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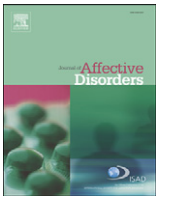

Research report

Weight gain in relation to major depression and antidepressant medication use

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ABSTRACT

Background: Previous studies have linked major depressive episodes (MDEs) to obesity. The association may be partially mediated by antidepressant medication use. In the current study we examine changes in weight and BMI in relation to MDE and antidepressant use in a general population cohort.
Methods: Data from a Canadian longitudinal study, the National Population Health Survey (NPHS) were used. The NPHS has collected data from a community cohort since 1994 using interviews spaced two years apart. The NPHS includes the Composite International Diagnostic Interview Short Form for Major Depression (CIDI-SFMD). Self-reported height and weight are also recorded. Linear regression was used to describe associations between weight, BMI and MDE.
Results: The pattern of weight change varied by age. Respondents under the age of 65 tended to gain weight over time, whereas those over the age of 65 tended to lose weight. Respondents in the younger category gained more weight if they had MDE or took antidepressant medications. However, the extent of weight gain was modest, those with MDE and those taking an antidepressant gaining an average of approximately 1 kg over 12 years of follow-up.
Limitations: The study used self-reported weight, which may be inaccurate. Measurements were made two years apart. The measure of MDE was an abbreviated diagnostic interview.
Conclusions: Both MDE and antidepressant medication use are associated with a modest increase in weight in people under 65. These results may be useful for physicians and other health professionals in planning dietary and weight-management regimens for depressed patients.

1. Background

Cross-sectional associations between weight gain and depression have been identified by epidemiologic studies, but such studies may be confounded by bidirectional effects: an intermixing of effect of weight gain on MDE risk (or prognosis) and an effect of MDE risk (or prognosis) on weight gain. Longitudinal data are needed to determine whether MDE leads to weight gain. A recent systematic review and meta-analysis of longitudinal studies found that MDE had a modest effect on the risk of obesity (BMI≥30), unadjusted OR=1.58, p<0.001 (Luppino et al., 2010). Some studies have found sex-specific associations (McIntyre et al., 2006), with a stronger association in women being generally being reported (deWit et al., 2010). However, one recent study failed to identify an elevated obesity risk association with MDE when adjustments were made for antidepressant use (Patten et al., 2009). Medication use, a potential confounder or mediator of the MDE-obesity

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association, could not be accounted for in the systematic reviews cited above. Another recent study failed to identify an increased risk of MDE in obese respondents (Gariepy et al., 2010), instead reporting a protective effect in men. Patients often express concern about weight gain as a possible adverse effect of antidepressant medications. If MDE is associated with obesity risk, more aggressive treatment may be recommended as a preventive strategy, but this may be counter-productive if antidepressants in themselves are associated with weight gain. Additional epidemiological data may be useful to clinicians in their treatment planning. In this study, we describe the effects of MDE, antidepressant medication use, and associated variables on weight gain and changes in BMI over time.

2. Method

The data source for this study was the Canadian National Population Health Survey (NPHS). The NPHS is a longitudinal study based on a nationally representative community sample assembled by Statistics Canada (Canada's national statistical agency) in 1994/1995. Detailed information about the NPHS methodology may be found on the Statistics Canada Web page (http://www.statcan.gc.ca/pub/82f0068x/82f0068x1997001-eng.htm). The longitudinal cohort included 17,276 participants, but eligibility for the current analysis was restricted to n = 14,117 who were 18 years or older at baseline. Of these, 7166 provided complete data at each of seven interviews conducted between 1994 and 2006 and were included in the analysis. Fig. 1 summarizes the origin of this subset and their pattern of attrition from the NPHS cohort over time. It is important to note that the failure to provide full data across the entire follow-up interval does not necessarily represent loss to follow-up. Respondents who died or were institutionalized also fell into this group because they left the NPHS sampling frame (household population). Statistics Canada estimates that the response rate not including attrition due to departure from the sampling frame to 2006 was 77%. Since 1994 the cohort has been interviewed every two years with data from six such follow-up interviews (to 2006) being available at the time of the current analysis. The 1994 NPHS interviews were mostly conducted face to face, but 99% of follow-up interviews took place over the telephone.

