

# Preoperative Education and Informed Consent in Young Adults Undergoing Bariatric Surgery

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# Preoperative Education and Informed Consent in Young Adults Undergoing Bariatric Surgery: Patients' Perspectives on Current Practice

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**Background:** Preoperative education is part of the informed consent process and should enable patients to make an informed decision. Aim of this study was to gain a more detailed insight in the perceptions and experiences of the informed consent process of young adults undergoing bariatric surgery.

**Methods:** Fifty-five young adults, aged 18–25 years, who underwent bariatric surgery, were invited to participate in a semistructured interview. The interview covered three main topics: education of specific informed consent domains, perioperative expectations and experiences, and personal (un)certainities related to undergoing bariatric surgery.

**Results:** Twenty-seven patients participated in a semistructured interview. Mean age was  $23.1 \pm 1.6$  years. All consent domains were remembered by the patients, but 24/27 patients could not recall one or more complications. Inadequate weight loss was not recalled by 6/27 patients. Common remarks were that the preoperative education focused mainly on the positive results. Negative effects were inadequately educated.

**Conclusions:** Physicians should educate patients more about the negative effects of a treatment and should focus more on specific age-related problems and social interactions. Improved preoperative education, including possible outcome scenarios to assess risks and lifetime consequences, should be developed to improve informed consent in these patients.

**Keywords:** bariatric surgery, young adults, informed consent, preoperative education

## Introduction

WITH THE INCREASE of morbid obese adolescents and young adults, more bariatric procedures are performed on these patients.<sup>1–8</sup> The positive effects of bariatric surgery on weight loss and remission of comorbidities in adolescents and young adults are comparable with adults.<sup>6–8</sup> Furthermore, quality of life, confidence, and self-esteem improve after bariatric surgery in adolescents and young adults.<sup>6–9</sup> Colquitt *et al.* stated that young adults might have a greater benefit, because they have a longer period to obtain it, if weight loss and positive effects on comorbidity remain.<sup>10</sup>

For every surgical procedure a patient should give permission after being educated about the treatment, a process called surgical informed consent (SIC).<sup>11,12</sup> This process consists of three separate elements with their specific items (Fig. 1).<sup>12</sup> A well-executed SIC increases the chance that a

patient has realistic expectations of the effects of the treatment, sufficiently understands the reasons for treatment, will be able to deal with complications and might have a more effective participation in his/her own care.<sup>13–16</sup>

The preoperative education given by a multidisciplinary team helps patients to select the type of surgery and has an important input on psychological adaptation.<sup>17</sup> As part of the bariatric SIC, preoperative education informs patients about the bariatric procedure, alternative treatment options, perioperative and postoperative risks, short- and long-term results, and effects on daily life and future health. Explaining the changes to be expected after bariatric surgery will help anticipate to negative feelings.<sup>15</sup> Furthermore, the bariatric surgeon should inform the patient that the surgery itself does not guarantee a successful outcome but that the outcome is dependent on how well the lifestyle change is followed.<sup>9,13</sup> A well-conducted bariatric SIC process enables patients to

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1. Assessment of preconditions
- Patient competence and voluntariness
2. Provision of information
- Patient education
- Recommendation of a care plan
- Understanding of this information by the patient
3. Stage of consent
- Patient consenting to the surgical procedure
- Recording of this authorization

**FIG. 1.** Items of informed consent.<sup>12</sup>

make an informed decision to undergo a bariatric procedure and can improve patients' satisfaction.

The young adulthood is a stage with many changes: leaving parental care, starting a professional career, changes in peer relationships, and starting a family.<sup>9</sup> As young adults are in a different stage of life compared with adults, they may require other information and/or another approach, for example, receiving information from other young bariatric patients and more involvement of his/her family in the SIC process.<sup>9</sup>

Following this perspective, the aim of this study is to gain a detailed understanding of the perceptions and experiences of young adults undergoing bariatric surgery regarding the SIC process and the preoperative education in bariatric surgery.

## Materials and Methods

### Medical Ethical Committee

Approval of the local Medical Ethical Committee (MEC) was requested but deemed not formally necessary for this study by the MEC.

### Local preoperative education and informed consent process

Current practice involves multiple individual and group education sessions, combining presentations with didactic material (leaflets) (Fig. 2). Bariatric nursing, psychology, dietetics, and physiotherapy have specific education sessions. In addition, a website and mobile application are available for patients containing more information regarding bariatric techniques, frequently asked questions, healthy recipes, and more.

