Bioethical Inquiry (2013) 10:227–237
DOI 10.1007/s11673-013-9440-0

ORIGINAL RESEARCH

The Controversy Over Pediatric Bariatric Surgery

An Explorative Study on Attitudes and Normative Beliefs of Specialists, Parents, and Adolescents With Obesity

Stefan M. van Geelen · Ineke L. E. Bolt · Olga H. van der Baan-Slootweg · Marieke J. H. van Summeren

Received: 28 March 2012 / Accepted: 5 December 2012 / Published online: 13 April 2013

Abstract Despite the reported limited success of conventional treatments and growing evidence of the effectiveness of adult bariatric surgery, weight loss operations for (morbidly) obese children and adolescents are still considered to be controversial by health care professionals and lay people alike. This paper describes an explorative, qualitative study involving obesity specialists, morbidly obese adolescents, and parents and identifies attitudes and normative beliefs regarding pediatric bariatric surgery. Views on the etiology of obesity—whether it should be considered primarily a medical condition or more a psychosocial problem—seem to affect the specialists' normative opinions concerning the acceptability of bariatric procedures as a treatment option, the parents' feelings regarding both being able to influence their child's health and their child being able to control their own condition, and the adolescents' sense of competence and motivation for treatment. Moreover, parents and adolescents who saw obesity as something that they could influence themselves were more in favor of non-surgical treatment and vice versa. Conflicting attitudes and normative views—e.g., with regard to concepts of disease, personal influence on health, motivation, and the possibility of a careful informed consent procedure—play an important role in the acceptability of bariatric surgery for childhood obesity.

Keywords Pediatrics · Bariatric surgery · Obesity · Qualitative study

S. M. van Geelen (✉) · M. J. H. van Summeren
Department of Pediatrics, University Medical Center Utrecht, Lundlaan 6, KE.04.133.1, 3584 EA Utrecht, The Netherlands
e-mail: s.m.vangeelen@umcutrecht.nl

I. L. E. Bolt
Ethics Institute, Department of Humanities, Utrecht University, Utrecht, The Netherlands

O. H. van der Baan-Slootweg
Merem Childhood Obesity Center Heideheuvel, Hilversum, The Netherlands

Introduction

At present, it is overwhelmingly clear that obesity is a growing problem in practically all societies. In fact, it is now commonplace to speak of an obesity epidemic, in general, and of childhood obesity as a public-health crisis, in particular (de Vries 2007; Ebbeling, Pawlak, and Ludwig 2002). It is generally agreed that the prevention and treatment of pediatric obesity should focus foremost on the promotion of a healthy personal and familial lifestyle (Ludwig 2007). Nonetheless, when morbidly obese children and adolescents do not respond to multidisciplinary treatment, surgical weight loss operations present an alternative that could be offered to these young patients (Inge et al. 2004). These

operations, known as bariatric surgery, include a variety of procedures in which weight loss is intended by reducing the size of the stomach, either through a gastric band (the surgical reduction of a section of the stomach) or resecting and rerouting the small intestines to a small stomach pouch.

However, there appears to be much controversy surrounding these procedures in childhood, and pediatricians and family physicians seem to be very reticent to refer children and adolescents for bariatric surgery. An example of this can be found in a recent study examining American physicians' perspectives on referring obese adolescents for bariatric surgery (Woolford et al. 2010). Despite moderate outcomes of non-operative methods, the study found an extreme reluctance to refer pediatric patients for surgery, as 48 percent of 381 participating family physicians and pediatricians indicated that they would not ever refer an obese adolescent for a bariatric operation and 46 percent indicated that the minimum age at which they would make a referral was 18 years. Unfortunately, this study did not inquire further into the reasons for this reluctance. In another study, however, fear of operative complications and a lack of long-term follow-up data were found to be likely barriers for referral (Iqbal et al. 2009). It seems evident that the controversy over bariatric procedures with regard to childhood obesity involves arguments concerning efficacy and safety.

In the absence of more evidence concerning the immediate and long-term risks and benefits of these operations for pediatric patients, a certain amount of hesitance and disinclination would appear appropriate. On the other hand, a recent systematic review and meta-analysis of bariatric surgery for obese children and adolescents found that these operations commonly resulted in sustained and clinically significant weight loss (Treadwell, Sun, and Schoelles 2008). Nonetheless, it has also been concluded that the quality of evidence in support of these procedures remains poor and that even in highly experienced and specialized settings there lingers the potential for serious complications and re-operations (Livingston 2010; Treadwell, Sun, and Schoelles 2008).

