

Psychiatric Illness and Obesity: Recognizing the “Obesogenic” Nature of an Inpatient Psychiatric Setting

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Objective: The prevalence of obesity and obesity-related diseases is higher among individuals with psychiatric illness than in the general population. This study examined environmental factors that contribute to obesity in one psychiatric hospital in Canada. **Methods:** Semistructured interviews were conducted with 25 key stakeholders from multiple professional disciplines at the hospital. Transcribed interviews were analyzed through content analysis with the analysis grid for environments linked to obesity (ANGELO) framework as a categorical template. **Results:** Factors contributing to obesity in this setting were related to increased energy intake, such as easy access to high-calorie snacks and beverages, and reduced energy expenditure, such as lack of access to staircases. **Conclusions:** Psychiatric settings may contribute to the high prevalence of obesity among individuals with psychiatric illness. Ecologically framed interventions are required to address obesity in this population. (*Psychiatric Services* 60:538–541, 2009)

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Health professionals who make treatment decisions in collaboration with individuals who have a psychiatric illness are “caught between a rock and a hard place” in prescribing medications that improve psychiatric symptoms while causing deleterious metabolic side effects. It is well established that the prevalence of obesity among individuals with psychiatric illness is high and that the prevalence may be greater than among their age-matched counterparts in the general population.

In a review of the literature, we found that weight management interventions have focused almost exclusively on changing individual behavior (physical activity and dietary modification) or examining the benefits of adjunct medication (1). These interventions report modest short-term effects, ranging between approximately one and three kilograms of weight loss at the end of treatment. Broader strategies to address metabolic risks may be required to complement existing approaches. We suggest that the adoption of an ecologic framework (2) is required to underpin research and practice in addressing obesity and weight gain among individuals with a psychiatric illness. We must critically examine how the settings in which psychiatric services are provided may by their nature amplify the weight gain associated with antipsychotic medication—that is, these settings may be “obesogenic,” or obesity promoting (3). Examining service settings requires the acknowledgment of multiple influences on health behavior, in-

cluding social and physical environmental influences.

Therefore, systems-based, environmental interventions are needed to increase the modest impact of individual-level interventions. Before such interventions are used in psychiatric settings, a systematic framework, such as the analysis grid for environments linked to obesity (ANGELO) model (3), is required for identifying and prioritizing potential interventions. This framework dissects the environment by environment type: physical (what is available?), economic (what are the costs?), political (what are the rules?), and sociocultural (what are the attitudes and beliefs?). Once obesogenic elements have been identified, they are then evaluated in terms of validity (what is the evidence that this element is problematic?), relevance (how big a problem is the element?), and changeability (how modifiable is this particular problem?). After all factors have been evaluated, they can then be prioritized and stratified according to research and intervention initiatives. The ANGELO framework has been successfully applied to several settings, although not hospital settings (3).

The study presented here applied this framework through a qualitative methodology consisting of semistructured interviews with a range of stakeholders at the Centre for Addiction and Mental Health (CAMH) who were directly connected with an inpatient psychiatric hospital in Toronto. CAMH is involved in a number of innovative initiatives monitoring the physical health of pa-

tients and implementing interventions. In line with these initiatives, the primary objective of this study was to identify modifiable environmental factors that may influence the weight of service users at this facility.

Methods

The study participants were key stakeholders at the hospital and were invited to participate on the basis of their professional expertise, their ability to influence guidelines and policy within the hospital, and their working knowledge of the patients and the facility. After the study received ethics approval from the CAMH Research Ethics Board, letters of invitation and information that outlined the study were sent to each professional by e-mail. Twenty-five individuals participated in the study between November 2007 and April 2008. They included five recreation therapists, four registered nurses, three food services supervisors, three clinical dietitians, three psychiatrists, two schizophrenia program administrators, a patient services staff member, a general physician, a site redevelopment advisor, a housing staff member, and an occupational therapist.