### Study design

An oral survey that consisted of closed-ended questions and open-ended questions was executed in the form of a semistructured interview. Therefore, a mixed methods design was applied. This semistructured interview consisted of three parts of which the focus is described in the next paragraph.

### Semistructured interview

The knowledge was collected through the method of semistructured interviewing. The interviews were performed individually to allow the gathering of detailed information. All interviews were conducted in Dutch and performed in the hospital or over the telephone.

The interviews consisted of three main parts: (1) education in the specific informed consent domains, (2) perioperative expectations and experiences, and (3) personal (un)certainties in undergoing bariatric surgery. The focus of this article is solely on part (1) and part (3), regarding the preoperative education and the SIC process. Although in semistructured interviewing the sequencing of questions is not the same for each participant, an interview guide (see Supplementary Data) was used to ensure that the researcher would collect similar types of data from all participants. None of the interviews were recorded. The researcher made notes in the form of keywords during the performance of the interviews. If the researcher was of opinion that the participant made an interesting quote or statement, the whole quote/statement was literally noted. Directly after the interview all notes were transcribed.

### Setting and study population

This study was performed between October 2017 and April 2018 at a large teaching hospital with a bariatric surgery department certified as European Centre of Excellence. Patients were contacted by letter and telephone to participate in the study. Before the start of the semistructured interviews, all patients had to sign a written informed consent form to participate in this study.

A cohort of young adult patients (18 and 25 years old at the time of surgery) who had preoperative education and bariatric surgery in our bariatric center was selected from our hospital database and were invited to participate in the semistructured interview. All patients were at least 6 months postoperative. Bariatric surgery included primary and revisional bariatric surgery. No specific exclusion criteria were applied for the study population.

### Data

Besides the gathering of information through semistructured interviewing, preoperative and postoperative data



**FIG. 2.** Current surgical informed consent procedure.

(anthropometrics up to 5 years, postoperative complications and preoperative comorbidities) were retrospectively collected from the electronic patient files.

Primary responder (i.e., weight loss success) was defined as the achievement of a percentage excess weight loss (%EWL) >50% and primary nonresponder (i.e., weight loss failure) was defined as the inability to achieve a %EWL >50% at 18 months postsurgery.<sup>18</sup>

**Analysis and statistics**

All the gathered knowledge from the semistructured interviews and the data from the electronic patient files were processed. The information gathered from the closed-ended questions was processed as quantitative data (comparable with a survey). The open conversations of part (1) and part (3) were of qualitative nature and were, therefore, addressed in a qualitative manner. Coding on the keywords was applied, including the identification of relevant “themes,” to organize and group the information into “categories” (creating a single code to describe a large amount of text, for example, “missed information,” “improvements”). Relevant information of these “categories” were then paralleled between the semistructured interviews. Data processing and analysis in semistructured interviews were ongoing processes. As such, the data were collected until a point of data saturation was reached, namely when no new or relevant information emerged.

Continuous variables were stated as mean with standard deviation. Quantitative outcomes of part (1) of the semistructured interviews were stated as number. No specific statistical analyzes were performed. Percentages were not used as the number of patients was <100.

