clinical obesity

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Health behaviours, intentions and barriers to change among obesity classes I, II and III

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What is already known about this subject

- Most individuals with obesity do not meet health behaviour recommendations.
- Canadian adults with obesity are more likely to have an intention to improve their health compared to normal-weight Canadians.

What this study adds

- Canadian adults with obesity think increasing exercise is the first change they should do to improve their health.
- The lack of willpower is the most reported barrier to change regardless of obesity classes.
- Despite poorer health behaviours in individuals with class II/III obesity, no difference between obesity classes for the intentions to change and barriers are found.
- Comorbidities are more likely to explain barriers to change than is the severity of obesity.

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Summary

Health behaviour change is a cornerstone in the management of obesity, and data on health behaviours, intentions and barriers to change would be useful to inform the development of interventions. The aim of this study was to describe these variables in individuals with obesity, and to compare obesity classes. The study obtained data from the Canadian Community Health Survey 2011–2012 including 5614 adults with body mass index (BMI) ≥30 kg m^{-2}. The majority of participants reported eating four or more fruits and vegetables daily (65.3% [95% confidence interval {CI}: 64.1–66.6]), being a regular drinker (59.6% [95% CI: 58.4–61.0]) and inactive (58.0% [95% CI: 56.7–59.3]). About 84% of participants answered they should do and/or intend to do something in the next year to improve their health, with increasing exercise being the most reported choice (69.2% [95% CI: 67.1–71.5]). Among the 58.0% (95% CI: 55.9–60.2) of participants facing barriers to change, the lack of willpower was the most reported (37.0% [95% CI: 34.2–39.7]). No difference between classes for intention to change and barriers were found. Comorbidities were the most important factor explaining several health behaviours and barriers to change. The vast majority of participants, regardless of the severity of obesity, know they should do and also want to do something to improve their health, but faced a lack of willpower. Thus, the most important thing to consider during an obesity intervention is the lack of motivation to modify health behaviours and beyond BMI, the presence of comorbidities.

Keywords: Barriers, comorbidities, health, obesity.

Introduction

Already at a worryingly world rate of 13% (1), obesity prevalence still increases at an alarming pace throughout the world (2). Obesity is divided into three classes according to body mass index (BMI): class I – 30.0–-34.9 kg m^{-2}; class II – 35.0–39.9 kg m^{-2} and class III – ≥40.0 kg m^{-2} (3). In Canada, the prevalence of obesity was 18% in 2011, with 13, 4 and 2% in class I, II and III,

respectively (4) and the class III showed the greatest increase in the last two decades compared to the other classes with a 30% increase (4). Moreover, future projections indicate that the increase in class III obesity population will continue (4), which raises concerns given that mental and physical health in persons with severe obesity are more altered compared to lower obesity classes (5). In addition, these differences highlight the specific needs and expectations for treatment in the different obesity class (e.g. surgery or lifestyle intervention).

Health behaviour change (physical activity, nutrition and tobacco) is a cornerstone in the management of obesity (6), and previous studies underlined the effectiveness of behavioural interventions in this regard (7). However, it is known that people with obesity had difficulties to engage in these behaviours. Indeed, 84 and 66% of individuals with obesity did not meet the physical activity, and fruits and vegetables recommendations, 21% were current smokers and 61% regular drinkers (8).

Given that people with obesity have a greater tendency to adopt poor health behaviours, advancing the understanding of barriers to behaviour change and of their intentions to change remains a challenge. A previous population-based study underlined that 78% of people with obesity intended to change at least one health behaviour to improve their health compared to 63% of normal-weight people (9). Also, regarding barriers to change, lack of willpower, followed by work schedule were the most prominent (9), even though no difference between obese and normal-weight participants was observed. However, this study did not consider the severity of obesity (9). Therefore, it was hard to extrapolate their data to all individuals with obesity according to class.

Indeed, specific needs have to be addressed to tailor intervention and conduct successful interventions (10, 11). Current data on health behaviours, intentions and barriers to change according to obesity classes is limited, but would be useful to inform the development of better health policies, programs and services aimed at improving their health (9, 12–15). Moreover, to our knowledge no study provided data according to the three obesity classes or highlighted the differences between them.

