).

There is a lack of clear evidence about how best to deliver health promotion messaging or how best to assess its impact on the eating attitudes and behaviors of children. Moreover, there is little evidence which demonstrates the impact of obesity prevention initiatives on children's mental health, specifically disordered eating. A recent review of obesity prevention programs for youth concluded that there was no evidence that these programs resulted in harm; however, data collected on potential harms was limited and problematic, making conclusions unreliable (Carter & Bulik, 2008). This has led to the need for case study reports to uncover inadvertent yet harmful consequences brought on by widespread population-based approaches to weight-focused obesity prevention (Carter & Bulik, 2008). The purpose of this report is to report on how school based *healthy weight* initiatives can trigger the adoption of unhealthy behaviours for some children through clinical case descriptions of four patients presenting to two pediatric tertiary care eating disorder programs in Southern Ontario. The cases presented have been documented in accordance with the treating hospital's ethics protocol and consent from the patients described has been attained as required.

CASE A

Case A, a 14-year-old girl, lived at home with both parents and a younger sister. She was described as a focused, attentive student with excellent grades who was perfectionistic and worried tremendously about her marks. She was well until 6 months prior to presentation. At that time, she was assigned a

school project on eating disorders as part of a health and nutrition section of her physical education program. She reviewed common weight loss behaviours found in patients with eating disorders for her project. In doing so, she began to worry about her own weight and whether she was too fat. She became preoccupied with eating disordered thoughts and behaviours that she had documented for her project and found herself trying them out. She began restricting the amount of energy dense foods she consumed and decreasing her total portion sizes. She did not engage in bingeing, purging, or over-exercising as a means to lose weight.

Approximately 6 months later she presented to the hospital emergency department as a result of not eating solid foods for 5 days. She complained of dizziness and non-radiating chest pain that occurred even at rest.

On physical exam, she was described as emaciated. Her weight was 44.4 kg (27th percentile) and height was 170.2 cm (93rd percentile). Her body mass index (BMI) was 15.3 kg/m² (2nd percentile). Her temperature was 36 C. Her heart rate was 49 beats per minutes (bpm) while lying and 69 bpm on standing. Her blood pressure in the right arm was 95/56 lying and 86/62 standing and she complained of dizziness on standing. Her hands and feet were noted to be cold to touch and there was a blue hue to her upper limbs; capillary refill was 3 to 4 seconds. She had generalized symmetrical muscle wasting. The rest of her physical examination was within normal limits. Her blood work was normal and her electrocardiogram (ECG) showed marked sinus bradycardia. She was admitted to hospital with a diagnosis of anorexia nervosa-restrictive subtype (AN-R).

CASE B

Case B, a 14-year-old boy, lived with both parents and two younger brothers. He was described as an excellent student with perfectionistic qualities. He was well until 7 months prior to presentation, which coincided with the introduction of a “healthy living” program at his school. According to the family, they understood the goal of this program was to help students to eat less fat and to increase intake of better quality, low calorie carbohydrates. It also encouraged a more physically active lifestyle. The patient was determined to be “the best” at healthy living. He began “eating healthy” and increased his exercise. He signed up for extra-curricular physical activity opportunities provided at the school as part of the healthy living program including track and field practice, gym class, and soccer. He supplemented this by using a stationary bike at home in order to increase his fitness level. He exercised an average of 2–4 hours per day and became overfocused on “being fit.” In regards to his eating, he cut out “bad foods and junk foods” in response to the program’s goals and limited his intake of cheese, milk, and meat. He began to skip breakfast, and only ate chicken, fruit, and veggies

in smaller and smaller portions. He also began to read food labels. He had extreme reactions to any extra calories being added to his food. For example, he stuck his hand in boiling pasta to take out the tablespoon of butter his mother had added to the pot. He weighed himself three times a day, but when he looked in the mirror he did not feel fat, but rather that he needed to gain weight.