Besides such considerations, however, it is also possible that more fundamental problems—such as conflicting conceptual and normative views—play a major role in the controversy. Especially in the most vulnerable patient groups, such as those seen in pediatric settings, these aspects could well be pronounced and of principal importance. On a theoretical level, several ethical challenges with regard to pediatric bariatric surgery—concerning personal autonomy, informed consent, patient characteristics, and concepts of disease—have been pointed out (Caniano 2009; Hofmann 2010a). On a practical level, however, it remains unclear whether (and which of) such concerns play an actual role in the motivation, attitudes, and beliefs of health care professionals, parents, and pediatric patients when considering weight loss surgery. Potential ethical concerns are not necessarily explicit; to a large extent, they might very well be implicit. It has therefore been argued that there is an urgent need for empirical-ethical research into bariatric surgery, especially with regard to pediatric populations (Hofmann 2010b; van Geelen, Bolt, and van Summeren 2010). As a first step in such research, the main aim of this explorative study is to identify attitudes and normative beliefs with regard to pediatric weight loss surgery, through qualitative interviews with specialists, morbidly obese adolescents, and parents of morbidly obese children.

Methods

Participants

Twenty-eight pediatric obesity specialists, most of whom had been involved in developing Dutch guidelines for pediatric obesity, had been invited to an expert meeting on bariatric surgery in children and adolescents at the University Medical Center, Utrecht, The Netherlands. Sixteen pediatric obesity specialists participated. As this meeting gave initial insight into the major concerns and perceived problems among health care providers, all 12 specialists who had not been able to attend the meeting were invited for an individual interview in order to further investigate specialists' attitudes and normative beliefs. Of these, eight specialists accepted the invitation for an individual interview. These specialists came from different secondary and tertiary hospital settings in the Netherlands and represented diverse disciplines: two pediatricians, one family practitioner, one surgeon, two clinical psychologists, one medical psychologist, and one nutritional scientist. They were interviewed at their respective institutes. None of the interviewed specialists worked at the obesity center where parents and children were recruited. One person with a prominent role in the obesity patient movement, who was not a health care professional, was also included in order to gain insight into the opinions of a field expert.

We also recruited parents of obese children and adolescents attending a two-year outpatient multidisciplinary treatment program for morbidly obese youth at Merem Childhood Obesity Center in Heideheuvel in the Netherlands. All parents of two groups of eight children and adolescents attending this program were asked to participate in the study. Of these, eight parents (three couples and two individuals) accepted the invitation and were interviewed at this specialized obesity center. The treatment program consists of intensive cognitive-behavioral, dietary, and physiotherapeutic interventions, combined with continuous pediatric assessment.

It is generally agreed that eligible candidates for pediatric bariatric surgery should be adolescents who have experienced long-term failure of organized weight loss at a specialized obesity center (Inge et al. 2004; Fried et al. 2007). Therefore, all adolescents of the aforementioned two groups participating in the multidisciplinary treatment program were asked to participate in the study. Of these, nine adolescents accepted the invitation. With assent from the participants and parental approval (if needed), these patients were interviewed at the obesity center. Three of the nine adolescents were male, the mean age was 16.7 years (range 13–20 years), and all participants attended school. They were all in the last stages of the program. Except for one couple whose two daughters were included, there were no individual relationships between the three groups of participants.

The foremost reason for non-participation in the study, as stated by those who declined the invitation to participate, was that the interviews were thought to be too time-consuming.

In qualitative research, it is notoriously hard to determine beforehand the purposive sample size at which *saturation*—the point at which no new information or themes in the data is observed—will be attained (Morse 2000). Based on their extensive review of the literature and practical research, Guest, Bunce, and Johnson (2006) posit that, especially in relatively homogeneous groups, for the most part data saturation occurs between six to 12 interviews. As this research was designed as a preliminary, explorative study, we estimated that approximately eight to 10 participants in each group would lead to a satisfactory level of saturation. The study was submitted to the Medical Research Ethics Committee (MREC) of the University Medical Center, Utrecht. The MREC concluded that the study was not subject to the *Medical Research Involving Human Subjects Act*.

Some limitations of this study should be noted. Firstly, the interviewed adolescents were a group that might not be representative of the average severely obese adolescent patient. These participants had already complied with an extensive multidisciplinary program for more than a year, and this might have influenced their views on obesity and its treatment. Their answers might have been significantly biased by the paradigms of the center. However, such patients—who have participated in long-term, organized weight loss attempts—are exactly the ones who are generally considered eligible for bariatric surgery. Secondly, both the patients and the parents volunteered to participate in this study. This might have created a bias in favor of more motivated individuals. Once again, however, the criteria for pediatric bariatric surgery clearly indicate the need for a motivated and supportive family environment (Inge et al. 2004). Thirdly, in the Netherlands, pediatric bariatric surgery is not a standard procedure, and only gastric banding is allowed in research settings. The answers of the participants might therefore also indicate a certain bias. While this is true, it seems very likely that concerns identified with regard to a minimally invasive procedure, like gastric banding, will also be present when considering more invasive procedures, such as a gastric bypass. Finally, while the parents and adolescents seemed to be relatively homogeneous groups, in which data saturation likely was achieved with the included samples, the specialists—somewhat unexpectedly—proved to be a rather heterogeneous group. A larger sample of specialists might therefore have provided a better opportunity to draw conclusions about whether certain disciplines (instead of individual persons) are more inclined toward a particular strategy of management. Unfortunately, as the scientific field of pediatric obesity in the Netherlands is relatively small, this was not possible in this study.