Thus, the purpose of this study was to describe health behaviours, intentions and barriers to health behaviour change in individuals with obesity in a nationally representative sample of Canadian adults, and then to proceed comparative analysis across obesity classes.

Subjects, materials and methods

Data source and study population

The 2011–2012 cycle of Canadian Community Health Survey (CCHS) was used in the current study (response rate: 68.4%) (16). Statistics Canada conducted the survey using computer-assisted telephone interviewing or face-to-face interviews. Data from the core (sociodemographic, comorbidities, perceived health and health behaviours) and optional contents (intentions to change and barriers to change) were analysed in the current study. The core content was answered by all participants and the optional content was only answered in Canadian provinces and territories that selected the module.

CCHS participants were 12 and older, living in private dwellings in the 10 Canadian provinces and the three territories. Excluded from the CCHS were people younger than 12 years old, institutionalized persons, full-time members of the Canadian Forces, living in Indian Reserves, on Crown lands or in some remote regions, the final sample size was thus equivalent to 98% of the Canadian population. In the 2011–2012 CCHS, the optional content included six Canadian provinces (Yukon, Newfoundland and Labrador, Quebec, Manitoba, Alberta, Northwest Territories, Nova Scotia and Prince Edward Island), and was representative of approximately 40% of the Canadian population.

The current study's specific inclusion criteria were limited to adults (≥18 years) with BMI ≥30.0 kg m^{-2}.

Sociodemographic and anthropometric data

BMI was calculated from self-reported weight (kg) divided by self-reported height (m^2). Participants were categorized by obesity class according to the international standards (3). Age, sex, the highest certificate, diploma or degree were also self-reported by participants.

Comorbidities

Nine physical and mental comorbidities known to have an association with obesity were selected and were the following: asthma, arthritis, hypertension, type 2 diabetes, heart disease, stroke, cancer, mood and anxiety disorders. Participants were asked whether they had long-term conditions, which are expected to last or have already lasted 6 months or more, diagnosed by a health professional.

Health behaviours

Health behaviours considered in the present study were fruits and vegetables consumption, physical activity, tobacco and alcohol consumption.

Fruits and vegetables consumption was calculated based on juice, fruits, green salad, potatoes (excluding French fries, fried or potato chips), carrots and other vegetables consumption self-declared by participants on a daily, weekly, monthly and yearly basis. Based on the Canadian food guide recommendations (17), participants were classified as meeting the recommendations (more than four fruits servings per day) or not (four or more fruits servings per day).

For physical activity, participants were asked about the type, duration and frequency of recreational physical activity practiced over the last 3 months. An index was then calculated according to the metabolic equivalent of each physical activity. Participants with score <1.5 kcal kg^{-1} day^{-1} were categorized as inactive (18).

Tobacco consumption was assessed by asking participants if they smoked daily, occasionally (defined as someone who did not smoke daily or smoked less than 100 cigarettes in their lifetime) or not at all. Regular and occasional smokers were merged in the same category 'smokers' for the analyses.

Alcohol consumption was quantified by asking participants how often they drank an alcoholic beverage in the past 12 months. In the present study, participants were considered as regular alcohol drinkers if they drank alcohol at least once a month or more.

Intentions and barriers to change

To evaluate the perception of having to change, they were asked 'Do you think there is anything you *should do* to improve your physical health? If they answered yes, they had to choose *the most important thing* they think they should do among nine different choices: 'start/increase exercise', 'lose weight', 'change diet', 'quit smoking', 'drink less alcohol', 'reduce stress level', 'receive medical treatment', 'take vitamins' or 'other', which they would have to describe.

Then, barriers to change were assessed by asking participants: 'Is there anything stopping you from making this improvement?' If yes, participant had to report what reasons applied among the following answers: 'lack of willpower/self-discipline', 'family responsibilities', 'work schedule', 'addiction to drugs/alcohol', 'physical condition', 'disability/health problem', 'too stressed', 'financial constraints', 'not available in area', 'transportation problems', 'weather problems' or 'other', which they would have to identify.

