



**University of Nairobi, College of Health Sciences
School of Medicine**

**DETERMINING THE IMPACT OF LIPOSUCTION ON
PATIENT SATISFACTION OF QUALITY OF LIFE AND
BODY IMAGE: A PROSPECTIVE STUDY IN
NAIROBI, KENYA**

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H58/11521/2018

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**THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE
AWARD OF MASTER OF MEDICINE IN PLASTIC,
RECONSTRUCTIVE AND AESTHETIC SURGERY DEGREE OF
UNIVERSITY OF NAIROBI.**

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STUDENT'S DECLARATION

I, **Dr. Kamundi Reuben Kangangi**, hereby certify that this thesis is my original work and has not been submitted for any degree at any other institution.

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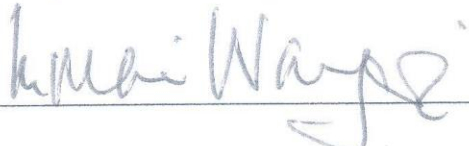
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STUDY IN NAIROBI, KENYA”**

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The research proposal for this research was presented at a meeting held on the 7th of September 2021 at the Department of Surgery of the University of Nairobi and was approved for submission to the institutional ethics review board. It was subsequently approved by the Kenyatta National Hospital – University of Nairobi, Ethics and Research Committee KNH/UoN-ERC on the 4th of July 2022. This thesis is hereby submitted for examination with my approval as the Chairman, of the Department of Surgery.

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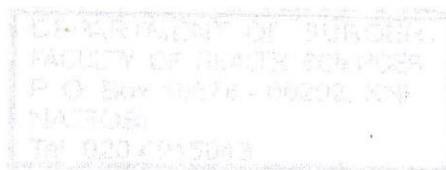
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Finally, I'm grateful to my colleagues in the department for their assistance in various capacities.

DEDICATION

I dedicate this dissertation to my parents: **Dr. Shadrack M.R. Kamundi, Ph.D.** and **Dr. Tabitha Karimi Kamundi, Ph.D.**, and my only sibling **David Kinyua Kamundi** for their unwavering support.

TABLE OF CONTENTS

STUDENT’S DECLARATION	ii
SUPERVISORS’ APPROVAL	iii
DECLARATION OF ORIGINALITY FORM	iv
UNIVERSITY OF NAIROBI.....	iv
DECLARATION	iv
DEPARTMENTAL APPROVAL	v
ACKNOWLEDGEMENTS.....	vi
DEDICATION.....	vii
TABLE OF CONTENTS	viii
LIST OF ABBREVIATIONS & ACRONYM	xiii
ABSTRACT	xiv
CHAPTER ONE: INTRODUCTION	1
1.1 Background Information.....	1
1.2 Research Question.....	2
1.3 Study Objectives	2
1.3.1 Broad Objective.....	2
1.3.2 Specific Objectives	2
2.0 CHAPTER TWO: LITERATURE REVIEW	3
2.1 Liposuction	3
2.1.1 Body Image and Liposuction	4
2.1.2 Quality of Life and Liposuction	4
2.2 Study Justification and Significance.....	5
2.3 Conceptual Framework.....	6
3.0 CHAPTER THREE: MATERIALS AND METHODS	7
3.1 Study Design.....	7
3.2 Area of Study/Study sites	7
3.3 Study Population	7
3.3.1 Inclusion Criteria	7
3.3.2 Exclusion Criteria	7
3.4 Sample Size Calculation	7

3.5 Sampling Technique & Procedure	8
3.6 Variables	8
3.6.1 Independent Variables	8
3.6.2 Dependent Variables	8
3.6.3 Confounding /Extraneous Variables	8
3.7 Data Collection Techniques	9
3.7.1. BODY-Q Questionnaire.....	9
3.8 Data Collection Methods	9
3.9 Data Management.....	10
3.10 Data Analysis and Presentation.....	11
3.11 Quality Control.....	11
3.12 Ethical Consideration.....	11
3.13 Dissemination of Results	11
3.14 Study Limitations and Delimitations	12
3.14.1 Study Limitation	12
3.14.2 Study Delimitations	12
4.0 CHAPTER FOUR: RESULTS	13
4.1. Characteristics of the Patients	13
4.2 Intraoperative	13
4.3 Technique of Liposuction	14
4.4 Postoperative Complications.....	14
4.5 Impact of Patient Demography on Satisfaction and Quality of Life Pre and Post Liposuction	14
4.5.1 Patient Age on Satisfaction and Quality of Life.....	14
4.5.2 Patient BMI On Satisfaction and Quality of Life	16
4.6. Surgical Procedures and Their Effect on Patient Satisfaction, Quality of Life and Body Image 6 Months Postoperatively.....	18
4.7 Liposuction Complications and Their Effects on Quality of Life and Patient Satisfaction	19
4.7.1 Patient Liposuction Complication and Their Effect on Satisfaction and Quality of Life	19
4.7.2 Quality of Life Before and After	21

5.0 CHAPTER FIVE DISCUSSION, CONCLUSION & RECOMMENDATIONS	22
5.1 Discussion	22
5.1.1 Impact of Liposuction on Patient Satisfaction and Quality of Life	22
5.1.2 The Impact of The Age of The Patient on Satisfaction and Quality of Life Pre and Post Liposuction.....	23
5.1.3 The Effect of Patient’s BMI On Satisfaction and Quality of Life Pre and Post Liposuction	23
5.1.4 The Effect of The Type of Surgical Procedures Done on Patient Satisfaction, Quality of Life and Body Image 6 Months Postoperatively	23
5.1.5 Effect of Liposuction Post-Op Complications on Quality of Life and Patient Satisfaction.....	24
5.2 Conclusion	24
5.3 Recommendations	25
REFERENCES	26
APPENDICES	29
Appendix I: Participant Information and Consent Form.....	29
Appendix II: Assent Form	35
Appendix III: Questionnaire I.....	41
Appendix IV: Body-Q Questionnaire.....	43
Appendix V: Letter of Approval from Da Vinci Medical Group	65
Appendix VI: Letter of Approval from Coptic Hospital	66
Appendix VII: Letter of Approval from Platinum Surgery Center.....	67
Appendix VIII: NACOSTI Research Permit	68
Appendix IX: KNH/UoN-ERC Letter of Approval.....	69
Appendix X: Certificate of Plagiarism.....	71

LIST OF TABLES.

