



Research paper

Impact of obesity and mood disorders on physical comorbidities, psychological well-being, health behaviours and use of health services



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A B S T R A C T

Background: Albeit obesity and mood disorders frequently co-occur, few studies examined the impacts of this co-occurrence. The aim was to compare individuals with obesity and mood disorders (ObMD) to those with obesity without mood disorder in terms of physical comorbidities, psychological well-being, health behaviours and use of health services.

Methods: Cross-sectional study using the Canadian Community Health Survey including a weighted sample of individuals with obesity (n = 1298) representing inhabitants from the province of Quebec (Canada).

Results: Adjusted multivariate logistic regressions indicated that ObMD reported more physical conditions with odds ratio (OR) ranging from 1.8 [95%CI: 1.1 – 2.8] (hypertension) to 2.8 [95%CI: 1.3 – 6.0] (stomach ulcer). Also, ObMD reported poorer psychological well-being with OR ranging from 2.1 [95%CI: 1.4 – 3.3] (stress) to 25.6 [95%CI: 14.7 – 45.0] (poor perceived mental health). ObMD also reported more consultations with health professionals with OR ranging from 1.9 [95%CI: 1.0 – 3.5] (physicians) to 7.7 [95%CI: 4.2 – 14.3] (psychologists), and less healthy behaviours with OR ranging from 1.7 [95%CI: 1.1 – 2.6] (fruits and vegetables intake) to 2.1 [95%CI: 1.3 – 3.3] (tobacco).

Limitations: Self-reported data so we cannot discard the possibility of a bias in reporting. Also, given the cross-sectional design, no directional conclusion or causality about our results is possible.

Discussion: The co-occurrence of mood disorder and obesity seems to be an aggravating factor of obesity-related factors because it is associated with poorer health in several areas. Interventions to prevent or manage obesity in mood disorders are necessary.

1. Introduction

In Canada, obesity constitutes a health burden (Finkelstein et al., 2012), and a 200% increase in its prevalence was observed over the last three decades (Twells et al., 2014). Obesity, a multi-factorial condition, is defined as an accumulation of fat that has adverse effects on health (Mokdad et al., 2003). Among the most vulnerable populations, individuals with mood disorders (MD) such as bipolar disorder or major depressive disorders (MDD) are more likely to develop obesity compared to the general population (Mansur et al., 2015; Twells et al., 2014). Indeed, in Canada, while the prevalence of individuals with MD represents 13.4% of the population (including 12.2% for depression, and 2.4% for bipolar disorders (Public Health Agency of Canada, 2006)), up to 40–55% of them are in obesity (Amodeo et al., 2017)

compared to 18% in the Canadian general population (Twells et al., 2014). People with MD are more likely to develop obesity due to several causes such as psychotropic medications, inadequate health behaviours, environmental, genetics, and psychosocial factors (Gadalla, 2009; Mansur et al., 2015; Stunkard et al., 2003). As an illustration, two meta-analyses recently underlined the low levels of physical activity and the high levels of sedentary behaviours in people with bipolar disorders and also in MDD (Schuch et al., 2017; Vancampfort et al., 2016b).

Thus, over the last years, several studies underlined the bi-directional relationship between obesity and MD because these two pathologies frequently co-occurred (Jantaratnotai et al., 2016; McElroy et al., 2004). Indeed, while MD can impact obesity, that latter was also found to aggravate the course of MD (Luppino et al., 2010; Simon et al., 2006). Several factors seem to be commonly associated with the

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development of obesity and MD (Gatineau and Dent, 2011; Stunkard et al., 2003). For example, in obesity as in MD, behavioural factors were found to be inadequate (low physical activity, unhealthy diet). Moreover, some patho-physiological (eg., inflammation), social (eg., stigma), or psychological factors (eg., stress) were also found to contribute to the development of both, MD and obesity (Mansur et al., 2015; Stunkard et al., 2003).

Recently, several studies and meta-analyses emphasized that MD are also known to be associated with several adverse health outcomes such as low psychological functioning, type 2 diabetes, metabolic syndrome, cancer, dementia, anxiety, low quality of life (Chapman et al., 2005; Goldstein et al., 2011; McElroy et al., 2004; McElroy and Keck, 2012; Scott and Happell, 2011; Vancampfort et al., 2015, 2016a) but also with premature mortality (Correll et al., 2017; Walker et al., 2015).

Among individuals with MD, obesity is an important issue to consider notably because these individuals are more likely to be affected by cardiovascular events and complications (Carney and Jones, 2006; Schoepf and Heun, 2014), and obesity is often the starting point of these events (Laursen, 2011; Lopresti and Drummond, 2013). Also, in adults with bipolar disorder, obesity was twice more likely to be associated with previous suicide attempts (Gomes et al., 2010). Afterwards, in individuals with MD, obesity was also found to decrease the effects of the antidepressant treatments (Jantarantotai et al., 2016).

