



## A qualitative exploration on the needs of health care providers working with adolescents who are undergoing bariatric surgery

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### ABSTRACT

**Background:** With increasing prevalence of severe obesity in youth, more adolescents are becoming candidates for bariatric surgery. In Canada, bariatric surgery in adolescents is in its infancy, and long-term health outcomes are not well known. It is unknown what health care providers (HCPs) are using to prepare and guide their adolescent patients for bariatric surgery. The needs of HCPs should be explored with the aim to improve patient outcomes. Therefore, the purpose of this study was to investigate the resource needs of HCPs working with adolescents living with severe obesity who are undergoing bariatric surgery.

**Methods:** This qualitative study consisted of a focus group with seven HCPs from an adolescent bariatric program using a semi-structured interview guide. The focus group discussion was audio-recorded, and the recording was transcribed verbatim. A thematic analysis was conducted.

**Results:** Four data-generated themes emerged highlighting the perceived needs and challenges faced by HCPs. These included (1) gaps in patient education materials on the subject of the bariatric surgery process, obesity as a chronic disease and mental health, (2) the need for designing resources that are teen-friendly, adaptable, and accessible, (3) the need for resources to facilitate decision-making and patient evaluation delivering more streamlined care and; (4) challenges to addressing resource needs due to limited clinical time and budgets.

**Conclusion:** This needs assessment study highlights the need for appropriate resources for patient education, as well as pre and post-operative preparation. The hope is that HCPs can improve quality of care delivered and positively impact surgical outcomes in their patients.

### 1. Introduction

With the prevalence of severe obesity on the rise, children and adolescents are becoming more susceptible to the associated comorbidities that accompany this chronic disease. When adolescents have a body mass index (BMI) of 40 kg/m<sup>2</sup> and above, or a BMI of 35 kg/m<sup>2</sup> and above, along with one or more severe comorbidities, they may be considered as potential candidates for bariatric surgery [1]. While adolescent bariatric surgery remains in its infancy [2], research suggests that bariatric surgery can be an effective treatment option for many adolescents [3] resulting in a rise in the number of surgeries being performed [4].

In Canada, there are currently two publicly funded bariatric programs for adolescents. These multidisciplinary programs aim to guide adolescents and ensure that they are well-prepared for the process of bariatric surgery through patient education and follow-ups [5]. In order to promote positive outcomes, adolescents must adhere to pre- and post-operative guidelines recommended by their clinical team [6]. This requires health care providers (HCPs) to be equipped with the appropriate resources, which can be challenging since adolescent bariatric surgery remains an emerging area of research [3]. An environmental scan and assessment of patient education materials for adolescent bariatric surgery concluded that there was a lack of tailored materials for this

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group [7]. This is of particular concern because adolescents require resources that are tailored to their age and teenage life circumstances to promote their understanding [8]. Therefore, it is important that the needs of HCPs regarding adolescent patient education and management be explored with the overall aim of improving patient outcomes [9]. To our knowledge, there were no previous studies that have explored the needs of HCPs working with adolescents who are undergoing bariatric surgery. The objective of this needs assessment study was to investigate the needs of HCPs working with adolescents who are undergoing bariatric surgery.

## 2. Methods

Qualitative description [10] was used for this needs assessment study. This methodology is well established for studies in healthcare that aims to explore the perspectives of HCPs to identify potential challenges or gaps in order to improve patient care.

### 2.1. Recruitment of participants

Ethics for this study was submitted to the local university's Research Ethics Board on February 4, 2019 and was approved on February 28, 2019 [#30010930]. This study used purposive sampling [11] to recruit HCPs from an adolescent bariatric program that services patients from the province. To recruit participants, an email invitation was sent to all the HCPs by a member of the research team in April 2019. All seven HCPs accepted to participate in the study and informed consent was obtained at the start of the focus group discussion.