Table 1:Characteristics of the patients	13
Table 2:Duration of surgery and volume suctioned.....	13
Table 3:Technique of Liposuction	14
Table 4:Postoperative complication.....	14
Table 5 :Patient age on satisfaction and quality of life	15
Table 6:Patient BMI on satisfaction and quality of life	16
Table 7:Patient surgical procedures done on satisfaction and quality of life	18
Table 8:Patient Liposuction Complication And Their Effect On Satisfaction And Quality Of Life	19
Table 9:Quality of life before and after.....	21

LIST OF FIGURES.

Figure 1:Conceptual Framework 6
Figure 2: Flow Chart of Plan of Action..... 10

LIST OF ABBREVIATIONS & ACRONYM

BMI	Body mass index
HDL	High-density lipoproteins
HIV	Human Immunodeficiency Virus
HIV	Human Immunodeficiency Virus
HOMA-IR	Homeostatic model assessment for Insulin Resistance
IBM	International Business Machines
KDHS	Kenya Demographic and Health Survey.
KNH	Kenyatta National Hospital
LDL	Low-density lipoproteins
PRO	Patient-related outcomes
PSC	Platinum Surgery Centre
SPSS	Statistical Package for Social Sciences.
US	United States
WHO	World Health Organization
SAL	Suction- Assisted Liposuction
PAL	Power Assisted Liposuction
KNH-UoN ERC	Kenyatta National Hospital-University of Nairobi Ethics Review Committee
NACOSTI	National Commission for Science, Technology, and Innovation

ABSTRACT

Background: The need to be considered physically attractive and the urge to match the conventional beauty model is continually gaining importance in our modern society. This is further worsened by the unrealistic ideals that are depicted in the media which for the majority of the people are unattainable in an ordinary manner. The ensuing discontent with an individual's body semblance has led to low self-esteem, social isolation, sex life impairment, anxiety as well as feelings of rejection from which negatively impacts quality of life. As a result, liposuction as an aesthetic procedure has got the highest demand to help in weight redistribution according to a patient's ideal.

Broad objective: To establish the impact of liposuction on the quality of life of a patient and the image of the body in a sample Kenyan population.

Study design: Prospective observational study

Research and methods: The study was a multicenter study that was materialized in the surgical departments of Da Vinci Hospital, Platinum Surgery Centre (PSC) and Coptic Mission Hospital. A sum of 50 patients above 18 years undergoing liposuction were subjected to a validated questionnaire; BODY-Q, pre-operatively and 6 months post-operatively. Data collected through the questionnaire included: patients' demographics, body semblance evaluation as well as health-associated life quality measures, complications postoperatively and technique of surgery used.

Data methods and handling: Data collected was coded and input into SPSS (IBM version 25). Scores on Body image, Quality of life, and Patient satisfaction were calculated. Differences between the pre-and post-op scores were assessed using a paired t-test, while a repeated measure mixed ANOVA was used to assess the differences between the scores and characteristics of the patients. At a 95% confidence interval, a p-value of <0.05 was considered statistically important.

Results: The study included 50 patients, mostly females (98%), with a mean age of 35.4 (SD 6.8) years and a BMI of 28.0 (SD 4.1) kg/m². Most procedures (60%) were VASER, and the mean suctioned volume was 4744.4mls (SD 1606.1). Postoperative complications occurred in 30% of patients, mostly seromas. Age had no effect on most BODY-Q domains, except for social function (p-value = 0.019) and appraisal of excess skin (p-value = 0.041). BMI had no effect on most domains except satisfaction with the back (p-value = 0.049). The surgical procedure had no effect on most domains except for physical function (p-value = 0.034) and

satisfaction with the abdomen (p-value = 0.008). Postoperative complications affected expectations (p-value = 0.049) and satisfaction with the abdomen (p-value = 0.004), chest (p-value = 0.041), and upper arms (p value < 0.001). Quality of life improved after surgery, except for satisfaction with the chest (p-value = 0.089) and appraisal of body contouring scars (p-value = 0.058).

Conclusion: The findings in this study serve to emphasize the positive effect that liposuction has on patients' quality of life, self-esteem, body image, and satisfaction with their body. Thus, this study has provided local data that will aid healthcare providers during the provision of liposuction. Further, it will help improve public awareness of the benefits of liposuction apart from aesthetic concerns.

CHAPTER ONE: INTRODUCTION

1.1 Background Information

Aesthetic surgery such as liposuction is often considered a low-priority intervention, with frivolity and apparent lack of substantial benefit being the main criticisms against it (1,2). As such, a majority of healthcare insurance companies shy away from covering aesthetic procedures as they consider them trivial (3). Although the obvious objective is to make a part of the body more beautiful, the reasons for the patient to undergo expensive risky procedures in the lack of pathologic signs, are of a more complex nature (4).