Data Collection and Analysis

The researchers collected detailed information on the participants' views and experiences through semi-structured interviews, with a list of open questions (Table 1). All interviewees were encouraged to speak freely about the pros and cons of bariatric surgery in children and adolescents. The Health Council of the Netherlands (2003) currently advises against pediatric weight loss surgery outside of research contexts. The specialists were therefore also asked to reflect upon the inclusion criteria and selection methods for

Table 1 Interview questions for the participants

Specialists	Parents	Adolescents
1) What do you think of bariatric surgery, especially gastric banding, as a treatment for morbid obesity?	1) Can you please describe your child? How old is s/he? When did obesity become a problem?	1) Can you please describe yourself? How old are you? When did obesity become a problem?
2) What do you think of bariatric surgery as a treatment for pediatric morbid obesity?	2) What is it like for your child to be overweight? What are the main problems s/he encounters? How do you deal with that? How do other people deal with it?	2) What is it like for you to be overweight? What are the main problems you encounter? How do you deal with that? How do other people deal with it?
3) What should be the age limit for these procedures?	3) What do you think of bariatric surgery, especially gastric banding, as a treatment for morbid obesity?	3) What do you think of bariatric surgery, especially gastric banding, as a treatment for morbid obesity?
4) Should patients have tried conventional, multidisciplinary treatment before being eligible? If yes, for how long? If no, why not?	4) What kind of risks would you find acceptable?	4) What kind of risks would you find acceptable?
5) How can these patients' motivation for pre- and post-operative treatment adherence be determined?	5) Would you want it for your own child? If yes, why? If no, why not?	5) Would you want it for yourself? If yes, why? If no, why not?
6) Do you consider these children and adolescents to be able to provide adequate informed consent?	6) Do you think that your child would want it? If yes, why? If no, why not?	6) Would you recommend it to a friend? If yes, why? If no, why not?
7) Do you consider obesity to be a disease? If yes, why? If no, how do you see it?	7) Do you consider obesity to be a disease? If yes, why? If no, how do you see it?	7) Do you consider obesity to be a disease? If yes, why? If no, how do you see it?

All interviews lasted between 45 minutes to 1.5 hours

potential new trials. In the interviews with the adolescents and the parents, special attention was paid to the experience of living with (a child with) morbid obesity, in order to gain more insight into their motivations for possible treatment options.

A thematic approach, based on a hermeneutical perspective, was used to analyze the qualitative interviews (Bolt and Schermer 2009; Ziebland and McPherson 2006). Constant comparison within and between interviews was used to analyze the data. All interviews were recorded and transcribed verbatim. In the first stage of analysis, transcripts were read several times to acquire an overall sense of the data. Emergent and recurrent issues were noted alongside the reading. In the second stage of analysis, open coding began with the first interviews, and axial coding began upon completion of the interviews. The analysis was undertaken jointly by the first two authors, and interpretations and categories were negotiated until agreement was obtained.

Results

In the following sections, the perspectives of the specialists, parents, and patients regarding bariatric surgery for pediatric obesity are presented separately (Table 2).

The Specialists' Viewpoints

Among the specialists, there was a very diverse spectrum of opinions concerning the appropriateness of weight loss surgery as an intervention for obese children and adolescents. For some, the relevancy of and the urgent need for bariatric surgery for children and adolescents was beyond question, considering the success of these procedures in attaining weight loss and reduction of co-morbidity in adults:

> What can I do if I see a morbidly obese child with hypertension, high blood sugar values, and heart problems, who has tried several different treatments during many years? Other interventions might have some effectiveness, but are nowhere near satisfactory. … In adult obesity, surgeons have the best results with regard to the reduction of weight and health risks. … If severely affected children could also drastically lose weight through these procedures, I think we should do it (A).

Others point out that, in morbid obesity in pediatric cases, one is dealing with acute life-threatening situations, in which there are no other treatment options:

> What many people tend to forget is that, if we didn't operate, these patients would die. … It is often pointed out that we should focus on prevention. Of course, I agree. However, if someone is drowning, I don't tell them, "You should learn how to swim"; no, I rescue them (B).

However, other specialists were wholeheartedly against pediatric weight loss operations. The most common reason was that surgery offered a wrong solution to the actual problem these children and adolescents were dealing with:

> These young patients and their parents externalize the causes of their obesity. They don't want to take responsibility for their situation, and bariatric surgery does not change their behavioral problems. … If you have a problem in your head, you shouldn't operate on the stomach. … I have seen many patients who put chocolate bars into a blender with some cream, just to pass technically installed obstacles [e.g., a gastric band] (C).