Data collection and analysis are described briefly here (a more detailed description is available from the first author). Primarily, participants were asked to describe the factors that they believed might influence the weight of hospital patients. Participants were also asked how relevant and modifiable each factor was and how it might be changed. All audiotaped interviews conducted during the data collection phase were transcribed. Inductive data analysis involved a process of close scrutiny of the transcriptions; the researchers immersed themselves in the data in order to understand the perceptions of participants. The method of constant comparative inductive data analysis (4) was used to code and organize the data by identified themes. The transcripts were read line by line, and quotations were coded to form the basic units of analysis (5). The responses that occurred most frequently across all participants were documented in tabular format

and formed the basis of provisional themes and categories. These categories and themes were grouped according to environment type as dictated by the ANGELO framework. In a form of peer debriefing, throughout the coding and analysis process the authors constantly reexamined categories and themes and their interconnectedness in light of the research literature to identify the validity, relevance, and modifiability of each element.

Results

A large number of obesogenic elements were identified by participants across the four different environment types (physical, economic, political, and sociocultural), and most were related to food consumption rather than to physical inactivity. Some elements were common to two or more environmental categories. Below we describe examples of elements that we classified as consistent factors associated with obesity in this inpatient psychiatric setting.

The presence of highly visible and accessible vending machines throughout the hospital was identified by most participants as being a well-used source of high-calorie drinks and snacks. Research has consistently found associations between high-calorie soft drink intake and body weight and increased risk of medical problems, such as diabetes (6). Although a major overhaul of the food items available for sale was conducted at the hospital in the fall of 2007, many study participants believed that the new products were still low in nutritional value. To promote the sale of healthful products in vending machines, more low-fat options should be made available and these items should be lower in cost and more prominently displayed than less healthful options (7).

Some participants recommended implementation of a water policy for patients, noting that water would be an excellent alternative to the sugar-rich beverages patients often consumed. Researchers have reported on the importance of drinking water to reduce obesity (8). As participants noted, there are “few to no” drinking fountains in the hospital, which may

encourage some patients to purchase soft drinks. Drinking fountains could be placed by existing vending machines. However, water is not available because of concerns that patients with water intoxication syndrome might drink water to excess.

Many participants saw restructuring food delivery to patients as a priority for change. On most wards, meals are consumed buffet style. Because of the side effects of many antipsychotic medications, patients often report being hungry and consuming more food. However, several participants mentioned that the buffet service was associated with excessive overeating and unhealthful and unbalanced diets. Unlimited creamers, milk, juice, sugar, butter, margarine, and condiments are accessible to patients in the buffet area and are commonly hoarded by patients and consumed during the day. Some patients complain that their food is restricted, and they “act out” to receive more food. Essentially, the more one has available to eat, the more one overeats (9).

An important program at CAMH is a food service run by inpatients and former inpatients that provides vocational training for patients. This consists of a café and a food cart that distributes food throughout the hospital. The participants had conflicting attitudes toward the service. Most notably, they expressed grave concern that both the café and the food carts, which visited almost all units, sold unhealthful food and beverages, similar to the items in the vending machines. At the same time, they noted that the service provides valuable opportunities for patients to develop social and occupational skills. Participants also expressed concern about patients’ right to choose, but they suggested that something should be done to change the items available for sale and provide competitively priced and visible options that had greater nutritional value. Initiatives to change the choices offered by the service could be aligned with initiatives to change the contents of the vending machines.

Participants also mentioned that the small monthly government al-

lowance that patients receive has an impact on their food-purchasing behavior. Research confirms that groups of lower socioeconomic status are less likely to make food choices consistent with dietary recommendations, which may be related to a perceived or real lack of availability or to price (10). Because the neighborhood surrounding the hospital is undergoing rapid redevelopment and gentrification, most patients may be financially unable to purchase food from new stores and restaurants that offer healthful options. Participants believed that patients were forced into convenience stores and inexpensive diners to purchase food when they left the hospital grounds or to rely on the vending machines, café, or food carts.

In addition, participants noted that staircases were closed on all units for safety reasons. As a result, patients were required to take the elevator throughout the day. In such circumstances, the usual instrumental activities of living, such as walking and stair climbing, disappear from daily routines, even among individuals who have the functional capacity (11). Accumulating short bouts of stair climbing throughout the day can have a positive impact on cardiovascular risk factors (12), and all-cause mortality has been found to be lower in individuals reporting regular stair use (13). The safety of staff and patients is paramount. However, as with the absence of drinking fountains, the limited access to staircases is an example of a well-intentioned rule that contributes to reducing energy expenditure.