The importance of health and fitness, as well as the ardency placed on beauty and youthfulness, have increased in the last 30 years (5). The need to be considered physically appealing as well as the urge to attain the conventional idyllic beauty is continually gaining importance in our modern society. This is further worsened by the unrealistic ideals that are depicted in the media which for most people, are unattainable in a natural way (6,7). Further, genetic predisposition, pregnancy, dietary excesses, lifestyle and the process of ageing also chip into the change of body contour. The ensuing dissatisfaction with their body image has led to low self-esteem, social isolation, sex life impairment, anxiety as well as feelings of rejection from their peers which negatively impacts their quality of life (4,5). As a result, liposuction is one of the aesthetic procedures with the highest demand.

However, differences in both body image satisfaction and quality of life perception exist across ethnic groups. As compared to Caucasians, Black women are less likely to idealize thinner frames and tend to prefer larger body sizes as these are seen to be more appealing (8). Further, within the African culture, larger body size was traditionally considered a sign of wealth and social status (9). In previous studies in Western and European populations, there were significant improvements following liposuction concerning life in general, health, body image and emotional stability with significant reduction in anxiety and psychological distress. Further, up to 80% of the patients in these studies were satisfied with the post-operative results and would endorse it to friends and family (6,10,11). In the 21st century, the degree of acculturation in Africa with Western customs is significantly increasing which could thus alter the image of the body and quality of life perception due to liposuction in unforeseen ways (12,13). However, there has been no local study that had assessed the aforementioned and there remained a paucity of data as best known to us. Thus, this study aimed to determine the impact of liposuction on patients' satisfaction on life quality as well as the image of the body in a sample Kenyan population.

1.2 Research Question

What is the impact of liposuction on patients' quality of life and body image in a sample Kenyan population?

1.3 Study Objectives

1.3.1 Broad Objective

To determine the impact of liposuction on patients' satisfaction on the quality of life and body image in a sample Kenyan population.

1.3.2 Specific Objectives

- a) To determine the impact of patient demography on satisfaction and quality of life pre- and post-liposuction.
- b) To determine satisfaction with preoperative body contours as a determinant of patient satisfaction
- c) To determine surgical procedures done and their effect on patient satisfaction, quality of life, and body image 6 months postoperatively.
- d) To determine liposuction complications and their effects on quality of life and patient satisfaction.

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Liposuction

Since 1980, obesity in the world has more than doubled with approximately 1.9 billion adults classified as overweight or obese (9,14). It has become a public outbreak within the US with roughly 70% of grown-ups being overweight and 40% obese (15). In Kenya, women were found to be four-fold more prone to be obese or overweight paralleled to fellow males with up to 33% of women in Kenya being overweight or obese (Mkuu et al., 2021, KDHS 2014). Given the challenges that many encounter in initiating and maintaining weight loss in the long term, there has been intensified attention towards surgical interventions that aid in weight control, improve physical appearance and overall health (16). Suction assisted lipectomy commonly referred to as liposuction is a procedure of removing adipose tissue from the subcutaneous space to create a desirable body contour. Of all the cosmetic procedures done in the US, it is the second most common (17).

Liposuction has both aesthetic and non-aesthetic indications. For its aesthetic indications, it aids in weight redistribution according to a patient's ideal, with the commonest parts for fat deduction being- the abdomen, the flanks, the gluteal region and the lumbar region. In addition, it is also used adjunctively to enhance aesthetic interventions such as body contouring following bariatric surgery, abdominoplasty, breast augmentation and gluteal fat transfer (17). On the other hand, management of lymphedema secondary to breast cancer, lipodystrophy secondary to HIV medication and Cushing's syndrome, evacuation of hematomas and breast reduction are but a few of its non-aesthetic indications (18). Furthermore, as adipose tissue acts as a metabolic organ affecting diabetic risk, cardiovascular disease risk and energy balance, its removal could affect an individual's metabolism. As such some studies have found normalization of insulin levels and HOMA- IR, a significant increase in adiponectin and HDL levels as well as a significant decrease in leptin, LDL levels and inflammatory markers following abdominoplasty and liposuction (15,19).

In the past, surgical intervention was considered a success if the surgeon was satisfied (1). However more recently, as health care becomes more patient-centered, psychosocial functioning is increasingly considered more essential by improving self-esteem, body semblance as well as life quality being used as criteria to evaluate the benefits of a medical intervention (20).

2.1.1 Body Image and Liposuction

Body semblance or image constitutes several components; an individual's effect, perception and attitude towards the shape and size of their own body (21). It is a psychological representation of one's thinking, feelings as well as behavior towards their physique (22). Body image exerts important effects on one's physical, mental and psychological health, self-confidence and socialization as well as the sexual experience and satisfaction (23). Body image satisfaction and dissatisfaction falls on a continuum, such that some people report severe body image discontent that depressingly affects their day-to-day life such that some people report camouflaging their body with oversize clothing and avoiding looking at their bodies. When excessive on the other hand body image dissatisfaction can manifest as low self-esteem, anxiety and depression symptoms additionally, it is formally recognized as a symptom in eating disorders, gender dysphoria and body dysmorphic disorder (20).

As expected, due to societal pressure women have greater tendency to be discontented with their body image in comparison to men. Contrary to popular belief though, it is not only obese women who report dissatisfaction with their body image some studies show that it may be independent of Body mass index (BMI). This was demonstrated in a study by Sawyer et al. (24) where up to approximately 42 percent of females of average weight were still highly dissatisfied with their abdomen and waist.

The level of dissatisfaction or satisfaction of a person's appearance and the amount of energy that they invest towards their appearance emotionally, cognitively or behavioral will determine their subsequent behavior. As such, a person who is exceedingly invested as well as highly dissatisfied with the appearance of their body is more likely to be involved in behaviors that can alter their appearance such as aesthetic surgery (20). In a population-based study by Jávoet al. (25), 50% of women who were 18-35 years old had an interest in liposuction with 20% of these exhibiting eating disorder symptoms. Curiously, aesthetic liposuction has been found to significantly lessen the overall danger of an eating disorder and improve body image satisfaction (26).