**Results**

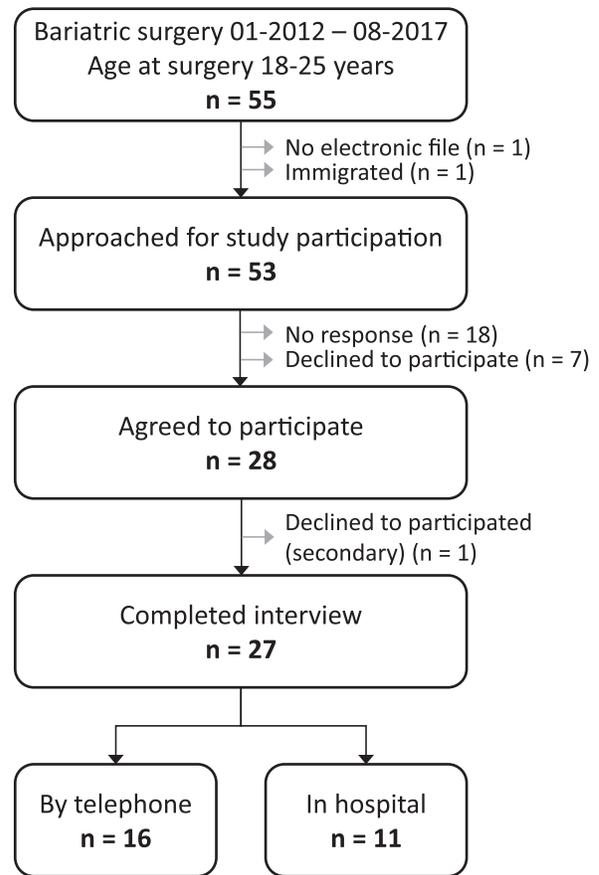
*Patient characteristics*

The total cohort of young adults consisted of 55 patients. Mean age at surgery was 22.8±1.9 years and mean body mass index (BMI) during screening was 43.3±6.1 kg/m<sup>2</sup>. Mean BMI reduction was 11.7±3.1 kg/m<sup>2</sup>, 14.8±4.2 kg/m<sup>2</sup>, and 15.2±5.1 kg/m<sup>2</sup> at 6 months, 1, and 2 years follow-up, respectively.

Twenty-seven out of the 55 patients, mostly female, participated in a semistructured interview (Fig. 3). The baseline characteristics are stated in Table 1. Twenty-two patients received a primary Roux-en-Y gastric bypass (RYGB), four patients received an RYGB after gastric banding and one patient received an adjustable gastric band (primary). Mean BMI reduction was 11.1±2.2 kg/m<sup>2</sup>, 14.4±4.1 kg/m<sup>2</sup>, and 15.4±5.0 kg/m<sup>2</sup> at 6 months, 1, and 2 years follow-up, respectively. The mean time lapse between surgery and the interview was 2.9±1.7 years after the bariatric surgery.

*Education concerning weight loss and health benefits*

The received education regarding the positive effects of bariatric surgery on weight loss was rated sufficient by the study cohort (Fig. 4). Patients mentioned that the preoperative education focused primarily on the positive effects of bariatric surgery and that the negative effects were not given adequate attention. Some patients mentioned that they only remembered the positive effects, as this was what they wanted



**FIG. 3.** Inclusion flowchart.

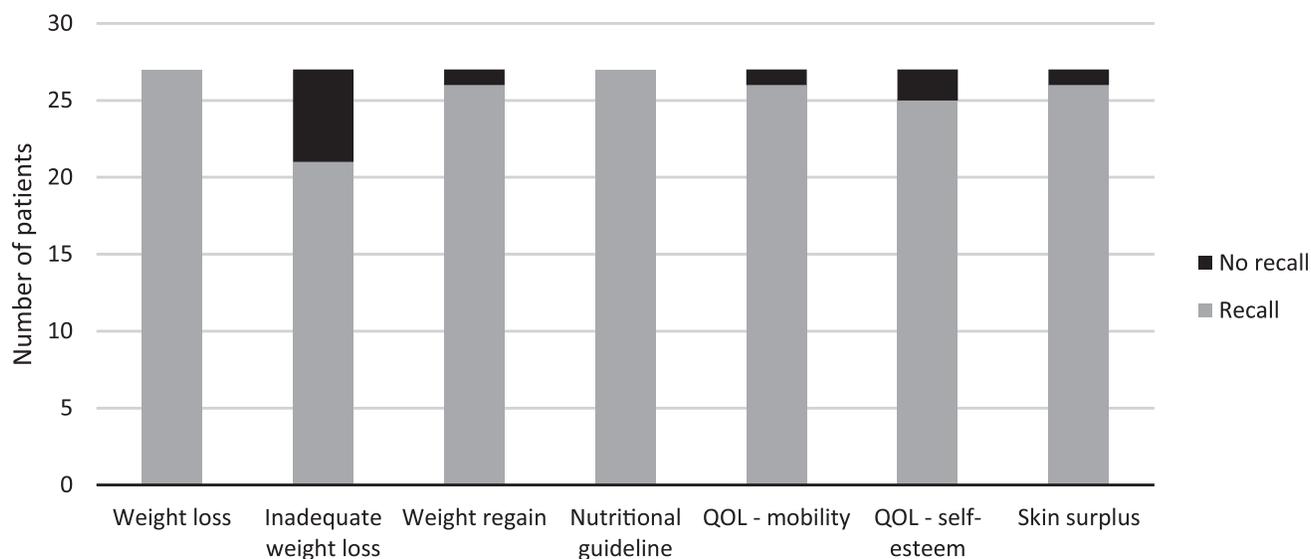
to hear. Other patients gave specific feedback on the education regarding the expectations of weight loss. Comments were that the formula to calculate their expected weight loss can be really informative, but it also creates a certain expectation that cannot always be achieved. The latter should be explained more thoroughly.