Several participants mentioned that they did not want to infringe on patient autonomy with respect to dietary decisions. Health care professionals did not want to restrict patients' choices of takeout food, portion sizes and number of servings at mealtimes, and purchases from food carts or vending machines. Neither did they want to prevent patients from eating food from other patients' untouched trays. Although some participants felt that poor decisions resulted from a lack of knowledge about a healthful diet, they ultimately did not want to en-

croach on patient autonomy. Other participants mentioned that it was the hospital's responsibility to restrict and control access to unhealthy food to benefit the well-being of patients. Messent and colleagues (14) referred to the "commonly rehearsed argument" within the developmental disability context that encouragement to be more physically active should not overtake the individual's right not to take part and to continue to lead an inactive life. In the current context, clients may have the choice to eat an unhealthy diet but may be severely constrained in terms of their functional capacity or their opportunity to obtain healthier alternatives.

Participants also mentioned that to avoid potential conflict or to preserve patients' right to choose, patients were often allowed to sleep in and as a result skip breakfast. Research has shown that skipping breakfast can increase body weight and also decrease physical activity. In a study that investigated the relationship between breakfast type, energy intake, and body mass index (BMI), researchers found that individuals who ate ready-to-eat or cooked cereals for breakfast had a significantly lower BMI than those who skipped breakfast (15). Of interest was the observation that skipping breakfast was the beginning of a chain of obesogenic events. Because breakfast was missed, patients then ate less healthful food purchased from the food carts and café, regularly missed appointments with their recreation therapists, and were generally less physically active throughout the rest of the day.

Discussion

The purpose of this study was to identify factors that may contribute to obesity in an inpatient psychiatric setting. A related purpose was to highlight the need for mental health administrators, practitioners, and researchers to look beyond individual factors in explaining the increased prevalence of overweight and obesity among individuals with psychiatric illnesses. Overall, the identified factors clearly indicated a trend toward increased energy intake (overeating,

easy access to high-calorie snacks and beverages, and skipping breakfast) and reduced energy expenditure (not having access to staircases). We suggest that these factors play an important role, over and above medication side effects, in the increasing rates of obesity commonly seen among individuals taking antipsychotic medication.

The factors described are not exhaustive and may not be generalizable to other psychiatric settings. Clinicians in other settings could apply the ANGELO process to identify setting-specific obesogenic factors to develop unique and creative strategies for reducing the impact of these factors on body weight.

The environments in which psychiatric services are provided are probably not the primary factor contributing to obesity in this population, but it possibly makes a bad problem worse. The next step of the ANGELO process is to engage patients and other stakeholders in negotiating elements of interventions that are feasible and acceptable to all. On the basis of our initial findings, these interventions may include revisiting the nutritional content of all food services at the hospital, exploring creative ways to promote physical activity and deliver nutritional education and programming via nontraditional routes (such as implementing volunteer programs and enhancing the hospital's walking options), and identifying and implementing policies and protocols to ensure that patients have greater options in terms of when and what they eat.

It has been recommended that clinicians adopt a structured system within psychiatric services for metabolic monitoring. If such systems are in place, then it becomes possible to evaluate the impact of policy or environmental changes in a natural experiment. Such experiments are particularly feasible in settings where "treatments" (for example, buffet-style meals) have been assigned to an entire population (for example, patients in a hospital) and there is natural variation in the implementation of the treatment (for example, across wards).

Conclusions

The challenge of ecological frameworks, such as ANGELO, is that the potential interventions that result from their application are complex, particularly in light of safety concerns, limited financial resources, and the need to ensure the dignity and autonomy of patients. There are no easy solutions to address the factors described here, and any solution will be beyond the capacity of any one professional or advocacy group to achieve. Interprofessional engagement and collaboration between stakeholders from all sectors and disciplines involved in the delivery of psychiatric services will be required. Ultimately, a top-down approach that applies rules and regulations likely to limit obesogenic influences in conjunction with a bottom-up approach by interested staff and patients advocating for better physical health will be critical in changing the nature of psychiatric settings. Researchers and practitioners should not ignore the need to implement and evaluate interventions at the individual level to address weight gain in this population. However, consideration should also be given to ensuring that it is easier for patients (and staff) to make healthier choices in psychiatric settings.

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