2.1.2 Quality of Life and Liposuction

World Health Organization describes Quality of Life as the view of an individual's life position in the background of value systems as well as culture in which they subsist relating to their goals, concerns, expectations, goals as well as standards. Quality of life is thus a multi-dimensional construct that involves both physical, psychological health, economic, social,

cultural and environmental aspects (6). In this case, it incorporates appearance issues as well as those of social functioning, relationships and physical health. Some of these issues may include obesity specific symptoms and challenges experienced when performing various physical activities in the domain of physical health as well as the degree of sex life satisfaction and social acceptance by peers in the domains of relationships and social functioning (27). Individuals who have undergone liposuction have been shown to experience improved mental well-being, intimacy, social functioning and physical appearance in short an overall improvement in their quality of life (20).

During these unprecedented times due to the COVID-19 pandemic, some studies have noted increased public interest in aesthetic surgery. Some of the major cited reasons range from the urge to be more better-looking following the crisis, to constantly seeing and thus judging oneself in the mirror more frequently as well as an increase in the time spent on social media (28,29). Body image concerns are however still considered trivial, especially by insurance companies most of which refuse to fund cosmetic surgeries with patients seeking these particular healthcare services having to incur serious pocket expenditure. This delays their ability to access care and can also cause financial distress to some (30). The current guidelines thus fail to consider that people with body semblance discontentment are more prone to being anxious, suicidal and depressed as well as more prone to having eating disorders, all conditions which influence an individual's health, life quality and well-being (31). Thus, this study could provide local data that would aid Kenyan insurance companies when formulating policies on liposuction

2.2 Study Justification and Significance

During these unprecedented times due to the COVID-19 pandemic, some studies have noted increased public interest in aesthetic surgery. Some of the major cited reasons range from the urge to be better-looking following the crisis, to constantly seeing and thus judging oneself in the mirror more frequently as well as an increase in the time spent on social media (26,27). Body image concerns are however still considered trivial, which delays the ability of patients to access care (28). There is a failure to consider that people with body semblance discontentment are more prone to being anxious, blue and suicidal as well as more prone to having eating disorders, all conditions which influence one's health, well-being as well as life quality (29). Knowledge of health-associated quality of life has become increasingly important in medical care and has been noted to be related to greater patient satisfaction and better health outcomes.

However, there remains a paucity of data regarding this, especially among Black African populations. Thus, this study could provide local data that would aid healthcare providers during the provision of liposuction. Further, it would help improve public awareness of the benefits of liposuction apart from the aesthetic concerns.

2.3 Conceptual Framework

The figure below illustrates the study conceptual framework. It describes the inter-relationship of patient satisfaction, body image and quality of life and how liposuction interacts with all the three domains.

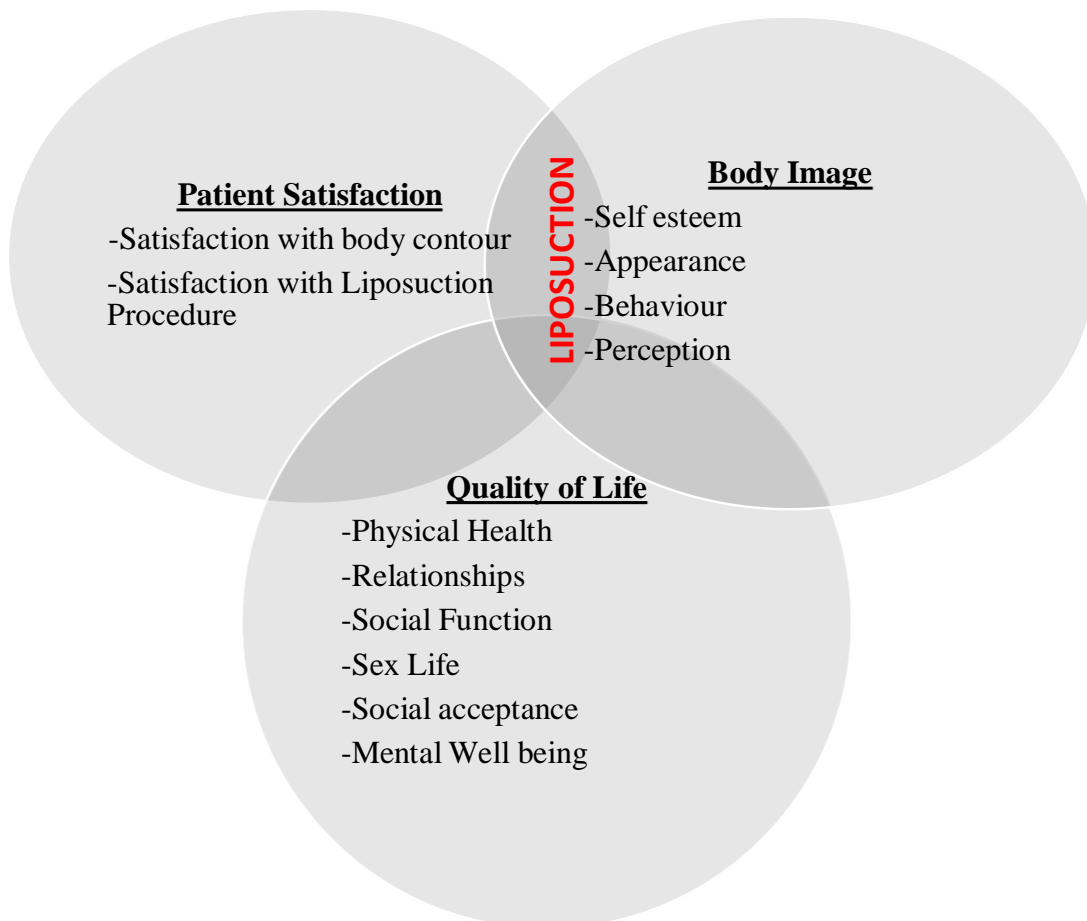


Figure 1: Conceptual Framework

3.0 CHAPTER THREE: MATERIALS AND METHODS

3.1 Study Design

This was a prospective observational study.