Many also brought forward the concern that surgery could cause serious harm to these vulnerable patients:

> I think it would do my patients more harm than good. … Therefore, I am not going to refer these children—ever (D).

> Patients who are depressed might hope that a surgical intervention will provide them an external life-changing solution. However, this will most likely lead to disillusionment [because the real problems remain unresolved] and this might well express itself in suicidal behavior (E).

As can be seen in the above examples, the specialists had seriously conflicting beliefs and feelings with regard to weight loss operations in childhood. What they all agreed on, though, was that, if these operations were ever to be considered a common treatment strategy for pediatric obesity, more and better scientific evidence would be needed. However, with regard to the inclusion criteria and selection methods for possible trials, a similar kind of dispute surfaced.

An obvious example of such disagreement was with respect to the age at which children should be considered to be eligible for bariatric surgery. For some, there would be (virtually) no age limit:

> If I could decide, I would like it most to give them a gastric band when they are 5 years old and then have it taken out when they are 8 years old. Then they would be cured definitively. I know this is probably not going to happen, but I regularly see very painful cases; for example, a 9-year-old in a diabetic coma. What should I do in that case? Tell them to come back when they are 12 years old? Of course not (F)!

Others, however, indicate that bariatric surgery should certainly not be considered until the patients are fully matured and grown:

> I definitely think the patients should have reached the end of puberty. They should show both skeletal and further developmental maturity. However, if you would want them to be fully developed mentally as well, you should even ask yourself if 18 years wouldn't be too soon (G).

Table 2 Interview quotes by interviewed participants

Specialists	Parents	Adolescents
Specialist 1: quote A, K	Parent 1: quote A, F	Adolescent 1: quote A, F, J
Specialist 2: quote B, F, H	Parent 2: quote B, E	Adolescent 2: quote B, G, K
Specialist 3: quote C, I	Parent 3: quote C, I	Adolescent 3: quote C
Specialist 4: quote D	Parent 4: quote D	Adolescent 4: quote D, I, M
Specialist 5: quote E, J, M	Parent 5: quote G	Adolescent 5: quote E, H, N
Specialist 6: quote G, L	Parent 6: quote H	Adolescent 6: quote L
Specialist 7: no quote used	Parent 7: no quote used	Adolescent 7: no quote used
Specialist 8: no quote used	Parent 8: no quote used	Adolescent 8: no quote used

Most specialists agreed that, in order to be eligible, the patients should be able to give informed consent, should genuinely (but unsuccessfully) have tried non-surgical treatments, should have an intrinsic motivation to comply with pre- and post-operational dietary and psychological treatment, and should have the decisional capacity to oversee the long-term consequences of their choice for bariatric surgery. However, there was very little consensus if these criteria could in fact be fulfilled in these patients:

> To be on the safe side, they will also have to do psychological tests to determine their motivation and their chances of success. If they don't pass these tests the children will be considered psychologically unsuitable. … On the other hand, I have spoken extensively with psychologists, and they tell me "our methods are not yet capable of deciding for which patients surgery will be effective" (H).

> I think that there are many personality factors that decide whether a child is liable to consider surgery. Some are completely unable to live with their obesity, with being "fat" and socially isolated. However, they often ask me, "I will not have to change my lifestyle will I? Won't this operation do it for me?" (I).

> Children are just cognitively unable to oversee the long-term consequences of such decisions, until they are at least 18 or 19 years old. If you were to tell a 16-year-old that an operation could make him, or her, lose 40 kilograms, they would do it. They have no real abstract thoughts of death, or of negative results. … I don't think a child, or adolescent, will be able to give informed consent (J).

Besides the abovementioned conflicting opinions regarding pediatric bariatric surgery, there were also many disagreements about the extent to which (pediatric) obesity should be considered a disease. All specialists agreed that childhood-onset extreme obesity was a very serious and chronic problem, severely decreasing quality of life and impairing general health. However, there were major disagreements with regard to the main etiological beliefs concerning pediatric obesity. While some focused on the somatic aspects of obesity, others emphasized its psychological and environmental features.

Those who concentrated primarily on the somatic aspects of obesity generally considered it a "medical condition," and they commonly also pointed out the severity of the physical co-morbidities:

> Obesity is obviously a disease. The World Health Organization has recognized it as such. Among others, this means that patients have a right to treatment and that comprehensive, effective management strategies should be developed. … Children with morbid obesity run severe health-risks, and co-morbid pathology is to be considered a primary focus of medical attention. … Bariatric surgery for these patients should never be considered "cutting in healthy tissue" (K).

Other specialists drew attention to possible interactions of a genetic predisposition in combination with psychosocial factors:

> I am totally convinced that obesity is a kind of addiction enforced through pedagogical problems in the upbringing of children. … Of course, there probably is a genetic constitution for this pathological dependency on eating, but it is also a fact that [nowadays] parents are unable to give their children clear rules, or to withhold things from them (L).