**TABLE 1. PATIENT CHARACTERISTICS OF THE TWENTY-SEVEN PATIENTS WHO PARTICIPATED IN A SEMISTRUCTURED INTERVIEW**

Number of patients	27	
Age (years)	23.1 (±1.6)	
BMI (kg/m <sup>2</sup> )	43.9 (±7.2)	
Weight (kg)	120.9 (±25.5)	
Timeframe interview— bariatric surgery	2.9 (±1.7)	
Gender (female/male)	25	2
Type 2 diabetes mellitus (yes/no)	0	27
Hypertension (yes/no)	3	24
Dyslipidemia (yes/no)	0	27
Obstructive sleep apnea (yes/no)	2	25
Arthritis (yes/no)	7	20
Gastroesophageal reflux disease (yes/no)	13	14

Scale variables are mentioned as mean (±SD). Nominal variables are mentioned as absolute numbers.

BMI, body mass index; SD, standard deviation.



**FIG. 4.** Recall of outcomes after bariatric surgery, which were addressed in the preoperative education.

All young adults knew about the positive effects on type 2 diabetes mellitus (T2DM) and the majority (23/27) also knew the positive effects on the cardiovascular risk profile. Four patients mentioned that the education about the health benefits emphasizes sleep apnea, joint pain, and T2DM, and that the education regarding the cardiovascular risk profile is inadequate.

#### Education concerning complications

Only three young adults could recall all the complications that were educated. In general, the most common complications were known, but there were some striking differences. For example, a wound infection was not known by 10 young adults and about half of the patients could not recall the complication anemia (Fig. 5a, b).

In the long term, eight young adults had a more complicated course after the bariatric surgery. Six patients had abdominal pain of whom five patients received one or more diagnostic laparoscopic surgeries. Abdominal wall pain, gallstones, wound infection, and anemia, all educated during the SIC, were better recalled by patients with a complicated course compared with patients with a normal course (Fig. 6).

One patient, who received a primary gastric banding, did not achieve a %EWL >50% (primary nonresponder), all other patients were primary responders. The recall of complications and health risks by the primary nonresponder was at least comparable with the rest of the cohort.

The patients who were interviewed within 1 year of their bariatric surgery (5/27) could better recall the complications, except for gallstones and osteoporosis, compared with the patients who were interviewed >1 year after the bariatric surgery.

#### SIC process

More than one-third of the patients found it very difficult to give consent for the bariatric surgery, despite the fact that they mentioned being informed sufficiently during the SIC

process. About half of the patients missed some specific information before the surgery (Table 2). Some of them mentioned that, regardless of the information given, they were too young to make this decision on their own; they could not oversee all the effects, complications, and lifestyle adjustments. There was a strong request to emphasize more on the effects of the bariatric surgery during a pregnancy on the mother and the fetus, on the menstrual problems and on the skin surplus in relation to the eligibility criteria for plastic surgery.

The online content and app were used by only a few young adults. More than one-third mentioned that social media should be included, but another one-third mentioned that social media would only give false expectations, good or bad.