3.2 Area of Study/Study sites

The study was done in the surgery departments of the following collaborating institutions: Platinum Surgery Centre, Da Vinci Hospital, and Coptic Mission Hospital. The above sites were chosen as they were board certified to carry out liposuction procedures in Kenya.

3.3 Study Population

Male as well as female patients above 18 years of age undergoing liposuction surgery was the study population- Approximately 12-15 patients undergo this procedure every month within the country and its popularity is gradually increasing.

3.3.1 Inclusion Criteria

Male as well as female patients above 18 years of age undergoing liposuction in different areas of the body.

3.3.2 Exclusion Criteria

- i. Patients with overt Body Dysmorphic Disorder
- ii. Patients undergoing liposuction for non-aesthetic indications.
- iii. Patients who are cigarette smokers

3.4 Sample Size Calculation

Fischer formula was used to calculate the size of the sample (32):

$$N = Z^2 P (1-p) / D^2$$

Where:

N = total number of samples

P = estimated proportion of study outcome. In a study by Soest et al., (2009), 3.2% reported they would decide against a cosmetic operation citing dissatisfaction.

D = margin of error (D=0.05)

Z = z score (z=1.96)

Hence, $1.96 * 1.96 * 0.032 * 0.968 / 0.0025 = 47.59$

Hence a minimum 48 participants were selected.

3.5 Sampling Technique & Procedure

Non-probability sampling, specifically convenience sampling was used.

3.6 Variables

3.6.1 Independent Variables

Patient demographics:

- Age
- Weight
- Height
- BMI
- Education level
- Occupation

3.6.2 Dependent Variables

- i. Body Image evaluation done using BODY-Q tool and specifically measuring the following related Quality of life measures:
 - Physical function
 - Psychological function
 - Obesity symptoms
 - Expectations from surgery
 - Social function
 - Sexual function
- ii. Amount of lipoaspirate and effect on the quality of life.
- iii. Technique employed in liposuction and its post-operative impact on quality of life and body image.

3.6.3 Confounding /Extraneous Variables

- i. Patients who had another aesthetic procedure within 6 months of liposuction that had the potential of affecting quality of life, body image and patient satisfaction were dropped from the study.
- ii. Societal view on liposuction and their take on what is beautiful

3.7 Data Collection Techniques

3.7.1. BODY-Q Questionnaire

The BODY-Q questionnaire, is a validated tool designed by Memorial Sloan Kettering Cancer Center in New York City, to measure Patient-Related Outcomes (PRO) among patients undergoing loss of weight and body contouring procedures like Liposuction, was used in the study. This questionnaire comprised three main domains namely: semblance, health-associated life quality as well as the patient's experience with care. Each domain had sub-themes that were measured with independently functioning scales. The appearance domain measured the patient's satisfaction with the appearance of various body parts like the buttocks, abdomen, thighs, hips, and upper arms. The health-associated life quality domain measured the image of the body, symptoms of obesity, psychosocial stress related to appearance as well as physical, psychological, social and sexual function. The experience of care domain was left out in this study as it did not affect patient life quality as well as body semblance following liposuction. Since the questionnaire was lengthy and tedious, the Principal Investigator guided the participants in filling the questionnaire highlighting the areas of the questionnaire that were relevant to the patient's particular procedure. All scales were changed into scores that ranged from zero to a hundred with a greater score implying a better outcome. The license to use the BODY-Q questionnaire was obtained from Dr. Andrea Pusic, a plastic surgeon and health services researcher at Memorial Sloan Kettering Cancer Center in New York City.

3.8 Data Collection Methods

Male and female patients above 18 years undergoing liposuction surgery who presented to the clinics, wards, and theaters in the study locations were recruited into the study either by the principal investigator or the presiding plastic surgeon. Written informed consent was sought from each patient. History taking and physical exams were performed for each patient and only those who met the eligibility criteria were subjected to the BODY-Q instrument pre-operatively and after 6 months post-op (Figure 1).