The NPHS interview included a self-report item with the following wording: "How much do you weigh?" Responses were recorded both in pounds and kilograms. A similar item assessed height, such that the BMI could be calculated as weight in kilograms divided by height in metres squared. The NPHS interview also included the Composite International Diagnostic Interview Short Form for Major Depression (CIDI-SFMD) (Kessler et al., 1998). The CIDI-SFMD identifies major depressive episodes occurring in the year preceding the interview. The CIDI-SFMD is a brief instrument designed for use by non-clinician interviewers. The instrument is scored with a predictive probability algorithm based on the number of symptom-based criteria fulfilled during a 2-week period in the preceding year, and which also requires either depressed

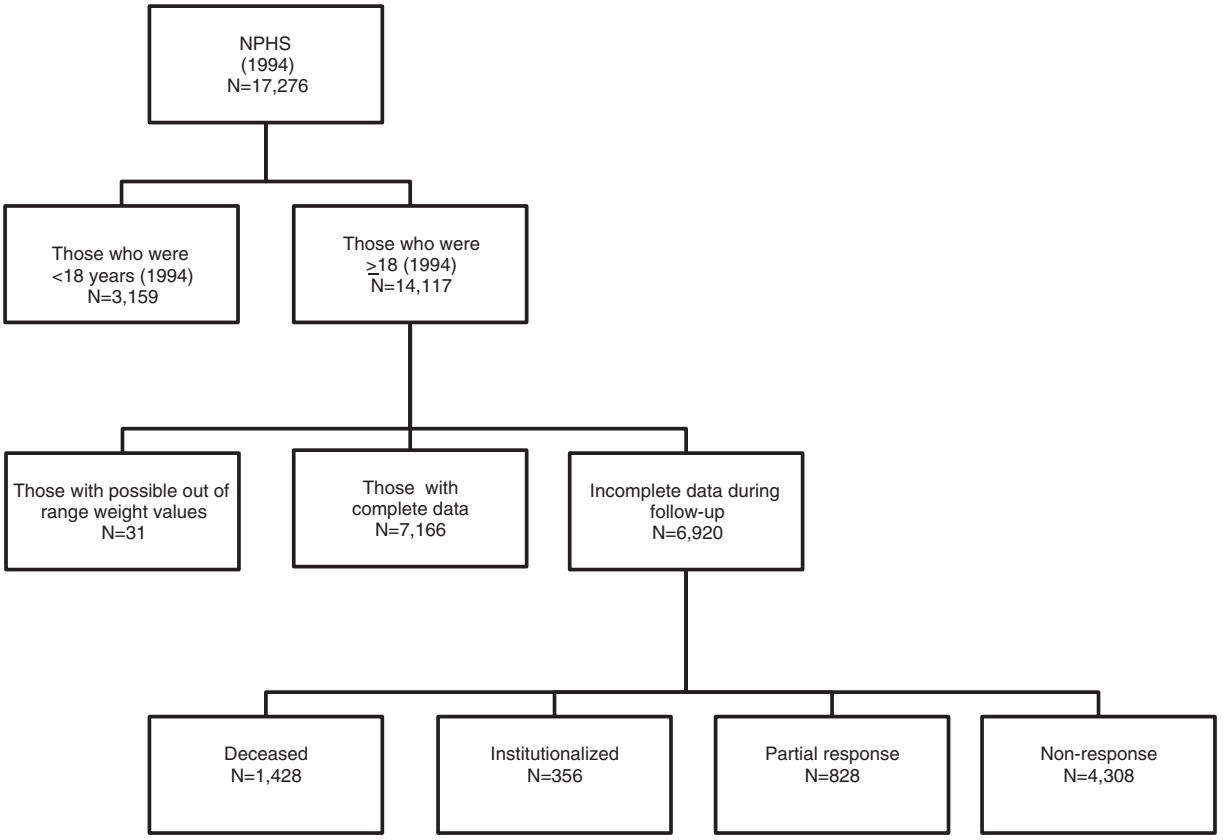

Fig. 1. Eligible respondents and their pattern of attrition in the National Population Health Survey (NPHS) 1994–2006.