

**Canadian Health Care Providers' Attitudes and Practices Towards  
Pharmacotherapy and Bariatric Surgery in Youth**

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## ABSTRACT

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Pharmacotherapy and Bariatric Surgery in Youth

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**Background.** Behavioural therapy and lifestyle modifications are pillars of obesity management treatment. However, other treatment options like bariatric surgery (BarSx) and pharmacotherapy (Pharm) are gaining more and more interest. Little is known about healthcare providers' (HCPs) attitudes towards pediatric obesity treatments in Canada. The purpose of this study was to explore the prior knowledge, attitudes and practices (i.e., frequency of treatment recommendations, referrals to specialists) of Canadian HCPs towards pharmacotherapy (Pharm) and bariatric surgery (BarSx) in children and adolescents. We also examined familiarity with pediatric obesity guidelines, differences in attitudes with regards to the type of HCP, prior obesity training and levels of confidence treating obesity and definitions of pediatric obesity management success.

**Methods.** Canadian physicians, nurse practitioners and medical residents completed 39 multiple choice and open-ended questions on LimeSurvey from October 2021 until September 2022. Participants were recruited through convenience and snowball sampling across Canada. Chi-square and Fisher's exact tests compared attitudes between respondents who were familiar versus unfamiliar with pediatric obesity guidelines. Kruskal-Wallis tests and independent sample t-tests were used to analyze our exploratory objectives.

**Results.** A total of 130 HCPs responded to the survey. Of the respondents, 78% identified as women, 49% were physicians, 39% resided in Ontario, 54% had received pediatric obesity training before working in the field, 48% were most familiar with the 2015 Canadian Task Force

Guidelines whereas only 12% were familiar with the 2018 American Society for Metabolic BarSx guidelines. HCPs did not respond favorably towards Pharm and BarSx. Responses varied regarding agreement about the effectiveness, safety, usefulness and willingness to refer adolescents and children. For Pharm, 48% of respondents agreed that it is an effective intervention in adolescents compared to 23% that agreed in children. As for BarSx, only 16% of respondents agreed that it's a useful treatment for obesity-related co-morbidities in children compared to 47% who agreed that it was useful in adolescents. In general, there was more disagreement in regard to responses for children compared to adolescents. Reasons chosen for HCPs' reluctance to refer were lack of long-term data (Pharm: 58%, BarSx: 41%) and patients' unrealistic outcome expectations (Pharm: 45%, BarSx: 49%). Referrals to medical specialists (74%), like dietitians (85%), and multidisciplinary programs (61%) were the most common referrals for patients.

**Conclusion.** Pharmacotherapy and bariatric surgery are not highly endorsed by Canadian HCPs. Future studies should investigate other barriers to treatment recommendations, such as HCPs' knowledge on obesity and potential bias towards the causes of obesity and severe obesity in youth.

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*Trust in the Lord with all your heart, And lean not on your own understanding; In all your ways, acknowledge Him, And He shall direct your paths.*

*Proverbs 3:5-6*

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## **ABBREVIATIONS**

AAP: American Academy of Pediatrics

ASMBS: American Society for Metabolic and Bariatric Surgery

BarSx: Bariatric Surgery

BMI: Body Mass Index

HCPs: Healthcare Providers

Pharm: Pharmacotherapy

## **CHAPTER 1: INTRODUCTION**

## 1.0 General Introduction

Obesity is a complex chronic disease (1) that is often stigmatized to be a consequence of poor personal choices (1,2). According to WHO Growth Charts for Canada, obesity in children and in adolescents is defined by having a body mass index (BMI)  $\geq$  97th percentile for age and sex (3). In 2019, rates of obesity were predicted to impact over 100 million children between 5 to 9 years old and over 150 million adolescents aged 10 to 19 years by 2030 worldwide (4,5). In 2019, approximately 27.5% of Canadian youth aged 5 to 17 years old are living with overweight or obesity (6).

Obesity is caused by a complex set of factors related to one's genetics, their environment, as well as their hormonal, behavioral, psychosocial, and physiological makeup (1,7). It is associated with many medical comorbidities, such as type 2 diabetes, obstructive sleep apnea, polycystic ovary syndrome as well as social, emotional, and psychological impacts like depression, disordered eating, and poor self-esteem, likely resulting from experiences of weight stigma and discrimination (8). Given the complexity in cause and in manifestation of obesity in adolescents, multicomponent behavioral interventions (i.e., lifestyle modifications), such as dietary interventions, physical activity, and behavioral counselling, are fundamental to help treat and manage this chronic disease (7,9). Behavioural interventions are consistently recommended by most clinical practices guidelines used in Canada, such as the 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children (10), The 2015 Canadian Task Force on Preventive Health Care guidelines on obesity in children (11), The 2017 Endocrine Society Clinical Practice Guidelines on Pediatric Obesity: Assessment, Treatment and Prevention (12), the 2018 American Society for Metabolic and Bariatric Surgery (ASMBS) pediatric metabolic and bariatric surgery guidelines (13), as well as the most recent 2023

American Academy of Pediatrics (AAP) Clinical Practice Guidelines for the Evaluation and Treatment of Children and Adolescents with Obesity (2).

### **1.1 Pharmacotherapy and Bariatric Surgery**

Aside from behavioural interventions, pharmacotherapy (Pharm), and bariatric surgery (BarSx) are other available treatment options for pediatric obesity that are gaining more interest. Pharm is defined as the use of drugs/medication for weight management (2), whereas BarSx is a surgical procedure designed to limit the stomach's capacity to hold food (13). However, there are specific requirements for these interventions that are different for youth and adults.

According to the AMSBS pediatric metabolic and bariatric surgery guidelines, Pharm has the potential to help treat pediatric obesity in combination with other interventions, such as behavioural interventions and BarSx (13). Findings from a recent study have shown that weight loss (mean BMI change was -16.1%) resulting from once-weekly semaglutide injection improved health risks associated with obesity-related comorbidities in adolescents with overweight and obesity (14). In the 2006 Canadian clinical practice guidelines addressing both obesity among adults and youth, Pharm (orlistat) was recommended to be considered in adjunct with behavioural intervention among adolescents. For children, these guidelines considered the use of obesity medication only in the context of a supervised clinical trial (10). Moreover, the latest AAP Guideline suggests prescriptions for obesity medication to adolescents with obesity  $\geq$  12 years old in combination with lifestyle and behavioral interventions (2).

BarSx is another intervention for obesity in adolescents that is often recommended to be accompanied with behavioural counselling, exercise, nutrition, as well as pharmacotherapy to

maintain long-term outcomes (13). Recently, there has been a rise in the use of BarSx in adolescents, mainly because it has been found the most effective intervention for weight loss in adolescents living with severe obesity (13,15–20). Results from the Teen-LABS cohort, one of the largest multi-centre studies evaluating the safety and efficacy of BarSx in adolescents in the US, showed significant improvements in weight, cardiometabolic health as well as weight-related quality of life three years after BarSx. Additionally, they reported a remission of type 2 diabetes mellitus in more adolescents than in adults who underwent the same surgical procedures (16,17). In Canada, recent findings from the STOMP program in Toronto also showed that adolescent BarSx is safe and effective for weight loss in the context of a multidisciplinary obesity management program (15). BarSx was suggested to be performed only among adolescents in the context of experienced teams for the most extreme cases in the 2006 Canadian clinical practice guidelines (10), while the new 2023 AAP guidelines recommend that surgery referrals should be offered to patients  $\geq 13$  years old with severe obesity for evaluations at nearby multidisciplinary pediatric BarSx centers (2).

Recommendations regarding the use of Pharm and BarSx in youth from the 2006 Canadian clinical practices guidelines may be updated in the upcoming Canadian pediatric obesity guidelines that are expected to be released later in 2023 (21).

## **1.2 Attitudes towards Pharmacotherapy and Bariatric Surgery**

Healthcare providers (HCPs) play an integral role in monitoring the weight and health of their pediatric patients, so it is vital to understand and capture their attitudes and practices regarding obesity management in children and adolescents. Some studies have examined HCPs'



attitudes towards the emergence of Pharm and BarSx (22–31) for children and adolescents living with obesity. However, few studies have addressed attitudes towards the use of Pharm and BarSx in youth in Canada (29,30,32).

For instance, Frankfurter *et al.* showed that 58.1% of their sample of physicians, surgeons and allied health professionals disagreed (*strongly disagree to disagree*) with treating pediatric obesity with medication (29). Also, 73% of the health practitioners surveyed did not know how to treat obesity with medication (29). Though the idea of Pharm as a pediatric obesity treatment has been gaining more and more attention, its clinical application is still quite understudied, and novel compared to BarSx in youth. More research is needed to better understand the safety and efficacy of Pharm as a pediatric obesity treatment especially in Canadian children and adolescents (33,34).

Results from Frankfurter *et al.* also included that 56.1% of their sample of primary care practitioners would *strongly disagree* to treat pediatric obesity with BarSx (29). Similarly, interviews conducted by Bailey *et al.* reported skepticism towards bariatric surgery for children and adolescents and emphasized the need for long-term follow-up and transitions to adult care plans following the surgery (30). On the other hand, a qualitative study from Farnesi *et al.* found that physicians were open to bariatric surgery in adolescents if conditions (*e.g.*, support from a multidisciplinary team, presence of medical and psychological comorbidities) were met (32). The main reasons for the negative attitudes (skepticism) towards BarSx reported outside of Canada include uncertainties about long-term complications and efficacy (27), the belief that BarSx does not address the underlying factors of obesity by simply treating its symptoms (22,26), and the need for more and more rigorous scientific evidence on the immediate and long-term risks and benefits on pediatric patients (26). Given the upcoming release of the new 2023

Canadian pediatric obesity guidelines (21) and considering the variations in healthcare resources and services between countries, it is vital to assess the current knowledge, attitudes and practices of HCPs regarding pediatric obesity in Canada. Currently, no study has explored Canadian HCPs' reasons for their willingness or reluctance to refer children and adolescents to Pharm and BarSx. Furthermore, previous studies have shown how HCPs attitudes towards obesity can potentially influence what treatments HCPs offer to children and adolescents with higher weights (32). Therefore, understanding HCPs' attitudes towards Pharm and BarSx can provide insight on how to address any potential barriers to HCPs medical decisions regarding pediatric obesity management treatment options in Canada and inform future education and knowledge translation initiatives for HCPs.

### **1.3 Current Practices and Obesity Management Success**

Capturing HCPs' current practices and their definitions of obesity management success is essential to improve personalized patient care. A study conducted in the Netherlands revealed that Dutch general practitioners seldom (if at all) referred patients to multidisciplinary treatment programs, cognitive behavioural therapy, and family treatment (22). On the other hand, they usually offered lifestyle and dietary advice as well as exercise or sports programs (22). This common trend is seen in many US studies where counselling for behavioural changes is frequently offered by the majority of physicians (24,35–39). In fact, a study conducted in the US explored HCPs' obesity treatment practices and attitudes towards BarSx in youth (27), which revealed that 76-78% of HCPs provided counselling on physical activity and dietary intake, while <10% referred pediatric patients to surgery (27). Similarly, two Canadian studies reported

that HCPs were reluctant to use medication or perform surgical procedures in youth with obesity compared to other treatments such as behavioural diet and exercise interventions and psychosocial treatments (29,40).

According to Obesity Canada's 5As of Pediatric Obesity Management, identifying and addressing (1) the 'root causes' of unhealthy weight gain and (2) the barriers to health and well-being are required for obesity management success (41). Some studies consider an effective or successful treatment to result in clinically meaningful weight outcomes, significant changes in patients' BMI, waist circumference or BMI z-score or improvements in obesity-related consequences (42–44). For example, the Pediatric Obesity Weight Evaluation Registry, which is an ongoing study that collects data from 31 pediatric obesity management clinics in the US, defined success as at least 5% BMI reduction after 6-12 months of interventions (1,45). However, this definition is not consistent and is understudied among Canadian HCPs (42). Given that obesity is a complex chronic disease that is unique to everyone, definitions of what successful obesity management entails can differ from patient to patient, warranting more study in a Canadian context. Understanding HCPs current practices and definitions of successful obesity management is essential to improving personalized patient care and setting realistic expectations for families and HCPs.

#### **1.4 Education on Pediatric Obesity and Perceived Levels of Confidence**

The lack of formal obesity training among physicians, residents and nurse practitioners is reported to be a major barrier to obesity prevention and treatment (46–53). Medical students indicated their lack of knowledge on obesity as an obstacle to effectively preventing and treating

childhood obesity in clinical settings (54). In a study by Katz *et al.* Canadian residents reported an average time of 14.6 +/- 5 hours spent learning about obesity over the span of 3-4 years in medical school compared to an average of 15.4 hours for learning about diabetes alone (52,55). Studies found that training residents in childhood obesity prevention and treatment led to an increase in confidence in their counseling skills, in body mass index recognition and classification, knowledge on obesity and overweight, and in weight counseling techniques using motivational interviewing (56). One study also examined a sample of nurse educators in post-graduate nursing programs in the US and reported that approximately half of respondents spent only 2-5 hours per semester teaching students on obesity (51).

Furthermore, low confidence levels and self-efficacy in treating pediatric obesity have been reported by many HCPs (46,48,49). However, physicians with increased obesity training had better confidence and lead to better familiarity with obesity management guidelines (49). Obesity management guidelines are often developed by a steering committee of experts in the field and provide evidence-based recommendations for HCPs working with patients living with obesity. Therefore, familiarity with obesity guidelines as well as confidence are important to assess in Canadian HCPs to help ensuring evidence-based patient care.

## **1.5 Research Questions & Objectives**

1. What are Canadian HCPs' knowledge on pediatric obesity?
  - a. What prior training did they receive before working in the field?
  - b. What topics would they want to receive training on now that they are working HCPs in the field?
2. What are Canadian HCPs' attitudes towards the effectiveness, safety, usefulness, and willingness to refer youth living with obesity to Pharm and BarSx?
3. What are Canadian HCPs current practices for youth living with obesity?
  - a. What are their current treatment recommendations and specialist referrals?

### **Specific Objectives**

1. To assess Canadian HCPs' prior training on pediatric obesity, their preferences for future training, as well as their familiarity with pediatric obesity guidelines.
2. To explore the attitudes of Canadian HCPs towards the use of Pharm and BarSx in youth with obesity.
3. To describe Canadian HCPs current practices, such as referral patterns and treatment and intervention recommendations, for youth living with obesity.

### **Exploratory Questions**

1. How familiar are Canadian HCPs with the current pediatric obesity guidelines?
2. Do the attitudes towards the use of Pharm and BarSx in youth differ between physicians, medical residents and nurse practitioners?
3. What training experiences do Canadian HCPs have regarding managing obesity in youth?

- a. Are HCPs who received prior training on pediatric obesity more familiar with obesity guidelines?
- b. Are attitudes towards Pharm and BarSx more favorable among HCPs who have received prior training on pediatric obesity?
4. What are Canadian HCPs levels of perceived confidence in managing obesity in youth?
  - a. Are levels of perceived confidence greater in HCPs who received prior training on pediatric obesity?
5. How do Canadian HCPs define pediatric obesity management success?

## **1.6 Hypotheses**

We hypothesize that:

1. Canadian HCPs will report infrequent referrals for Pharm or BarSx for youth with obesity due to their negative attitudes (reluctance) towards the interventions.
2. Canadian HCPs will follow pediatric obesity guidelines and mainly recommend behaviour interventions (*e.g.*, nutrition, exercise counselling) to youth who are living with obesity.
3. Canadian HCPs will often refer to other medical specialists (*e.g.*, dietitians, psychologists) to help manage and educate families on obesity.

## **CHAPTER 2: METHODS**

## 2.1 Participants

Canadian physicians, nurse practitioners and medical residents were eligible to participate in this study from October 2021 to September 2022. In addition, eligible participants must have been over 18 years old, practiced in at least one Canadian province or territory, and must have had clinical interactions with children and or adolescents. The 20-minute survey was hosted on Concordia's version of Limesurvey (Hamburg, Germany), an online survey platform. All participants completed an informed consent prior to answering the survey (*See Appendix*). This research study was approved by the Concordia University Research Ethics Board (# 30015408), by the University of Alberta Research Ethics Board (Pro00117356) and obtained an Edmonton Zone Administrative Approval to be able to recruit from the Stollery Children's Hospital in Edmonton, Alberta, Canada.

Participants were mainly recruited through snowball and convenience sampling. The survey was first published online in October 2021 on the Obesity Canada and CMDO (Cardiometabolic Health, Diabetes and Obesity Research Network) websites. Shortly after, the survey was taken off the Obesity Canada website due to a high number of fraudulent bot and false responses. Additionally, the recruitment scripts for the study, which included its description and weblink (*See Appendix*), were sent to our research team's colleagues in Alberta, British Columbia, Manitoba, Nova Scotia, Ontario and Quebec and were asked to circulate the study among their colleagues and networks. The electronic survey link was also posted on private medical groups on social media platforms (Facebook, LinkedIn, and Twitter), in newsletters and on forums of recognized medical associations and groups such as the Alberta Medical Association (AMA), the Division of Family Practice in British Columbia and the College of Family Physicians of Canada and the Canadian Pediatric Society. Furthermore, the survey was



presented twice at a virtual learning and networking platform for HCPs across Canada called the Extension for Community Healthcare Outcomes (ECHO) sessions. These virtual sessions were presented twice in the beginning of 2022 and were done in the presence of Canadian HCPs who are interested in pediatric obesity management. Lastly, HCPs were also recruited from a telemedicine company by sharing the study details in the monthly newsletter and post on the company's messaging forum (Dialogue Technologies, Quebec). Academic and residency program directors as well as directors of communications from the Canadian Federation of Medical Students, Resident Doctors of Canada, the Mosaic Primary Care Network in Alberta, the Children's Hospital Research Institute of Manitoba as well as the residency programs at the University of British Columbia (Vancouver, British Columbia), at McGill University (Montreal, Quebec) and the University of Montreal (Montreal, Quebec) were contacted by email to circulate the survey among medical residents and members.

### *2.11 Data Cleaning*

As mentioned earlier, the survey was withdrawn from the Obesity Canada website after we discovered many bots had completed the survey. These bots were first detected due to the sudden influx of responses to the survey. To analyze which responses were real and which were fraudulent, we developed a stepwise data cleaning procedure (57,58). First, we removed responses that did not consent to the study. Second, we analyzed the referring URLs and deleted responses that came from websites that were not yet included in our recruitment strategy. Third, we removed responses that were completed <5 minutes and > 30 minutes (57). In addition, we omitted responses that were completed in the early morning, which we defined as between 12:00 – 7: 00am. For this step, we also took into consideration the province of residence given the different time zones in Canada. Fourth, we identified potential fraudulent responses by removing

submitted email addresses that had a sequence of random letters or that ended with more than four numbers, which are characteristics of email addresses from Gmail bulk account creators that can easily be created or bought online (59). Fifth, we analyzed open-ended responses and verified each full name submitted on official medical directories found on accredited websites like the College of Physicians and Surgeons of Alberta (CPSA), the College of Nurses on Ontario (CNO), as well as other professional resources like LinkedIn. Lastly, we removed survey responses if participants did not satisfy our study inclusion criteria.

## **2.2 Measures**

The self-administered online survey was created based on an altered version of the knowledge, attitude, and practice conceptual framework created by Woolf (60) (*See Appendix Figure 1*) and later modified by Cabana *et al.* (61) and Roelens *et al.* (62) (*See Appendix Figure 2*). This modified framework was aligned with our study objectives to assess the current knowledge, attitudes and practices of Canadian HCPs towards Pharm and BarSx in youth (*See Appendix Figure 3*). Our survey was created following the same order of this framework with sections of questions assessing knowledge on pediatric obesity, attitudes towards pharm and BarSx in youth, and current clinical practices. The development of this survey also adhered to the systematic approach for survey development and testing recommended by Burns *et al.* (63) (*See Appendix Figure 4*).

The items in our survey were inspired by other studies that had similar questions or interests as our study (15,18–20,22,31,49,64–71). Additional items were created from discussions with colleagues and pediatric obesity experts. Items in the survey focused on knowledge and education regarding obesity management and current guidelines, reasons physicians would and would not refer either Pharm or BarSx to their pediatric and adolescent population and current practices and treatment recommendations. Most of the items were graded on a 4-point Likert scale, where the neutral option was placed on the right-hand side (*e.g.*, 1 = very unfamiliar, 4 = very familiar, 0 = neither unfamiliar nor familiar) (*See Appendix*).

We undertook several steps to develop and refine the survey before implementation. To assess the wording of the survey and its interface, we invited a group of university students (n = 17) to complete the first pilot version of the online survey. Changes were made to shorten and clarify the wording of some questions as well as modifying the formatting (fonts, colors and spacing) to better organize the sets of survey questions. Once the survey was updated, we invited a group of HCPs (n = 10) to assess the content and the face validity of the survey in both English and French versions of the second version of the survey. Minor revisions were made regarding the French translation of the survey. Lastly, we sent the third version of the survey to three physicians who have expertise in the field of pediatric and adolescent obesity. From these discussions with the physicians, response options were modified and added to the original responses from previous studies. The final version of the survey was modified based on our discussions with these three groups. The final version of the survey contained 39 questions and was divided into four sections, including: Knowledge on Obesity Management, Attitudes towards Pharmacotherapy and Bariatric Surgery, and Current Practices and Demographics.

## *I. Knowledge on Obesity Management*

Participants indicated whether they had received any training on pediatric obesity during their education pathway. They also stated the type of training they would have wanted to receive prior to working in the field, the type of training they would like to receive now that they are currently working, if there is a need for continuing medical education for physicians, what format they would like to receive training if it was offered (conferences, seminars, workshops, etc.). Lastly, participants indicated their levels of familiarity with four current pediatric practice guidelines on obesity on a 4-point Likert scale (1 = very unfamiliar, 4 = very familiar, 0 = neither unfamiliar nor familiar). Questions to assess HCPs knowledge on pediatric obesity management were informed by studies like Reyes *et al.* (49) and Zevin *et al.* (64). For example, the questions addressing a need for better obesity training were adapted from a study by Zevin *et al.* (64).

## *II. Attitudes towards Pharm and BarSx*

In this section, participants indicated their levels of agreement on 8 statements regarding the effectiveness, usefulness, safety, and willingness to refer youth for Pharm and BarSx. Levels of agreement were assessed on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree, 0 = no opinion). Participants stated if they would recommend these treatment options to patients of specific age groups, what they recommend as the minimum age and BMI requirement, the reason(s) they would recommend these treatment options as well as the reasons why they would not recommend these treatments options. The questions in this section were adjusted from studies by Roebroek *et al.* (22), Iqbal *et al.* (24), Reyes *et al.* (49), Vanguri *et al.* (27), Zevin *et al.* (64), as well as

Auspitz *et al.* (66) and were revised by group discussions with experts in the field of pediatric obesity management. For instance, examples of reasons for reluctance for BarSx were modified from Roebroek *et al.* (22) as well as Auspitz *et al.* (66) for inclusion in our survey (*See Appendix*).