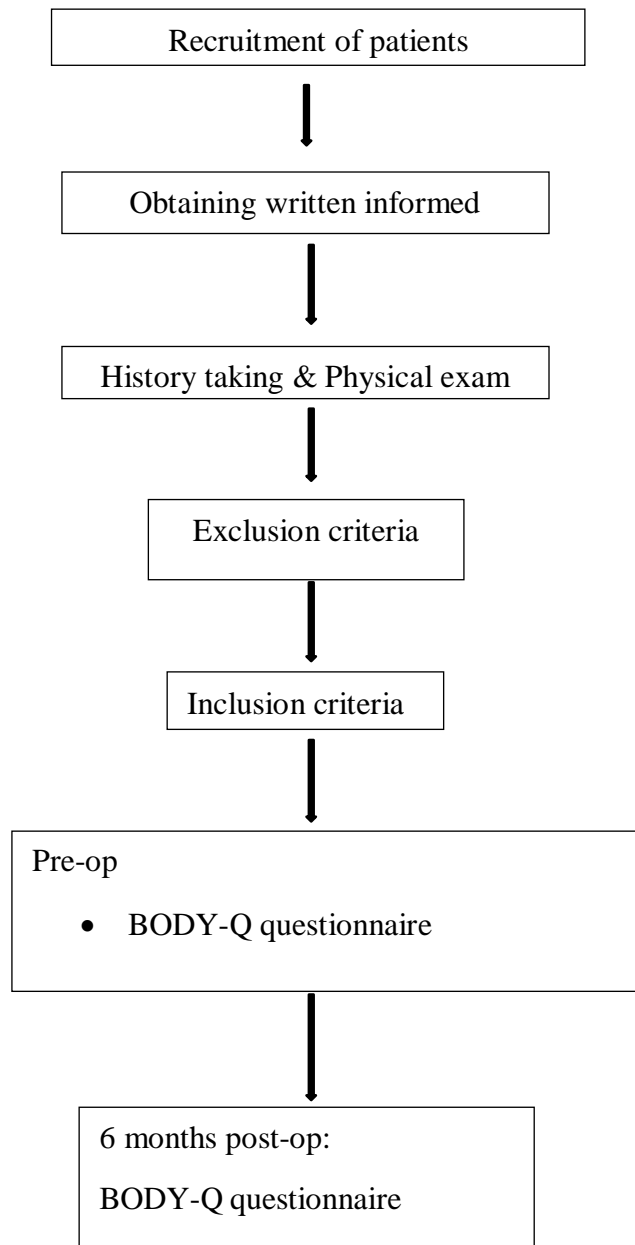


Figure 2: Flow Chart of Plan of Action.

3.9 Data Management

The data collection process was properly structured for confidentiality and privacy. Participants were assigned codes, and no bio-identifiable markers were used when recording the collected data. The principal investigator inputted all data collected into Microsoft Access Database on a password-protected laptop.

3.10 Data Analysis and Presentation

Collected data were assigned codes and inputted into SPSS (IBM version 25). Scores on life quality, body semblance as well as patient contentment were calculated. Statistically significant differences between pre-and post-op scores were established using a paired T-test, and also with the repeated measure mixed ANOVA when associating with selected characteristics of the patients. A p-value of <0.05 for all the statistical tests was considered statistically significant. Data analyzed were summarized and presented using tables and figures.

3.11 Quality Control

Data collection tools used were standard for both pre-operative and post-operative. To avoid misinterpretation, a pre-test of the questionnaires was carried out to clarify the language used. The data collected were cross-checked for any incompleteness. To ensure the legitimacy and dependability of the study findings, this quality control process was carried out throughout the whole study period.

3.12 Ethical Consideration

The researcher requested for authorization from the Kenyatta National Hospital/ University of Nairobi Ethical Review Committee (KNH/UoN-ERC). Research permit was also sort from the National Commission for Science, Technology and Innovation (NACOSTI). The consent was attained from the surgical departments of the 3 sites before the commencement of the study. The participants of the study who were recruited received full disclosure of the essence of the study and only then was written informed consent obtained. They were also alerted that participation was voluntary and any patient who did not wish to participate would still be able to receive the same quality of care. The participants did not incur an extra cost for participating in the study, nor were they reimbursed to ensure no conflict of interest. The recommendations for COVID-19 within the healthcare settings were also strictly adhered to. Only the presiding plastic surgery team handling the patient or the principal investigator administered the questionnaires to minimize contact.

3.13 Dissemination of Results

The study results and findings will be disseminated through academic meetings in the department, presentations at scientific conferences and publication of manuscripts in peer-reviewed journals.

3.14 Study Limitations and Delimitations

3.14.1 Study Limitation

- Loss of follow-up of some patients
- The length of the questionnaires was off-putting to participants. However, this was mitigated by ensuring the principal investigator guided the participant in filling the questionnaire.

3.14.2 Study Delimitations

- Multiple numbers of sites provided more options for recruiting participants.
- Ten percent more participants were provisioned to cater for the loss of follow up
- A detailed explanation of the purpose of each tool/questionnaire was given to each participant during recruitment- to ensure a good understanding of its importance.

4.0 CHAPTER FOUR: RESULTS

4.1. Characteristics of the Patients

Table 1: Characteristics of the patients

	Frequency (<i>n=50</i>)	Percent
Age in years		
≤30	13	26.0
31 – 40	23	46.0
>40	14	28.0
Gender		
Male	1	2.0
Female	49	98.0
BMI		
18.5 – 24.9	10	20.0
25.0 – 29.9	26	52.0
≥30.0	14	28.0
Education		
Secondary	6	12.0
Tertiary	44	88.0
Occupation		
Business	27	54.0
Employed	22	44.0
Housewife	1	2.0
Study site		
Coptic	6	12.0
DVC	30	60.0
PSC	14	28.0

The mean age of the patients was 35.4 (SD 6.8) years, where the lowest age was 22.0 years, and the highest was 51.0 years. Most patients recruited for the study were females (98%). The mean BMI of the patients was 28.0 (SD 4.1) kg/m². Most patients had post-secondary education (88.0%), were businesspeople (54.0%), and were from Da Vinci Hospital (60%). [Table 1].

4.2 Intraoperative

Table 2: Duration of surgery and volume suctioned

	Mean ± SD	Median (IQR)	Min	Max
Volume suctioned	4744.4 ± 1606.1	4534.0 (3800.0 - 5700)	400	8000
Surgery duration	3.8 ± 0.7	4.0 (3.0 – 4.0)	3.0	5.0

From table 2, the mean volume suctioned was 4744.4 (SD 1606.1), while the median volume suctioned was 4534 with an IQR of 3800.0 – 5700.0. The mean duration of the surgeries was

3.8 hours (SD 0.7), while the median duration of the surgeries was 4 hours with an IQR of 3.0-4.0 hours

4.3 Technique of Liposuction

Table 3:Technique of Liposuction

	Frequency (<i>n=50</i>)	Percent
Power assisted	14	28.0
SAL	6	12.0
VASER	30	60.0

Thirty out of the fifty procedures carried out were VASER; which was 60% of all the procedures. Power assisted liposuction took 28%, while SAL took 12%.