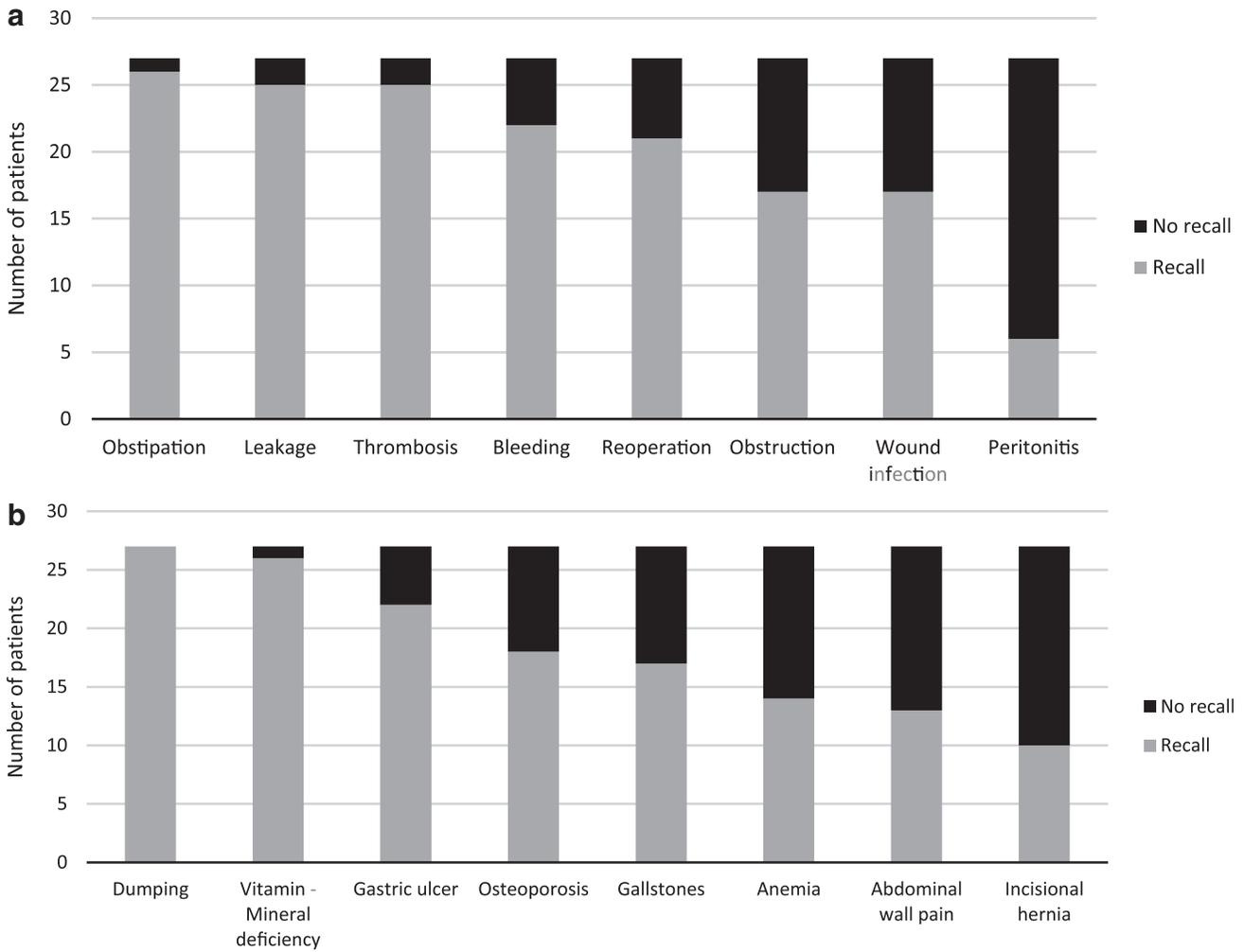
A substantial part of the patients recommended that a specific SIC process for the age group of young adults be held. Being informed by a person who went through this process as a young adult would be really informative.

#### Discussion

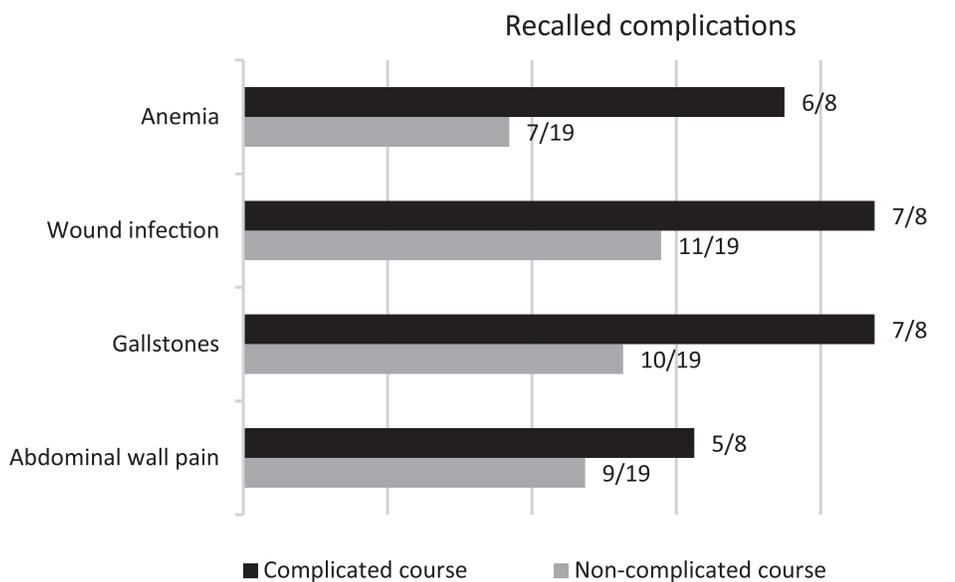
Received preoperative counseling and recall of preoperative provided information were focus of this study.