### III. *Current Practices*

For current practices, participants stated the percentage of patients they treat that are living with obesity or severe obesity, whether they have access to professional resources such as other health care providers or services, the frequency that they recommend treatments to their pediatric population as well as the reasons why they have never recommended some of the resources. Similarly, they were asked to indicate how often they currently recommend different specialists to their patients. Lastly, participants indicated their level of agreements with statements regarding their perceived levels of success, confidence and readiness when treating and managing obesity. This section ends by asking participants about their definition of successful pediatric obesity management. Questions in this section were inspired by similar studies by van de Pas *et al.* (31), Roebroek *et al.* (22), Reyes *et al.* (49), Vanguri *et al.* (27) and Zevin *et al.* (64). For example, questions in our survey asking about the frequency of treatment recommendations and definitions of successful pediatric obesity management were adapted from a study by van de Pas *et al.* (31). We modified the question regarding successful pediatric obesity management and added additional response options (BMI reduction, improved mental health, improved relationship with food, improved self-esteem, improved body image, integration of healthy lifestyle habits and sustained weight loss) for our survey geared towards Canadian HCPs.

#### IV. *Demographics*

This section included questions assessing gender, age, current position, and workplace setting, years of practice, province or territory of residence and practice as well as memberships to Canadian medical associations and organizations.

### **2.3 Statistical Analysis**

Statistical analyses were conducted using IBM SPSS Statistics 27 with a significance level of  $p < 0.05$ . Descriptive statistics were used to report the means, modes and standard deviations of our sample demographics, knowledge on pediatric obesity and training status, attitudes towards the effectiveness, safety, usefulness, and willingness to refer for Pharm and BarSx in youth as well as current practices (frequency of treatment recommendations, referrals to specialists, access to other healthcare providers, services, or other professional resources and definition of a successful pediatric obesity treatment). Continuous variables (*e.g.*, minimum age for Pharm and BarSx and HCP age ) included means and standard deviations, whereas categorical variables (*e.g.*, type of HCP, HCP specialization, province of residence , etc. ) were expressed as a percentage. Proportions were calculated based on the number of submitted responses for each question since participants could chose to bypass questions they did not want to answer. To evaluate objective 1 (assess attitudes towards Pharm and BarSx), disagreement responses on the Likert scale (“strongly disagree”, “disagree”) were combined and compared with both agreement responses (“strongly agree”, “agree”). To evaluate exploratory objective 1 (examining if attitudes about Pharm and BarSx differed between groups of respondents who were familiar versus unfamiliar with four pediatric obesity guidelines that are commonly used in

Canada), Chi-square and Fisher's exact tests were conducted. Of these guidelines, two have been published in Canada (10,11) and the remaining two are pediatric-specific guidelines for BarSx and Pharm from the US (12,13). To assess exploratory objective 2 [examining differences in mean attitudes scores towards Pharm and BarSx between 3 groups of HCPs (medical physicians, medical residents and nurse practitioners)], Kruskal-Wallis tests were conducted. To evaluate exploratory objectives 3 and 4 (comparing mean attitudes scores, familiarity with guidelines and perceived level of confidence scores between respondents who had received prior training on pediatric obesity versus those who did not receive training), we conducted independent sample t-tests. Lastly, to evaluate exploratory objective 5 (defining success in managing pediatric obesity).

## **CHAPTER 3: RESULTS**



This manuscript is formatted in preparation for submission to the journal *Childhood Obesity* for potential publication.

**Manuscript Title: Canadian Health Care Providers' Attitudes and Practices Towards Pharmacotherapy and Bariatric Surgery in Youth**

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## Abstract

**Background.** Little is known about healthcare providers' (HCPs) attitudes towards pediatric obesity and management practices in Canada. We examined HCPs' i) attitudes and reasons for reluctance towards pharmacotherapy (Pharm) and bariatric surgery (BarSx), ii) pediatric obesity management practices (i.e., frequency of treatment recommendations, referrals to specialists) and iii) how attitudes differ by familiarity with pediatric obesity guidelines.

**Methods.** Canadian physicians, nurse practitioners and medical residents (N = 130) completed multiple choice and open-ended questions on LimeSurvey. Chi-square and Fisher's exact tests compared attitudes between respondents who were familiar versus unfamiliar with pediatric obesity guidelines.

**Results.** HCPs did not respond favorably towards Pharm and BarSx. Responses varied regarding agreement about the effectiveness (50%), safety (46%), usefulness (63%) and willingness to refer adolescents (53%). There was more disagreement in regard to responses for children compared to adolescents. Reasons chosen for HCPs' reluctance to refer were lack of long-term data (Pharm: 58%, BarSx: 41%) and patients' unrealistic outcome expectations (Pharm: 45%, BarSx: 49%). Referrals to medical specialists (74%), like dietitians (85%), and multidisciplinary programs (61%) were the most common referrals. Forty-eight percent of HCPs were most familiar with the 2015 Canadian Task Force Guidelines whereas only 12% were familiar with the 2018 American Society for Metabolic BarSx guidelines. Those who responded that they were familiar with the 2018 guidelines would refer adolescents for Pharm (92% vs. 46%) and BarSx (83% vs. 49%) compared to those who were unfamiliar with these guidelines ( $p < 0.05$ ).

**Conclusion.** Pharm and BarSx are not highly endorsed by Canadian HCPs. Future studies should investigate other barriers to treatment recommendations.

### **Impact Statement**

This study aimed to understand Canadian healthcare providers' attitudes and reasons for using pharmacotherapy and bariatric surgery as a treatment option for youth living with obesity. The findings can provide insight into barriers to managing pediatric obesity in Canada and inform future education and knowledge translation initiatives for healthcare providers

## Introduction

The high prevalence of childhood and adolescent obesity is a public health concern worldwide. Pediatric obesity is defined by having a body mass index (BMI) for age and sex  $\geq$  95<sup>th</sup> percentile (1). In 2019, the rates of obesity were predicted to affect over 250 million youth between 5 to 19 years by 2030 (2,3). In Canada, the rates of obesity in children and adolescents have tripled since the late 1980s (4).

In the last 2006 Canadian obesity clinical practice guidelines, experts recommended multicomponent behavioural interventions, such as nutrition, exercise and behavioural counselling to help treat obesity in children and adolescents (5). However, with the small to modest reductions in weight and BMI resulting from behavioural and lifestyle interventions in pediatric patients with severe obesity (BMI  $\geq$  120% of the 95<sup>th</sup> percentile for age and sex) (6), there has been increased interest in other intensive interventions such as pharmacotherapy (Pharm) and bariatric surgery (BarSx) (7–13). Previous studies in adolescents with severe obesity have shown significant reductions in weight, increased weight-related quality of life, physical and metabolic health following both Pharm (14–16) and BarSx (8,17–20). In fact, the new 2023 American Academy of Pediatrics (AAP) clinical practice guidelines for the evaluation and treatment of pediatric obesity (1) recommend that health care providers (HCPs) propose Pharm in addition to health behaviour and lifestyle treatment to adolescents with obesity  $\geq$  12 years old as well as offer referrals to youth  $\geq$  13 years old with severe obesity for evaluations for BarSx to nearby multidisciplinary pediatric BarSx centers.

Despite the release of the new 2023 AAP clinical practice guidelines, a few studies have explored HCPs attitudes towards Pharm and BarSx for adolescents in the US (21–23) and Europe

(24–28). Offering BarSx for children and adolescents with severe obesity is relatively newer in Canada than in the US (29,30) and HCPs attitudes towards BarSx in Canada are less understood. Only four studies examined attitudes towards BarSx and/or Pharm for children and adolescents among Canadian HCPs (31–34). Among these Canadian studies, two reported that physicians, surgeons, and allied health professionals would be less willing to treat pediatric obesity with medication or provide surgical treatment for obesity to youth compared to other treatments, such as behavioural diet and exercise interventions and providing psychosocial treatments (31,32). One study in the Netherlands assessed HCPs' reasons for reluctance to refer their patients to BarSx and reported that the lack of long-term data and the uncertainty about long-term efficacy and safety were the main reasons for reluctance (24). Another study in the US found that 76-78% of HCPs counsel patients about physical activity and dietary intake while <10% have referred adolescents to surgery due to reasons such as cost and concerns about complications (23). In light of the new Canadian pediatric obesity guidelines that will be published soon (35) and given that healthcare budgets, accessibility and services differ between countries, it is important to understand current attitudes and practices regarding pediatric obesity in Canada. To date, no study has assessed Canadian HCPs reasons for reluctance or willingness to refer children and adolescents for Pharm or BarSx nor examined their current treatment recommendations.

The apriori objectives of this study were to examine i) the attitudes of Canadian HCPs towards the use of Pharm and BarSx in youth and their reasons for reluctance or willingness to refer and ii) their current obesity management practices. The exploratory objective of this study was to assess how Canadian HCPs attitudes differed by familiarity with current pediatric obesity guidelines.

## **Methods**

### ***Procedures and participants***

Data was collected from a cross-sectional online survey hosted on LimeSurvey. Before starting the survey, participants read the study aim and consent form. Snowball and convenience sampling methods were used to recruit participants by posting on private social media medical groups on Facebook, LinkedIn, Twitter, sharing the survey information in the newsletters and on forums of Canadian medical organizations (e.g., College of Family Physicians of Canada) and with a telemedicine company (Dialogue Technologies, Quebec). Lastly, the survey was presented at two pediatric obesity webinars and shared through emails to colleagues within the researchers' networks. Medical physicians, nurse practitioners and medical residents were eligible to participate in the study. In addition, inclusion criteria were being 18 years old or older, currently practicing in at least one Canadian province or territory and having clinical interactions with children and/or adolescents. The survey was pilot tested three times to assess for content and face validity. The survey was open to the public in October 2021 and closed in September 2022. The study protocol was submitted and accepted by the Research Ethics Boards of Concordia University (Ethics certification number: 30015408) and the University of Alberta (Pro00117356).

### ***Measures***

The 20-minute survey consisted of 39 questions that covered demographics, attitudes towards the effectiveness, safety, usefulness, and willingness to refer for Pharm and BarSx in youth, current clinical practices with youth living with obesity and/or severe obesity (*See*

*Supplemental files*). As exploratory analyses, we also assessed HCPs familiarity with pediatric obesity guidelines.

Levels of agreement for each statement about attitudes were assessed on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree, 0 = no opinion). Questions in this section were adapted from studies by Roebroek *et al.* (24) and Auspitz *et al.* (36) and modified by group discussions with experts in the field of pediatric weight management. A review of the literature (8,17–20,37–40) and conversations with pediatric obesity experts helped guide the creation of the questions related to education and previous training on pediatric obesity as well as current clinical practices and definitions of treatment success.

Lastly, participants indicated their levels of familiarity of four current pediatric practice guidelines on obesity on a 4-point Likert scale (1 = very unfamiliar, 4 = very familiar, 0 = neither unfamiliar nor familiar): The 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children (5), The 2015 Canadian Task Force on Preventive Health Care Recommendations for growth monitoring and prevention and management of overweight and obesity in children and youth in primary care (41), The 2017 Endocrine Society Clinical Practice Guidelines on Pediatric Obesity: Assessment, Treatment and Prevention (42) and the 2018 American Society for Metabolic and Bariatric Surgery (ASMBS) pediatric metabolic and bariatric surgery guidelines (43).

### ***Data Analysis***

Statistical analyses were performed using IBM SPSS version 27 with a significance level of  $p < 0.05$ . Proportions were calculated based on the number of submitted responses for each question. Descriptive statistics were used to report HCPs attitudes regarding the

effectiveness, safety, usefulness, and willingness to refer for Pharm and BarSx in youth as well as the current obesity management practices. Disagreement responses on the Likert scale (1 = strongly disagree, 2 = disagree ) were combined and compared with both agreement responses ( 3 = strongly agree”, “ 4 = agree ). We also conducted additional exploratory analyses to understand if attitudes differed by guideline familiarity. We used the chi-square and fisher’s exact tests to examine if attitudes about Pharm and BarSx differed between groups of respondents who were familiar vs. unfamiliar with four pediatric obesity guidelines that are commonly used in Canada.

## **Results**

### *Participants*

Between October 2021, and September 2022, our survey had 4,480 total views. Of the 4338 views were removed due to fraudulent responses that were submitted by bots, resulting in 142 surveys that were assessed for eligibility. Twelve participants were excluded for not meeting the inclusion criteria (i.e., they did not work with children and were not a medical physician, medical resident or nurse practitioner) and for duplicate responses. Our final sample included 130 Canadian HCPs, consisting of 59 medical physicians (MD), 25 medical residents (MR) and 46 nurse practitioners (NP). As a result of a question branching technical issue, 37 HCPs (32 NPs and 5 MRs) could not complete the attitudes and practices sections of the survey, so some survey sections were completed by fewer HCPs. The number of survey respondents varied from 80 to 122. Most respondents identified as women (78%), practiced as family physicians (28%),



worked in person and virtually in community clinics (30%), and resided in Ontario (39%) (Table 1).

*Objective 1: Attitudes towards Pharm and BarSx*

Responses varied regarding agreement about the effectiveness (50%) safety (46%). usefulness (63%) and willingness to refer adolescents (53%) compared to children (Table 2). Most respondents reported a minimum age requirement of 13 years old and minimum BMI requirement of 30 kg/m<sup>2</sup> for referrals to both Pharm and BarSx (Table 3). The mean score for attitudes towards the effectiveness, safety, usefulness, and willingness to refer youth for Pharm was  $1.98 \pm 0.89$  versus  $1.60 \pm 0.92$  for BarSx. Out of 83 respondents, only 6 had prescribed Pharm to at least one child between 5 and 12 years old (7%) and 15 to adolescents 13 to 17 years old (18%). Improving obesity-related co-morbidities was selected as the most frequent reason they would prescribe Pharm (71%, n = 59/83), followed by weight loss (36%, n = 30/83) and weight stabilization (31%, n = 26/83). When asked about the reason(s) they would not recommend Pharm, the majority (58%, n = 48/83) selected lack of long-term data. Unrealistic expectations of outcomes (45%, n = 37/83), the cost of obesity medication (42%, n = 35/83) and the unfamiliarity with obesity medications (39%, n = 33/83) were among the other reasons most frequently chosen by participants (Figure 1).

No respondents (n = 0/83) referred children for BarSx. Few respondents (10%) had referred at least one adolescent patient (n = 8/80). The most selected reason for referring patients to BarSx was to improve obesity-related co-morbidities (65%, n = 54/83), followed by weight loss (39%, n = 32/83) and weight stabilization (28%, n = 23/83). The most frequently chosen reasons HCPs would not refer were unrealistic expectations of BarSx outcomes (49%, n=41/83), the presence

of long-term complications (46%, n=38/83) and the lack of long-term data (41%, n = 34/83) (Figure 1).

### *Objective 2: Current Pediatric Obesity Management Practices*

Most participants (75%, n = 62/83) stated that 1-20% of the patients they currently treat are pediatric patients who live with obesity or severe obesity. Most respondents (87%, n = 71/82) had access to professional resources such as other HCPs or services; the majority of participants (89%, n = 69/78) had a dietitian/nutritionist available to them and 55% (n = 43/78) had access to a social worker. Only 41% (n = 32/78) had access to a psychiatrist and 37% (n = 29/78) to a psychologist.

Furthermore, 49% (n = 38/78) have pediatric obesity management programs available to them to refer their patients. Treatment options that were often or always recommended for children and adolescents living with obesity or severe obesity were referrals for a consultation with a specialist(s) (74%, n = 61/83) and multidisciplinary treatment programs (61%, n = 51/83) (Figure 2). The majority of participants 85% (n = 70/82) often or always referred their pediatric patients to a dietitian, 46% (n = 38/83) to a kinesiologist, 45% (n = 37/83) to an endocrinologist and 43% (n = 36/83) to a psychologist.

### *Exploratory Analyses: Familiarity with Pediatric Obesity Guidelines*

HCPs were most familiar with the 2015 guidelines (48%, n = 58/122), followed by the 2006 guidelines (37%, n = 45/122) and the 2017 guidelines (28%, n = 34/122). The participants were least familiar with the 2018 ASMBS guidelines (12%, n = 14/122).

There were more respondents who agreed that BarSx is effective, safe, useful and willingness to refer adolescents to BarSx in the groups who were familiar with the 2006, 2017 and the 2018 guidelines compared to the groups that were unfamiliar with these guidelines. More respondents who were familiar with the 2017 and the 2018 guidelines agreed that Pharm is a safe option for treating obesity and severe obesity and would prescribe obesity medication to adolescents compared to respondents who were unfamiliar with these guidelines. More respondents who were familiar with the 2018 guidelines would prescribe Pharm to children and adolescents compared to those were unfamiliar with these guidelines. Attitudes did not differ for any statements on Pharm and BarSx between those who were familiar versus unfamiliar with the 2015 guidelines ( $p > 0.05$ ) (See Table 4).

### **Discussion**

This sample of Canadian HCPs did not respond favourably towards the effectiveness, safety, usefulness, and willingness to recommend Pharm and BarSx to children and adolescents living with obesity or severe obesity. Our sample also had less favorable attitudes towards the use of Pharm and BarSx in children compared to adolescents.

More HCPs (25%) had previously prescribed obesity medication to children and adolescents compared to HCPs who had referred patients to BarSx (10%). Our findings are similar to Frankfurter *et al.* that showed more support for Pharm than BarSx among a sample of 198 physicians, surgeons, and allied health professionals (e.g., nurse practitioners, dietitians) across Canada (31). They reported that 24% of HCPs agreed to be willing to treat obesity with medication compared to 12% who agreed to provide surgical treatments for obesity (31). HCPs might be less likely to refer adolescents to BarSx because there is less accessibility and there are fewer surgeries performed in Canada compared to the US. In Canada, there are only two publicly-funded university hospitals that offer BarSx to adolescents (SickKids Hospital, Ontario and the Montreal Children's Hospital, Quebec) and none west of Toronto. In the US, there are at least 63 centers that offer adolescent BarSx (44). Between 2009 and 2020, there were no more than 60 adolescents who received BarSx from publicly-funded programs in Canada (45) compared to 1,000-1,600 surgeries in the US in 2019 (46).

Our sample reported less favorable attitudes towards BarSx in youth compared to Pharm. These attitudes may be due to the permanent and more invasive nature of BarSx and the known side effects of micronutrient deficiencies (43,47) whereas Pharm is often considered to have a lower risk of complications and patients can choose to refrain from continuing the medication(s) at any time (40). There are also more eligibility requirements to consider for pediatric BarSx candidates compared to Pharm. For example, according to the 2023 AAP Clinical Practice Guidelines, HCPs should offer referrals for BarSx for adolescents  $\geq 13$  years old with severe obesity (BMI  $\geq 120\%$  of the 95th percentile for age and sex). Eligibility for BarSx referrals should be determined through multidisciplinary assessments of BMI and that include diverse domains of health (i.e., metabolic, mechanical, mental health, social milieu) to determine

potential surgery contraindications, ensure families understand the risks and benefits of the surgery, and assess potential to adhere to the necessary lifestyle and behavioural changes needed pre- and post-BarSx (1,48).

### *Reasons for reluctance*

As hypothesized, one of the reasons for reluctance stems from the lack of long-term data for both therapies in youth. Our findings are similar to a study by Roebroek *et al.* where lack of long-term data was the main reason their sample of 184 Dutch general practitioners would not recommend bariatric surgery to their adolescent patients (24). However, due to an expanding base of evidence from Pharm and BarSx studies (49–51), HCPs might potentially have other reasons to be skeptical (such as bias regarding the causes of obesity) or more accepting of these interventions in the future depending future trial results.

Unrealistic expectations regarding treatment outcomes were one of the most frequent reasons reported by HCPs. For BarSx, adolescents and their parents prioritize weight loss from BarSx (27,45). For example, van de Pas *et al.* (27) reported that among Dutch adolescents with obesity (n = 19) and their parents (n = 49), their top goal of BarSx was weight loss, followed by improved obesity-related comorbidities and self-esteem. In Canada, Li *et al.* (45) reported similar findings based on interviews with adolescents (n =14) undergoing BarSx; prioritized outcomes included weight loss, followed by physical changes like pain relief, improved sleep, increased energy levels, and reduced co-morbidity-related symptoms. Not meeting the patients' prior expectations for weight loss may lead to disappointment in treatment outcomes, as seen in Canadian adults (53,54), and may discourage HCPs to refer youth to either Pharm or BarSx.

It is important to acknowledge the limitations of this study. First, our sample size consisted of 130 Canadian HCPs, which may be perceived as low, despite offering monetary tokens of appreciation and recruiting participants over an 11-month period. Other similar studies highlighted that recruitment of HCPs (physicians, medical residents, and nurse providers) is difficult (24,55–60). Second, our main methods of recruitment consisted of snowball and convenience sampling. This may have resulted in selection bias as respondents may have participated in our study because of their interest in this topic. Our findings may not be generalizable to other HCPs in Canada. Third, the technical error with our survey platform also limited some participants to complete some survey sections resulting in a lower number of respondents. Fourth, the voluntary nature of our survey not only affected its response rate, but also our ability to assess the differences between respondents and non-respondents. Lastly, our study requires participants' self-reported knowledge, attitudes, and current practices. This may be subject to recall bias, self-reported bias, and socially desirable responding. Even though our study has various limitations, it provides insight on current knowledge and attitudes about pediatric obesity management in Canada.

## **Conclusion**

HCPs did not respond favorably towards Pharm and BarSx. Participants reported lack of long-term data and the unrealistic outcome expectations as the most frequent reasons behind their reluctance towards Pharm and BarSx. HCPs described their most frequent obesity management practices which were referrals to other medical specialists and multidisciplinary treatment programs. Our exploratory analysis regarding HCPs' familiarity with pediatric obesity guidelines highlighted the need for future studies to investigate the possible relationships

between awareness and knowledge translation of pediatric obesity guidelines and their impact on Canadian HCPs' attitudes about therapies and practices in managing pediatric obesity.

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## **Authorship Contribution Statement**

**Trisha C. Baluyot:** Writing – original draft (lead); Visualization (lead); Conceptualization (equal); Data curation (lead); Formal analysis (lead); Investigation (lead); Project administration (equal); Resources (lead). **Tamara R. Cohen:** Supervision (equal); Writing – review & editing (equal); Conceptualization (equal); Project administration (equal); Resources (equal);. **Geoff D.C. Ball:** Supervision (equal); Writing – review & editing (equal); Conceptualization (equal); Project administration (equal); Resources (equal). **Julius Erdstein:** Resources (supporting); Methodology (supporting); Conceptualization (supporting). **Laurent Legault:** Resources (supporting); Methodology (supporting); Conceptualization (supporting). **Stasia Hadjiyannakis:** Resources (supporting); Methodology (supporting). **Angela S. Alberga:** Supervision (lead);

Writing – review & editing (lead); Conceptualization (lead); Formal analysis (equal); Funding acquisition (lead); Project administration (lead); Resources (equal).

### **Author’s Disclosure Statement**

The authors declare no conflicts of interest.