Finally, to evaluate intentions to change, participants were asked: 'Is there anything you *intend to* do to improve your physical health in the next year?' If yes, they had to provide a *yes or no response* to all the following answers: 'start/increase exercise, sports/physical activity', 'lose weight', 'change diet/improve eating habits', 'quit smoking/reduce amount smoked', 'drink less alcohol', 'reduce stress level', 'receive medical treatment', 'take vitamins' and 'other', which they would have to identify.

Statistical analyses

The CCHS used a complex survey design that resulted in unequal probabilities of selection for respondents. To be representative of the Canadian population, a raw weight is attributed to each participant included in the final sample. In our study, results were reported based on a rescaled version of the survey weight, which is divided by its mean and again by the overall survey design effect, which was 3.55.

Chi-square tests were used to compare the three obesity classes for categorical data and a one-way ANOVA for continuous data. The alpha value was set at 0.05 for this study. To test for significant differences between each group, 95% confidence intervals (CIs) were reported. If the two confidence intervals did not overlap, we can conclude to a significant difference between the two population's values at the given level of confidence. Also, the coefficient of variation was computed to ensure the reliability of our prevalence and values between 0% and 16.5%, 16.6% and 33.3%, and those exceeding 33.3% were considered as acceptable, marginal and unacceptable and therefore not presented (19).

To analyse the specific impact of severe obesity (BMI ≥ 35 kg m^{-2}) on health behaviours, intentions and barriers to behaviour change, logistic regressions (class I vs. class II/class III) were used. Three subsequent models of regression with different adjustments were computed. In the first model, no adjustment was realized. In the second model, the regression was adjusted to age (< vs. ≥45 years) and sex (male vs. female). In the third model, variables from the previous model plus education (no vs. ≥high school) and number of comorbidities (< vs. ≥3 comorbidities) were added. The null hypothesis was rejected at $P < 0.05$. SPSS (version 21) was used for conducting analyses.

Results

Sample characteristics

A sample size of 5614 participants (2663 females) was included. Participants' characteristics are presented in Table 1. Mean BMI for obesity classes I, II and III were, respectively, 32.0 ± 1.4, 37.0 ± 1.4 and 44.1 ± 3.8 kg m^{-2}. The most prevalent comorbidities throughout all obesity classes were high blood pressure 32.8% (95% CI: 31.6–34.0), arthritis 24.4% (95% CI: 23.3–25.6) and diabetes 14.3% (95% CI: 13.4–15.3) with higher prevalence in classes II and III compared to class I obesity (Table 1). A significant difference in the number of comorbidities was found between obesity classes (class I: 1.0 ± 1.2; class II: 1.3 ± 1.3; class III: 1.6 ± 1.4; $F = 52.6$; df = 2; $P < 0.001$).

Health behaviours

Inactivity and eating less than five servings of fruits and vegetables per day were the most prevalent 'unhealthy' behaviours reported by participants (Fig. 1).

Table 1 Characteristics of the sample

	Class I (n = 4036)			Class II (n = 1088)			Class III (n = 490)			P values
	n	%	CI	n	%	CI	n	%	CI	
Sex										
Male	2262	56	54.5–57.6	507	47	43.7–49.7	182	37	33.1–41.7	<0.001
Female	1774	44	42.4–45.5	581	53	50.5–56.5	308	63	58.7–67.3	
Age (years)										
18–34	789	20	18.4–20.8	210	19	17.1–21.8	103	21	17.7–25.0	0.01
35–49	1169	29	27.6–30.4	351	32	29.6–35.2	156	32	28.0–36.3	
50–64	1355	34	32.2–35.1	366	34	31.0–36.6	171	35	31.0–39.5	
≥65	723	18	16.8–19.1	161	15	12.8–17.1	59	12	9.5–15.3	
Education level										
No high school diploma	648	17	15.5–17.8	172	16	14.1–18.5	85	18	14.8–21.8	0.623
≥High school diploma	3249	82	82.2–84.6	893	84	81.7–86.1	388	82	78.6–85.7	
Comorbidities										
High blood pressure	1260	31	29.9–32.7	380	35	32.2–38.0	196	40	36.2–45.0	<0.001
Arthritis	908	23	21.2–23.8	306	28	25.6–31.0	155	32	27.9–36.2	<0.001
Diabetes	495	12	11.3–13.3	199	18	16.2–20.8	108	22	18.8–26.2	<0.001
Asthma	383	9	8.6–10.4	141	13	11.2–15.1	94	19	16.0–23.1	<0.001
Mood disorder	368	9	8.3–10.1	152	14	12.0–16.1	94	19	16.1–23.0	<0.001
Heart disease	304	8	6.8–8.4	70	6	5.1–8.1	47	10	7.3–12.6	0.085
Anxiety disorder	293	7	6.5–8.1	101	9	7.7–11.2	55	11	8.8–14.4	0.002
Cancer (past)	225	6	5.0–6.5	59	6	4.4–7.2	30	6	4.4–8.8	0.87
Cancer	100	2	2.0–3.0	31	3	2.0–4.0	8	*	*	*
Stroke	44	1	0.8–1.5	20	2	1.2–1.8	9	*	*	*