The received education regarding positive effects of bariatric surgery was deemed sufficient. It is known that patients will forget several aspects about the SIC postoperatively.<sup>11</sup> Madan and Tichansky concluded that at >1 year postoperatively only 36% of the patients could answer all questions correctly regarding the preoperative information.<sup>19</sup> Especially the negative aspects are easily forgotten, but also less emphasized, although patients express the need for education about these negative aspects. In our cohort, 24/27 patients could not recall one or more complications and the negative effects were less recalled. Physicians should educate patients more about the negative effects of a treatment.

Recollection of preoperative information might be biased by the occurrence of complications and/or by the participant's satisfaction on the surgery itself. Saigal *et al.*, however, found no significant difference between recall of specific complications experienced versus those not experienced in patients



**FIG. 5.** Recall of complications of bariatric surgery, which were addressed in the preoperative education **(a)** ≤30-day complications **(b)** >30-day complications.



**FIG. 6.** Complicated versus noncomplicated course; recall of complications that were addressed in the preoperative education.

TABLE 2. SUMMARY OF INADEQUATELY EDUCATED TOPICS

Topics	Number of patients (n)
Pregnancy—fertility—contraception—menstrual and vaginal disorders	11
Skin surplus—plastic surgery criteria	6
Dietary advise—alcohol—restaurant—lifestyle advise	6
Constipation—incontinence problems	3
Depression—happiness	2
Dumping	2
Vitamin deficiencies	2
Self-image	1
Chronic abdominal pain	1
The feeling of hunger	1
Fatigue	1
Surgery-related information	1
Postoperative care, hospital admission, and outpatient clinical care	1
Intolerance for specific products	1

undergoing adult spinal deformity surgery.<sup>20</sup> In our study, patients with a complicated course showed more knowledge of the postoperative complications abdominal (wall) pain and gallstones. More emphasis on postoperative complications in general and on specifically abdominal (wall) pain and gallstones is recommended.

The SIC process should be more age specific and personalized. Bariatric surgery requires a lifelong lifestyle adjustment. In a turbulent young adult stage of life, complying with all these adjustments might be challenging, especially in the long term. Young people are known to show worse adherence to the postoperative outpatient hospital care and the postoperative behavioral adjustments.<sup>7</sup> Taube-Schiff *et al.* reported the need to connect to other individuals that had gone through the surgical program and several participants also noted that having other young adults in the patient to patient support groups would have been beneficial.<sup>9</sup> In this study, a strong request was made by the young adults for more education regarding fertility, contraception, and menstrual disorders, and for more patient to patient support with other young adults. Next to this, more than one-third of the patients found it very difficult to give consent for the bariatric surgery, although the law considers a young adult capable of making independent decision, which indicates that there might be a need for a coach to make an informed consent decision.

The preoperative education and informed consent process is an essential step in the treatment process of bariatric surgery. Data from individual practice or larger published studies regarding outcomes after bariatric surgery help physicians to optimally inform patients, which can improve adherence to medical advice.<sup>13,14</sup> However, there is a lack of literature regarding the optimal preoperative education and informed consent and the outcomes in young adults undergoing bariatric surgery. Our results show that more attention should be paid to the SIC process in these patients.

Further research should focus on the specific needs of young adults, to optimize the informed consent process for bariatric surgery and thereby allow patients to have more realistic expectations and improve satisfaction. Incorporating

questionnaires on patient-related outcome measures could provide this kind of information. In addition, further research should be performed regarding the recall of the SIC process.

The major limitation of this study is the small sample size. Furthermore, the amount of time that elapsed postoperatively before participants were interviewed ( $2.9 \pm 1.7$  years) can bias information considering that patients forgot information.<sup>19</sup> At last, one researcher (C.E.J.M.D.) did all the interviews and kept notes without audiotaping. All these factors could affect the reliability and limit the ability to extrapolate the data from this study.<sup>21</sup>

## Conclusion

This is the first study regarding the preoperative education and informed consent in young adults (aged 18–25 years) undergoing bariatric surgery from a patient's point of view. This study reveals that there is room for improvement of the SIC process in young adults undergoing bariatric surgery. More dedicated educational material on possible scenarios after bariatric surgery, including risks and lifetime consequences, should be developed. Preoperative education should focus more on specific age-related problems and social interactions.

## Ethics

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Consent Statement

Informed consent was obtained from all individual participants included in the study.

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## Author Disclosure Statement

No competing financial interests exist.

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## Supplementary Material

Supplementary Data

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