He presented to a local emergency department because of parental concerns of depressed mood and decreased food intake. At presentation, he complained that he had been feeling cold, had occasional dizziness, but no fainting/sadness/difficulty concentrating. He claimed to sleep well, but parents reported that he often took 1–2 hours to fall asleep, and was awake at night, rubbing his stomach as if in pain. On examination, his height was 165.1 cm (54th percentile), with a weight of 43.1 kg (16th percentile). He had a weight loss of 11.5 kg over 7 months. His BMI was 15.4 kg/m² (3rd percentile). The patient was alert, cooperative, with a normal mood. His vital signs included a temperature of 36.5 C, a heart rate of 32 bpm lying and 34 bpm sitting. Blood pressure in the right arm was 90/55 lying and 94/51 sitting. The ECG showed marked sinus bradycardia with a rate of 36 bpm. He had cold hands and a capillary refill of refill ~ 3 seconds. Aside from his emaciated state, the rest of the physical examination was unremarkable. He was admitted with a diagnosis of eating disorder not otherwise specified (EDNOS).

CASE C

A 13-year-old female living with both parents, presented with a 6-month history of progressive food restriction that began when a visiting dietitian gave a classroom presentation about the importance of “healthy eating.” Prior to this talk, the patient acknowledged having some occasional feelings about eating “junk” food. Despite these feelings, she had not changed her eating habits before the class presentation. The patient reported that the dietitian talked at length about what foods the students should be eating and what they should limit. Each class member was presented with a copy of the Health Canada’s Food Guide. After the class, the patient reported having an increased conviction to “eat healthier.” She denied any initial thoughts of wanting to purposefully lose weight. Within a month however, she had lost a noticeable amount of weight. She was restricting nutritionally dense foods, fats, and spreads. She also started to participate in a host of physical activities and went to the gym three times a week for intensive 80-minute workouts. She denied feeling pressured to lose weight and on her assessment, expressed concern that she had “lost her curves.” She felt enormous guilt about her weight loss, denied any bingeing, purging, or abuse of laxatives or diuretics. She denied being fearful of weight gain, but then acknowledged gaining weight would be difficult.

On physical examination, the patient presented as thin and pale, but was alert and oriented. Her weight was 38.5 kg (16th percentile), height 159.7 cm (65th percentile), and BMI 15.1 (3rd percentile for age). Her resting heart rate was 42 bpm and blood pressure 98/59. Her postural changes were insignificant. Her laboratory investigations revealed a low total white blood cell count (4) with normal platelets and hemoglobin. Her erythrocyte sedimentation rate was low at 4, and alanine aminotransferase (ALT) elevated at 190 U/L. The remainder of her blood work was normal. An ECG revealed marked sinus bradycardia with normal sinus rhythm with a heart rate of 39 bpm. The patient was admitted for medical stabilization and was given a diagnosis of AN-R.

CASE D

A 13-year-old female, living with both parents and one brother, was referred to the eating disorder program because of concerns of food restriction. She was described by her parents as extremely hardworking, perfectionistic, and an overachiever. She studied constantly and tried to be involved with as many extra-curricular activities as possible. Her eating difficulties began approximately 3 years earlier while living in Sri Lanka, where in grade 5, she learned about dieting in a school nutrition class. The class included information about obesity, the effects of obesity, and the importance of receiving proper nutrition. The class left her with thoughts that she “shouldn’t eat a lot.” Shortly thereafter, the patient began a progressive pattern of nutritional restriction. Initially, she cut back by stopping snacks, and soon after stopped eating breakfast. Her restrictive behaviours continued through the beginning of Grade 6, at which point her family decided to move to Canada. By the start of grade 7, the patient stated that she was eating extremely little. At this point, she began having thought preoccupation around body image and feelings that all of her peers were “skinny and pretty.” She continued to be very active in school sports including cross country running, swimming, and soccer. She would go for long bike rides whenever she could in an attempt to lose weight and at night she would do 500 sit-ups. She acknowledged bingeing sporadically after school and purging 2–3 times in total in the 2 years prior to her assessment. At the time of her assessment, the patient continued to feel that she needed to lose more weight. She was extremely fearful of any weight gain and stated that when she ate, she felt fat and guilty.