On the other end of the spectrum, there were those specialists who regarded childhood obesity as almost exclusively the expression of a psychological condition:

> In severely overweight children and adolescents, psychological difficulties—internalizing problems such as depression and anxiety and very limited problem-solving behavior—are dominant. Therefore, we advise psychological treatment before the treatment of excess weight. However, they don't end up with a psychologist, but with a physician. … Obesity is seen as a somatic problem. That is how the medical world presents itself (M).

The Parents' Viewpoints

As with the specialists, there were also great differences in the parents' attitude toward bariatric operations for

(their) children. Some of them regarded surgery as providing a constant and inescapable "outer" incentive to comply with dietary restrictions, relieving the parents of a continuously felt pressure to implement intrinsic changes in their child's lifestyle:

> I would definitely want a gastric band for our son. Then he'll be forced to have several smaller meals throughout the day and to eat a lot less. I am very afraid, that if things continue as they are, I'll have to constantly correct him. As a mother, I would have a lot more peace and quiet [if he underwent surgery] (A).

Similarly, other parents would welcome a surgical intervention primarily as a *trigger* for weight loss and an added external stimulus to further adhere to obesity treatment:

> My daughter is almost 18 years old, and I would let her do it immediately—especially when I see how she is struggling. Of course, she wants to be thin just like everybody else! … I sincerely think that bariatric surgery would motivate her and make it a lot easier for her to change her lifestyle (B).

On the other hand, some parents were completely against bariatric surgery. Just like some of the specialists, several parents saw it as a wrong or too easy solution for their child's actual problem:

> I would not choose it for our daughter, without even yet taking the possible medical risks into consideration. Surgery might help temporarily, but it would not solve her problems. I believe she should make her own decision to change. … You might be able to take away the symptom, but the underlying suffering remains (C).

> I see it as a typical example of the shortsightedness of modern society. You don't like your nose, you get a new one; you're overweight, you go for surgery. In a couple of years it will probably be performed on children of 6 or 7 years old. I just find it a too easy means. If you accomplish it through your own strength, it's worth so much more (D).

The question of whether pediatric obesity should be considered a disease, and the question to what degree they themselves (or their child) could have an influence on it, also seemed to play a central role in the perspectives of the parents. Again the opinions varied. Some emphasized that they felt that their child's obesity had an important genetic component:

> I do think our daughter is clearly genetically predisposed. Our son can eat everything he wants. I don't think she'll ever be thin; she is just big-boned. She probably could lose 20 to 30 kilograms, but she would always be big (E).

> Being overweight certainly runs in our families, me and my husband are also overweight. … Now the doctors tell us that it is a chronic condition, and then I ask myself, "Why do we have to try so hard to change it then?" (F).

Most parents, on the other hand, clearly stated that they saw their child's obesity as primarily a pedagogical or psychological problem that they, or their child, could influence:

> We both feel very guilty. Especially until they are 12 or 13 years old, you have the matter completely in your own hands. You might not realize what's happening, but at a certain point it's just too late. … We are both smart individuals, but we just let it slip out of our control (G).

> I don't consider obesity a disease at all. … With us it has everything to do with our lifestyle (H).

> After a while we found out that our daughter's problems were mainly emotional. When she felt unhappy, when she was bullied, or when something went wrong, the first thing she would do was grab something to eat and she would not stop. She knows she shouldn't react like that, but she is unable to react in another way. … I think she has a serious condition, but it's just psychological (I).

The Adolescents' Viewpoints

There were also clear contrasts in the adolescents' attitudes toward bariatric surgery as a potential treatment option for their own obesity or that of other obese adolescents. Some of them regarded these procedures as a much needed external stimulus or an inescapable push to eat less:

> If I could have surgery, I would do it at once. I think that I might be able to lose some weight in the regular way, but not enough. I can never stay motivated for an extended period of time, and I

> think this would just force me to eat less! … Of course, there might be risks involved, but I don't care about hospital procedures, and I am never afraid of them (A).

> I might be a bit young, but I think I'd like to have a gastric band. I would think more about what I eat, because I would have something in my stomach. … And, when you eat too much you just puke it out. So you lose a lot of weight, because there is less room in your stomach (B).

Other adolescents however, were very outspoken against bariatric surgery for pediatric patients. Their reasons included the possibility of success with other treatment options, aversion toward parental and societal pressure to conform to an ideal of beauty and thinness, and the need to overcome one's actual problems in the "right way":

> I would never want it. Children might think that they can't improve their health by themselves, or they might not want psychological counseling or to talk about their problems, but when I see what I have done here by myself—with the support of my family and friends—I just know that [success] is possible in other ways (C).

> I think that parents are too fixated on having a beautiful, thin child. They don't see that if a child loses 10 kilograms it will feel a lot better. They want 30 kilograms at once, and therefore they see surgery as a viable option. … I can't imagine a 12-year-old child going to the doctor and saying that they want surgery. And if they ask for it, it is just because they want to be normal like the rest (D).