### 2.2. Data collection

In order to address the needs of HCPs working with adolescents who are undergoing bariatric surgery, an English focus group (1.5-h) was conducted at the HCPs workplace in Montreal, QC (May 2019). The semi-structured focus group began with a 15-min presentation on the findings from an environmental scan conducted from January 2019 to April 2019 to gather feedback on the appropriateness of the tools used and what resources they deemed missing. The environmental scan showcased resources that were available to the general public in the North American context to adolescent bariatric patients and their caregivers before and after bariatric surgery. After the presentation, the focus group began and was audio recorded. A copy of the focus group guide is in Table 1.

### 2.3. Data Analysis

Data was sent for transcription (Transcription Heroes Transcription Services, Toronto, ON) and a thematic analysis [12] was conducted in a word processing software (Microsoft Word) using five steps: (1) familiarization with the data; (2) generating codes from the data; (3) identifying themes; (4) reviewing the themes and; (5) naming and defining

**Table 1**  
Focus group guide.

Questions
1. From the resources we presented today, are there any you could you see yourself using in practice here at your clinic?
2. From the resources that you identified using, what changes (if any) would you make to these resources?
3. As healthcare providers, what are your needs as part of this multidisciplinary team?
4. In your opinion what are the needs of the patients at this clinic?
5. In your opinion what are the needs of the families at this clinic?
6. If not already mentioned, what resources do you think the multidisciplinary team at this clinic needs to support adolescents with severe obesity undergoing bariatric surgery?
7. What format of resources do you think would be best for the adolescents with severe obesity in this clinic? (e.g. not limited to PowerPoint presentations, brochures, handouts, information booklets, pamphlets, webinars, postcards, social media).

each them [12]. The same research member that presented the environmental scan also facilitated the focus group and completed the thematic analysis (K.K.). To establish rigor several strategies were used including ensuring methodological congruence, the use of memos, peer review debriefs during analysis, providing thick descriptions in the results and disclosing any sources of explicit bias [11].

## 3. Results

Seven HCPs (including five females), working with adolescents who are undergoing bariatric surgery participated in this study. Participants included one physician specialized in adolescent medicine, one pediatric endocrinologist, one dietitian, one kinesiologist, one mental health specialist and two nurses. Following the focus group, four themes were identified: perceived subject gaps in patient education materials, designing effective patient education resources, decision-making and patient evaluation resources, and challenges to addressing resource needs. Patient resources were defined as tools that are used by the patients and their caregivers. Table 2 provides illustrative quotes for each of the themes.

### 3.1. Perceived subject gaps in patient education resources

A primary need identified by the participants was to develop patient resources that focused on education in three key areas: the bariatric surgery process, obesity as a chronic disease, and the importance of mental health.

Resources explaining the process of bariatric surgery and the roles and responsibilities of the family, patient, and HCPs were reported to be lacking. For example, participants (n = 5) noticed that many patients and families were overwhelmed during their appointments because there was a lot of information to be shared with families about bariatric surgery as a procedure, the preparation required, the frequency of follow-ups, and the expected outcomes without supplemental resources available to support families' understanding.

A majority of participants (n = 5) expressed that the resources available often failed to provide educational information on obesity as a chronic disease. They explained that without having this shared understanding with the patient and their family, it is difficult to address the topic of bariatric surgery because it will lead to the perception that surgery will magically resolve the weight issue. Participants also desired a section that debunks current myths about obesity management.

Another gap mentioned by participants was the lack of resources on mental health and obesity. They reported that it is crucial to address this gap as mental health and wellbeing were important factors to ensure their patients' success in the long-term after bariatric surgery. Similarly, participants highlighted that mental health concerns among adolescents who are living with severe obesity are so prevalent that they need to establish links with larger communities outside of their bariatric program to be able to provide sufficient support.

### 3.2. Designing effective patient education resources

When creating resources for patients and their families, participants mentioned the outstanding need to design resources that have the appropriate format, as well as the capacity to be accessible and adaptable to a variety of different patients.