On examination, her weight was 46.9 kg (55th percentile), height 158 centimeters (53rd percentile) which gave a BMI of 18.8 kg/m² (59th percentile). Her heart rate lying was 53 bpm and increased to 72 bpm while standing. Blood pressure was normal at 102/57 lying and remained stable at 103/63 while standing. She had evidence of impaired peripheral perfusion

(cold extremities). The remainder of her examination was unremarkable and her blood work was normal. The patient received a diagnosis of EDNOS.

DISCUSSION

This article presents four cases where the development of food/caloric restriction was triggered by the teaching of healthy eating or healthy weights curricula to children and youth. They were all affected by the idea of trying to adopt a more healthy lifestyle in the absence of significant pre-existing notions, beliefs, or concerns regarding their own weight, shape, or eating habits prior to the intervention. Whereas healthy weight interventions are intended to promote health, they may not be risk free.

These cases underscore the need to promote health, *regardless of size*, for all children and adults in the homes, schools, and neighborhoods they live in. One way to reduce the risk of triggering disordered eating is the use of an ecological approach, which is designed to address the many layers of risk or resilience known to contribute to weight-related problems (Neumark-Sztainer, 2005; Neumark-Sztainer, et al., 2006). This approach may have a far greater potential than individually focused “energy in, energy out”-type messaging in helping prevent weight-related disorders. For example, if messaging around health is common to all body types, and is coupled with school rules that discourage and intervene on incidences of weight-based teasing and other more covert acts of weight bias, a safer environment for learning is promoted, which has possibility to prevent many risky outcomes.

Sensitization of all members of an ecology (school building, sports teams) to the negative psychological (Haines & Neumark-Sztainer, 2009) and physical (Muennig, 2008) consequences of weight stigmatization will help align people to take care in their delivery of health messaging so that it is truly healthful—not stigmatizing—and there is more synchrony on concepts of health. This needs to occur through professional development strategies geared at personal reflection on the value laden topics of health, food, and weight and their impact on teaching practices (McVey, Tweed, & Ferrari, 2005; Piran, 2004). Piran (2004) has long supported the need for prevention work to occur at the environmental level with a focus on sensitizing adult role models like teachers on ways to avoid transmitting their own biases about food, weight, and shape onto the students they teach. An Ontario-based study is currently underway which is evaluating the effectiveness of this type of sensitivity training for health professionals. It focuses on weight discrimination awareness and a balanced approach to healthy eating and active living in order to prevent the triggering of weight preoccupation, while promoting mental health and resiliency as a healthy weights strategy (McVey et al., 2010).

The adoption of more ecological approaches, that acknowledge and honor the social determinants of health, leads one to broaden one's definition of health so that weight is not its primary determinant. Moderating and mediating effects of other environmental, relational, and motivational factors that affect health outcomes become of great interest (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003). As such, the indices used to measure health should also be broadened in prevention trials so as to accurately capture positive health outcomes such as engagement/enthusiasm for physical activity, adoption of attitudes that could influence life-long patterns of physical activity, benefits of physical activity that extend *beyond* weight, such as improved blood pressure and glucose tolerance, heightened energy, greater attention and readiness to learn, self-confidence, and protection against the adoption of risky behaviors (Neumark-Sztainer, 2005; Neumark-Sztainer, et al., 2006). Careful consideration of the health indices at each layer of the ecology will allow for stronger conclusions to be drawn. Above all, intersectoral partnerships are both necessary and critical in the design, measurement and conclusions drawn about prevention science, so that unintended effects of prevention efforts do not remain overlooked as children cross sectors into the healthcare system.

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