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*Table 1: Demographic characteristics of survey respondents*

<b>Characteristics</b>	<b>n (%)</b>
<b>Age range, years</b>	
<20	1 (0.8)
20-29	23 (17.7)
30-39	53 (40.8)
40-49	31 (23.8)
More than 50	20 (15.4)
<b>Gender</b>	
Woman	101 (77.7)
Man	24 (18.5)
Prefer not to disclose	2 (1.5)
<b>Medical Specialization</b>	
Nurse Practitioner	45 (34.6)
Family Physician	36 (27.7)
Pediatrician	15 (11.5)
Medical Resident	18 (13.8)
Endocrinologist	9 (6.9)
Cardiologist	1 (0.8)
Psychiatrist	1 (0.8)
Surgeon	1 (0.8)
<b>Years in practice</b>	
1 – 5 years	42 (32.3)
6 – 10 years	29 (22.3)
11 – 20 years	12 (9.2)
21 – 30 years	16 (12.3)
More than 30 years	6 (4.6)
<b>Province of Residence</b>	
Ontario	51 (39.2)
Quebec	33 (25.4)
Alberta	23 (17.7)
British Columbia	10 (7.7)
Manitoba	3 (2.3)
New Brunswick	3 (2.3)
Nova Scotia	3 (2.3)
Newfoundland and Labrador	1 (0.8)

Table 2: Attitudes towards pharmacotherapy and bariatric surgery

	Pharmacotherapy			Bariatric Surgery		
	No. of respondents (%)					
	Agree	Disagree	No opinion	Agree	Disagree	No opinion
<b>Statements</b>						
Is an effective intervention for severe obesity in <b>children</b>	20 (22.5%)	44 (49.4%)	25 (28.1%)	12 (14.5%)	42 (50.6%)	29 (34.9%)
Is an effective intervention for severe obesity in <b>adolescents</b>	42 (47.2%)	24 (27%)	23 (25.8%)	43 (51.8%)	19 (22.9%)	21 (25.3%)
Is a safe option for treating obesity/severe obesity in <b>children</b>	21 (23.6%)	36 (40.4%)	32 (36%)	6 (7.2%)	50 (60.2%)	27 (32.5%)
Is a safe option for treating obesity/severe obesity in <b>adolescents</b>	50 (56.2%)	17 (19.1%)	22 (24.7%)	30 (36.1%)	32 (38.6%)	21 (25.3%)
Is a useful treatment for obesity-related co-morbidities in <b>children</b>	52 (59.1%)	18 (20.5%)	18 (20.5%)	13 (15.7%)	37 (44.6%)	33 (39.8%)
Is a useful treatment for obesity-related co-morbidities in <b>adolescents</b>	69 (77.5%)	4 (4.5%)	16 (18%)	39 (47%)	19 (22.9%)	25 (30.1%)
I would prescribe obesity medication/ refer bariatric surgery to <b>children</b>	16 (18.2%)	56 (63.6%)	16 (18.2%)	10 (12%)	43 (51.8%)	30 (36.1%)
I would prescribe obesity medication/ refer bariatric surgery to <b>adolescents</b>	46 (51.7%)	32 (36%)	11 (12.4)	44 (53%)	20 (24.1%)	19 (22.9%)

Note. Responses indicate the proportion of the sample who indicated their level of agreement with the statements provided. Disagreement responses on the Likert scale (“strongly disagree”, “disagree”) were combined and compared with both agreement responses (“strongly agree”, “agree”). Some statements were adapted from studies by Roebroek *et al.* and Auzpitz *et al.* (22,66) The complete survey for the current study can be found in Supplemental files.



Table 3: Minimum age and BMI requirements for Pharm and BarSx

Minimum requirements	Pharmacotherapy n (%)	Bariatric surgery n (%)
<b>Minimum age</b>		
Children (5 – 12 years old)	10 (13)	3 (3.9)
Adolescents (13 – 17 years old)	26 (33.8)	32 (42.1)
Adults (18 years old or older)	26 (33.8)	32 (42.1)
<b>Minimum BMI</b>		
<30 kg/m <sup>2</sup>	5 (6.6)	0
30 – 39 kg/m <sup>2</sup>	41 (53.9)	30 (41.7)
≥40 kg/m <sup>2</sup>	14 (18.4)	31 (43.1)
Other	16 (21)	11 (15.2)

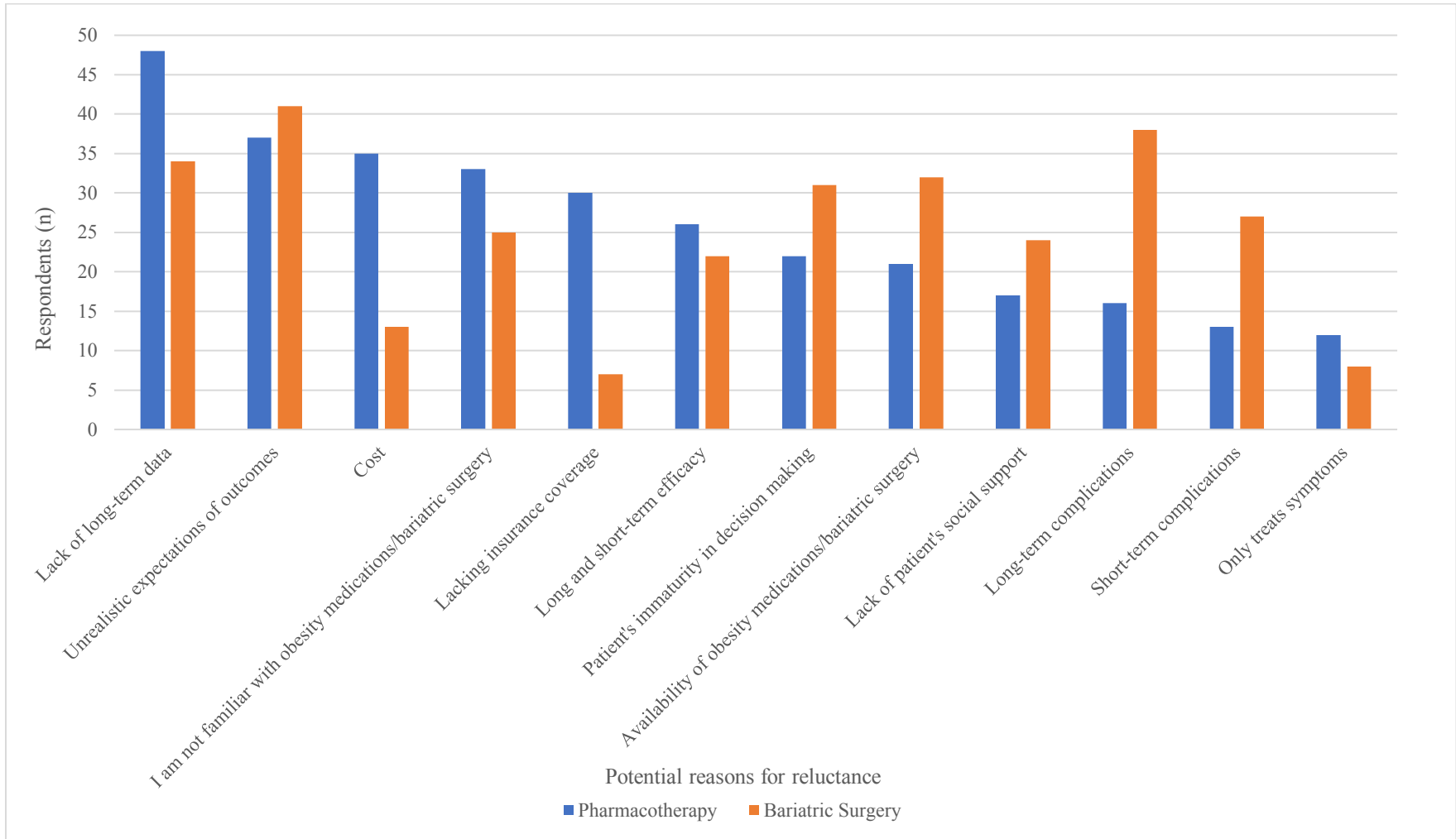
**Note.** Ranges for BMI categories were based on HCPs' responses. Other included responses that were not expressed in BMI (e.g., Depends on comorbidities). This questions was adapted from studies by Roebroek *et al.* and Auzpitz *et al.* (22,66).

Table 4: Familiarity with pediatric obesity guidelines

	The 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children				The 2015 Canadian Task Force on Preventive Health Care Recommendations on obesity in children			
Statement	Fisher's Exact	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)	Chi-square	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)
I would prescribe obesity medication to <b>children</b>	3.485	0.430	8 (24.2%)	8 (15.1%)	1.715 <sup>a</sup>	0.479	7 (16.7%)	9 (19.6%)
I would prescribe obesity medication to <b>adolescents</b>	5.691	0.171	21 (61.8%)	25 (47.2%)	2.34 <sup>a</sup>	0.33	25 (58.1%)	21 (45.7%)
If eligible, I would refer <b>children</b> for bariatric surgery	2.525	0.676	5 (15.6%)	5 (10.2%)	0.816 <sup>a</sup>	0.741	6 (15.4%)	4 (9.1%)
If eligible, I would refer <b>adolescents</b> for bariatric surgery	10.672	0.013*	23 (71.9%)	21 (42.9%)	4.206 <sup>a</sup>	0.141	25 (64.1%)	19 (43.2%)
	2017 Endocrine Society Clinical Practice Guidelines				The 2018 ASMBS pediatric metabolic and bariatric surgery guidelines			
Statement	Fisher's Exact	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)	Fisher's Exact	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)
I would prescribe obesity medication to <b>children</b>	7.155	0.093*	9 (34.6%)	7 (11.5%)	8.598	0.033*	6 (50%)	10 (13.3%)
I would prescribe obesity medication to <b>adolescents</b>	9.329	0.028*	20 (74.1%)	26 (42.6%)	10.003	0.014*	11 (91.7%)	35 (46.1%)
If eligible, I would refer <b>children</b> for bariatric surgery	2.468	0.775	4 (14.8%)	6 (10.9%)	5.081	0.225	2 (16.7%)	7 (10%)
If eligible, I would refer <b>adolescents</b> for bariatric surgery	19.667	<0.001*	23 (85.2%)	21 (38.2%)	8.804	0.025*	10 (83.3%)	34 (48.6%)

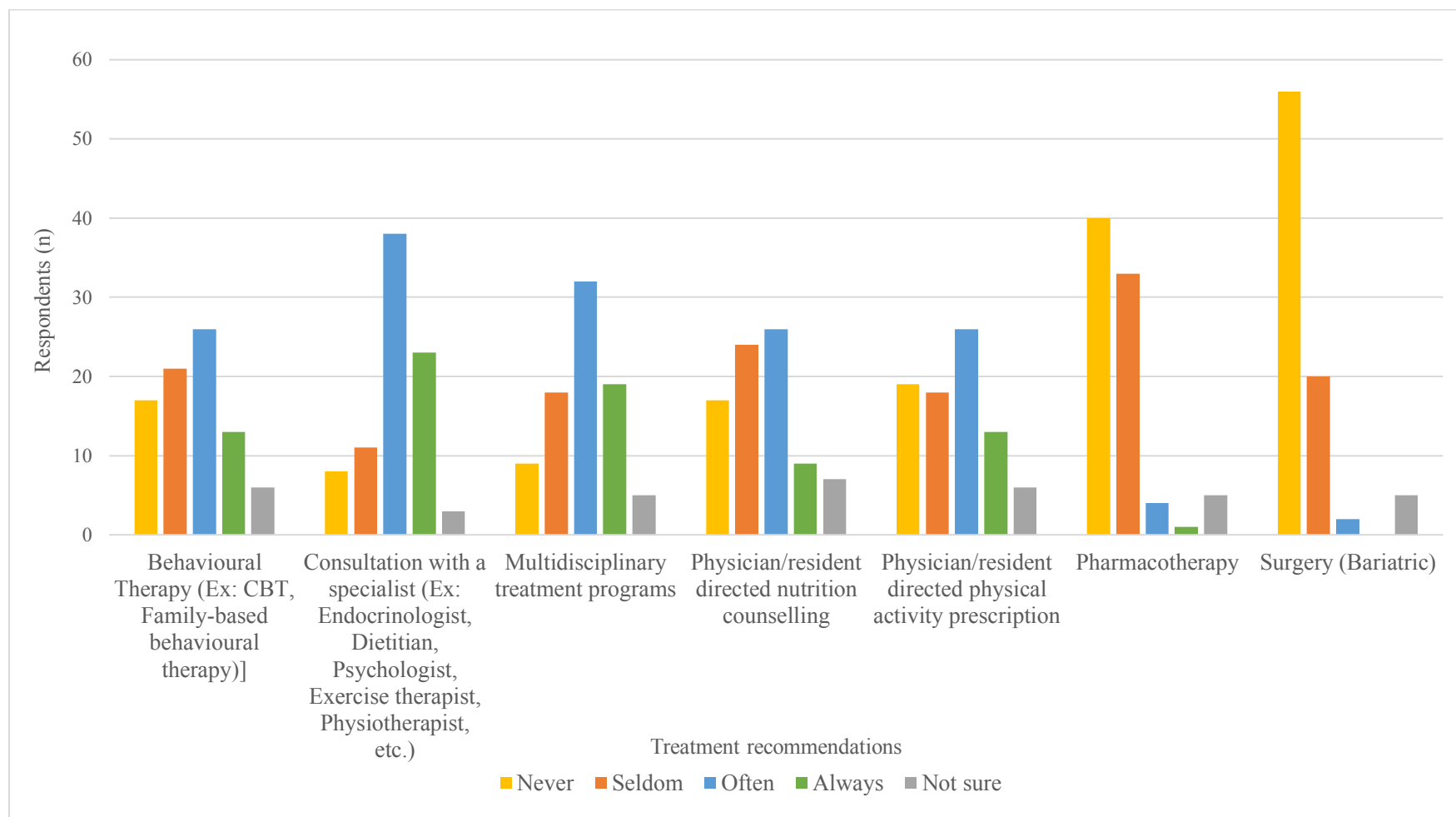
Note. Fisher's exact test used unless otherwise noted. <sup>a</sup> Chi-Square test used. See Full Table in Supplemental files. \*Statistically significant *p* <0.05.

**Figure 1: Reasons for reluctance towards Pharm and BarSx**



*Note.* This figure demonstrates the reasons for not prescribing Pharm and BarSx (n=83). Respondents were asked to select the reason(s) they would not refer children and/or adolescents for Pharm and BarSx. Approximately 47 respondents could not respond to this question.

**Figure 2: Current treatment recommendations**



*Note.* Current treatment recommendations (n=83). Respondents indicated the frequency they referred their patients to the options of treatments provided. Approximately 47 respondents could not respond to this question.

## Supplemental Files

Electronic Survey

### Pediatric Obesity Management in Canada: Current Attitudes and Practices of Health Care Providers Towards Pharmacotherapy and Bariatric Surgery in Youth

This is a **15-minute online survey** with questions regarding knowledge about pediatric obesity management, attitudes towards pharmacotherapy and bariatric surgery in Canadian youth, current obesity management practices as well as demographic information. By participating in this survey, you will be eligible to receive a **\$10.00 Amazon gift card**.

**We invite you to participate in this research project. However, before agreeing to participate and signing this information and consent form, please take the time to read, understand and carefully consider the following information.**

There are 44 questions in this survey

Information and Consent Form

[]



### Pediatric Obesity Management in Canada: Current Attitudes and Practices of Health Care Providers Towards Pharmacotherapy and Bariatric Surgery in Youth

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Phone: (514) 848-2424 ext. 3371

**Source of funding for the study:** Fonds de recherche du Québec – Santé (FRQS)

**You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.**

### **PURPOSE**

The purpose of the research is to explore the attitudes and practices of Canadian health care providers towards the use of pharmacotherapy and bariatric surgery as obesity treatment options in youth. This objective is part of a larger goal to investigate the possible need for continuing medical education in obesity management for future health care providers. This study aims to document the knowledge, attitudes and practices of both health care providers and medical trainees in Canada.

### **PROCEDURES**

If you participate, you will be asked to complete a 15-minute online survey with questions regarding your knowledge about pediatric obesity management, your attitudes towards pharmacotherapy and bariatric surgery in Canadian youth, your current obesity management practices as well as demographic information.

### **RISKS AND BENEFITS**

You might face certain risks by participating in this research, which mainly includes the risk of fatigue.

We estimate that the questionnaire will take approximately 15-20 minutes on a computer. We recognize that this may cause fatigue, so if you need a break at any point during the session, you are invited to do so at your own leisure. Participants can also opt to choose to complete a survey they have already begun at a later time.

You do not have to answer any questions that you are not comfortable with, and you can absolutely resign from participating in the study at any point.

### **CONFIDENTIALITY**

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

The information gathered will be confidential and coded.

The following measures will be applied to ensure the confidentiality of the information provided by the participants:

- Names of the participants will not appear in any report
- Individual results of the participants will never be shared
- The research data will be stored for future use in a password-protected computer located in Dr. Alberga's research laboratory at Concordia University
- A backup copy of the research data will be stored on Concordia's password-protected Microsoft Outlook server
- The research will be published in scientific journals, and no participant will be identified with it

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

### **CONDITIONS OF PARTICIPATION**

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, you must tell the researcher before October 25<sup>th</sup>, 2022.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information. While this research is not intended to benefit you personally, you will be eligible to receive a \$10.00 CAD Amazon gift for participating in this study.

You must reach the end of the questionnaire and provide your email address in order to receive the Amazon gift card. If you withdraw from the study, you will be able to keep the gift card.

Click here ([/limesurvey/upload/surveys/579269/files/EN\\_Consent%20Form\\_20220831.pdf](/limesurvey/upload/surveys/579269/files/EN_Consent%20Form_20220831.pdf)) to download consent form

[]

**PARTICIPANT'S DECLARATION**

- 1. I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

\*

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

[]

\*

**Only answer this question if the following conditions are met:**

Answer was '

Yes

' at question '2 [IC1]' (PARTICIPANT'S DECLARATION 1. I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described. )

2. NAME (First and Last)	
3. SIGNATURE (Initials)	
4. DATE (mm/dd/yyyy)	



## Eligibility Verification

Are you 18 years old or older? \*

**Only answer this question if the following conditions are met:**

Answer was '

Yes

' at question '2 [IC1]' (PARTICIPANT'S DECLARATION 1. I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described. )

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

Do you live in Canada? \*

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

Are you a physician, nurse practitioner or a medical resident? \*

Choose one of the following answers

Please choose **only one** of the following:

- Yes, I am a medical physician
- Yes, I am a medical resident
- Yes, I am a nurse practitioner
- No

What is your postgraduate year status? \*

**Only answer this question if the following conditions are met:**

Answer was 'Yes, I am a medical resident' at question '6 [E3]' (Are you a physician, nurse practitioner or a medical resident? )

Choose one of the following answers

Please choose **only one** of the following:

- Year 1
- Year 2
- Years 3+

[]

Do you practice or are doing your residency in any of the following disciplines?

- Adolescent Medicine
- Family Medicine
- Pediatrics

\*

**Only answer this question if the following conditions are met:**

Answer was 'Yes, I am a medical physician' or 'Yes, I am a medical resident' at question '6 [E3]' (Are you a physician, nurse practitioner or a medical resident? )

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

[]Do you meet with children and/or adolescents patients as part of your professional practice? \*

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

Children and adolescents are considered 5-17 years old

## Knowledge

[]1. Have you received any training on overweight/obesity in childhood and/or adolescence before working in the field?

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

[]2. What type of training did you receive on overweight/obesity in childhood and adolescence?

Check all that apply

Please choose **all** that apply:

- Undergraduate education
- Post-medical education (Residency)
- Post-medical education (Fellowship)
- Additional school courses ( ex: Bachelor's or Master's)
- Post-graduate (ex: CME training)
- Conferences
- Other:

[]2. What kind of training would you have wanted to receive BEFORE WORKING with children and adolescents with obesity and severe obesity?

Check all that apply

Please choose **all** that apply:

- Behavioural counselling
- Education on improving sleep
- Mental health (ex: eating disorders, body image, etc.)
- Motivation interviewing
- Nutrition counselling
- Physical activity prescription
- Screening and diagnostic training for obesity/ severe obesity
- I did not want to receive training
- Other:

[]3. What topic(s) would you like to have training on NOW as a practicing health professional?

Check all that apply

Please choose **all** that apply:

- Behavioural counselling
- Education on improving sleep
- Education on intensive treatments options (ex: Bariatric surgery)
- Mental health (ex: eating disorders, body image, etc.)
- Motivational interviewing
- Nutrition counselling
- Physical activity prescription
- Screening and diagnostic training for obesity/ severe obesity
- I would not like to have any training
- Other:

4. Do you think there is a need for continuing medical education on childhood and adolescent obesity/severe obesity for Canadian physicians?

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

If offered, in what format you would like to receive supplemental training?

Please choose the appropriate response for each item:

	In person	Online	Both in person and online	No opinion
Conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seminars / lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How familiar are you with the following guidelines?

Please choose the appropriate response for each item:

	Very unfamiliar	Unfamiliar	Familiar	Very familiar	Neither unfamiliar nor familiar
The 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very unfamiliar	Unfamiliar	Familiar	Very familiar	Neither unfamiliar nor familiar
The 2015 Canadian Task Force on Preventive Health Care guidelines on obesity in children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The 2017 Endocrine Society Clinical Practice Guidelines on Pediatric Obesity: Assessment, Treatment and Prevention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The 2018 American Society for Metabolic and Bariatric Surgery (ASMBS) pediatric metabolic and bariatric surgery guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

## Attitudes towards Pharmacotherapy and Bariatric Surgery

Bariatric surgery, also known as weight-loss surgery or metabolic surgery, is a procedure aimed to modify the stomach and intestines to treat obesity and related diseases. (ASMBS)

Pharmacotherapy, also known as obesity medications, includes the prescriptions of medications such as Saxenda, Contrave, etc.

[ ]6. What is your level of agreement with the following statements regarding obesity pharmacotherapy?

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Pharmacotherapy is an effective intervention for severe obesity in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is an effective intervention for severe obesity in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Pharmacotherapy is a safe option for treating obesity/severe obesity in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Pharmacotherapy is a safe option for treating obesity/severe obesity in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prescribe obesity medication to <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prescribe obesity medication to <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pharmacotherapy = Obesity medications (ex: Saxenda, Contrave, etc.)

Children are considered 5-12 years old

Adolescents are considered 13-18 years old

[ ]7. How many patients of the following age groups have you prescribed obesity medication?

Please choose the appropriate response for each item:

	None	1 - 5	6 - 10	11 - 15	15 or more
Children: 5-12 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13-17 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Young Adults: 18-25 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adults: 26 years old and older	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ]8. In your opinion, what should the minimum age and BMI requirement for pharmacotherapy be?