> I'll be honest: When I was younger I also told my mother that I wanted surgery, because I didn't want to see a psychologist. However, it wouldn't have solved anything. I still wouldn't have talked about my problems, and I still wouldn't have accepted myself. … You should cure the causes, not just the effects (E).

A constantly reemerging theme in the stories the adolescents told was the notion of being able—or unable—to solve one's own problems through determination and a strong will. For some adolescents it was just clear that they would be unable to attain weight loss without some kind of external stimulus—preferably bariatric surgery:

> I think I might be able to lose some weight by myself. However, I am totally convinced that I won't be able to get it all off. It just won't work for me. I'm not motivated enough, and after a while I will surely forget to adhere to my diet (F).

> At first we had meetings three times a week, and then it was easy to comply with the treatment. Then gradually the meetings became fewer and fewer, and it became increasingly hard to think about the program. So at first I was able to do it, but by myself it just became impossible (G).

For other adolescents, however, the inability to lose or maintain weight—and the felt need for bariatric surgery—was a clear sign of weakness of will:

> Nine out of 10 times it is your own fault. That might sound very negative, but a disease is something that happens to you, but with obesity nine times out of 10 you should be able by yourself to do something about it. … If you would have asked me to do this program a couple of years ago, I wouldn't have wanted to do it, but now I'm just proud of what I have accomplished by myself (H)!

> Momentarily, losing weight is not my priority. First I'm going to work on my inner me, and then on my outer appearance. … I am convinced that when I decide for myself that it is the time to truly lose weight, I will be able to do it. And in the end I will be much happier that I was able to do it without the help of surgery (I).

When asked whether their obesity should be considered a disease, none of the patients really saw it as a somatic illness. However, several adolescents did indicate that they felt that genetics played an important role:

> Both my mother and my father are overweight, so I definitely have some kind of familial disposition. … And there's something else: When a normal person eats something they maybe have to exercise for 20 minutes to lose those calories again. For me it would take at least 30 minutes (J).

> When someone is born thin, and they become fatter and fatter, it's their own fault. In that case they just eat too much, or unhealthy. However, if you are born quite large, like me, you will always remain big. So in that case it is more like a disease (K).

For most patients, however, it was absolutely clear that they did not suffer from a disease. In those cases eating habits, family circumstances, and emotional problems were cited as the primary causes of their obesity:

> It's certainly a very problematic condition. However, I just got fat because we eat too much … It's not even that we eat unhealthy—well, maybe we could consume more fruits and vegetables. It is just that we eat a lot, and we exercise very little (L).

> In our home there have always been problems. My father has a narcissistic personality disorder, and he would call me a fat pig. I have somewhat of a boyish figure, and ever since I was very young, he was always telling me to lose weight and to see a dietician. … That's how it went wrong. If someone tells me not to eat, I will instead start eating a lot (M).

> I definitely don't consider it a disease. I'm just a very emotional eater. I had a horrible time in high school and was bullied a lot. That's how it started. Whenever I experienced negativity I tried to eat my problems away. … Gradually I developed all kinds of eating problems (N).

Discussion

The main aim of this explorative study was to identify attitudes and normative beliefs that may play a role in the controversy surrounding pediatric bariatric surgery. The results show that—perhaps over and above concerns of safety and efficacy—the beliefs identified in this paper had major consequences for the participants' perspectives on weight loss surgery for children and adolescents. Three examples regarding how participants' attitudes influence the (un)acceptability of pediatric bariatric surgery will be discussed below.

The first is the participants' model of obesity in childhood and adolescence. Participants' views on pediatric obesity ranged from primarily somatic to predominantly psychosocial explanations. Proponents of pediatric bariatric surgery generally held the former view, while opponents of these procedures commonly held the latter. When the participating specialists were prone to a mainly somatic model of pediatric obesity, they were more likely to accept bariatric surgery as an appropriate treatment option. However, if they held a more psychosocial, behavioral, or pedagogical perspective, they were liable to be more skeptical and endorse alternative interventions. Additionally, it was found that the participating parents' concept of pediatric obesity also had significant consequences for their views on the acceptability of bariatric surgery. In particular, parents who felt that obesity was something they—or their child—could not influence were more prone toward bariatric surgery as an appropriate solution to their child's obesity. These parents regarded a weight loss operation as an external stimulus and a means to motivate their child. In contrast, the parents who saw their child's obesity as something that they—or their child—could influence were more in favor of treatment in a non-surgical way.

A similar situation arose with the adolescent participants. It seemed as though the patients who were most skeptical regarding bariatric surgery were the patients who felt that their obesity was mainly an emotional or behavioral problem that—at least to a considerable extent—they could influence. Conversely, the adolescents who regarded weight loss operations as a viable option seemed to be those who showed little awareness of their own role and who saw their obesity foremost as a personally inalterable condition for which they sought an external solution.