Participants (n = 5) noted there is a lack of teen-friendly and age-appropriate resources, requiring them to use resources developed for adults. The latter was viewed as problematic because they often contained more complex wording and fewer illustrations. This resulted in their patients having difficulty understanding the material. Participants (n = 5) further identified the need to create resources that track patient progress in a more engaging and interactive way. They explained that this would help them identify how much progress a patient has made (i.e., regarding their diet) and would promote a friendly environment

**Table 2**  
Themes generated following thematic analysis of focus group data and illustrative participant quotes.

Themes	Illustrative Quotes
<b>Perceived Subject Gaps in Patient Education Resources</b>	<p><b>Participant 7:</b> "Another thing that would be a useful tool would be an introduction to what to expect. Some people come in here and haven't gotten enough of the information [about bariatric surgery]."</p> <p><b>Participant 7:</b> "None of these things [resources] that talk about obesity. They talk about surgery, they talk about nutrition, they don't talk about obesity as a chronic disease, [...]. That should be the entry point, the entry point should be, Hello, this is what your disease is."</p> <p><b>Participant 2:</b> "[...] I didn't see anything about self-esteem and about communication, about relationships. And I think you need to focus on self-esteem, communication, relationships and families."</p>
<b>Designing Effective Patient Education Resources</b>	<p><b>Participant 4:</b> "For my part, I'm a nurse and we're doing the teaching for the pre-op of the surgery and the post-op and for now, we're using like the booklet that we got provided from the local hospital that is really an adult centre. So we need tools more teen friendly and more animated."</p> <p><b>Participant 4:</b> "But I like them to have – I don't know, a diary or something for them to kind of keep track of what they're doing, what they want to start by doing first. Just to have an idea. Not something like to tap on their finger for not doing it, just so after we can discuss, review together and as a partnership with them like set goals."</p> <p><b>Participant 1:</b> "Yeah, I think a website-having everything online because the teens will all be online, YouTube videos are all online. Its easily accessible for both them and the parents. [...]"</p> <p><b>Participant 6:</b> "In Europe, for instance, we might be interesting in looking into because obviously, half of our patients are going to be French speaking. We can do the translating, but sometimes if it's there, we could perhaps use it."</p> <p><b>Participant 1:</b> "We have an Aboriginal population of patients as well with the special group."</p>
<b>Decision-making and Patient Evaluation Resources</b>	<p><b>Participant 1:</b> "One thing to add for me would be we talk a lot about one of the criteria I guess for bariatric surgery is proving that you've done this certain amount of lifestyle interventions prior. And I feel personally I don't have much to evaluate."</p> <p><b>Participant 7:</b> "Part of our need is our internal evaluation tools. No communication tools with the patient but internal evaluation tools to quantify what we do in our decision making and standardize our decision making."</p> <p><b>Participant 1:</b> "Or something that just for us to evaluate the extent to which they're engaged like a readiness for surgery."</p> <p><b>Participant 7:</b> "So I think that part of that is internal resources and external resources. So, we need to improve our knowledge and link to external resources and our ability to not quantify but also evaluate those external resources because quantifying them is one thing but knowing what they're doing is another thing."</p> <p><b>Participant 6:</b> "What we need is time and resources because I mean unfortunately, we're all kind of doing other stuff and have a day job [...] and we are obviously trying to help out but we're not able to necessarily spend 6 h a day with these patients all the time"</p> <p><b>Participant 2:</b> "[...] Time is a resource that we have very limited of or very short of."</p> <p><b>Participant 7:</b> "We have limited time and availability, we have limited resources, our patient population is dramatically increasing."</p>
<b>Challenges to addressing resource needs</b>	

between the clinicians and their patients. Such resources provide the opportunity for the clinicians to adapt the program and set specific goals that are tailored to each of their patient and ensure the patient is adequately prepared for bariatric surgery.

Participants (n = 3) reported that it is crucial to create resources that are readily accessible to all patients and their family members so that they can access this information outside of the clinical encounter, especially for patients who live far away. Additionally, by enabling patients and families to review materials from home, they should be better prepared for their appointments, saving valuable clinic time. In terms of recommended format, participants (n = 4) mentioned that they were currently working towards developing online modules that can be made accessible on-demand to their patients.

Participants (n = 5) also discussed on multiple occasions during the focus group that resources should be adaptable, considering their broad range of patients. Among the most important were the patient's age, special needs, language and culture.