*Data not reported because the coefficient of variation was above 33.3%.
CI, confidence interval.

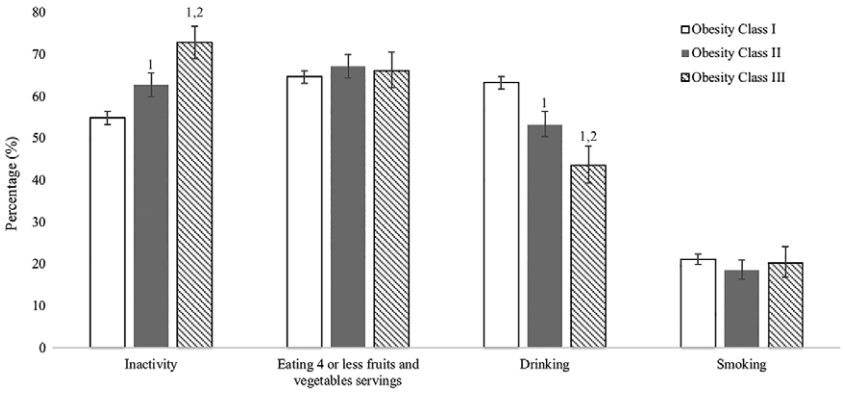

Figure 1 Prevalence of participants reporting health behaviours according to obesity classes. 1, significantly different from class I obesity; 2, significantly different from class II obesity.

For fruit and vegetable daily consumption, the prevalence of participants who did not meet the recommendation was 65.3% (95% CI: 64.1–66.6) and no difference between obesity classes was found (P = 0.29).

Inactive participants were reported at 58.0% (95% CI: 56.7–59.3) with a significant increased prevalence across obesity classes (P < 0.001) (Fig. 1).

With regards to alcohol consumption, the prevalence of regular drinker participants, which was 59.6% (95% CI: 58.4–61.0) significantly decreased across obesity classes (P < 0.001) (Fig. 1).

Smoking was reported by 20.6% (95% CI: 19.5–21.6) without significant difference between obesity classes (P = 0.19) (Fig. 1).

Adjusted odds ratio showed that individuals with class II and III obesity were more likely to be inactive, to eat less fruits and vegetables and to be non-regular drinkers than individuals with class I obesity (Table 2). Interestingly, the

number of comorbidities was an important factor associated with inactivity, tobacco consumption and alcohol consumption (Table 2).

Intention and barriers to change

Regarding the perception of having to change to improve the physical health, 84.0% (95% CI: 82.5–85.4) answered they should do something with a significant difference between the three obesity classes ($P = 0.03$). A significant difference was noted only between obesity classes I and II (class I obesity: 82.7 [95% CI: 81.0–84.5] vs. class II obesity: 87.2 [95% CI: 84.2–90.3] and class III obesity: 87.3% [95% CI: 82.9–91.9]).

The most reported change was to increase physical activity (48.3% [95% CI: 46.2–50.5]), and it was more often mentioned by participants in obesity class I (50.7% [95% CI 48.2–53.4)], compared to participants in obesity class III (40.2% [95% CI 33.7–48.0]) ($P < 0.001$) (Fig. 2). The second most important change was to lose weight (22.0% [95% CI: 20.2–23.8]), with a lower proportion in class I obesity compared to the two other classes (class I obesity: 18.6% [95% CI: 16.7–20.7] vs. class II obesity: 27.7% [95% CI: 23.6–32.4] and class III obesity: 35.9% [95% CI: 29.6–43.5]) ($P < 0.001$) (Fig. 2). Thirdly, changing eating habits was reported by 16.0% (95% CI: 14.4–17.6) of participants, without significant differences between obesity classes ($P = 0.37$) (Fig. 2). All other changes were cited by less than 10% (Table S1, Supporting Information).