4.4 Postoperative Complications

Table 4:Postoperative complication

Complication	Frequency (<i>n=50</i>)	Percent
Yes	15	30.0
No	35	70.0
Type of complication	Frequency (<i>n=15</i>)	Percent
Anaemia	3	20.0
Infection	3	20.0
Keloids	1	6.7
Left abdominal abscess	1	6.7
Lipoma	1	6.7
Seroma	5	33.3
Skin necrosis	1	6.7

There were no postoperative complications on 35 out of the 50 patients (70%). Most of the 15 who experienced postoperative complications had a seroma (33.3%). Anaemia and infections were the second most common complication, representing 20% of the complications each. Other complications included keloids (6.7%), left abdominal abscess (6.7%), lipoma (6.7%), and skin necrosis (6.7%).

4.5 Impact of Patient Demography on Satisfaction and Quality of Life Pre and Post Liposuction

4.5.1 Patient Age on Satisfaction and Quality of Life

Table 5 :Patient age on satisfaction and quality of life

Appearance related psychosocial distress				
	≤30	31-40	>40	p-value
Before	56.3 ± 21.9	54.3 ± 12.0	49.6 ± 18.4	0.302
After	15.4 ± 37.6	2.8 ± 7.8	2.9 ± 9.3	
Expectations				
Before	95.9 ± 10.1	94.9 ± 11.2	93.6 ± 12.7	0.422
After	100.0 ± 0.0	93.2 ± 13.4	96.2 ± 7.0	
Body image				
Before	49.4 ± 32.2	35.3 ± 25.4	30.8 ± 20.5	0.251
After	90.9 ± 18.2	95.9 ± 11.3	90.0 ± 16.6	
Social function				
Before	83.2 ± 22.2	63.8 ± 15.7	65.3 ± 22.9	0.019
After	100.0 ± 0.0	97.0 ± 9.0	95.4 ± 10.6	
Psychological function				
Before	81.0 ± 25.4	66.6 ± 13.4	69.7 ± 29.5	0.163
After	100.0 ± 0.0	98.4 ± 5.5	95.8 ± 11.5	
Physical function				
Before	87.1 ± 15.5	80.4 ± 22.6	73.4 ± 22.1	0.291
After	100.0 ± 0.0	96.4 ± 8.2	97.1 ± 11.0	
Sexual function				
Before	50.2 ± 31.0	52.0 ± 20.9	45.5 ± 27.8	0.446
After	90.7 ± 17.7	95.6 ± 10.4	86.7 ± 22.4	
Satisfaction with abdomen				
Before	32.3 ± 33.2	22.8 ± 17.0	19.5 ± 20.5	0.329
After	93.2 ± 13.5	91.2 ± 13.7	87.5 ± 17.4	
Satisfaction with back				
Before	45.9 ± 32.0	30.1 ± 17.0	28.0 ± 19.8	0.283
After	92.8 ± 12.8	95.4 ± 10.8	92.7 ± 14.5	
Satisfaction with body				
Before	41.5 ± 22.2	36.3 ± 15.8	43.7 ± 17.4	0.578
After	92.3 ± 15.2	91.5 ± 16.4	93.7 ± 11.7	
Satisfaction with buttocks				
Before	48.2 ± 40.0	65.9 ± 41.4	57.4 ± 32.5	0.420
After	87.7 ± 13.9	97.4 ± 9.9	95.4 ± 13.1	
Satisfaction with chest				
Before		50.3 ± 9.4	50.9 ± 13.9	0.882
After		74.8 ± 30.6	70.8 ± 19.5	
Satisfaction with nipples				
Before		100.0		-
After		100.0		
Satisfaction with upper arms				
Before	14.0 ± 19.2	25.8 ± 29.8	27.3 ± 43.8	0.636
After	67.6 ± 40.8	72.9 ± 31.5	82.0 ± 16.1	
Satisfaction with inner thighs				
Before	0.0 ± 0.0	66.0 ± 0.0	52.8 ± 36.3	0.423
After	100.0 ± 0.0	66.0 ± 0.0	77.2 ± 13.9	
Satisfaction with hips and outer thighs				
Before	54.6 ± 25.5	32.6 ± 32.5	43.1 ± 36.2	0.140
After	91.3 ± 16.2	75.0 ± 17.1	82.5 ± 18.7	
Appraisal of excess skin				
Before	87.7 ± 19.2	66.7 ± 31.7	53.6 ± 28.9	0.041
After	93.9 ± 15.0	96.5 ± 11.5	91.4 ± 17.0	
Appraisal of stretch marks				
Before	60.2 ± 28.5	70.2 ± 27.6	56.9 ± 26.4	0.278
After	66.8 ± 20.6	82.1 ± 25.9	79.5 ± 12.6	
Appraisal of body contouring scars				
Before	75.2 ± 24.7	85.7 ± 20.0	79.8 ± 27.7	0.476
After	78.3 ± 25.1	85.7 ± 20.0	88.6 ± 18.8	

A repeated measures mixed ANOVA (Analysis of Variance) was performed to determine the impact of age on satisfaction and quality of life pre and post liposuction.

The results on Table 5 indicate that age had no effect on all domains of the BODY-Q with the exception of social function (p value = 0.019) and appraisal of excess skin (p value = 0.041). No effect implies the difference in the score for the before and after for the age groups were comparable i.e. no age group exhibited a high difference than the other. For social function, patients aged 30 and below had higher scores for before and after in comparison to the other age groups, and the before and after difference of 16.8 was not comparable to the 33.2 and 30.1 for age group 31-40 and more than 40 years old. This was the case for appraisal for excess skin which also had the highest scores for the before and after, where the difference for the before and after for the 30 and below age group of 6.2 was not comparable to the 29.8 and 37.8 for the age groups of 31-40 and more than 40 years old.