Age:

BMI:

Age in years

BMI: Body mass Index in kg/m<sup>2</sup>

[ ]9. Please indicate the reason(s) you WOULD prescribe pharmacotherapy to children and/or adolescents living with obesity/severe obesity\*

Check all that apply

Please choose **all** that apply:

- To improve obesity-related co-morbidities (ex: Hypertension, Dyslipidemia, Diabetes, etc.)
- For weight loss
- For weight stabilization
- I would not prescribe obesity medications to my pediatric patients
- I would not prescribe obesity medications to my adolescent patients
- Other:

**\*If you cannot prescribe, please answer the question as if you could**

**[ ] 10. Please indicate the reason(s) you would NOT prescribe obesity medication to children and adolescents**

Check all that apply

Please choose **all** that apply:

- Availability of obesity medications
- Cost
- Lack of long-term data
- Lack of patient's social support
- Lacking insurance coverage
- Long and short-term efficacy
- Long-term complications
- Only treats symptoms
- Patient's immaturity in decision making
- Short-term complications
- Unrealistic expectations of obesity medication outcomes
- I am not familiar with obesity medications
- Other:

**[ ] 11. What is your level of agreement with the following statements?**

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Bariatric surgery is an effective intervention for severe obesity in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is an effective intervention for severe obesity in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Bariatric surgery is a safe option for treating obesity in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a safe option for treating obesity in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a useful treatment for obesity-related co-morbidities in <b>children</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Bariatric surgery is a useful treatment for obesity-related co-morbidities in <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
If eligible, I would refer <b>children</b> for bariatric surgery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
If eligible, I would refer <b>adolescents</b> for bariatric surgery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Bariatric surgery, also known as weight-loss surgery or metabolic surgery, is a procedure aimed to modify the stomach and intestines to treat obesity and related diseases. (ASMBS)

Eligible : BMI > 35 kg/m<sup>2</sup> with significant co-morbidities or a BMI > 40 kg/m<sup>2</sup>

[ ] 12. How many patients of the following age groups have you referred for bariatric surgery?

Please choose the appropriate response for each item:

	None	1 - 5	6 - 10	11 - 15	15 or more
Children: 5-12 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13-17 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Young Adults: 18-25 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adults: 26 years old and older	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. In your opinion, what should the minimum age and BMI requirement for bariatric surgery be?

Age:

BMI:

Age in years

BMI: Body Mass Index in kg/m<sup>2</sup>

14. Please indicate the reason(s) you WOULD refer children and/or adolescents for bariatric surgery\*

Check all that apply

Please choose **all** that apply:

- To improve obesity-related co-morbidities (ex: Hypertension, Dyslipidemia, Diabetes, etc.)
- For weight loss
- For weight stabilization
- I would not refer my pediatric patients for bariatric surgery
- I would not refer my adolescent patients for bariatric surgery
- Other:

**\*If you cannot refer, please answer the question as if you could**

15. Please indicate the reason(s) you would NOT refer children and/or adolescents for bariatric surgery?

Check all that apply

Please choose **all** that apply:

- Availability of adolescent bariatric surgery services
- Cost
- Lack of long-term data
- Lack of patient's social support
- Lacking insurance coverage
- Long and short-term efficacy
- Long-term complications
- Only treats symptoms
- Patient's immaturity in decision making
- Short-term complications
- Unrealistic expectations of bariatric surgery outcomes
- I am not familiar with bariatric surgery
- Other:

## Current Practices

Includes a series of questions regarding your current clinical practices, your level of self-confidence as well as your education and training background.

[] 16. Approximately what percentage of pediatric patients with obesity or severe obesity do you currently treat in your practice?

Check all that apply

Please choose **all** that apply:

- 0%
- 1 - 10%
- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- More than 50%
- Other:

[] 17. Do you have access to professional resources?

Choose one of the following answers

Please choose **only one** of the following:

- Yes
- No

[] Please indicate what other health care provider(s) and/or service(s) is/are available to you?

Check all that apply

Please choose **all** that apply:

- Dietitian/ Nutritionist
- Exercise specialist (Kinesiologist)
- Mental health specialist (Ex: Art therapist, Psychotherapist, etc.)
- Nurse clinician
- Nurse practitioner
- Occupational therapist/ Physiotherapist
- Pediatric obesity management programs
- Psychiatrist
- Psychologist
- Social worker

Other:

18. Please indicate how often you have recommended the following treatment(s) to children and adolescents living with obesity/severe obesity

Please choose the appropriate response for each item:

	Never	Seldom	Often	Always	Not sure
Behavioural Therapy (Ex: CBT, Family-based behavioural therapy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with a specialist (Ex: Endocrinologist, Dietitian, Psychologist, Exercise therapist, Physiotherapist, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multidisciplinary treatment programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physician/resident directed nutrition counselling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physician/resident directed physical activity prescription	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surgery (Bariatric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18 b) If you have never referred to any of these professional resources, please indicate the reasons why

Check all that apply

Please choose **all** that apply:

- I am not aware of this/these health professional(s) scope of practice
- None available in my area
- This/these health professional(s)'s service(s) were not needed
- Other:

19. How often do you currently recommend the following specialist(s) to children and adolescents living with obesity or severe obesity?

Please choose the appropriate response for each item:

	Never	Seldom	Often	Always	Not sure
Cardiologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dietitian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endocrinologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exercise therapist / Kinesiologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gastroenterologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gynecologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nephrologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Occupational therapist / Physiotherapist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Psychiatrist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respirologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surgeon (ex: Orthopaedic, Bariatric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

[ ] 20. Please rate your level of agreement with the following statements

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
I am generally successful in treating obesity/severe obesity in children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am generally successful in treating obesity/severe obesity in adolescents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident when discussing weight with my patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in providing quality care to patients with obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
I am well trained to provide obesity management counselling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treating pediatric patients with obesity/severe obesity is professionally rewarding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ]21. How would you define pediatric obesity treatment success?

Check all that apply

Please choose **all** that apply:

- BMI reduction
- Improved mental health (ex: lack of depression, lower anxiety, etc.)
- Improved relationship with food
- Improved self-esteem
- Improved body image
- Integration of healthy lifestyle habits (ex: increased physical activity, healthier food choices, etc.)
- Remission of obesity-related co-morbidities (ex: Cardiovascular disease, sleep apnea, etc.)
- Sustained weight loss
- Weight stabilization
- Other:

## Demographics

[ ]22. What is your gender identity?

Choose one of the following answers

Please choose **only one** of the following:

- Man
- Woman
- Non-binary
- Two-Spirit
- Not listed
- Prefer not to disclose
- Other

[ ]23. What is your age?

Only numbers may be entered in this field.

Please write your answer here:

Age in years

[ ]24. What is your current position?

Choose one of the following answers

Please choose **only one** of the following:

- Cardiologist
- Endocrinologist
- Family Physician
- Pediatrician
- Psychiatrist
- Nurse Practitioner
- Resident
- Registered Nurse
- Surgeon
- Other

[ ]25. How many years have you been in practice?

Choose one of the following answers

Please choose **only one** of the following:

- <1 year
- 1 - 5 years
- 6 - 10 years
- 11 - 20 years
- 21 - 30 years
- More than 30 years

[ ]26. What is/are your usual workplace setting(s)?

Please choose the appropriate response for each item:

	In person	Virtually	In person and virtually	Not applicable
Academic (ex: university, research unit)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative, Corporate office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community clinic (ex: CLSC in Quebec)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private clinic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ]27. What is your province or territory of residence?

Choose one of the following answers

Please choose **only one** of the following:

- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland and Labrador
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Quebec
- Saskatchewan
- Yukon

[ ]28. What is/are your province(s) or territories of practice?



Check all that apply

Please choose **all** that apply:

- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland and Labrador
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Quebec
- Saskatchewan
- Yukon

[ ] 29. Which recognized medical associations/groups are you a member of?

Check all that apply

Please choose **all** that apply:

- Canadian Association of Bariatric Physicians and Surgeons
- Canadian Medical Association
- Canadian Pediatric Endocrine Group
- Canadian Pediatrician Society
- Canadian Psychiatric Association
- College of Family Physicians of Canada
- Obesity Canada
- Resident Doctors of Canada
- Royal College of Physicians and Surgeons of Canada
- Other:

## Gift Card

[]

30. Would you like to receive a CA 10.00\$ Amazon electronic gift card?

**\*Please note that receiving a gift card is optional and that you may remain anonymous upon completion of this survey. However, refusal to provide contact information will result in ineligibility to receive a gift card.**

\*

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

[]

To receive an Amazon eGift Card, please provide your email address in a NEW browser tab on our separate Google form AFTER clicking SUBMIT:

<https://forms.gle/gbWm4BaabRRRYGoK7> (<https://forms.gle/gbWm4BaabRRRYGoK7>)

**Only answer this question if the following conditions are met:**

Answer was 'Yes' at question '43 [G1]' (30. Would you like to receive a CA 10.00\$ Amazon electronic gift card? \*Please note that receiving a gift card is optional and that you may remain anonymous upon completion of this survey. However, refusal to provide contact information will result in ineligibility to receive a gift card. )

Please write your answer(s) here:

Thank you for taking the time to participate in our study. We truly value the information you have provided. The results of this study will help researchers better understand the knowledge and attitudes about pharmacotherapy and bariatric surgery in youth among Canadian health care providers.

If you have any further questions, please feel free to contact us at [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca).

09-27-2022 – 13:05

Submit your survey.

Thank you for completing this survey.

*Table 5: Familiarity with the 2006 Canadian Practice Guidelines on the management and prevention of obesity in adults and children*

<b>Attitude variable measured</b>	<b>Test value</b>	<b><i>p</i></b>	<b>Familiar <i>n</i> (%)</b>	<b>Unfamiliar <i>n</i> (%)</b>
Pharmacotherapy is an effective intervention for severe obesity in children	3.159	0.516	9 (26.5)	11 (20.8)
Pharmacotherapy is an effective intervention for severe obesity in adolescents	4.968	0.232	20 (58.8)	22 (41.5)
Pharmacotherapy is a safe option for treating obesity/severe obesity in children	2.096	0.818	10 (29.4)	11 (20.8)
Pharmacotherapy is a safe option for treating obesity/severe obesity in adolescents	6.498	0.115	23 (67.6)	27 (50.9)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in children	0.901	1	20 (58.8)	30 (57.7)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in adolescents	3.559	0.485	27 (79.4)	40 (75.5)
I would prescribe obesity medication to children	3.485	0.430	8 (24.2)	8 (15.1)
I would prescribe obesity medication to adolescents	5.691	0.171	21 (61.8)	25 (47.2)
Bariatric surgery is an effective intervention for severe obesity in children	2.343	0.712	6 (18.8)	6 (12.2)
Bariatric surgery is an effective intervention for severe obesity in adolescents	10.66	0.012*	22 (68.8)	21 (42.9)
Bariatric surgery is a safe option for treating obesity in children	4.381	0.348	4 (12.5)	2 (4.2)
Bariatric surgery is a safe option for treating obesity in adolescents	11.675	0.007*	17 (53.1)	13 (26.5)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in children	4.991	0.233	8 (25)	5 (10.2)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in adolescents	8.107	0.047	20 (62.5)	19 (38.8)
If eligible, I would refer children for bariatric surgery	2.525	0.676	5 (15.6)	5 (10.2)
If eligible, I would refer adolescents for bariatric surgery	10.672	0.013*	23 (71.9)	21 (42.9)

*Note.* Fisher's exact test used unless otherwise noted. <sup>a</sup> Chi-Square test used. \*Statistically significant  $p < 0.05$ .

*Table 6: Familiarity with the 2015 Canadian Task Force on Preventive Health Care Recommendations for growth monitoring and prevention and management of overweight and obesity in children and youth in primary care*

<b>Attitude variable measured</b>	<b>Test value</b>	<b><i>p</i></b>	<b>Familiar <i>n</i> (%)</b>	<b>Unfamiliar <i>n</i> (%)</b>
Pharmacotherapy is an effective intervention for severe obesity in children	4.118 <sup>a</sup>	0.12	8 (18.6)	12 (26.1)
Pharmacotherapy is an effective intervention for severe obesity in adolescents	4.926 <sup>a</sup>	0.092	21 (48.8)	21 (45.7)
Pharmacotherapy is a safe option for treating obesity/severe obesity in children	0.558 <sup>a</sup>	0.769	10 (23.3)	11 (23.9)
Pharmacotherapy is a safe option for treating obesity/severe obesity in adolescents	1.676 <sup>a</sup>	0.442	26 (60.5)	24 (52.2)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in children	1.885	0.412	27 (64.3)	25 (54.3)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in adolescents	0.309	0.918	34 (79.1)	35 (76.1)
I would prescribe obesity medication to children	1.715 <sup>a</sup>	0.479	7 (16.7)	9 (19.6)
I would prescribe obesity medication to adolescents	2.34 <sup>a</sup>	0.33	25 (58.1)	21 (45.7)
Bariatric surgery is an effective intervention for severe obesity in children	1.728 <sup>a</sup>	0.428	7 (17.9)	5 (11.4)
Bariatric surgery is an effective intervention for severe obesity in adolescents	5.188 <sup>a</sup>	0.078	25 (64.1)	18 (40.9)
Bariatric surgery is a safe option for treating obesity in children	1.029	0.611	4 (10.3)	2 (4.7)
Bariatric surgery is a safe option for treating obesity in adolescents	3.339 <sup>a</sup>	0.207	18 (46.2)	12 (27.3)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in children	1.292 <sup>a</sup>	0.608	7 (17.9)	6 (13.6)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in adolescents	4.686 <sup>a</sup>	0.098	23 (59)	16 (36.4)
If eligible, I would refer children for bariatric surgery	0.816 <sup>a</sup>	0.741	6 (15.4)	4 (9.1)
If eligible, I would refer adolescents for bariatric surgery	4.206 <sup>a</sup>	0.141	25 (64.1)	19 (43.2)

*Note.* Fisher's exact test used unless otherwise noted. <sup>a</sup> Chi-Square test used. \*Statistically significant  $p < 0.05$ .

Table 7: Familiarity with the 2017 Endocrine Society Clinical Practice Guidelines on Pediatric Obesity

Attitude variable measured	Test value	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)
Pharmacotherapy is an effective intervention for severe obesity in children	3.392	0.520	6 (22.2)	14 (23)
Pharmacotherapy is an effective intervention for severe obesity in adolescents	6.607	0.095	15 (55.6)	27 (44.3)
Pharmacotherapy is a safe option for treating obesity/severe obesity in children	3.512	0.477	8 (29.6)	13 (21.3)
Pharmacotherapy is a safe option for treating obesity/severe obesity in adolescents	13.371	0.003*	21 (77.8)	29 (47.5)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in children	3.485	0.536	17 (63)	34 (56.7)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in adolescents	2.351	0.924	22 (81.5)	46 (75.4)
I would prescribe obesity medication to children	7.155	0.093	9 (34.6)	7 (11.5)
I would prescribe obesity medication to adolescents	9.329	0.028*	20 (74.1)	26 (42.6)
Bariatric surgery is an effective intervention for severe obesity in children	4.004	0.426	6 (22.2)	6 (10.9)
Bariatric surgery is an effective intervention for severe obesity in adolescents	16.6553	<0.001*	22 (81.5)	21 (38.2)
Bariatric surgery is a safe option for treating obesity in children	0.086	0.3	4 (14.8)	2 (3.7)
Bariatric surgery is a safe option for treating obesity in adolescents	14.997	0.001*	17 (63)	13 (23.6)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in children	9.330	0.027	8 (29.6)	5 (9.1)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in adolescents	16.627	<0.001*	21 (77.8)	18 (32.7)
If eligible, I would refer children for bariatric surgery	2.468)	0.775	4 (14.8)	6 (10.9)
If eligible, I would refer adolescents for bariatric surgery	19.667	<0.001*	23 (85.2)	21 (38.2)

Note. Fisher's exact test used unless otherwise noted. <sup>a</sup> Chi-Square test used. \*Statistically significant  $p < 0.05$

Table 8: Familiarity with the 2018 ASMBS pediatric metabolic and bariatric surgery guidelines and bariatric surgery guidelines

Attitude variable measured	Test value	<i>p</i>	Familiar <i>n</i> (%)	Unfamiliar <i>n</i> (%)
Pharmacotherapy is an effective intervention for severe obesity in children	43.743	0.453	3 (25)	16 (21.1)
Pharmacotherapy is an effective intervention for severe obesity in adolescents	6.945	0.080	8 (66.7)	33 (43.4)
Pharmacotherapy is a safe option for treating obesity/severe obesity in children	5.255	0.183	5 (41.7)	15 (19.7)
Pharmacotherapy is a safe option for treating obesity/severe obesity in adolescents	8.462	0.031*	11 (91.7)	38 (50)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in children	3.102	0.640	7 (58.3)	44 (58.7)
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in adolescents	2.899	0.764	11 (91.7)	57 (75)
I would prescribe obesity medication to children	8.598	0.033*	6 (50)	10 (13.3)
I would prescribe obesity medication to adolescents	10.003	0.014*	11 (91.7)	35 (46.1)
Bariatric surgery is an effective intervention for severe obesity in children	5.752	0.156	3 (25)	8 (11.4)
Bariatric surgery is an effective intervention for severe obesity in adolescents	10.20	0.012*	11 (91.7)	31 (44.3)
Bariatric surgery is a safe option for treating obesity in children	8.410	0.043*	2 (16.7)	3 (4.3)
Bariatric surgery is a safe option for treating obesity in adolescents	9.316	0.018*	8 (66.7)	21 (30)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in children	9.726	0.025*	4 (33.3)	8 (11.4)
Bariatric surgery is a useful treatment for obesity-related co-morbidities in adolescents	13.006	0.002*	11 (91.7)	28 (40)
If eligible, I would refer children for bariatric surgery	5.081	0.225	2 (16.7)	7 (10)
If eligible, I would refer adolescents for bariatric surgery	8.804	0.025*	10 (83.3)	34 (48.6)

Note. Fisher's exact test used unless otherwise noted. <sup>a</sup> Chi-Square test used. \*Statistically significant  $p < 0.05$

### 3.1 Additional Exploratory Results

The following results section describes exploratory results that complement the main findings.

The purpose of these exploratory analyses was to provide better understanding of Canadian HCPs' knowledge (education and training) on pediatric obesity as well as their perceived levels of confidence in treating obesity and their definitions of pediatric obesity treatment success.

#### *Exploratory Objective 2: Comparing Attitudes between Health Care Providers*

There were no differences between mean attitude scores towards Pharm ( $t = 0.123$ ,  $p = 0.94$ ) or BarSx ( $t = 0.117$ ,  $p = 0.943$ ) between physicians, medical residents, and nurse practitioners.

#### *Training*

Among the 122 respondents, 54 % ( $n = 66/122$ ) had received training on overweight or obesity in youth before working in the field (Figure 3). The most common types of training received were post-medical education during residency (39%,  $n = 31/80$ ), followed by courses during undergraduate education (36%,  $n = 29/80$ ), conferences (29%,  $n = 23/80$ ) and post-graduate training such as CME training (26%,  $n = 21/80$ ). When respondents were asked what topics, they would have wanted to receive training on *before* working with this population, 69% HCPs ( $n = 58/84$ ) would have wanted to receive training on behavioural counselling and 69% HCPs ( $n = 58/84$ ) on mental health topics (e.g., eating disorders and body image). Similarly, when asked on the training they would like to receive *now*, 66% ( $n = 80/122$ ) responded that they also would have wanted to receive training on behavioural counselling and mental health. Lastly, only 28% of respondents ( $n = 23/83$ ) believed that they were well trained to provide obesity management counselling.

### *Comparing obesity training and familiarity with guidelines*

Respondents who received training prior to working had higher familiarity scores with the 2006 guidelines ( $2.36 \pm 0.84$  vs.  $2.02 \pm 0.98$ ,  $p=0.03$ ), the 2017 guidelines ( $2.29 \pm 0.92$  vs.  $1.82 \pm 0.74$ ,  $p<0.01$ ) and the 2018 guidelines ( $1.79 \pm 0.73$  vs.  $1.48 \pm 0.6$ ,  $p=0.01$ ) compared to those who did not receive training respectively. However, there were no differences in familiarity scores for the 2015 recommendations on obesity in children and adolescents between respondents who were trained in pediatric obesity vs. those who were not ( $2.45 \pm 0.79$  vs.  $2.21 \pm 0.91$ ,  $p=0.12$ ).

### *Comparing obesity training and attitudes towards Pharm and BarSx*

Respondents who received training in pediatric obesity had higher mean attitude scores about Pharm compared to those who did not get trained ( $2.19 \pm 0.8$  vs.  $1.64 \pm 0.94$ ) ( $p<0.01$ ).

Similarly, those who received training also had higher mean attitudes scores towards BarSx compared to those without training in pediatric obesity ( $1.82 \pm 0.82$  vs.  $1.23 \pm 0.97$ ) ( $p<0.01$ ).

### *Perceived confidence about treating obesity*

Out of 83 respondents the mean score for perceived confidence was  $2.03 \pm 0.92$  from the rating of 4 where 1 signified “strongly disagree” and 4 “strongly agree”. Only 18% ( $n=15/83$ ) of respondents believed that they were generally successful in treating obesity/severe obesity in children and 18% in adolescents ( $n=15/83$ ). On the other hand, 64% ( $n=53/83$ ) stated that they are confident when discussing weight with their patients and 48% ( $n=40/83$ ) are confident in providing quality care to their patients with obesity (Figure 4).



### *Comparing obesity training and levels of confidence*

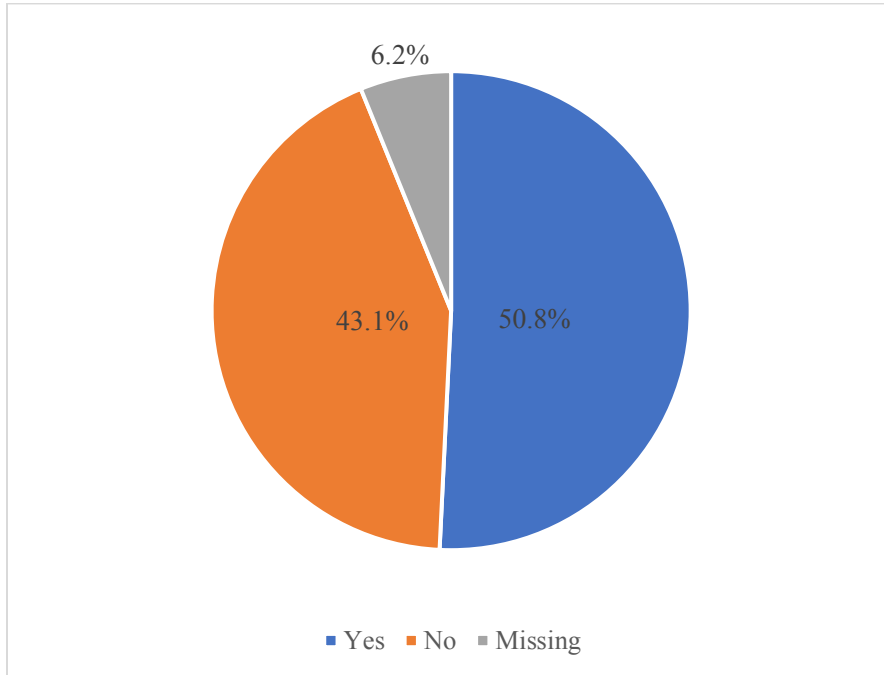
Respondents who had training had a higher mean perceived level of confidence score than those who were not trained prior to working in the field ( $2.28 \pm 0.88$  vs.  $1.61 \pm 0.83$ ) ( $p < 0.001$ ).