Table 2 Logistic regressions comparing obesity class I vs. class II/class III

Dependent variables	Independent variables*	Model 1			Model 2			Model 3		
		OR	95% CI	*P* value	OR	95% CI	*P* value	OR	95% CI	*P* value
Inactivity	Obesity classes	1.59	1.41–1.79	<0.001	1.55	1.38–1.76	<0.001	1.51	1.33–1.71	<0.001
	Age				1.4	1.25–1.56	<0.001	1.29	1.15–1.44	0.003
	Sex				1.32	1.18–1.47	<0.001	1.26	1.13–1.4	<0.001
	Education							0.81	0.72–0.91	<0.001
	Comorbidities							1.5	1.27–1.79	<0.001
Four and less servings of fruits/vegetables per day	Obesity classes	1.1	0.97–1.25	0.124	1.19	1.05–1.35	0.007	1.18	1.03–1.35	0.013
	Age				1	0.90–1.13	0.923	0.97	0.86–1.1	0.626
	Sex				0.55	0.50–0.62	<0.001	0.55	0.49–0.62	<0.001
	Education							0.72	0.63–0.81	<0.001
	Comorbidities							0.93	0.78–1.11	0.411
Smoking	Obesity classes	0.88	0.76–1.02	0.098	0.88	0.76–1.03	0.103	0.87	0.74 1.01	0.069
	Age				0.56	0.50–0.64	<0.001	0.53	0.46–0.61	<0.001
	Sex				0.9	0.79–1.03	0.112	0.88	0.77–1	0.066
	Education							0.75	0.66–0.86	<0.001
	Comorbidities							1.26	1.03–1.54	0.028
Excessive alcohol consumption	Obesity classes	0.73	0.62–0.86	<0.001	0.82	0.69–0.98	0.024	0.84	0.70–0.99	0.05
	Age				0.41	0.35–0.47	<0.001	0.43	0.37–0.50	<0.001
	Sex				0.24	0.20–0.28	<0.001	0.25	0.21–0.29	<0.001
	Education							1	0.85–1.17	1
	Comorbidities							0.62	0.46–0.82	0.001
Perception of having to change to	Obesity classes	1.43	1.1–1.85	0.007	1.43	1.10–1.86	0.007	1.42	1.08–1.86	0.011
	Age				0.57	0.45–0.72	<0.001	0.62	0.49–0.80	<0.001
	Sex				0.92	0.74–1.14	0.438	0.95	0.76–1.2	0.664
	Education							2.24	1.78–2.81	<0.001
	Comorbidities							1	0.73–1.39	0.985
Barriers to change	Obesity classes	1.03	0.85–1.25	0.775	1	0.83–1.22	0.955	0.99	0.81–1.21	0.89
	Age				1.02	0.85–1.22	0.824	1	0.83–1.21	0.99
	Sex				1.25	1.04–1.49	0.015	1.21	1–1.45	0.044
	Education							1.13	0.93–1.37	0.211
	Comorbidities							1.52	1.15–2.00	0.004
Intentions to change in the next year	Obesity classes	1.14	0.87–1.5	0.344	1.1	0.84–1.45	0.489	1.12	0.84–1.48	0.441
	Age				0.83	0.65–1.06	0.136	0.82	0.63–1.06	0.126
	Sex				1.39	1.08–1.78	0.01	1.4	1.08–1.8	0.016
	Education							1.44	1.1–1.84	0.005
	Comorbidities							1.03	0.71–1.49	0.888

*Age (18–44 years vs. ≥45 years); sex (men vs. female); education (no high school vs. ≥high school); and number of comorbidities (<3 vs. ≥3 comorbidities).

CI, confidence interval; OR, odd ratio.