### 3.3. Decision-making and patient evaluation resources

Participants shared the difficulty in making clinical decisions regarding how best to guide their patients pre- and post-operatively regarding nutrition, physical activity and addressing mental health, given the emerging nature of bariatric surgery in adolescents. Participants mentioned that while there are guidelines available, how these are translated into practice can vary between HCPs. Participants acknowledged that without further guidance from the available evidence, discrepancies between the timelines to surgery and pre-operative requirements led to inconsistencies amongst patients in their clinic. The participants struggled between having a fixed pathway, while also having the ability to individualize the care based on the unique needs of the patients. Therefore, participants concurred they could benefit from decision-making resources such as algorithms, in order to ensure cohesion between team members and by extension facilitate communication to patients about the process involved with undertaking bariatric surgery.

Moreover, the participants expressed a need to develop more evaluation tools, such as phone applications, physical diaries or modules to assess nutrition, physical activity and mental health when screening patients. Participants reported that these tools are important because they allow HCPs to assess each patient's progress and evaluate whether they have been completing pre-operative health recommendations. Developing evaluation tools for patients would help the team standardize their decision making and establish readiness for surgery. Participants also stated that having more engaging evaluation tools allow for open discussions with their patients, which can strengthen their partnership and create trust.

### 3.4. Challenges to addressing resource needs

Participants expressed the need to create better resources, but they faced challenges that limit their ability to do so. These include a lack of clinical time and tight financial budget. Therefore, the participants recognised they needed to be realistic about what could be accomplished.

## 4. Discussion

The objective of this needs assessment study was to investigate the needs of HCPs working with adolescents who are undergoing bariatric surgery given the scarcity of information about the experience of providers who prepare adolescents for this procedure. Our results indicate that patient education resources are needed to improve adolescent bariatric surgery care and they should be teen-friendly, accessible and adaptable. There are also several challenges faced by HCPs including insufficient time and budgetary constraints that limit optimal care to patients.

#### 4.1. Subject area gaps

The three subject area gaps in the currently available resources included explaining the bariatric surgery process, obesity as a chronic disease, and mental health concerns.

The lack of adolescent-oriented bariatric surgery information is likely the result of the relatively newness in this population and is reflective of the environmental scan which demonstrated that most adolescent bariatric surgery websites use the same content as on the adult websites [7]. Concomitantly, the need for education on obesity as a chronic disease represents an ongoing shift in the broader health community from framing obesity as an individual responsibility towards a chronic disease model of management. Despite these efforts, there are persistent narratives that continue to blame and shame patients living with obesity including adolescents [13]. As illustrated in our study, the key to dispelling the perception that bariatric surgery will be a quick fix is to make adolescents aware that they will have to continue to manage their chronic disease, even after surgery. Thus, having adolescent-appropriate material is central to effectively preparing adolescents for surgery.

From the patient perspective, a needs assessment involving adolescents who underwent bariatric surgery, reported a need to emphasize mental health during the preparation phase [14]. These findings parallel to what participants expressed in our study and highlight the importance of having a mental health professional on the team that follows the patients on their journey.

#### 4.2. Patient resources

This study found that there is a need for bariatric resources that are teen-friendly, easily accessible and adaptable to different patient profiles. Previous research on the topic of digital weight management among adolescents echoes our findings as adolescents preferred websites that are fun and interactive [15]. Additionally, a systematic review that assessed the usability of health information websites showed that adolescent participants diagnosed with medical conditions preferred that content on health information websites be delivered through the use of videos, images and animations [16]. Moreover, multiple studies have found that mobile health apps could be helpful and effective self-monitoring tools in obesity management [17,18] supporting the perceptions reported by the participants in our study. Web-based health applications can also increase the effectiveness of weight loss programs, as it is a more convenient intervention for participants and it allows them to have unlimited access to resources [19]. Since the use of technology is common in adolescents, incorporating more health resources online can facilitate engagement in health care-related topics as it is more accessible [20]. This contrasts from speaking personally with HCPs for information, as they are only available for a limited amount of time [20]. These findings re-enforce our own results on the importance of integrating online resources as part of the standard of care. Web-based interventions also allow for more individuals to participate in weight loss programs because people with lower social economic status or those who live further away from weight management clinics may be hesitant to enroll in these programs [19].