### *Definition of pediatric obesity treatment success*

Most respondents (94%,  $n = 78/83$ ) agreed that the integration of healthy behaviours, such as increased physical activity and healthier food choices would define obesity treatment success in youth (Figure 5). The majority of respondents agreed that improvements in mental health, like a decrease in depressive symptoms and anxiety (90%,  $n = 75/83$ ), improved self-esteem (88%,  $n = 73/83$ ), improvements in one's relationship with food (86%,  $n = 71/83$ ) and the remission of obesity-related co-morbidities (*e.g.*, cardiovascular disease, sleep apnea) (82%,  $n = 68/83$ ) would also define a successful treatment. Compared to integration of healthy behaviors and improvements in mental health, definitions of treatment success focusing on body weight, such as BMI reduction (69%,  $n = 57/83$ ), sustained weight loss (58%,  $n = 48/83$ ) and weight stabilization (74%,  $n = 61/83$ ) were less frequently chosen (Figure 5).

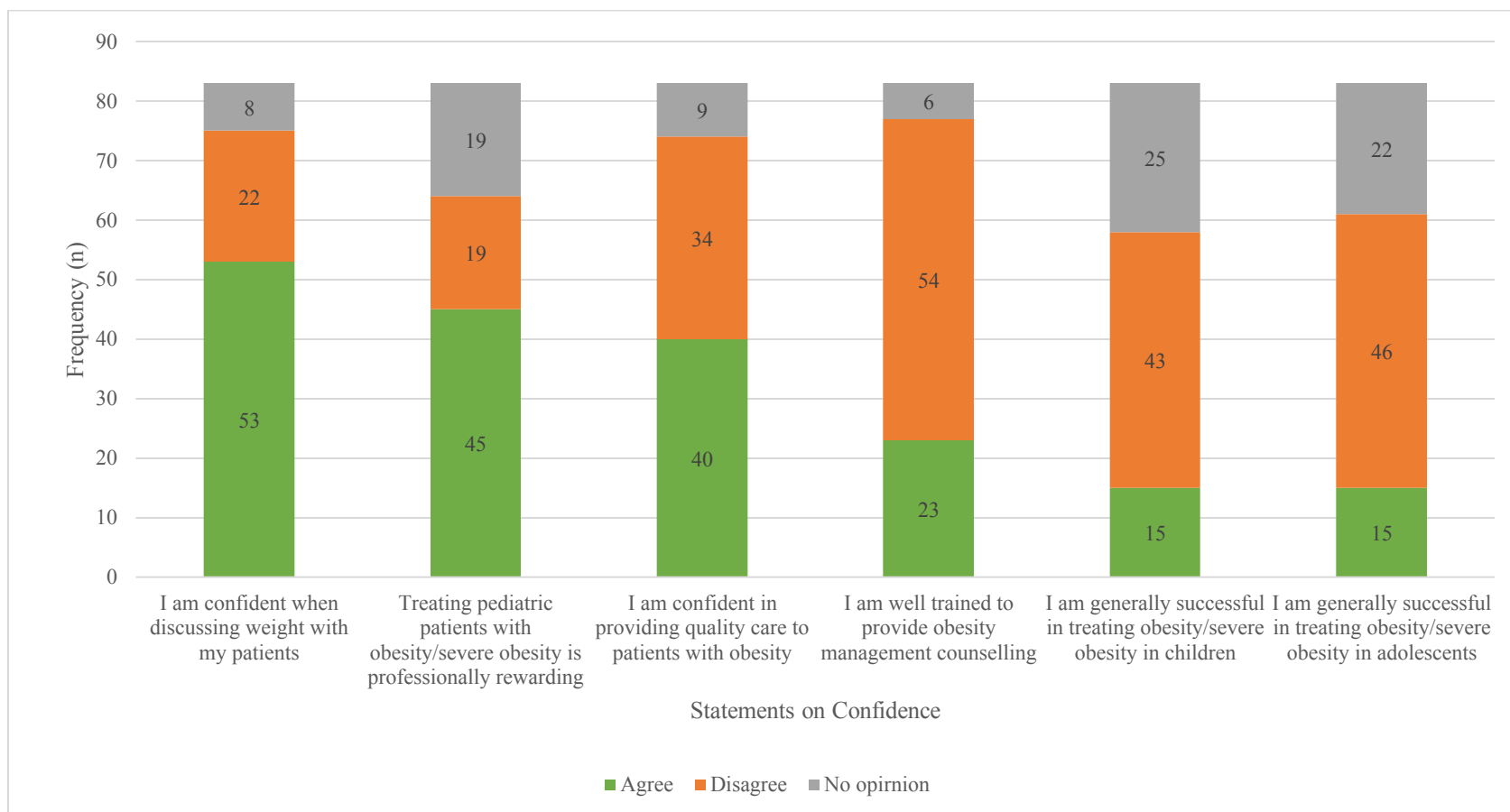
### 3.2 Additional Results Tables

*Figure 3: Prior educational training on pediatric obesity*



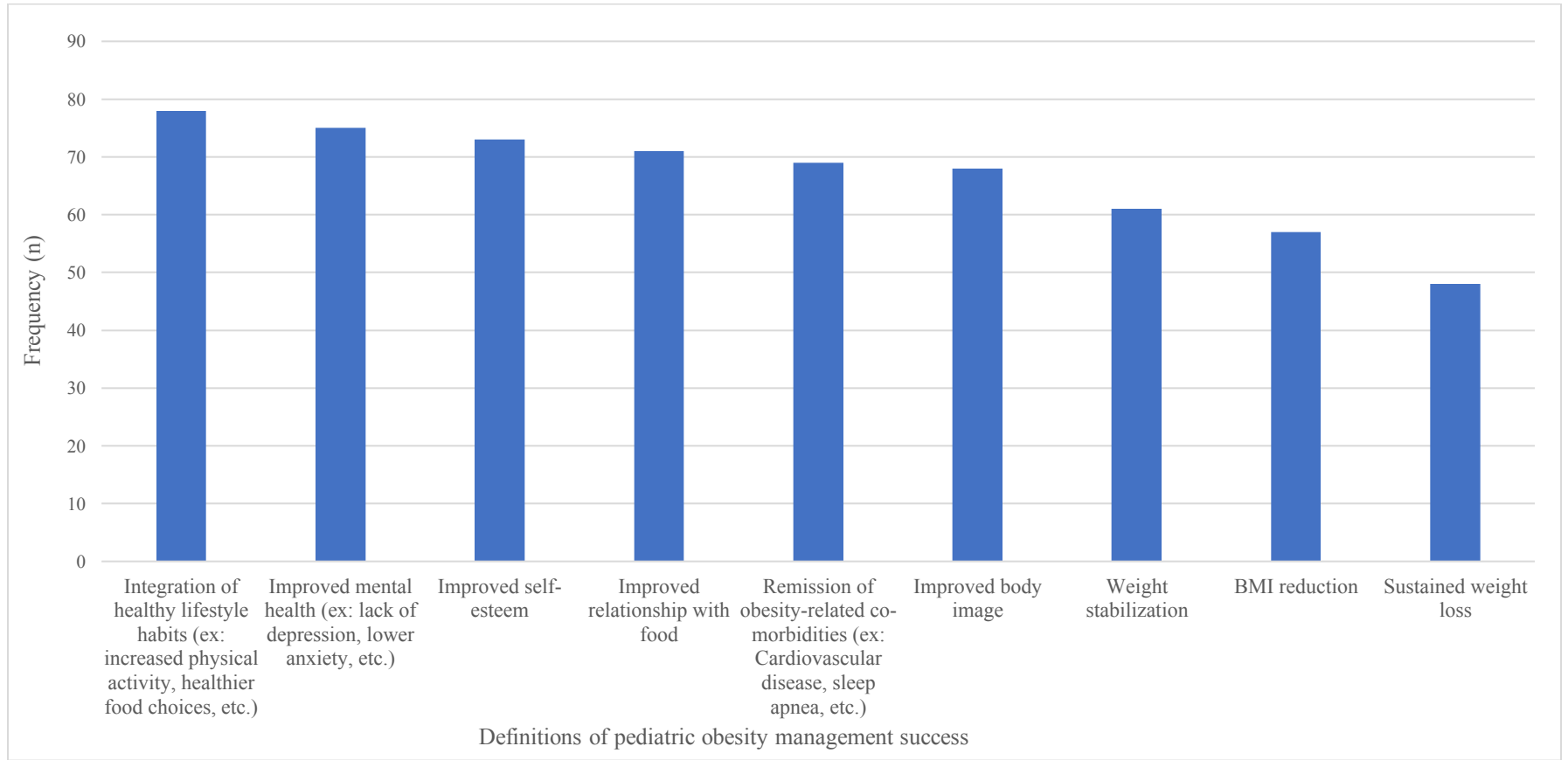
*Note.* Percentage of respondents (n=130) who received training or education before working in clinical practice. Some respondents (n=8, 6.2%) could not answer this question due to a technical error.

Figure 4: Levels of agreement with perceived levels of confidence in treating pediatric obesity



Note. Statements capturing HCPs perceived levels of confidence in treating pediatric obesity. Responses indicate the proportion of the sample who indicated their level of agreement with the statements provided. Statements adapted from Frankfurter *et al.* and Reyes *et al.* (29,49) Disagreement responses on the Likert scale (“strongly disagree”, “disagree”) were combined and compared with both agreement responses (“strongly agree”, “agree”). Due to a technical error, some respondents (n=47, 36.2%) could not complete this question.

Figure 5: Definition of Success in Pediatric Obesity Management



Note. HCPs definition of pediatric obesity treatment success. Respondents (N=130) selected descriptions that best defined their definition of pediatric obesity treatment success. The responses indicate the frequency of respondents who selected the definitions from the list provided. Other open-ended responses that are not presented above include : “decrease in % of total body weight/ BMI percentile – targets depend on age, severity, comorbidities” and “depends on patient’s goals.”

## **CHAPTER 4: DISCUSSION**

## 4.0 Discussion

The main objective of this thesis was to better understand the attitudes of Canadian HCPs towards the use of Pharm and BarSx in youth. We also assessed their current clinical practices when treating youth with obesity and/or severe obesity, such as the frequency of treatment recommendations, referrals to specialists as well as their definition of obesity treatment success. This chapter further expands on the findings from Manuscript 1 and discusses additional results obtained from the study that could not be included in the manuscript due to word limits. Moreover, this chapter will explore practical implications from the findings of this thesis and suggest potential future research areas.

The original research article of this thesis was the first study to examine attitudes and reasons for reluctance and willingness towards the use of both Pharm and BarSx in youth in a sample of Canadian HCPs. Furthermore, findings from this thesis provided a recent assessment of Canadian HCPs' perceptions on what defines successful obesity management treatment. The findings from this thesis revealed that overall Canadian HCPs demonstrated skepticism towards the use of Pharm and BarSx in youth mainly due to the lack of long-term data and the unrealistic expectations patients have following these interventions as well as the long-term complications associated with BarSx. The prime reason HCPs would potentially consider referring pediatric patients to either intervention would be to improve obesity-related co-morbidities. Frequent referrals were made for medical specialists, like dietitians, endocrinologists, and kinesiologists, and to multidisciplinary programs. Exploratory and additional results demonstrated that a little over half of participants had received training on overweight or obesity in youth before working in the field and that HCPs were most familiar with the 2015 Canadian Task Force on Preventive

Health Care recommendations on obesity in children and least familiar with the 2018 ASMBS guidelines. Furthermore, definitions of success that were most frequently chosen centered on the integration of healthier lifestyle habits, such as increased physical activity and healthier food choices, and improvements in mental health compared to less frequent definitions that prioritized weight loss and BMI reductions.

The manuscript results demonstrate that HCPs had less favorable attitudes for Pharm and BarSx in children compared to adolescents. Even though 59% of our sample agreed that Pharm is a useful treatment for obesity-related co-morbidities in children, 64% of our sample would not prescribe to children. In contrast, 78% agreed that Pharm is a useful treatment for obesity-related co-morbidities in adolescents and 52% agreed that they would prescribe Pharm to adolescents. This common trend was seen across the responses when comparing the intervention use in children versus adolescents. Most previously published trials evaluating the effects of Pharm in pediatric obesity management were conducted with only samples of adolescents and can therefore discourage the use of these interventions in children younger than 12 years old since there is limited evidence in the younger age groups (12,14,72). Though limited in research at the time, the 2006 Canadian clinical practice guidelines and the 2015 Canadian task force recommendations opposed the use of both Pharm and BarSx in younger years <12 years old (10,73). For example, respondents were most familiar with the 2015 Canadian Task Force recommendations which presented a *strong recommendation* that primary care practitioners *do not* offer Orlistat (a type of obesity medication) for obesity management to children and youth aged 2 to 11 years old. As for children and youth from 12 to 17 years old, it was presented as a *weak recommendation* (73). Furthermore, according to the latest 2023 AAP guidelines, pediatric HCPs should offer Pharm to adolescents  $\geq 12$  years old with obesity (BMI  $\geq 95$ th percentile) in

addition to lifestyle and behavioral treatments (2). As for BarSx, only 16% of respondents agreed that it's a useful treatment for obesity-related co-morbidities in children compared to 47% who agreed that it was useful in adolescents. In the 2006 Canadian guidelines, BarSx was presented as a *weak recommendation*, limiting its' use to exceptional cases in adolescents and only performed by experienced teams (10). Suggestions for BarSx in children in this same guideline was not considered. The recent 2023 AAP guidelines recommend that pediatric HCPs should offer referrals for BarSx to adolescents with severe obesity who are 13 years and older (2). Since the new Canadian clinical practice guideline for managing pediatric obesity is currently underway (74), future research should examine the impact of the new AAP guidelines and the upcoming Canadian pediatric obesity guidelines on future attitudes towards pharmacotherapy and BarSx among HCPs and how they may change over time.

The exploratory analyses we conducted also merit discussion. These exploratory analyses provide insight into Canadian HCPs' knowledge and educational training on pediatric obesity, perceived levels of confidence in treating this population and how they define obesity management treatment success.

#### *Training and confidence about treating pediatric obesity*

Our additional findings showed that HCPs who had prior education and training in pediatric overweight and obesity before working showed a) more support towards Pharm and BarSx and b) more confidence in treating pediatric obesity than those who did not have training prior to working in the field. Our findings align with recent results in a sample of 235 primary



care physicians in Sweden. Respondents from this Swedish study who had more knowledge on obesity felt more confident to suggest Pharm and BarSx to their adults patients living with obesity (75).

Additionally, despite the high prevalence of obesity worldwide, there is still a scarcity of obesity education in medical school, residencies, and fellowships (76). In fact, according to a recent study by Katz *et al.*, the average curricular time Canadian medical students receive on obesity management is 14.6 hours for their whole 4-year degree (52). They showed that medical students in their final year reported limited knowledge and inadequate competence in obesity management (52). In a sample of 45 nurse practitioner students in the US, only 13% of respondents reported that they were extremely/well prepared to manage patients with obesity following their undergraduate education (53). Our results also demonstrated similar findings where only 18% of our sample believed that they were well-trained to provide obesity management counselling. Furthermore, respondents who had received prior training before entering the field also had higher levels of confidence compared to those who didn't. There is an obvious need to increase obesity education in order for HCPs to have up-to-date and evidence-based knowledge regarding obesity management, but to also increase their confidence in treating this population. This was demonstrated in a recent study, where 42 Canadian family medicine resident's' confidence and competency in obesity prevention and management increased following a comprehensive course based on the 5As of Obesity Management, a tool designed to help health practitioners better communicate and manage their patients' weight and overall health (77). Similarly, knowledge and comfort levels in managing patients increased in nurse practitioner students following obesity education modules and conversations that covered

management practices, personal bias, comfort with documenting obesity management and surgical intervention counselling (78).

### *Definition of obesity treatment success*

Definitions of weight management success can be specific to each patient and can greatly differ among youth living with overweight, obesity or severe obesity. According to Obesity Canada's 5As of Pediatric Obesity Management, obesity management success can be defined as improved quality of life, greater self-esteem, higher levels of energy, prevention of further weight gain, modest weight loss, BMI maintenance or improved overall health (41).

Interestingly, definitions of obesity management success that focused on BMI reduction, sustained weight loss, and weight stabilization were less frequently chosen to define obesity management success compared to integration of healthy behaviors, improvements in mental health, self-esteem, and one's relationship with food. This may potentially be due to the crucial role of psychosocial health on one's overall well-being and on sustainable behaviour changes (79,80). Furthermore, focusing solely on weight loss and BMI reduction can possibly also reinforce harmful stigmas about body size and weight in youth living with obesity. It would be important to help monitor attitudes about definitions of successful obesity treatment over time and see how new guidelines might influence HCPs perceptions about successful treatments definitions in pediatric obesity. Although the majority of our sample defined obesity management success as improvements in mental health, less than half reported having access to mental health specialists, such as psychotherapists and art therapists (47%), psychiatrists (41%) and psychologists (37%). This highlights the potential gap between the available mental health resources and the increased need for mental health support in pediatric obesity management.

These additional results shed light on the role that previous education and training on pediatric obesity can have on HCP's attitudes towards Pharm, BarSx as well as their confidence in treating this population. Moreover, these findings emphasize the importance of mental health support for HCPs and patients in obesity management programs.

A major strength of our study was that it is the first to explore reasons for willingness and reluctance towards Pharm and BarSx in Canadian youth. However, despite the strengths of this thesis, its limitations should be considered when evaluating the findings. Despite the well-known challenges of recruitment of HCPs (22,65,81–85) and our pan-Canadian recruitment efforts to acquire a sample of physicians, medical residents, and nurse practitioners, our sample size was relatively small (N=130). Our findings may not be generalizable to other Canadian HCPs. Future studies should employ a combination of different recruitment strategies such as contacting academic heads or clinicians in hospitals in order to increase their response rate among HCPs. Additionally, while our study had HCPs respondents from most Canadian provinces, we were not able to recruit HCPs from any of the Canadian territories. This is an additional limitation as respondents from the territories could provide valuable insights on the knowledge, attitudes and current practices of HCPs who work among Indigenous communities, where the rate of obesity in children is greater compared to non-Indigenous children in countries such as Canada, the United States, Australia and New Zealand (86–88).

This thesis presents key findings that also have important clinical implications and provides valuable insight for future research. Firstly, respondents stated that one of the main reasons for Pharm and BarSx referral reluctance was due to patients' unrealistic outcomes. This emphasizes the importance of addressing and discussing patients' and their families'

expectations prior to beginning treatment. This can be achieved by including and emphasizing all potential outcomes earlier on in pre-treatment education as mentioned in Canadian studies from Li *et al.* (89). They explored adolescents' preoperative and postoperative experiences after BarSx and reported that the insights provided by these adolescents can help optimize the support from the clinical team and inform future pre-operative education (89). Future studies should also assess patients and their families' knowledge, attitudes and expectations regarding Pharm given that their expectations prior and following Pharm treatment has yet to be studied in a Canadian context similarly to studies on BarSx by Li *et al.* (89,90).

Secondly, as reported above, HCPs mainly defined pediatric obesity management success as the incorporation of healthy behaviours and improvements in mental health symptoms, such as decreased depressive symptoms and anxiety as well as improved self-esteem. Although respondents valued improvements in mental health for a successful treatment, less than half of our sample had access to mental health professionals like psychiatrists, psychotherapists, art therapist and psychologists. This highlights the discrepancy between mental health resources that are accessible and available for pediatric obesity management and the increased demand for mental health support. Moreover, results from our study also demonstrated that HCPs would have preferred to receive more training on mental health issues both prior to working in the field as well as currently as active HCPs. Therefore, future pediatric obesity guidelines should emphasize the role of better mental health support in pediatric obesity as it can likely aid to better identify, address, and treat underlying mental health concerns in children and adolescent who are living with obesity and/or severe obesity (91–94).

Lastly, our sample of HCPs were most familiar with the 2015 Canadian Task Force Recommendations compared to more recent guidelines on pediatric obesity such as the 2017 Endocrine Society Guidelines and the 2018 ASMBS guidelines. While our study did not investigate why they felt more familiar with some guidelines over others, future studies should explore potential barriers to familiarity and accessibility to guidelines. This can have major clinical implications to ensure that evidence-based recommendations are effectively communicated to HCPs and shared with patients. Furthermore, this is vital to understand as the findings from this thesis come before the release of the new Canadian pediatric obesity clinical practice guidelines that are anticipated later in 2023 (74). Therefore, results from our study can shed light on topics that the guidelines might address, such as the importance of addressing expectations before and during pediatric obesity treatment, the lack of mental health education, resources, and support despite the growing need in the area.

The results of this thesis highlights many directions for future research. For example, future studies should investigate how HCPs attitudes towards Pharm and BarSx evolve over time in response to the recent release of the 2023 AAP guidelines (2) and the upcoming Canadian pediatric obesity guidelines (74). Similarly, our exploratory analysis sheds light on the need for future studies to explore awareness, implementation and knowledge translation of obesity guidelines and their impacts on Canadian HCPs attitudes towards different pediatric obesity treatment options including Pharm and BarSx. Furthermore, future research should study the impact of other types of training, such as conference lectures and continuing medical education (CME) courses, on Canadian HCPs' attitudes towards Pharm and surgical interventions, current pediatric obesity management practices and their definitions of pediatric obesity treatment success and how these may continue to evolve over time. Moreover, is it vital to also consider

the voices of patients and their families' regarding pediatric obesity management. Future studies should therefore assess pediatric patients and their families' attitudes towards Pharm and BarSx and investigate how they would define obesity management success. In summary, by understanding how HCPs attitudes and practices may change over time in response to new guidelines, additional training or translation of guidelines and continuing to examine the evolution of how HCPs define pediatric obesity treatment success, there is much potential for advancements in the field of pediatric obesity.

## **CHAPTER 5: CONCLUSION**

## 5.0 Conclusion

In conclusion, few studies have captured Canadian HCPs attitudes and practices towards the use of Pharm or BarSx in youth. Though other studies have assessed the beliefs of pediatric practitioners on adolescent BarSx, none have reported the rationale behind their willingness and/or skepticism to refer pediatric patients to both Pharm and BarSx. In addition, our study contributes to existing literature by capturing current pediatric obesity management practices and recent definitions of pediatric obesity management success by HCPs across Canada.

There are several significant practical implications that can be drawn from our study. By understanding the reasons for skepticism towards intensive pediatric obesity interventions like Pharm and BarSx, future studies can investigate how these attitudes and practices are shaped and formed. Our findings highlight the need to better address treatment outcome expectations with patients and their families, how educational training on pediatric obesity may influence HCP's attitudes towards treatment recommendations and confidence in treating patients with obesity and their families. This research also highlighted the need for more training opportunities for mental health counselling and increased access to mental health professionals and resources for pediatric obesity management to HCPs.

Our study results are timely seeing as the new AAP pediatric obesity guidelines were just released in January 2023 (2) and the new Canadian Pediatric Obesity Clinical Practice Guidelines are soon going to be published later in 2023 (74). Future research should continue to evaluate the evolution of attitudes and practices about pediatric obesity treatment among HCPs and the impact that these guidelines may have on the evolution of these beliefs. Our overall findings can raise awareness on topics that should be included in these guidelines, such as a call



to better address treatment outcome expectations with patients and their families, the lack of support for mental health resources and the impact that supplemental training on pediatric obesity has on HCPs' attitudes towards treatment recommendations and confidence in treating patients and families who are living with obesity.