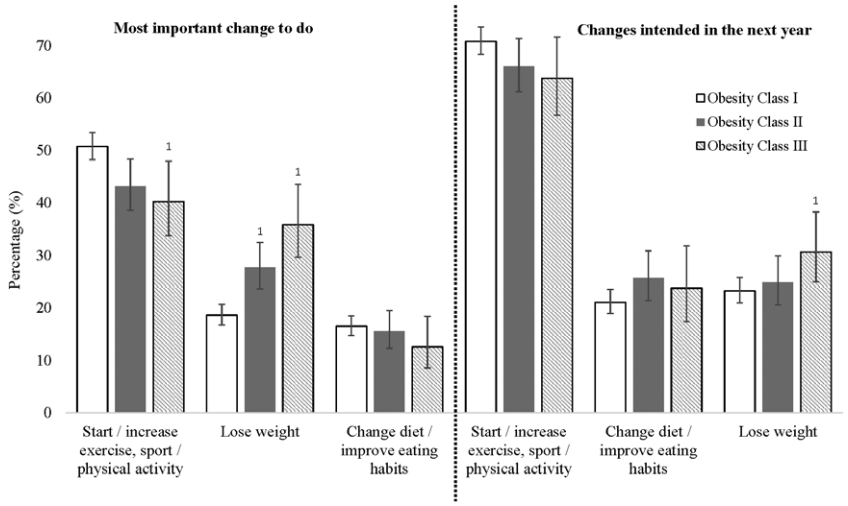

Figure 2 The three most prevalent changes that participants declared have to do to improve their physical health, and intended to do to improve their physical health in the next year according to obesity classes. 1, significantly different from class I obesity.

Concerning barriers to behaviour change, among all participants declaring they should do something to improve their physical health, 58.0% (95% CI: 55.9–60.2) of them faced barriers and no significant difference between obesity classes was noted (P = 0.09). The most reported barrier to behaviour change was the lack of willpower (37.0% [95% CI: 34.2–39.7]), followed by work schedule (19.0% [95% CI: 16.8–21.3]) and health problems (10.6% [95% CI: 9,0–12.6]). For these three barriers, there was no significant difference between obesity classes (Fig. 3).

Regarding intentions to change within the next year, the vast majority of participants (84.5% [95% CI: 82.9–86.1]) stated that they intended to do something to improve their physical health in the next year without significant difference between obesity classes (P = 0.47). The most reported intention was to increase exercise with 69.2% (95% CI: 67.1–71.5) of participants, without significant difference between obesity classes (P = 0.47) (Fig. 2). Improving eating habits was ranked second (23.6% [95% CI: 21.6–25.7]) without significant difference between obesity classes (P = 0.83) (Fig. 2). Losing weight was ranked third with 23.0% (95% CI: 20.9–25.0) of participants, which class III obesity participants (30.6% [95% CI: 24.2–38.7]) reporting it significantly more often than participants with class I obesity (21.0% [95% CI: 18.9–23.5]) (P = 0.01) (Fig. 2). All other changes were cited by less than 10% (Table S1).

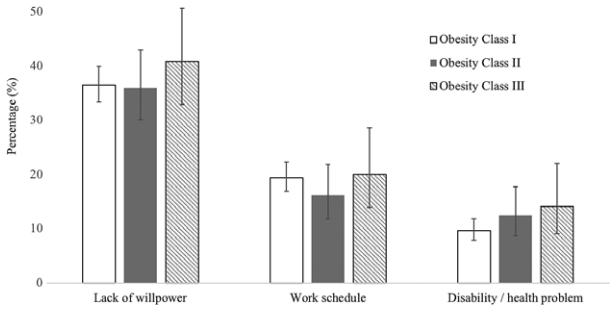

Figure 3 The three most prevalent health behaviours barriers reported by participants according to their obesity classes.

Regarding the perception of having to change, the adjusted logistic regression showed that individuals with class II/III obesity were more likely to declare that they should do something to improve their physical health than individuals with class I obesity (Table 2).

Adjusted logistic regression (Table 2) showed no significant difference between obesity classes regarding barriers (P = 0.89) and intentions to change (P = 0.44). The strongest predictor of barriers to health behaviour change was the number of comorbidities (Table 2).