Future resources also need to have some flexibility to be adapted to accommodate patients of different ages, languages, cultures and with intellectual disabilities. Indeed, previous research has found that when materials are adapted to the characteristics of the target population it leads to improved disease management [21–24].

As adolescent bariatric surgery becomes a more acceptable option for long-term weight management, the importance of having resources developed for this group will also be amplified. Future research should incorporate a patient-oriented approach by engaging adolescent patients to share their feedback on the best design for these resources.

#### 4.3. Decision-making and patient evaluation resources

The current literature indicates multidisciplinary team meetings prior to bariatric surgery are important to ensure that preoperative assessments are complete and that patients are receiving the most efficient care possible [25]. However, our study found that there is an outstanding need to develop evaluation tools to help standardize decision making in determining whether a patient is ready to be a surgery candidate or not. Components of the preoperative assessment of adolescent bariatric surgery include evaluating each patient's competence [26], their nutritional status and their mental health status [27]. Since there is currently no gold standard regarding pre-operative competence and psychological assessment, multidisciplinary bariatric teams for adolescent patients are having to assess readiness for surgery based on the limited recommendations available and clinical experience [26]. In a qualitative study with HCPs working with adolescents undergoing bariatric surgery; it was found that the participants experienced uncertainty relating to the surgery in part due to the lack of empirical evidence in the area [28]. Indeed, it is difficult for HCPs to navigate this type of surgery because it is unknown whether their care is effective, since long term health outcomes of adolescents undergoing bariatric surgery are not well known [6]. Further research is warranted to gain a better understanding of the pre-operative factors that predict positive long-term outcomes of bariatric surgery in adolescents. This can facilitate the process of developing standardized assessment tools that all HCPs who are working with adolescents undergoing bariatric surgery can use.

Our study also found similar barriers to previous research with HCPs on addressing obesity in clinical practice, namely limited budgets and clinical time. Leveraging existing organizations in the field of obesity to assist in the creation and dissemination of new resources would help to alleviate the responsibility from HCPs to develop these resources and contribute to a cohesive clinical approach across practices.

#### 4.4. Study strengths and limitations

A limitation of this study is that no demographics questionnaire was administered, therefore we were unable to explore whether the years of experience that each participant had working with teens with obesity impacted their perceived needs and should be explored in future studies. Also, while our study included only one dietitian and mental health specialist, the multi-disciplinary nature of the focus group participants strengthened the findings by highlighting diverse perspectives.

### 5. Conclusion

This study addressed the needs of HCPs working with adolescents undergoing bariatric surgery. It is important for HCPs to be equipped with adequate resources and tools to effectively guide their adolescent patients. Specifically, three data-generated themes surfaced from this focus group, including perceived subject gaps in patient education materials, designing effective patient education resources, decision-making and patient evaluation resources, and challenges to addressing resource needs. It would also be important to engage adolescent patients who are participating in these bariatric programs to understand their needs. Conducting more needs assessment studies, with both the HCPs and the adolescents, will not only aid in improving patient outcomes, but it will also facilitate pre-operative and post-operative education for patients and their caregivers.

#### Author contribution

The concept of the submission and methodology was by ASA and TRC. Data Analysis was performed by KK and BCF. KK and BCF wrote the first draft. BCF, KK, TRC and ASA all reviewed, edited, and approved the final submission and publication.

## Ethical review

This submission represents original work and has not been published, or for consideration for publication, elsewhere.

This study was carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. It was submitted to Concordia University's Research Ethics Board on February 4, 2019 and was approved on February 28, 2019 [#30010930].

This study used purposive sampling to recruit HCPs from an adolescent bariatric program that services patients from the province. To recruit participants, an email invitation was sent to all the HCPs by a member of the research team in April 2019. All seven HCPs accepted to participate in the study and informed consent was obtained at the start of the focus group discussion.

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## Declaration of competing interest

Declarations of interest: none.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.obpill.2023.100067>.

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