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## **APPENDIX**

## Informed Consent Documents



### INFORMATION AND CONSENT FORM

**Study Title:** Pediatric Obesity Management in Canada: Current Attitudes and Practices of Primary Care Providers Towards Pharmacotherapy and Bariatric Surgery in Youth

**Researcher:** Trisha Chloé Baluyot, Master's student in Health, Kinesiology & Applied Physiology

**Researcher's Contact Information:** [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca)

**Faculty Supervisor:** Dr. Angela Alberga, Assistant professor, Department of Health, Kinesiology & Applied Physiology

#### **Faculty Supervisor's Contact Information:**

Concordia University  
7141 Sherbrooke Street West  
Montreal, Quebec, H4B 1R6, Canada  
Office: SP-165.31  
Email: [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca)  
Phone: (514) 848-2424 ext. 3371

**Source of funding for the study:** Fonds de recherche du Québec – Santé (FRQS)

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

#### **A. PURPOSE**

The purpose of the research is to explore the attitudes and practices of Canadian primary care providers towards the use of pharmacotherapy and bariatric surgery as obesity treatment options in youth. This objective is part of a larger goal to investigate the possible need of continuing medical education in obesity management for future primary care providers. This study aims to document the knowledge, attitudes and practices of physicians, nurse practitioners and medical residents in Canada.

## **B. PROCEDURES**

If you participate, you will be asked to complete a 15-minute online survey with questions regarding your knowledge about pediatric obesity management, your attitudes towards pharmacotherapy and bariatric surgery in Canadian youth, your current obesity management practices as well as demographic information.

## **C. RISKS AND BENEFITS**

You might face certain risks by participating in this research, which mainly includes the risk of fatigue.

We estimate that the questionnaire will take approximately 15-20 minutes on a computer or telephone screen. We recognize that this may cause fatigue, so if you need a break at any point during session, you are invited to do so at your own leisure. Participants can also opt to choose to complete the survey they have already begun at a later time. You will be asked to provide an email and a password in order to complete the survey at a later time.

You do not have to answer any questions that you are not comfortable with, and you can absolutely resign from participating in the study at any point.

## **D. CONFIDENTIALITY**

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

The information gathered will be confidential and coded.

The following measures will be applied to ensure the confidentiality of the information provided by the participants:

- Names of the participants will not appear in any report
- Individual results of the participants will never be shared
- The research data will be stored for future use in a password-protected computer located in Dr. Alberga's research laboratory at Concordia University
- A backup copy of the research data will be stored on Concordia's password-protected Microsoft Outlook server.

The research will be published in scientific journals, and no participant will be identified with it

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

## **F. CONDITIONS OF PARTICIPATION**

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, you must tell the researcher before October 25<sup>th</sup>, 2022.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information. While this research is not intended to benefit you personally, you will be eligible to receive a \$10.00 CAD Amazon gift card for participating in this study.

You will be taken to a separate form at the end of the survey to provide your email address in order to receive the Amazon gift card. If you withdraw from the study, you will be able to keep the gift card.

## **G. PARTICIPANT'S DECLARATION**

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print) \_\_\_\_\_

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex.7481 or [oor.ethics@concordia.ca](mailto:oor.ethics@concordia.ca).



## CONSENTEMENT ÉCLAIRÉ À LA PARTICIPATION À UNE ÉTUDE

**Titre de l'étude :** Gestion de l'obésité pédiatrique au Canada : Attitudes et pratiques actuelles des fournisseurs de soins de santé à l'égard de la pharmacothérapie et de la chirurgie bariatrique chez les jeunes

**Chercheur :** Trisha Chloé Baluyot, Étudiante à la maîtrise dans le département de santé, kinésiologie et physiologie appliquée

**Coordonnées du chercheur :** [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca)

**Professeur-superviseur :** Dr. Angela Alberga, Professeur adjoint, Département de santé, kinésiologie et physiologie appliquée

### **Coordonnées du professeur-superviseur :**

Université Concordia  
7141 Sherbrooke Street West  
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**Sources de financement de l'étude :** Fonds de recherche du Québec – Santé (FRQS)

Nous vous invitons à prendre part au projet de recherche susmentionné. Le présent document vous renseigne sur les conditions de participation à l'étude; veuillez le lire attentivement. Au besoin, n'hésitez pas à communiquer avec le chercheur pour obtenir des précisions.

### **A. BUT DE LA RECHERCHE**

Cette étude a pour but d'explorer les attitudes et les pratiques des fournisseurs de soins de santé canadiens à l'égard du recours à la pharmacothérapie et la chirurgie bariatrique comme options de traitement de l'obésité chez les jeunes. Cet objectif fait partie d'un objectif plus large visant à étudier le besoin éventuel de formation médicale continue en matière de gestion de l'obésité. Cette étude vise à documenter les connaissances, les attitudes et les pratiques des fournisseurs de soins de santé et des résidents en médecine au Canada.

## **B. PROCÉDURES DE RECHERCHE**

Si vous participez à l'étude, vous serez invité à répondre à un sondage en ligne de 15 minutes comportant des questions concernant vos connaissances sur la gestion de l'obésité pédiatrique, vos attitudes à l'égard de la pharmacothérapie et de la chirurgie bariatrique chez les jeunes Canadiens, vos pratiques actuelles de gestion de l'obésité ainsi que des informations démographiques.

## **C. RISQUES ET AVANTAGES**

En participant à cette étude, vous pourriez être exposé à certains risques, y compris principalement: le risque de fatigue.

Nous estimons que le questionnaire prendra environ 15 à 20 minutes sur un écran d'ordinateur ou de téléphone. Nous sommes conscients que cela peut entraîner de la fatigue. Par conséquent, si vous avez besoin d'une pause à un moment quelconque de la session, vous êtes invité à le faire à votre convenance. Les participants peuvent également choisir de terminer le sondage qu'ils ont déjà commencé à un moment ultérieur. Il vous sera demandé de fournir une adresse électronique et un mot de passe afin de pouvoir compléter l'enquête plus tard.

Vous n'êtes pas obligé de répondre aux questions qui vous mettent mal à l'aise, et vous pouvez absolument renoncer à participer à l'étude à tout moment.

## **D. CONFIDENTIALITÉ**

Excepté les situations précisées aux présentes, seules les personnes qui mènent cette recherche auront accès aux renseignements fournis. Nous n'utiliserons l'information qu'aux fins de l'étude décrite dans ce document.

Les informations recueillies seront confidentielles et codées.

Les mesures suivantes seront appliquées pour assurer la confidentialité des informations fournies par les participants :

- Les noms des participants n'apparaîtront dans aucun rapport.
- Les résultats individuels des participants ne seront jamais partagés
- Les données de recherche seront conservées pour une éventuelle utilisation ultérieure dans un ordinateur protégé par un mot de passe situé dans le laboratoire de recherche du Dr Alberga à l'Université Concordia
- Une copie des données de recherche sera sauvegardée sur le serveur Microsoft Outlook de Concordia, protégé par un mot de passe
- La recherche sera publiée dans des revues scientifiques, et aucun participant ne sera identifié à cette recherche.



Nous avons l'intention de publier les résultats de cette étude. Cependant, on ne pourra pas vous identifier dans la publication.

Nous détruirons les données cinq ans après la fin de l'étude.

## **F. CONDITIONS DE PARTICIPATION**

Vous pouvez refuser de participer à la recherche ou vous en retirer à n'importe quel moment. Vous pouvez aussi demander que l'information que vous avez fournie ne soit pas utilisée; le cas échéant, votre choix sera respecté. Si vous prenez une décision en ce sens, vous devrez en avertir le chercheur avant le 25 octobre 2022.

Nous vous informerons de tout nouvel élément d'information susceptible d'affecter votre volonté à poursuivre votre participation à l'étude.

Il n'y a aucune conséquence négative à ne pas participer, à s'arrêter en cours de route ou à nous demander de ne pas utiliser vos informations. Bien que cette étude ne soit pas destinée à vous apporter un bénéfice personnel, vous pourrez recevoir un cadeau Amazon de 10 dollars canadiens pour avoir participé à cette étude.

À la fin du questionnaire, vous serez invité à fournir votre adresse électronique dans un formulaire séparé afin de recevoir la carte cadeau Amazon. Si vous vous retirez de l'étude, vous pourrez conserver la carte cadeau.

## **G. CONSENTEMENT DU PARTICIPANT**

Je reconnais par la présente avoir lu et compris le présent document. J'ai eu l'occasion de poser des questions et d'obtenir des réponses. Je consens à participer à l'étude dans les conditions décrites ci-dessus.

NOM (en majuscules) \_\_\_\_\_

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

Si vous avez des questions sur l'aspect scientifique ou savant de cette étude, communiquez avec le chercheur. Vous trouverez ses coordonnées sur la première page. Vous pouvez aussi communiquer avec son professeur-superviseur.

Pour toute préoccupation d'ordre éthique relative à ce projet de recherche, veuillez communiquer avec le responsable de l'éthique de la recherche de l'Université Concordia au 514-848-2424, poste 7481, ou à [oor.ethics@concordia.ca](mailto:oor.ethics@concordia.ca).

## Recruitment Scripts

### Script to Invite Physicians and Medical Residents to Participate in This Research Project

Dear physicians and residents,

My name is Trisha Chloé Baluyot and I am a Master's student in the Department of Health, Kinesiology & Applied Physiology at Concordia University. I am doing research under the supervision of Dr. Angela Alberga on pediatric obesity management in Canada. The purpose of our research is to explore physicians' attitudes and practices towards bariatric surgery and pharmacotherapy in youth. This objective is part of a larger goal to investigate the possible need of continuing medical education in obesity management for physicians and medical residents. This study aims to document the knowledge, attitudes and practices of both practicing physicians and medical residents in Canada.

We invite you to participate in this study, which will be completed online. Participation is voluntary. For those of you who decide to kindly participate, an informed consent document will be provided for you to complete, ensuring your willingness to participate and the anonymity of the data collected from you.

The online survey will be hosted on Concordia's LimeSurvey platform. Should you choose to participate, you may click on this link <https://survey.concordia.ca/limesurvey/index.php/579269?lang=en>, which will direct you to the consent form and questionnaire platform on LimeSurvey. Once you have clicked submit at the end of the survey, there will be nothing more required of you for your participation

Physicians and medical residents who choose to participate will be eligible to receive a 10.00\$ Amazon gift card as a thank you for your participation.

Please do not hesitate to contact us should you have any questions or concerns regarding your participation in this study. You can contact us by email at [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca) or at [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca) or by phone at (514) 848-2424 x 3371.

Thank you for your consideration,

Concordia University  
7141 Sherbrooke Street West  
Office: SP-165.31  
Montreal, Quebec, H4B1R6, Canada  
Email: [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca)  
Phone: (514) 848-2424 ext. 3371  
Fax: (514) 848-868

**Script to Invite Physicians and Medical Residents to Participate in This Research Project  
(FR)**

Chers médecins et médecins résidents,

Je m'appelle Trisha Chloé Baluyot et je suis étudiante à la maîtrise au Département de santé, kinésiologie et physiologie appliquée de l'Université Concordia. Je fais une recherche sous la supervision du Dr Angela Alberga sur la gestion de l'obésité pédiatrique au Canada. L'objectif de notre recherche est d'explorer les attitudes et les pratiques des médecins à l'égard de la chirurgie bariatrique et de la pharmacothérapie chez les jeunes. Cet objectif s'inscrit dans le cadre d'un objectif plus large visant à étudier le besoin éventuel de formation médicale continue en matière de gestion de l'obésité pour les médecins et les médecins résidents. Cette étude vise à documenter les connaissances, les attitudes et les pratiques des médecins praticiens et des résidents en médecine au Canada.

Nous vous invitons à participer à cette étude, qui se déroulera en ligne. La participation est volontaire. Pour ceux d'entre vous qui décident de participer aimablement, un document de consentement éclairé vous sera fourni pour que vous le remplissiez, garantissant votre volonté de participer et l'anonymat des données recueillies auprès de vous.

Le sondage en ligne sera organisé sur la plateforme LimeSurvey de Concordia. Si vous choisissez de participer, vous pouvez cliquer sur ce lien <https://survey.concordia.ca/limesurvey/index.php/579269?lang=fr>, qui vous dirigera vers le formulaire de consentement et la plateforme du questionnaire sur LimeSurvey. Une fois que vous aurez cliqué sur "soumettre" à la fin du questionnaire, vous n'aurez plus rien à faire pour participer.

Les médecins et les médecins résidents qui choisissent de participer pourront recevoir une carte cadeau Amazon de 10,00 \$ en remerciement de leur participation.

N'hésitez pas à nous contacter si vous avez des questions ou des préoccupations concernant votre participation à cette étude. Vous pouvez nous contacter par courriel [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca) ou à [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca) ou par téléphone au (514) 848-2424 x 3371.

Nous vous remercions de votre considération,

Université Concordia  
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Bureau : SP-165.31  
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Courriel : [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca)  
Téléphone : (514) 848-2424 poste 3371  
Télécopieur : (514) 848-868

## Social Media Advertisements Templates

### Twitter advertisements:

- Researchers seeking Canadian physicians and residents to complete a short survey on #Childhood Obesity, #Bariatric Surgery and #Pharmacotherapy (Insert link)
- Physicians and residents needed to complete a short on #ChildhoodObesity (Insert link).
- Want to have your opinions heard? Complete a short survey on # ChildhoodObesity, #Bariatric Surgery and #Pharmacotherapy today! (Insert link)
- Want to advance #ChildhoodObesity research? Complete a short survey on # ChildhoodObesity, #Bariatric Surgery and #Pharmacotherapy today! (Insert link)
- Calling on Physicians and Residents! What are your thoughts on #ChildhoodObesity, #Bariatric Surgery and #Pharmacotherapy? Let Concordia researchers know by completing this short survey today! (Insert link)

### Facebook and Newsletter advertisements:

- Attention Physicians and Residents! What are your thoughts on # ChildhoodObesity, #Bariatric Surgery and #Pharmacotherapy? Let Concordia researchers know by completing this 15-minute survey today!

Eligible participants will be able to receive a 10.00\$ Amazon gift card! For additional information please contact Ms. Trisha Baluyot at [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca)

- Want to advance research on Childhood obesity in Canada? Complete this short survey on Childhood obesity, bariatric surgery and pharmacotherapy today!

You can receive a 10.00\$ Amazon electronic gift card! For additional information please contact Ms. Trisha Baluyot at [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca)

- Calling all Canadian physicians and residents! Concordia university researchers seeking participants to complete a short 15-minute survey on Childhood obesity, bariatric surgery and pharmacotherapy!

Eligible participants will be able to receive a 10.00\$ Amazon gift card! For additional information please contact Ms. Trisha Baluyot at [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca).

# Online Survey

## Information and Consent Form



### Pediatric Obesity Management in Canada:

#### Current Attitudes and Practices of Health Care Providers Towards Pharmacotherapy and Bariatric Surgery in Youth

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**Faculty Supervisor:** Dr. Angela Alberga, Assistant professor, Department of Health, Kinesiology & Applied Physiology

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Phone: (514) 848-2424 ext. 3371

**Source of funding for the study:** Fonds de recherche du Québec – Santé (FRQS)

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

#### **PURPOSE**

The purpose of the research is to explore the attitudes and practices of Canadian health care providers towards the use of pharmacotherapy and bariatric surgery as obesity treatment options in youth. This objective is part of a larger goal to investigate the possible need for continuing medical education in obesity management for future health care providers. This study aims to document the knowledge, attitudes and practices of both health care providers and medical trainees in Canada.

#### **PROCEDURES**

If you participate, you will be asked to complete a 15-minute online survey with questions regarding your knowledge about pediatric obesity management, your attitudes towards pharmacotherapy and bariatric surgery in Canadian youth, your current obesity management practices as well as demographic information.

### RISKS AND BENEFITS

You might face certain risks by participating in this research, which mainly includes the risk of fatigue.

We estimate that the questionnaire will take approximately 15-20 minutes on a computer. We recognize that this may cause fatigue, so if you need a break at any point during the session, you are invited to do so at your own leisure. Participants can also opt to choose to complete a survey they have already begun at a later time.

You do not have to answer any questions that you are not comfortable with, and you can absolutely resign from participating in the study at any point.

### CONFIDENTIALITY

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

The information gathered will be confidential and coded.

The following measures will be applied to ensure the confidentiality of the information provided by the participants:

- Names of the participants will not appear in any report
- Individual results of the participants will never be shared
- The research data will be stored for future use in a password-protected computer located in Dr. Alberga's research laboratory at Concordia University
- A backup copy of the research data will be stored on Concordia's password-protected Microsoft Outlook server
- The research will be published in scientific journals, and no participant will be identified with it

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

### CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, you must tell the researcher before October 25<sup>th</sup>, 2022.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information. While this research is not intended to benefit you personally, you will be eligible to receive a \$10.00 CAD Amazon gift for participating in this study.

You must reach the end of the questionnaire and provide your email address in order to receive the Amazon gift card. If you withdraw from the study, you will be able to keep the gift card.



[Click here to download consent form](#)



### PARTICIPANT'S DECLARATION

- 1. I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

**Choose one of the following answers**

Yes

No

## Eligibility Verification

\* Are you 18 years old or older?

👉 Choose one of the following answers

- Yes  
 No

\* Do you live in Canada?

👉 Choose one of the following answers

🚫 This question is mandatory

- Yes  
 No

\* Are you a physician, nurse practitioner or a medical resident?

👉 Choose one of the following answers

🚫 This question is mandatory

Yes, I am a medical physician

\* Do you practice or are doing your residency in any of the following disciplines?

- Adolescent Medicine
- Family Medicine
- Pediatrics

👉 Choose one of the following answers

- Yes  
 No



\* Do you meet with children and/or adolescents patients as part of your professional practice?

① Choose one of the following answers  
② This question is mandatory

- Yes
- No

🔗 Children and adolescents are considered 5-17 years old

## Knowledge

1. Have you received any training on overweight/obesity in childhood and/or adolescence before working in the field?

① Choose one of the following answers

- Yes
- No

2. What type of training did you receive on overweight/obesity in childhood and adolescence?

① Check all that apply

- Undergraduate education
- Post-medical education (Residency)
- Post-medical education (Fellowship)
- Additional school courses ( ex: Bachelor's or Master's)
- Post-graduate (ex: CME training)
- Conferences
- Other:

2. What kind of training would you have wanted to receive BEFORE WORKING with children and adolescents with obesity and severe obesity?

📌 Check all that apply

- Behavioural counselling
- Education on improving sleep
- Mental health (ex: eating disorders, body image, etc.)
- Motivation interviewing
- Nutrition counselling
- Physical activity prescription
- Screening and diagnostic training for obesity/ severe obesity
- I did not want to receive training
- Other:

3. What topic(s) would you like to have training on NOW as a practicing health professional?

📌 Check all that apply

- Behavioural counselling
- Education on improving sleep
- Education on intensive treatments options (ex: Bariatric surgery)
- Mental health (ex: eating disorders, body image, etc.)
- Motivational interviewing
- Nutrition counselling
- Physical activity prescription
- Screening and diagnostic training for obesity/ severe obesity
- I would not like to have any training
- Other:

4. Do you think there is a need for continuing medical education on childhood and adolescent obesity/severe obesity for Canadian physicians?

Choose one of the following answers

- Yes
- No

If offered, in what format you would like to receive supplemental training?

	In person	Online	Both in person and online	No opinion
Conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seminars / lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How familiar are you with the following guidelines?

	Very unfamiliar	Unfamiliar	Familiar	Very familiar	Neither unfamiliar nor familiar
The 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The 2015 Canadian Task Force on Preventive Health Care guidelines on obesity in children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The 2017 Endocrine Society Clinical Practice Guidelines on Pediatric Obesity: Assessment, Treatment and Prevention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The 2018 American Society for Metabolic and Bariatric Surgery (ASMBS) pediatric metabolic and bariatric surgery guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Attitudes towards Pharmacotherapy and Bariatric Surgery

6. What is your level of agreement with the following statements regarding obesity pharmacotherapy?

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Pharmacotherapy is an effective intervention for severe obesity in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is an effective intervention for severe obesity in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is a safe option for treating obesity/severe obesity in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is a safe option for treating obesity/severe obesity in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy is a useful treatment for obesity-related co-morbidities in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prescribe obesity medication to <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prescribe obesity medication to <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How many patients of the following age groups have you prescribed obesity medication?

	None	1 - 5	6 - 10	11 - 15	15 or more
Children: 5-12 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13-17 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Young Adults: 18-25 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adults: 26 years old and older	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. In your opinion, what should the minimum age and BMI requirement for pharmacotherapy be?

Age:

BMI:



Age in years

BMI: Body mass Index in kg/m<sup>2</sup>

9. Please indicate the reason(s) you WOULD prescribe pharmacotherapy to children and/or adolescents living with obesity/severe obesity\*

**Check all that apply**

- To improve obesity-related co-morbidities (ex: Hypertension, Dyslipidemia, Diabetes, etc.)
- For weight loss
- For weight stabilization
- I would not prescribe obesity medications to my pediatric patients
- I would not prescribe obesity medications to my adolescent patients
- Other:

**\*If you cannot prescribe, please answer the question as if you could**

10. Please indicate the reason(s) you would NOT prescribe obesity medication to children and adolescents

**Check all that apply**

- Availability of obesity medications
- Cost
- Lack of long-term data
- Lack of patient's social support
- Lacking insurance coverage
- Long and short-term efficacy
- Long-term complications
- Only treats symptoms
- Patient's immaturity in decision making
- Short-term complications
- Unrealistic expectations of obesity medication outcomes
- I am not familiar with obesity medications
- Other:

11. What is your level of agreement with the following statements?

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
Bariatric surgery is an effective intervention for severe obesity in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is an effective intervention for severe obesity in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a safe option for treating obesity in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a safe option for treating obesity in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a useful treatment for obesity-related co-morbidities in <u>children</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bariatric surgery is a useful treatment for obesity-related co-morbidities in <u>adolescents</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If eligible, I would refer <u>children</u> for bariatric surgery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If eligible, I would refer <u>adolescents</u> for bariatric surgery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. How many patients of the following age groups have you referred for bariatric surgery?

	None	1 - 5	6 - 10	11 - 15	15 or more
Children: 5-12 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13-17 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Young Adults: 18-25 years old	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adults: 26 years old and older	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. In your opinion, what should the minimum age and BMI requirement for bariatric surgery be?

Age:

BMI:



Age in years

BMI: Body Mass Index in kg/m<sup>2</sup>

14. Please indicate the reason(s) you WOULD refer children and/or adolescents for bariatric surgery\*

📌 Check all that apply

- To improve obesity-related co-morbidities (ex: Hypertension, Dyslipidemia, Diabetes, etc.)
- For weight loss
- For weight stabilization
- I would not refer my pediatric patients for bariatric surgery
- I would not refer my adolescent patients for bariatric surgery
- Other:

🔍 \*If you cannot refer, please answer the question as if you could

15. Please indicate the reason(s) you would NOT refer children and/or adolescents for bariatric surgery?

📌 Check all that apply

- Availability of adolescent bariatric surgery services
- Cost
- Lack of long-term data
- Lack of patient's social support
- Lacking insurance coverage
- Long and short-term efficacy
- Long-term complications
- Only treats symptoms
- Patient's immaturity in decision making
- Short-term complications
- Unrealistic expectations of bariatric surgery outcomes
- I am not familiar with bariatric surgery
- Other:

## Current Practices

16. Approximately what percentage of pediatric patients with obesity or severe obesity do you currently treat in your practice?