Discussion

In the present study, our aim was to describe health behaviours, intentions and barriers to change among a sample of nationally representative Canadian adults with obesity and how can these aspects differ according to the severity of obesity. No other study highlighted such differences between obesity classes, and as the obesity rate is still growing, there was a need to understand the variability among the obese population to better adopt our treatments.

Our findings allowed us to pinpoint the most prevalent 'unhealthy' behaviours reported by participants. As expected, inactivity and eating less than five servings of fruits and vegetables per day were the most prevalent unhealthy behaviours. The high percentage of participants being inactive (64%) or eating less than the recommended

servings per day (66%) corroborates results from previous studies on the implication of physical activity and nutrition in the aetiology of obesity (14, 15, 20). In addition, our findings confirm results from previous studies showing that inactivity increases across obesity classes (21, 22), validating that excess weight is a factor negatively associated with physical activity (22).

Regarding alcohol consumption, the prevalence of regular drinker significantly decreased across obesity classes, which corroborates other results showing similar relationships that suggested a competing brain reward mechanism (23, 24). This specific mechanism postulates that both substance-addicted subjects and individuals with obesity seem to share the same reward-motivation neural network and the reward used is either food for some or drug/alcohol for others (24, 25). However, more recent studies find mixed results regarding the relationship between alcohol consumption and BMI (23). This lack of consistency might be explained by the fact that some studies only considered frequency, like ours, and others quantity or both variables. Future studies should address both frequency and quantity among people with obesity to better understand its relationship with alcohol.

Only minor differences between obesity classes were found for the perception of having to and intentions to change, and the most reported changes (increasing physical activity, losing weight and changing eating habits) were the same as in the Canadian general population (9). This suggests that obesity interventions should take personal variations into account, but that there are no preferred changes according to obesity classes.

As the intentions to change were exactly the same as those found in the literature, it is not surprising, therefore that the barriers were also equivalent as expected. Indeed, as previously reported, the most important barrier was the lack of willpower (9), followed by work schedule, disability, lack of time and family responsibilities (9, 26, 27). Given the absence of difference between obesity classes in terms of barriers, the latter are important to target in health behaviour change interventions dedicated to people with obesity, regardless of its severity. However, these barriers should be interpreted cautiously because a previous study highlighted that time-related barriers (e.g. no time to exercise) could be a false barrier (28).

The present study provides evidence not identified in previous obesity research that comorbidities were more likely to have influence over most of our outcomes than obesity classes. Indeed, the presence of three or more comorbidities was the most important variable explaining the perception of health, several health behaviours (e.g. tobacco, alcohol consumption) and barriers to change. However, comorbidities were not found to influence intentions to change. This indicates that a poor health with several comorbidities does not seem to be a reason to motivate a person to change their behaviour and therefore should not be used as a motivational argument in intervention. This phenomenon is similar to healthy lifestyle counselling based on genetic risk, which was found not to have an impact on motivation or even to reduce motivation to undertake lifestyle changes (29).

Some limitations inherent in our study should be underlined. Firstly, all measures were self-reported, so we cannot exclude bias in reporting. Another limitation is the measurement of the different health behaviours. Regarding physical activity, only leisure-time physical activity was considered, although this behaviour is much broader (e.g. active transports, household activities). Similarly, eating habits were evaluated only with fruit and vegetable consumption, while there are many other eating habits that could influence this behaviour such as sugary drinks or snacks consumption. Therefore, these two behaviours are not fully representative of the overall behaviour profile. Another limitation is the cross-sectional design of the CCHS, as no causal relationships can be drawn.

In conclusion, our results confirm the high prevalence of unhealthy behaviours in individuals with obesity, as well as the intentions to change to improve their health, especially the intention to increase exercise. This study compared each obesity class with the hope of highlighting differences that could help improve and personalize obesity interventions, but differences observed were mainly explained by sex, age and comorbidities, rather than obesity alone. We can infer that regardless of the obesity class, the most important thing therefore to consider during an obesity intervention is the lack of motivation to modify health behaviours, plus the presence of comorbidities.

Conflict of Interest Statement

No conflict of interest was declared.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1. Prevalence of participants declaring the most important changes they *have to do* and those they *intend to do* to improve their physical health according to obesity classes.