However, despite this set of knowledge, the specific impact of MD linked to obesity is not well characterized. Consequently, it is difficult to disentangle whether MD can be a worsening factor of obesity.

Thus, the main objective of the study was to determine the impact of obesity and MD regarding physical comorbidities, psychological well-being, health behaviours and use of health services. It was expected that individuals with obesity and mood disorders (ObMD) were more likely to have physical comorbidities, poor mental health and psychological well-being, but also to have more at-risk health behaviours, and use of health services compared to obese individuals without MD (ObC).

2. Methods

2.1. Procedure and settings

The current study was based on data collected by Statistics Canada in the Canadian Community Health Survey (CCHS) conducted in 2007–2008. The CCHS provides cross-sectional information related to health status, health care utilization and health determinants. The sample represents approximately 98% of the Canadian population aged 12 years or older who resided in private dwellings in the ten provinces and the three territories. Persons living on Indian Reserves or Crown lands, those residing in institutions, full-time members of the Canadian Forces and residents of certain remote regions are excluded from this survey. Respondents were interviewed by telephone or by face-to-face interview. All measures were self-reported.

2.2. Study specific inclusion criteria

In the present study, participants were included if they were adults (age > 18 years old), with obesity (body mass index, BMI \geq 30 kg/m²), inhabitants from the province of Quebec, provided complete answers to the questionnaires. Height and weight were self-reported and BMI was calculated (weight (kg) /height (cm)²). The different data used in the present study (physical comorbidities, psychological well-being, health behaviours, use of health services) were selected based on the fact they were known to be associated with obesity (Anon, 2010; Lau et al., 2007).

2.3. Mood disorder (variable of exposure)

To assess the presence of MD, a single item was used and participants were asked whether they had been diagnosed for a MD, such as

depression, bipolar disorder, mania or dysthymia, by a health professional. Those that responded positively were considered as having a MD. This classification has already been used in previous studies and was found to be reliable given its association with mental health outcomes (McIntyre et al., 2006, 2007).

2.4. Physical comorbidities

Participants responded to a module on chronic diseases. In the present study, 10 different physical conditions were considered: asthma, arthritis, type 2 diabetes, high blood pressure, migraines, heart disease, cancer, digestive disorders, stomach ulcer, and urinary incontinence. Those data were self-reported and concern health conditions that are expected to last or have already lasted 6 months or more and that have been diagnosed by a health professional.

2.5. Psychological well-being

Regarding psychological well-being, several indicators were selected. These were the presence of a major depressive episode, anxiety disorder, psychological distress, quality of life, stress, perceived global and mental health, and satisfaction with life in general. Major depressive episode was evaluated using the composite international diagnostic interview short-form questionnaire (Kessler et al., 2004; Robins et al., 1988). According to this scale, it is possible to compute a score expressing the probability of having experienced a major depressive episode over the last 12 months. A major depressive episode was considered when participants exceed a 90% odd of having experienced an episode.

Anxiety disorder was evaluated with one item. It was asked to participants whether they had been diagnosed by a health professional as being affected by anxiety disorders such as phobia, obsessive compulsive disorder, or panic disorder.

Psychological distress was assessed using the K6 scale (Kessler et al., 2002). This scale has been validated according to the DSM-IV criteria and higher scores represent a higher presence of symptoms (Kessler et al., 2002). In the present study, participants were considered as having high level of psychological distress when their scores exceed 10.

Health-related quality of life was evaluated with the Health Utilities Index (Feeny et al., 2002). This index is based on several attributes that respondents considered as the most important dimension of health status (Feeny et al., 1996) (e.g., vision, hearing, speech, ambulation, dexterity, emotion, cognition, pain, and discomfort). Then, considering these attributes, a final score was computed to reflect a health-related quality of life score.

Perceived stress was also evaluated using a single item with the following wording: “Thinking about the amount of stress in your life, would you say that most days are ...”. Possibilities of responses were coded in five categories: extremely stressful, quite a bit stressful, a bit stressful, not very stressful and not at all stressful. The respondents who reported extremely stressful or quite a bit stressful are those considered as stressed.

Perceived global and mental health was evaluated using a single item with the following wording: “In general, would you say your health (mental health) is ...”. With response options being: poor, fair, good, very good and excellent. In this study, a poor health is the combination of those who reported poor or fair.

Satisfaction with life in general was evaluated with one single item: “How satisfied are you with your life in general?”. The responses were coded in five categories: very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied. In this study, we considered that respondents were dissatisfied if they reported one of the last three responses.

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