📌 Check all that apply

- 0%
- 1 - 10%
- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- More than 50%
- Other:

17. Do you have access to professional resources?

📌 Choose one of the following answers

- Yes
- No

Please indicate what other health care provider(s) and/or service(s) is/are available to you?

📌 Check all that apply

- Dietitian/ Nutritionist
- Exercise specialist (Kinesiologist)
- Mental health specialist (Ex: Art therapist, Psychotherapist, etc.)
- Nurse clinician
- Nurse practitioner
- Occupational therapist/ Physiotherapist
- Pediatric obesity management programs
- Psychiatrist
- Psychologist
- Social worker
- Other:



18. Please indicate how often you have recommended the following treatment(s) to children and adolescents living with obesity/severe obesity

	Never	Seldom	Often	Always	Not sure
Behavioural Therapy (Ex: CBT, Family-based behavioural therapy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with a specialist (Ex: Endocrinologist, Dietitian, Psychologist, Exercise therapist, Physiotherapist, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multidisciplinary treatment programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physician/resident directed nutrition counselling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physician/resident directed physical activity prescription	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacotherapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surgery (Bariatric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18 b) If you have never referred to any of these professional resources, please indicate the reasons why

**📌 Check all that apply**

- I am not aware of this/these health professional(s) scope of practice
- None available in my area
- This/these health professional(s)'s service(s) were not needed
- Other:

19. How often do you currently recommend the following specialist(s) to children and adolescents living with obesity or severe obesity?

	Never	Seldom	Often	Always	Not sure
Cardiologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dietitian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endocrinologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exercise therapist / Kinesiologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gastroenterologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gynecologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nephrologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Occupational therapist / Physiotherapist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychiatrist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respirologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surgeon (ex: Orthopaedic, Bariatric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Please rate your level of agreement with the following statements

	Strongly Disagree	Disagree	Agree	Strongly Agree	No opinion
I am generally successful in treating obesity/severe obesity in children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am generally successful in treating obesity/severe obesity in adolescents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident when discussing weight with my patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in providing quality care to patients with obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am well trained to provide obesity management counselling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treating pediatric patients with obesity/severe obesity is professionally rewarding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. How would you define pediatric obesity treatment success?

📌 Check all that apply

- BMI reduction
- Improved mental health (ex: lack of depression, lower anxiety, etc.)
- Improved relationship with food
- Improved self-esteem
- Improved body image
- Integration of healthy lifestyle habits (ex: increased physical activity, healthier food choices, etc.)
- Remission of obesity-related co-morbidities (ex: Cardiovascular disease, sleep apnea, etc.)
- Sustained weight loss
- Weight stabilization
- Other:

## Demographics

22. What is your gender identity?

📌 Choose one of the following answers

- Man
- Woman
- Non-binary
- Two-Spirit
- Not listed
- Prefer not to disclose
- Other:

23. What is your age?

📌 Only numbers may be entered in this field.

🔗 Age in years

24. What is your current position?

Choose one of the following answers

- Cardiologist
- Endocrinologist
- Family Physician
- Pediatrician
- Psychiatrist
- Nurse Practitioner
- Resident
- Registered Nurse
- Surgeon
- Other:

25. How many years have you been in practice?

Choose one of the following answers

- <1 year
- 1 - 5 years
- 6 - 10 years
- 11 - 20 years
- 21 - 30 years
- More than 30 years

26. What is/are your usual workplace setting(s)?

	In person	Virtually	In person and virtually	Not applicable
Academic (ex: university, research unit)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative, Corporate office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community clinic (ex: CLSC in Quebec)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private clinic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. What is your province or territory of residence?

📌 Choose one of the following answers

Please choose... ▾

28. What is/are your province(s) or territories of practice?

📌 Check all that apply

- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland and Labrador
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Quebec
- Saskatchewan
- Yukon

29. Which recognized medical associations/groups are you a member of?

📌 Check all that apply

- Canadian Association of Bariatric Physicians and Surgeons
- Canadian Medical Association
- Canadian Pediatric Endocrine Group
- Canadian Pediatrician Society
- Canadian Psychiatric Association
- College of Family Physicians of Canada
- Obesity Canada
- Resident Doctors of Canada
- Royal College of Physicians and Surgeons of Canada
- Other:

## Gift Card



30. Would you like to receive a CA 10.00\$ Amazon electronic gift card?

**\*Please note that receiving a gift card is optional and that you may remain anonymous upon completion of this survey. However, refusal to provide contact information will result in ineligibility to receive a gift card.**

**Choose one of the following answers**

Yes

No

To receive an Amazon eGift Card, please provide your email address in a NEW browser tab on our separate Google form AFTER clicking SUBMIT:

<https://forms.gle/gbWm4BaabRRRYGoK7>

## Gestion de l'obésité pédiatrique au Canada: Attitudes et pratiques actuelles à l'égard de la pharmacothérapie et de la chirurgie bariatrique chez les jeunes

Ceci est un sondage en ligne de **15 minutes** avec des questions concernant les connaissances sur la gestion de l'obésité pédiatrique, les attitudes envers la pharmacothérapie et la chirurgie bariatrique chez les jeunes canadiens, les pratiques actuelles de gestion de l'obésité ainsi que des informations démographiques. En participant à cette étude, vous aurez la possibilité de recevoir **une carte cadeau Amazon de 10 \$**.

**Nous vous invitons à participer à ce projet de recherche. Toutefois, avant d'accepter de participer et de signer ce formulaire d'information et de consentement, veuillez prendre le temps de lire, de comprendre et d'examiner attentivement les informations suivantes.**

Il y a 44 questions dans ce questionnaire

Formulaire d'information et de consentement

[]



### **Gestion de l'obésité pédiatrique au Canada :** **Attitudes et pratiques actuelles des fournisseurs de soins de** **santé à l'égard de la pharmacothérapie et** **de la chirurgie bariatrique chez les jeunes**

**Chercheur :** Trisha Chloé Baluyot, Étudiante à la maîtrise dans le département de santé, kinésiologie et physiologie appliquée

**Coordonnées du chercheur :** [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca)  
(mailto:t\_baluyo@live.concordia.ca)

**Professeur-superviseur :** Dr. Angela Alberga, Professeur adjoint, Département de santé, kinésiologie et physiologie appliquée

**Coordonnées du professeur-superviseur :**

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Bureau: SP-165.31

Adresse courriel: [angela.alberga@concordia.ca](mailto:angela.alberga@concordia.ca)  
(<mailto:angela.alberga@concordia.ca>)

Téléphone: (514) 848-2424 ext. 3371

**Sources de financement de l'étude :** Fonds de recherche du Québec – Santé (FRQS)

**Nous vous invitons à prendre part au projet de recherche susmentionné. Le présent document vous renseigne sur les conditions de participation à l'étude; veuillez le lire attentivement. Au besoin, n'hésitez pas à communiquer avec le chercheur pour obtenir des précisions.**

**BUT DE LA RECHERCHE**

Cette étude a pour but d'explorer les attitudes et les pratiques des fournisseurs de soins de santé canadiens à l'égard du recours à la pharmacothérapie et la chirurgie bariatrique comme options de traitement de l'obésité chez les jeunes. Cet objectif fait partie d'un objectif plus large visant à étudier le besoin éventuel de formation médicale continue en matière de gestion de l'obésité. Cette étude vise à documenter les connaissances, les attitudes et les pratiques des fournisseurs de soins de santé et des résidents en médecine au Canada.

**PROCÉDURES DE RECHERCHE**

Si vous participez à l'étude, vous serez invité à répondre à un sondage en ligne de 15 minutes comportant des questions concernant vos connaissances sur la gestion de l'obésité pédiatrique, vos attitudes à l'égard de la pharmacothérapie et de la chirurgie bariatrique chez les jeunes Canadiens, vos pratiques actuelles de gestion de l'obésité ainsi que des informations démographiques.

**RISQUES ET AVANTAGES**

En participant à cette étude, vous pourriez être exposé à certains risques, y compris principalement: le risque de fatigue.



Nous estimons que le questionnaire prendra environ 15 à 20 minutes sur un écran d'ordinateur ou de téléphone. Nous sommes conscients que cela peut entraîner de la fatigue. Par conséquent, si vous avez besoin d'une pause à un moment quelconque de la session, vous êtes invité à le faire à votre convenance. Les participants peuvent également choisir de terminer le sondage qu'ils ont déjà commencé à un moment ultérieur. Il vous sera demandé de fournir une adresse électronique et un mot de passe afin de pouvoir compléter l'enquête plus tard.

Vous n'êtes pas obligé de répondre aux questions qui vous mettent mal à l'aise, et vous pouvez absolument renoncer à participer à l'étude à tout moment.

### **CONFIDENTIALITÉ**

Excepté les situations précisées aux présentes, seules les personnes qui mènent cette recherche auront accès aux renseignements fournis. Nous n'utiliserons l'information qu'aux fins de l'étude décrite dans ce document.

Les informations recueillies seront confidentielles et codées.

Les mesures suivantes seront appliquées pour assurer la confidentialité des informations fournies par les participants :

- Les noms des participants n'apparaîtront dans aucun rapport
- Les résultats individuels des participants ne seront jamais partagés
- Les données de recherche seront conservées pour une éventuelle utilisation ultérieure dans un ordinateur protégé par un mot de passe situé dans le laboratoire de recherche du Dr Alberga à l'Université Concordia
- Une copie des données de recherche sera sauvegardée sur le serveur Microsoft Outlook de Concordia, protégé par un mot de passe
- La recherche sera publiée dans des revues scientifiques, et aucun participant ne sera identifié à cette recherche

Nous avons l'intention de publier les résultats de cette étude. Cependant, on ne pourra pas vous identifier dans la publication.

Nous détruirons les données cinq ans après la fin de l'étude.

### **CONDITIONS DE PARTICIPATION**

Vous pouvez refuser de participer à la recherche ou vous en retirer à n'importe quel moment. Vous pouvez aussi demander que l'information que vous avez fournie ne soit pas utilisée; le cas échéant, votre choix sera respecté. Si vous prenez une décision en ce sens, vous devrez en avvertir le chercheur avant le 25 octobre 2022.

Nous vous informerons de tout nouvel élément d'information susceptible d'affecter votre volonté à poursuivre votre participation à l'étude.

Il n'y a aucune conséquence négative à ne pas participer, à s'arrêter en cours de route ou à nous demander de ne pas utiliser vos informations. Bien que cette étude ne soit pas destinée à vous apporter un bénéfice personnel, vous pourrez recevoir un cadeau Amazon de 10 dollars canadiens pour avoir participé à cette étude.

Vous devez atteindre la fin du questionnaire et fournir votre adresse électronique afin de recevoir la carte cadeau Amazon. Si vous vous retirez de l'étude, vous pourrez conserver la carte cadeau.

Cliquez ici

(/limesurvey/upload/surveys/579269/files/FR\_Formulaire%20Consentement\_20220831.pdf) pour télécharger le formulaire de consentement

### **DÉCLARATION DU PARTICIPANT**

1. J'ai lu et compris ce formulaire. J'ai eu la possibilité de poser des questions et j'ai obtenu des réponses à toutes mes questions. J'accepte de participer à cette recherche dans les conditions décrites.

\*

Veuillez sélectionner une réponse ci-dessous

Veuillez sélectionner une seule des propositions suivantes :

- Oui  
 Non

\*

**Répondre à cette question seulement si les conditions suivantes sont réunies :**

La réponse était 'OUI' à la question '2 [IC1]' (DÉCLARATION DU PARTICIPANT 1. J'ai lu et compris ce formulaire. J'ai eu la possibilité de poser des questions et j'ai obtenu des réponses à toutes mes questions. J'accepte de participer à cette recherche dans les conditions décrites. )

2. NOM (Prénom et Nom)	<input type="text"/>
3. SIGNATURE (Initiales)	<input type="text"/>
4. Date (mm/jj/aaaa)	<input type="text"/>

## Vérification d'éligibilité

Avez-vous 18 ans ou plus ? \*

**Répondre à cette question seulement si les conditions suivantes sont réunies :**

La réponse était 'Oui' à la question '2 [IC1]' (DÉCLARATION DU PARTICIPANT 1. J'ai lu et compris ce formulaire. J'ai eu la possibilité de poser des questions et j'ai obtenu des réponses à toutes mes questions. J'accepte de participer à cette recherche dans les conditions décrites. )

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

Habitez-vous au Canada ? \*

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

Êtes-vous un médecin ou un médecin résident ? \*

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui, je suis un médecin
- Oui, je suis un médecin résident
- Oui, je suis un(e) infirmier(ère) praticien(enne)
- Non

Quelle est votre année de résidence? \*

**Répondre à cette question seulement si les conditions suivantes sont réunies :**

La réponse était 'Oui, je suis un médecin résident ' à la question '6 [E3]' (Êtes-vous un médecin ou un médecin résident ? )

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Année 1
- Année 2
- Années 3 et plus

Pratiquez-vous ou faites-vous votre résidence dans l'une des disciplines suivantes ?

- Médecine des adolescents

- Médecine de la famille
- Pédiatrie

\*

**Répondre à cette question seulement si les conditions suivantes sont réunies :**

La réponse était 'Oui, je suis un médecin' ou 'Oui, je suis un médecin résident ' à la question '6 [E3]' (Êtes-vous un médecin ou un médecin résident ? )

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

Rencontrez-vous des enfants et/ou des adolescents dans le cadre de votre pratique professionnelle ? \*

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

Les enfants et les adolescents sont considérés comme étant âgés de 5 à 17 ans

## Connaissances

[]1. Avez-vous reçu une formation sur le surpoids et l'obésité chez les enfants et/ou les adolescents avant de travailler dans ce domaine ?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

[]2. Quel type de formation avez-vous reçu sur le surpoids/obésité chez l'enfant et l'adolescent ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- Enseignement de premier cycle
- Formations continues en médecine (résidence)
- Formations continues en médecine (formation postdoctorale)
- Cours d'école supplémentaires ( ex : cours aux études supérieures)
- Formations continues en médecine (ex: formation CME)
- Conférences
- Autre:

[]2. Quel type de formation auriez-vous souhaité recevoir AVANT DE TRAVAILLER avec des enfants et des adolescents atteints d'obésité et d'obésité sévère ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- Conseil comportemental
- Éducation sur l'amélioration du sommeil
- L'entretien motivationnel
- Santé mentale (ex : troubles alimentaires, image corporelle, etc.)
- Conseil en nutrition
- Prescription d'activité physique
- Dépistage et formation au diagnostic de l'obésité/obésité sévère
- Je ne voulais pas recevoir de formation
- Autre:

[]3. Sur quel(s) sujet(s) aimeriez-vous avoir une formation MAINTENANT en tant que professionnel de la santé ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- Conseil comportemental
- Éducation sur l'amélioration du sommeil
- Éducation sur les options de traitements intensifs (Ex : chirurgie bariatrique).
- Santé mentale (ex : troubles alimentaires, image corporelle, etc.)
- L'entretien motivationnel
- Conseil en nutrition
- Prescription d'activité physique
- Dépistage et formation au diagnostic de l'obésité/obésité sévère
- Je ne souhaite pas avoir de formation.
- Autre:

[ ] 4. Pensez-vous qu'il y a un besoin de formation médicale continue sur l'obésité/obésité sévère de l'enfant et de l'adolescent pour les médecins canadiens ?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

[ ] Si elle est proposée, dans quel format souhaitez-vous recevoir la formation complémentaire ?

Choisissez la réponse appropriée pour chaque élément :

	En personne	En ligne	En personne et en ligne	Aucune opinion
Conférences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Séminaires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ateliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ] 5. Dans quelle mesure êtes-vous familier avec les directives suivantes ?

Choisissez la réponse appropriée pour chaque élément :

	Très peu familier	Peu familier	Familier	Très familier	Ni familier, ni inconnu
Le guide canadien de pratique clinique 2006 sur la prise en charge et la prévention de l'obésité chez les adultes et les enfants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Très peu familier	Peu familier	Familier	Très familier	Ni familier, ni inconnu
Les directrices 2015 du Groupe de travail canadien sur les soins de santé préventifs sur l'obésité chez les enfants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Les directives de pratique clinique 2017 de l'Endocrine Society sur l'obésité pédiatrique : Évaluation, traitement et prévention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Les lignes directrices 2018 de l'American Society for Metabolic and Bariatric Surgery (ASMBS) en matière de chirurgie métabolique et bariatrique pédiatrique.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Attitudes à l'égard de la chirurgie bariatrique et de la pharmacothérapie

[ ]6. Quel est votre degré d'accord avec les affirmations suivantes concernant la pharmacothérapie de l'obésité ?

Choisissez la réponse appropriée pour chaque élément :

	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
La pharmacothérapie est une intervention efficace pour l'obésité sévère chez les <b>enfants</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
La pharmacothérapie est une intervention efficace pour l'obésité sévère chez les <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
La pharmacothérapie est une option sécuritaire pour traiter l'obésité/obésité sévère chez les <b>enfants</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
La pharmacothérapie est une option sécuritaire pour traiter l'obésité/obésité sévère chez les <b>adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
La pharmacothérapie est un traitement utile pour les comorbidités liées à l'obésité chez <b><u>les enfants</u></b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
La pharmacothérapie est un traitement utile pour les comorbidités liées à l'obésité chez <b><u>les adolescents</u></b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Je prescrirais des médicaments contre l'obésité aux <b><u>enfants</u></b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Je prescrirais des médicaments contre l'obésité aux <b><u>adolescents</u></b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pharmacothérapie = Médicaments contre l'obésité (ex : Saxenda, Contrave, etc.)

L'enfance est définie de 5-12 ans

L'adolescence est définie à partir de 13-18 ans

[ ]7. Combien de patients des groupes d'âge suivants vous avez prescrit des médicaments pour l'obésité?

Choisissez la réponse appropriée pour chaque élément :

	Aucun	1 - 5	6 - 10	11 - 15	15 ou plus
Enfants: 5 à 12 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13 à 17 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeunes adultes: 18 à 25 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adultes: 26 ans et plus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ]8. Selon vous, quel devrait être l'âge minimum et l'IMC requis pour la

pharmacothérapie?

L'âge:

IMC:

L'âge en années

IMC: Indice de masse corporelle en kg/m<sup>2</sup>

[ ] 9. Veuillez indiquer la ou les raisons pour lesquelles vous prescririez des médicaments contre l'obésité aux enfants et/ou aux adolescents souffrant d'obésité ou d'obésité sévère\*

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Pour améliorer des comorbidités liées à l'obésité (ex : hypertension, dyslipidémie, diabète, etc.)
- Pour la perte de poids
- Pour la stabilisation du poids
- Je ne prescrirais pas de médicaments pour l'obésité à mes patients pédiatriques
- Je ne prescrirais pas de médicaments pour l'obésité à mes patients adolescents
- Autre:

**\*Si vous ne pouvez pas prescrire, veuillez répondre à la question comme si vous le pouviez.**

[ ] 10. Veuillez indiquer la ou les raisons pour lesquelles vous ne prescririez PAS de médicaments contre l'obésité aux enfants et aux adolescents

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Disponibilité des médicaments pour l'obésité
- Coût
- Le manque de données à long terme
- Le manque de soutien social du patient
- Manque d'assurance
- Efficacité à court et long terme
- Complications à long terme
- Traite uniquement les symptômes
- Immaturité du patient dans la prise de décision
- Complications à court terme
- Attentes irréalistes quant aux résultats des médicaments pour l'obésité
- Je ne suis pas familier avec les médicaments pour l'obésité
- Autre:

[ ] 11. Quel est votre degré d'accord avec les affirmations suivantes ?

Choisissez la réponse appropriée pour chaque élément :

	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
La chirurgie bariatrique est une intervention efficace pour l'obésité sévère chez <b>les enfants</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
La chirurgie bariatrique est une intervention efficace pour l'obésité sévère chez <b>les adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
La chirurgie bariatrique est une option sécuritaire pour traiter l'obésité chez <b>les enfants</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
La chirurgie bariatrique est une option sécuritaire pour traiter l'obésité chez <b>les adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
La chirurgie bariatrique est un traitement utile pour les comorbidités liées à l'obésité chez <b>les enfants</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
La chirurgie bariatrique est un traitement utile pour les comorbidités liées à l'obésité chez <b>les adolescents</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
S'ils sont éligibles, je référerai des <b>enfants</b> pour une chirurgie bariatrique	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
S'ils sont éligibles, je référerai des <b>adolescents</b> pour une chirurgie bariatrique	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ] 12. Combien de patients des groupes d'âge suivants avez-vous référés pour une chirurgie bariatrique ?

Choisissez la réponse appropriée pour chaque élément :

	Aucun	1 - 5	6 - 10	11 - 15	15 ou plus
Enfants: 5 à 12 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adolescents: 13 à 17 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeunes adultes: 18 à 25 ans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adultes: 26 ans et plus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ] 13. À votre avis, quel devrait être l'âge minimum et l'IMC requis pour la chirurgie bariatrique ?

L'âge:

IMC:

L'âge en années

IMC: Indice de mass corporelle en kg/m<sup>2</sup>

[ ] 14. Veuillez indiquer la ou les raisons pour lesquelles vous référeriez des enfants et/ou des adolescents pour une chirurgie bariatrique\*

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Pour améliorer des comorbidités liées à l'obésité (ex : hypertension, dyslipidémie, diabète, etc.)
- Pour la perte de poids

- Pour la stabilisation du poids
- Je ne recommanderais pas la chirurgie bariatrique à mes patients pédiatriques
- Je ne recommanderais pas la chirurgie bariatrique à mes patients adolescents
- Autre:

**\*Si vous ne pouvez pas référer, veuillez répondre à la question comme si vous le pouviez.**

[ ] 15. Veuillez indiquer la ou les raisons pour lesquelles vous ne référeriez PAS d'enfants et/ou d'adolescents pour une chirurgie bariatrique ?

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Disponibilité de services de chirurgie bariatrique pour adolescents
- Coût
- Le manque de données à long terme
- Le manque de soutien social du patient
- Manque d'assurance.
- Efficacité à court et long terme
- Complications à long terme
- Traite uniquement les symptômes
- Immaturité du patient dans la prise de décision
- Complications à court terme
- Attentes irréalistes quant aux résultats de la chirurgie bariatrique
- Je ne suis pas familier avec la chirurgie bariatrique
- Autre:

## Pratiques courantes

Includes a series of questions regarding your current clinical practices, your level of self-confidence as well as your education and training background.