In previous studies on the relationship between patients' and physicians' beliefs about the causes of severe overweight in adulthood and its solutions, it has also been found that patients' and health care professionals' attitudes toward treatment seem to be determined to a large extent by their etiological beliefs (Ogden et al. 2001; Ogden and Flanagan 2008). These beliefs may be interpreted as having to do with efficacy ("the real cause has to be addressed in order to solve the problem in the long-term"). However, these beliefs may also be based on the normative idea that obesity is a psychosocial problem that should be dealt with on a psychosocial level even if bariatric surgery would be efficacious. In such a view, bariatric surgery is considered as an instance of medicalization and as morally problematic. However, the term "medicalization" comes from sociology to describe a process by which normal human problems are understood in a medical framework, and thus the term in itself cannot be used as a moral argument. Whether it is morally problematic to treat normal human problems with medical means depends on considerations such as the harm−benefit ratio of the intervention and whether

the medical intervention is considered as *the* solution to this complex problem (Schermer et al. 2009).

The second example of normative beliefs that play a role in the attitude of the respondents toward bariatric surgery is those that relate to personal responsibility. While some respondents declare it is simply beyond their control to change their lifestyle, others emphasize personal responsibility of the adolescent and/or their parents and view bariatric surgery as "an easy and quick medical fix" enforced by the ideology of modern society. As discussed with the first example, the "quick fix" argument also has to be critically analyzed as to its validity. What exactly is meant by the phrase "personal responsibility" (causal or moral responsibility?) or "a quick fix"? What are the implicit assumptions behind these beliefs? A quick fix does not in itself imply that bariatric surgery is morally problematic, whether the disease is self-inflicted or not. These beliefs might explain the diversity amongst the willingness of physicians to refer patients for bariatric surgery (Woolford et al. 2010). As a result, an arbitrary referral practice may occur that is in conflict with the value of justice.

Finally, all obesity specialists underlined the importance of a thorough informed consent process and stated that patients should have the capacity to oversee the long-term consequences of their choice for bariatric surgery. However, obesity specialists who had a critical opinion of bariatric surgery for children tended to set more stringent requirements with respect to competence and informed consent than proponents of bariatric surgery.

Furthermore, the study showed that patients who would not opt for bariatric surgery were the ones who seemed to have insight into the causes of their behavior and were motivated to adjust their lifestyle. Conversely, adolescents who regarded weight loss operations as a viable option seemed to view their obesity foremost as a personally inalterable condition for which bariatric surgery could provide an easy external solution. A similar view can be seen amongst the parents. These findings raise important questions. Are the skeptic respondents right in setting quite stringent requirements regarding competence and informed consent? And how should we deal with the apparently paradoxical finding that minors who hold positive attitudes toward bariatric surgery seem not to meet the requirements of informed consent, since they seem not to be aware of their own role in the success or failure of surgical treatment, while those who do not opt for surgery seem to be well aware of the causes of their behavior and the impact on their weight and are willing to adjust their lifestyle?

In order to move forward in the debate on the moral acceptability of bariatric surgery, a clear understanding of relevant concepts—e.g., competence and informed consent—is needed. A distinction has to be made between competence as a pre-condition for the practice of obtaining informed consent versus the capacity to conform to the lifestyle adjustments required for a successful surgery (Beauchamp and Childress 2009). Competence is generally conceived as a decision-making capacity (entailing a set of capacities) and qualified as a normative concept since it involves a judgment about whether someone is *sufficiently* capable to make a particular decision (Berghmans, Dickenson, and ter Meulen 2004). Little consensus, however, exists about the standards or criteria to judge the decision-making capacity of patients and, in particular, of minors. These criteria range from less demanding (expressing a preference or choice) to very demanding criteria (with a focus on cognitive capabilities). Minors willing to undergo bariatric surgery may meet some of the requirements, while other criteria may exclude them. They may, for instance, be perfectly able to express a preference and to understand relevant information, yet unable to apply this information to their own context or to value the consequences of bariatric surgery. Here, the crucial question is what level of decision-making capacity is sufficient for bariatric surgery with regard to minors. This is clearly a normative issue that cannot be solved by applying psychological concepts and instruments.

Conclusion

Weight loss surgery for obese children and adolescents is a controversial topic (Capella and Capella 2003). It is often believed that the debate surrounding pediatric bariatric surgery will eventually be solved through more and better scientific evidence concerning the risks and benefits of these procedures (Fried 2008; Garcia 2005). It is thought that, when the proper inclusion criteria and patient selection methods are adhered to, further randomized controlled trials will be able to provide the definitive answer to the question of whether pediatric weight loss operations are acceptable treatment options. However, as this study shows, the controversy over

bariatric surgery for obese children and adolescents entails much more than concerns about the efficacy and safety of these operations for pediatric patients. It seems evident that normative and conceptual issues—for example, with regard to concepts of disease, personal influence on health, motivation, and the possibility of informed consent—play an important role in the disputes over bariatric surgery for childhood obesity. These concerns have important ethical considerations down the line that need further elucidation and have to be taken into account for an adequate evaluation of the acceptability of bariatric surgery as a treatment option for obese pediatric patients. For, no matter how compelling the forthcoming scientific evidence, as long as such fundamental differences of opinion remain unaddressed the controversy over pediatric bariatric surgery will continue to exist.