[] 16. Quel pourcentage approximatif de patients pédiatriques atteints d'obésité ou d'obésité sévère traitez-vous actuellement dans votre cabinet ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- 0%
- 1 - 10%
- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- Plus que 50%
- Autre:

[] 17. Avez-vous accès à des ressources professionnelles?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Oui
- Non

[] Veuillez indiquer quel(s) autre(s) professionnel(s) de la santé et/ou service(s) est/sont à votre disposition ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- Diététicien(ne)/Nutritionniste
- Spécialiste de l'exercice (kinésologue)
- Spécialiste de la santé mentale (Ex : thérapeute en art, psychothérapeute, etc.)
- Infirmier(ère) clinicien(ne)
- Infirmier(ère) praticien(ne)
- Ergothérapeute/ Physiothérapeute
- Programmes de gestion de l'obésité pédiatrique
- Psychiatre
- Psychologue
- Travailleur social

Autre:

18. Veuillez indiquer à quelle fréquence vous avez recommandé le(s) traitement(s) suivant(s) aux enfants et adolescents vivant avec l'obésité/obésité sévère

Choisissez la réponse appropriée pour chaque élément :

	Jamais	Rarement	Souvent	Toujours	Je ne suis pas certain(e)
Thérapie comportementale (Ex : TCC, thérapie comportementale familiale)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation d'un spécialiste (Ex : endocrinologue, diététicien, psychologue, thérapeute de l'exercice, physiothérapeute, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Programmes de traitement multidisciplinaires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Conseil en nutrition dirigé par un médecin/résident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Prescription d'activité physique par le médecin/résident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacothérapie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chirurgie (bariatrique)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18 b) Si vous n'avez jamais référé à l'une de ces ressources professionnelles, veuillez en indiquer les raisons

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Je ne connais pas le champ de pratique de ce(s) professionnel(s) de la santé
- Non disponible dans ma région
- Ce(s) service(s) de ce(s) professionnel(s) de la santé n'étaient pas requis

Autre:

[ ] 19. A quelle fréquence recommandez-vous actuellement le(s) spécialiste(s) suivant(s) aux enfants et/ou adolescents vivant avec l'obésité ou l'obésité sévère ?

Choisissez la réponse appropriée pour chaque élément :

	Jamais	Rarement	Souvent	Tojours	Je ne suis pas certain(e)
Cardiologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diététicien(ne)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endocrinologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thérapeute de l'exercice / Kinésologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Gastroentérologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gynécologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Néphrologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ergothérapeute / Physiothérapeute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychiatre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respirologue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chirurgien (ex : orthopédique, bariatrique)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

[ ] 20. Veuillez indiquer votre degré d'accord avec les énoncés suivants

Choisissez la réponse appropriée pour chaque élément :

	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
Je réussis généralement à traiter l'obésité/l'obésité sévère chez les enfants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Je réussis généralement à traiter l'obésité/l'obésité sévère chez les adolescents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Fortement en désaccord	En désaccord	En accord	Fortement en accord	Sans opinion
J'ai confiance en moi lorsque je discute du sujet de poids avec mes patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
J'ai confiance en moi pour fournir des soins de qualité aux patients vivant avec l'obésité	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Je suis bien formé pour donner des conseils sur la gestion de l'obésité	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Le traitement des patients pédiatriques vivant avec l'obésité/obésité sévère est professionnellement gratifiant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]21. Comment définiriez-vous le succès du traitement de l'obésité pédiatrique ?

Cochez la ou les réponses

Veuillez choisir toutes les réponses qui conviennent :

- Réduction de l'IMC
- Une meilleure santé mentale (ex : absence de dépression, baisse de l'anxiété, etc.)
- Relation améliorée avec la nourriture
- Une meilleure estime de soi
- Image corporelle améliorée
- Intégration d'habitudes de vie saines (ex : augmentation de l'activité physique, choix d'aliments plus sains, etc.)
- Remission des comorbidités liées à l'obésité (ex : maladies cardiovasculaires, apnée du sommeil, etc)
- Perte de poids soutenue
- Stabilisation du poids

## Démographie

[]22. Quelle est votre identité de genre ?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Homme
- Femme
- Non-binaire
- Bispiritualité
- Non mentionné dans la liste
- Préfère ne pas divulguer
- Autre

[]23. Quel est votre âge ?

Seuls des nombres peuvent être entrés dans ce champ.

Veillez écrire votre réponse ici :

âge en années

[]24. Quel est votre poste actuel ?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- Cardiologue
- Endocrinologue
- Médecin de famille
- Pédiatre
- Psychiatre
- Infirmier(e) praticien(ne) spécialisé (e)
- Médecin résident
- Infirmier(e)
- Chirurgien
- Autre

[]25. Depuis combien d'années pratiquez-vous ?

Veillez sélectionner une réponse ci-dessous

Veillez sélectionner une seule des propositions suivantes :

- < 1 an
- 1 à 5 ans
- 6 à 10 ans
- 11 à 20 ans
- 21 à 30 ans
- Depuis plus de 30 ans

[ ] 26. Quel(s) est (sont) votre (vos) cadre(s) de travail habituel(s) ?

Choisissez la réponse appropriée pour chaque élément :

	En personne	Virtuellement	En personne et virtuellement	Ne s'applique pas
Académique (ex : université, unité de recherche).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administratif, bureau de l'entreprise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Clinique de quartier (ex : CLSC au Québec)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Hôpital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinique privé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[ ] 27. Quelle est votre province ou territoire de résidence ?

Veuillez sélectionner une réponse ci-dessous

Veuillez sélectionner une seule des propositions suivantes :

- l'Alberta
- la Colombie-Britannique
- le Manitoba
- le Nouveau-Brunswick
- la Terre-Neuve-et-Labrador
- les Territoires du Nord-Ouest
- la Nouvelle-Écosse
- le Nunavut
- l'Ontario
- l'île du Prince-Édouard
- le Québec
- la Saskatchewan
- le Yukon

[ ] 28. Quelle(s) est (sont) votre (vos) province(s) ou territoire(s) de pratique ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- l'Alberta
- la Colombie-Britannique
- le Manitoba
- le Nouveau-Brunswick
- la Terre-Neuve-et-Labrador
- les Territoires du Nord-Ouest
- la Nouvelle-Écosse
- le Nunavut
- l'Ontario
- l'île du Prince-Édouard
- le Québec
- la Saskatchewan
- le Yukon

[ ] 29. De quelles associations/groupes médicaux reconnus êtes-vous membre ?

Cochez la ou les réponses

Veillez choisir toutes les réponses qui conviennent :

- L' Association canadienne des médecin et chirurgiens bariatriques
- l' Association médicale canadienne
- Groupe canadien d'endocrinologie pédiatrique
- Société canadienne de pédiatrie
- l'Association des psychiatres du Canada
- Le Collège des médecins de famille du Canada
- l'Obésité Canada
- Médecins résidents du Canada
- Le Collège royal des médecins et chirurgiens du Canada
- Autre:

## Carte cadeau

[]

30. Aimerez-vous recevoir une carte-cadeau électronique Amazon de 10,00 \$ CA ?

**\*Veuillez noter que la réception d'une carte-cadeau est optionnelle et que vous pouvez rester anonyme après avoir répondu à cette enquête. Toutefois, si vous refusez de fournir vos coordonnées, vous ne pourrez pas recevoir de carte-cadeau.**

\*

Veuillez sélectionner une réponse ci-dessous

Veuillez sélectionner une seule des propositions suivantes :

- Oui  
 Non

[]

Pour recevoir une carte cadeau Amazon, veuillez indiquer votre adresse électronique dans un NOUVEL onglet du navigateur sur notre formulaire Google distinct APRÈS avoir cliqué sur SOUMETTRE :

<https://forms.gle/gbWm4BaabRRRYGoK7>  
(<https://forms.gle/gbWm4BaabRRRYGoK7>)

Répondre à cette question seulement si les conditions suivantes sont réunies :

La réponse était 'Oui' à la question '43 [G1]' (30. Aimerez-vous recevoir une carte-cadeau électronique Amazon de 10,00 \$ CA ?

\*Veuillez noter que la réception d'une carte-cadeau est optionnelle et que vous pouvez rester anonyme après avoir répondu à cette enquête. Toutefois, si vous refusez de fournir vos coordonnées, vous ne pourrez pas recevoir de carte-cadeau. )

Veuillez écrire votre(vos) réponse(s) ici :

Merci d'avoir pris le temps de participer à notre étude. Nous accordons une grande importance aux informations que vous nous avez fournies. Les résultats de cette étude aideront les chercheurs à mieux comprendre les connaissances et les attitudes des médecins et des fournisseurs de soins de santé canadiens concernant la pharmacothérapie et la chirurgie bariatrique chez les jeunes.

Si vous avez d'autres questions, n'hésitez pas à nous contacter à [t\\_baluyo@live.concordia.ca](mailto:t_baluyo@live.concordia.ca).

27/09/2022 – 13:05

Envoyer votre questionnaire.

Merci d'avoir complété ce questionnaire.

**Concordia University Ethics Certification**



**CERTIFICATION OF ETHICAL ACCEPTABILITY  
FOR RESEARCH INVOLVING HUMAN SUBJECTS**

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Name of Applicant: Ms. Trisha Chloé Baluyot

Department: External\External

Agency: N/A

Title of Project: Pediatric Obesity Management in Canada: Current  
Attitudes and Practices of Health Care Providers  
Towards Pharmacotherapy and Bariatric Surgery in Youth

Certification Number: 30015408

Valid From: September 01, 2022 To: August 31, 2023

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.

A handwritten signature in black ink, appearing to be "D. Waddington", followed by a horizontal line.

---

Dr. David Waddington, Chair, University Human Research Ethics Committee

# University of Alberta Ethics Certification



Edmonton, AB T6G 2C8  
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[www.nactrc.ca](http://www.nactrc.ca)

## EDMONTON ZONE

### ADMINISTRATIVE APPROVAL FOR CLINICAL RESEARCH

All clinical research being conducted within the Edmonton Zone requires operational approval to access AHS areas and ethics approval by a recognized Alberta Research Ethics Board.

Other related documents may be required depending on the scope of the study.  
Research in the Edmonton Zone cannot begin until Administrative Approval has been issued.

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#### PROJECT: PRJ38946

**Protocol Title:** Pediatric Obesity Management in Canada: Current Attitudes and Practices of Health Care Providers Towards Pharmacotherapy and Bariatric Surgery in Youth

**Principal Investigator:**

Geoff Ball

Medicine & Dentistry

Pediatrics

**Funding Agency:**

No Funding Agency

**Funding Type:**

Investigator-Initiated/No Funding

**Overhead Rate:**

0%

**Related Documents:**

**ID#**

**Status**

**Effective**

Research Ethics:

Pro00117356

Approved

Mar 15, 2022

HSA Data Disclosure Agreement:

RR10660

Not Required

Aug 18, 2022

**AHS Operational Approval:** The following AHS areas have agreed to support your research. To gain access, you must have Edmonton Zone Administrative Approval.

61679:

Stollery - Pediatric Centre for Weight and Health



#### Edmonton Zone Administrative Approval

**Approved:** Aug 18, 2022

**Approved By:** Simon Wong

Director of Operations, NACTRC

Figure 6: Barriers to physician adherence to practice guidelines in relation to behavior change (Cabana et al., 1999)

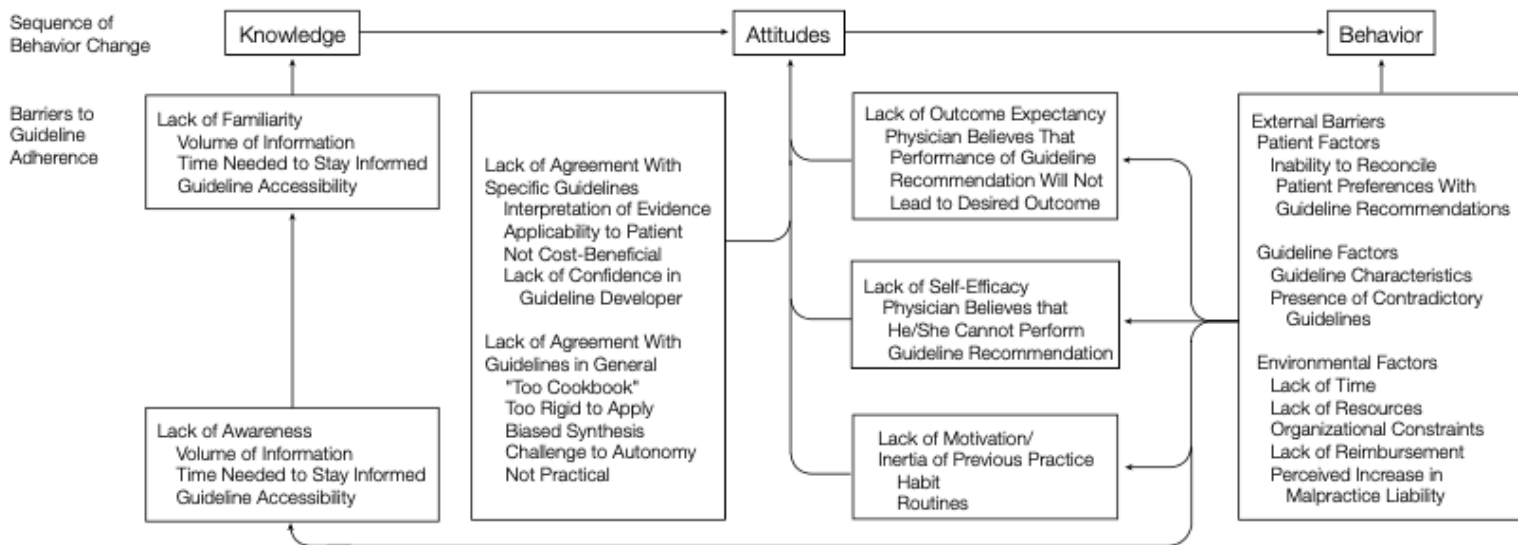




Figure 7: Conceptual Framework of knowledge, attitude, and practice as determinants of screening for intimate partner violence (Roelens et al., 2006)

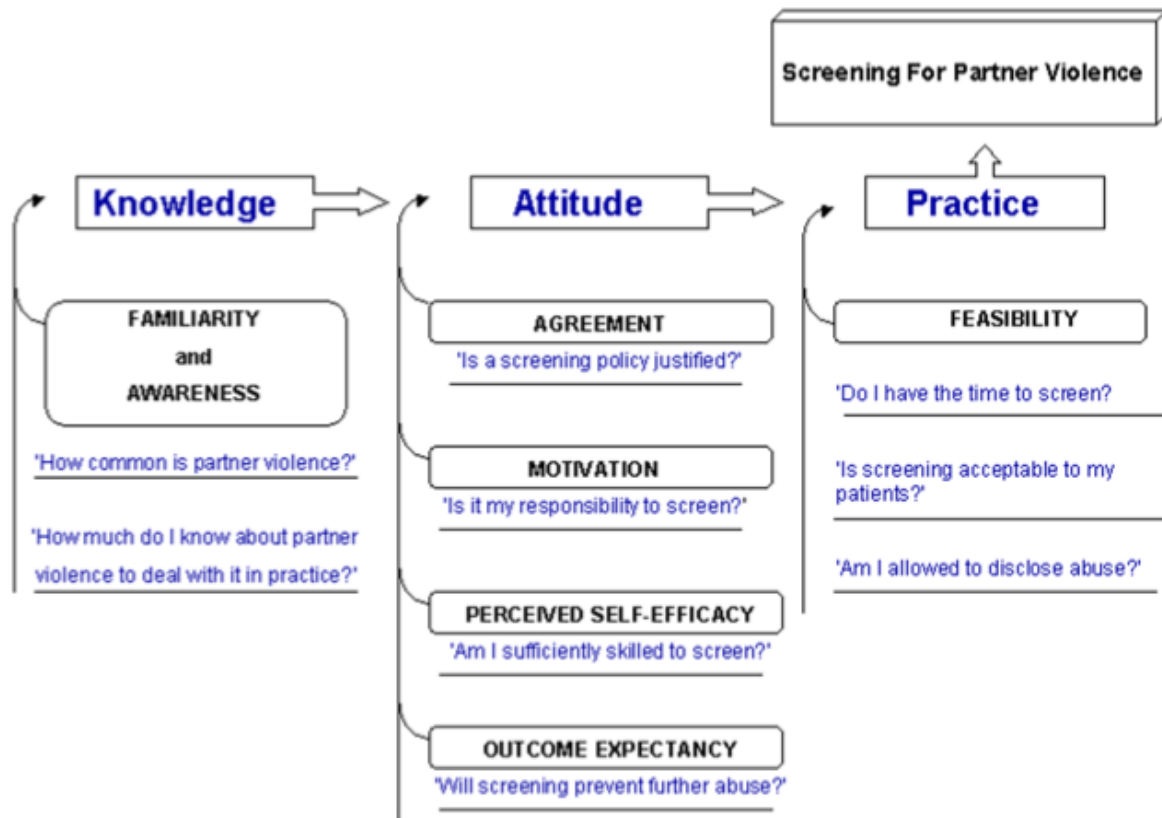


Figure 8: Modified framework for my MSc thesis project

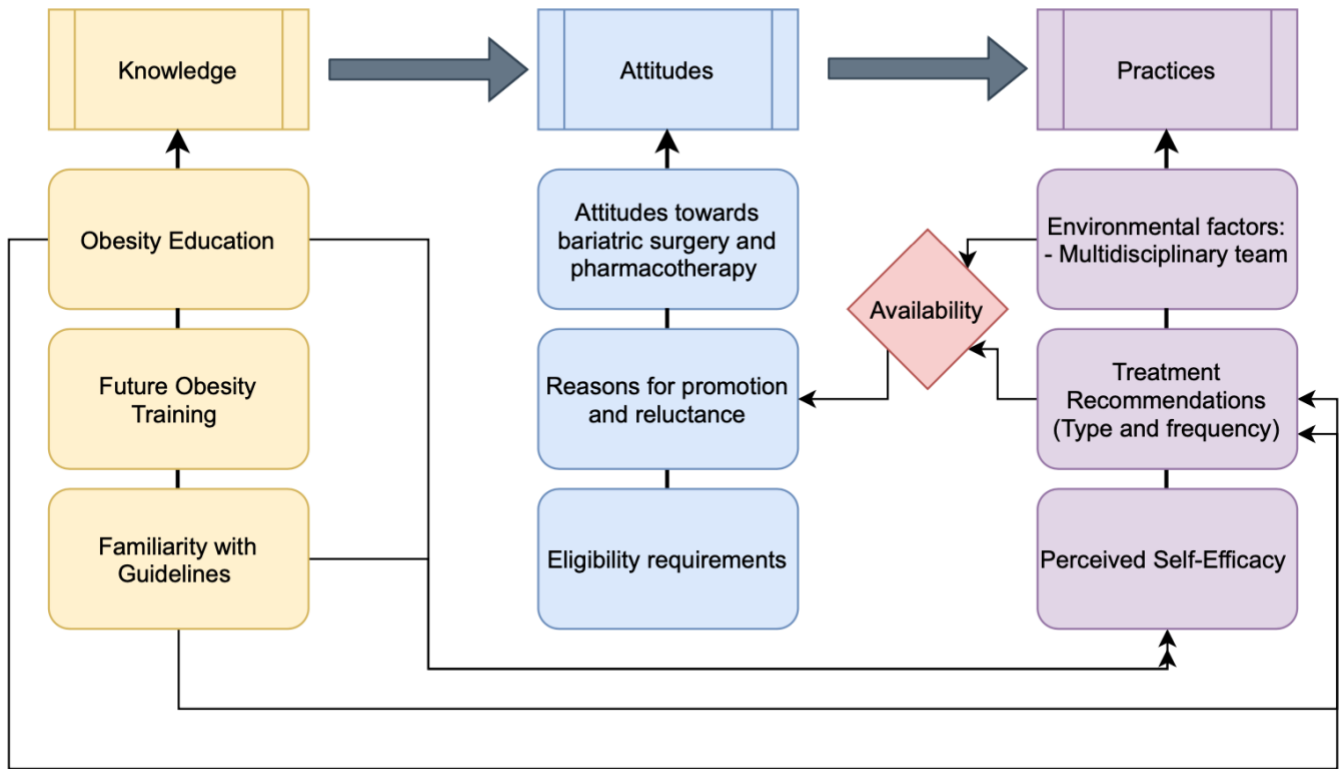


Figure 9: Considerations for the development and testing of a questionnaire (Burns et al, 2008)

<p><b>Appendix 6: Considerations for the development and testing of a questionnaire</b></p> <p><b>Item generation</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Conduct a literature review, use in-depth interviews or focus groups to generate items</li><li><input type="checkbox"/> Sample for new questions until no new items are generated (redundancy)</li><li><input type="checkbox"/> Group items with similar themes into domains or categories</li><li><input type="checkbox"/> Generate a table of specifications</li></ul> <p><b>Item reduction</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Target <math>\leq 25</math> total items to answer your research question</li><li><input type="checkbox"/> Use focus groups (with content experts) or external experts</li><li><input type="checkbox"/> Consider statistical analyses (factor analysis) for longer and multidimensional surveys following pilot testing</li></ul> <p><b>Questionnaire formatting</b></p> <p><i>Stem format</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Target total of <math>\leq 20</math> words for each question stem</li><li><input type="checkbox"/> Use clear, succinct, unbiased, appropriate and nonjudgmental language suitable for the education level of respondents</li></ul> <p><i>Response formats</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Choose response format (binary, ordinal, nominal, interval, ratio) based on your stem format; this will determine the type of analysis</li><li><input type="checkbox"/> Consider indeterminate response options ("uncertain," "don't know," "no opinion") to acknowledge uncertainty or indecisiveness of respondent</li><li><input type="checkbox"/> Consider "other" response options for respondents to allow for unanticipated responses, identify new issues or elaborate upon responses to closed questions</li></ul> <p><b>Questionnaire composition</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Include a cover letter</li><li><input type="checkbox"/> Highlight the rationale for the study and how respondents were chosen</li><li><input type="checkbox"/> Consider placing the demographic questions at the end of the questionnaire if the questions are of a sensitive nature</li></ul> <p><b>Pre-testing</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Pre-test the full draft questionnaire and the cover letter</li><li><input type="checkbox"/> Use personal interviews or focus groups (include experts/nonexperts) to pre-test</li><li><input type="checkbox"/> Consider potential users of the information generated from the results of your survey, research colleagues or a cross-section of potential respondents to pre-test</li><li><input type="checkbox"/> Evaluate each question and determine a course of action (i.e., accept original question, accept question with a change in its meaning, change question but retain meaning, eliminate question, develop new question)</li></ul> <p><b>Pilot testing</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Pilot test the penultimate version of the questionnaire to determine whether you have optimized the question order, relevance of the included questions and general flow of the questionnaire</li><li><input type="checkbox"/> Ask this group of respondents to assess the length of questionnaire and ease with which they completed the questionnaire</li><li><input type="checkbox"/> Consider using factor analysis to further reduce items following pilot testing (at least 5 respondents per candidate item required)</li></ul> <p><b>Clinical sensibility testing</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Conduct clinical sensibility testing to assess the comprehensiveness, clarity and face validity of the questionnaire</li><li><input type="checkbox"/> Administer a 1-page assessment sheet to respondents with items posed as questions with either Likert scale or nominal response formats</li></ul> <p><b>Reliability</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Choose the specific reliability assessment (test-retest, interrater, internal consistency) based on the survey's objective and the format of the responses</li><li><input type="checkbox"/> To assess test-retest reliability, administer the final questionnaire to selected respondents representing the sampling frame on 2 occasions at least 2-6 weeks apart</li></ul> <p><b>Validity</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Assess content validity by asking a content expert</li><li><input type="checkbox"/> If you have created a <i>table of specifications</i>, ask a content expert to review your table</li><li><input type="checkbox"/> Ask a content expert to assess construct validity to determine whether key constructs underlying your study question have been addressed by the questions</li></ul>
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