Acknowledgments This study was supported by a grant from the Netherlands Organization for Health Research and Development (ZonMw, Grant No. 141020004).

References

Beauchamp, T.L., and J.F. Childress. 2009. *Principles of biomedical ethics*, 6th edition. Oxford: Oxford University Press.

Berghmans, R., D. Dickenson, and R. ter Meulen. 2004. Mental capacity: In search of alternative perspectives. *Health Care Analysis* 12(4): 251–263.

Bolt, L.L.E., and M. Schermer. 2009. Psychopharmaceutical enhancers: Enhancing identity? *Neuroethics* 2(2): 103–111.

Caniano, D.A. 2009. Ethical issues in pediatric bariatric surgery. *Seminars in Pediatric Surgery* 18(3): 186–192.

Capella, J.F., and R.F. Capella. 2003. Bariatric surgery in adolescence. Is this the best age to operate? *Obesity Surgery* 13(6): 826–832.

de Vries, J. 2007. The obesity epidemic: Medical and ethical considerations. *Science and Engineering Ethics* 13(1): 55–67.

Ebbeling, C.B., D.B. Pawlak, and D.S. Ludwig. 2002. Childhood obesity: Public health crisis, common sense cure. *The Lancet* 360(9331): 473–482.

Fried, M., V. Hainer, A. Basdevant, et al. 2007. Interdisciplinary European guidelines for surgery for severe (morbid) obesity. *Obesity Surgery* 17(2): 260–270.

Fried, M. 2008. Bariatric surgery in pediatrics—when and how? *International Journal of Pediatric Obesity* 3(2): 15–19.

Garcia, V.F. 2005. Adolescent bariatric surgery: Treatment delayed may be treatment denied. *Pediatrics* 115(3): 822.

Guest, G., A. Bunce, and L. Johnson. 2006. How many interviews are enough? An experiment with data saturation and variability. *Field Methods* 18(1): 59–82.

Health Council of the Netherlands. 2003. *Overweight and obesity.* The Hague: Health Council of the Netherlands.

Hofmann, B. 2010a. Stuck in the middle: The many moral challenges with bariatric challenges. *The American Journal of Bioethics* 10(12): 3–11.

Hofmann, B. 2010b. The encompassing ethics of bariatric surgery. *The American Journal of Bioethics* 10(12): W1–W2.

Inge, T.H., N.F. Krebs, V.F. Garcia, et al. 2004. Bariatric surgery for severely overweight adolescents: Concerns and recommendations. *Pediatrics* 114(1): 217–223.

Iqbal, C.W., S. Kumar, A.D. Iqbal, and M.B. Ishitani. 2009. Perspectives on pediatric bariatric surgery: Identifying barriers to referral. *Surgery for Obesity and Related Diseases* 5(1): 88–93.

Livingston, E.H. 2010. Surgical treatment of obesity in adolescence. *The Journal of the American Medical Association* 303(6): 559–560.

Ludwig, D.S. 2007. Childhood obesity—the shape of things to come. *The New England Journal of Medicine* 357(23): 2325–2327.

Morse, J.M. 2000. Determining sample size. *Qualitative Health Research* 10(1): 3–5.

Ogden, J., and Z. Flanagan. 2008. Beliefs about the causes and solutions to obesity: A comparison of GPs and lay people. *Patient Education and Counseling* 71(1): 72–78.

Ogden, J., I. Bandara, H. Cohen, et al. 2001. General practitioners' and patients' models of obesity: Whose problem is it? *Patient Education and Counseling* 44(3): 227–233.

Schermer, M., L.L.E. Bolt, R. de Jongh, and B. Olivier. 2009. The future of psychopharmaceutical enhancements: Expectations and policies. *Neuroethics* 2(2): 75–87.

Treadwell, J.R., F. Sun, and K. Schoelles. 2008. Systematic review and meta-analysis of bariatric surgery for pediatric obesity. *Annals of Surgery* 248(5): 763–776.

van Geelen, S.M., L.L.E. Bolt, and M.J.H. van Summeren. 2010. Moral aspects of bariatric surgery for obese children and adolescents: The urgent need for empirical-ethical research. *The American Journal of Bioethics* 10(12): 30–32.

Woolford, S.J., S.J. Clark, A. Gebremariam, M.M. Davis, and G.L. Freed. 2010. To cut or not to cut: Physicians' perspectives on referring adolescents for bariatric surgery. *Obesity Surgery* 20(7): 937–942.

Ziebland, S., and A. McPherson. 2006. Making sense of qualitative data analysis: An introduction with illustrations from DIPEx (personal experiences of health and illness). *Medical Education* 40(5): 405–414.