4.5.2 Patient BMI On Satisfaction and Quality of Life

Table 6: Patient BMI on satisfaction and quality of life

Appearance related psychosocial distress				
	18.5 – 24.9	25.0 – 29.9	≥30	p-value
Before	49.0 ± 27.3	52.3 ± 8.6	59.1 ± 16.7	0.088
After	0.0 ± 0.0	2.7 ± 7.3	16.8 ± 36.5	
Expectations				
Before	96.5 ± 11.1	92.4 ± 12.6	98.1 ± 7.2	0.075
After	98.0 ± 4.2	93.1 ± 13.1	99.3 ± 2.7	
Body image				
Before	45.8 ± 36.6	38.1 ± 26.8	31.1 ± 16.2	0.500
After	90.5 ± 20.4	94.6 ± 13.0	91.6 ± 14.1	
Social function				
Before	76.8 ± 22.2	67.4 ± 21.1	67.4 ± 20.3	0.328
After	100.0 ± 0.0	98.2 ± 7.9	93.9 ± 11.0	
Psychological function				
Before	78.4 ± 25.0	71.1 ± 21.1	66.4 ± 23.4	0.406
After	97.7 ± 7.3	99.5 ± 2.7	95.8 ± 11.5	
Physical function				
Before	89.0 ± 16.9	80.2 ± 21.0	73.9 ± 26.2	0.191
After	100.0 ± 0.0	98.2 ± 6.5	94.5 ± 12.1	
Sexual function				
Before	46.3 ± 26.7	50.0 ± 19.3	51.7 ± 34.7	0.888
After	90.7 ± 16.5	93.6 ± 15.4	89.4 ± 19.2	
Satisfaction with abdomen				
Before	32.4 ± 22.2	24.4 ± 24.3	18.5 ± 21.3	0.162
After	93.9 ± 11.5	93.3 ± 14.1	83.6 ± 16.1	
Satisfaction with back				
Before	40.4 ± 24.8	35.1 ± 20.3	26.0 ± 26.7	0.049

After	96.6 ± 10.8	97.7 ± 7.4	85.1 ± 16.2	
Satisfaction with body				
Before	39.2 ± 27.2	42.8 ± 10.5	34.4 ± 21.2	0.174
After	95.3 ± 11.9	94.6 ± 11.9	86.1 ± 19.4	
Satisfaction with buttocks				
Before	30.0 ± 26.0	61.9 ± 40.2	69.1 ± 35.4	0.460
After	100.0 ± 0.0	95.1 ± 13.0	91.8 ± 16.3	
Satisfaction with chest				
Before	40.7 ± 19.1	57.0 ± 5.5		0.122
After	66.3 ± 31.3	76.6 ± 21.4		
Satisfaction with nipples				
Before		100.0		-
After		100.0		
Satisfaction with upper arms				
Before	16.0 ± 32.0	26.6 ± 35.0	23.3 ± 30.6	0.487
After	57.0 ± 38.9	80.9 ± 32.9	75.7 ± 16.7	
Satisfaction with inner thighs				
Before	66.0 ± 0.0	52.8 ± 36.3	39.6 ± 36.2	0.827
After	66.0 ± 0.0	77.2 ± 13.9	79.6 ± 18.6	
Satisfaction with hips and outer thighs				
Before	34.8 ± 26.6	39.8 ± 38.3	59.7 ± 13.0	0.812
After	100.0 ± 0.0	82.5 ± 18.3	70.8 ± 14.3	
Appraisal of excess skin				
Before	78.6 ± 28.2	67.7 ± 25.2	62.7 ± 40.0	0.558
After	92.0 ± 16.9	96.9 ± 10.9	91.4 ± 17.0	
Appraisal of stretch marks				
Before	55.5 ± 29.5	65.5 ± 22.9	66.9 ± 34.5	0.439
After	68.5 ± 32.9	80.5 ± 20.0	77.9 ± 23.7	
Appraisal of body contouring scars				
Before	79.5 ± 21.6	85.8 ± 19.9	74.3 ± 30.0	0.261
After	83.6 ± 21.2	89.0 ± 18.5	77.2 ± 24.5	

The results on Table 6 indicate that BMI had no effect on all domains of the BODY-Q except for satisfaction with back (p-value = 0.049). The satisfaction with back scores for before were decreasing as BMI increases, while the after scores were comparable, and this would have implication on their differences where the difference for the before and after for those whose BMI is normal would be smaller than the other BMI groups.

4.6. Surgical Procedures and Their Effect on Patient Satisfaction, Quality of Life and Body Image 6 Months Postoperatively

Table 7: Patient surgical procedures done on satisfaction and quality of life

Appearance related psychosocial distress				
	Power	Sal	Vaser	p-value
Before	54.9 ± 6.0	62.7 ± 19.4	51.1 ± 19.1	0.156
After	3.4 ± 9.7	21.5 ± 39.8	4.3 ± 18.7	
Expectations				
Before	92.2 ± 12.4	90.3 ± 15.0	96.9 ± 9.5	0.058
After	92.4 ± 10.6	91.5 ± 16.4	98.3 ± 7.6	
Body image				
Before	23.9 ± 13.1	37.8 ± 32.1	44.1 ± 28.4	0.165
After	97.2 ± 10.4	81.8 ± 17.5	93.2 ± 15.3	
Social function				
Before	55.8 ± 9.9	65.3 ± 19.6	76.4 ± 22.1	0.062
After	98.4 ± 5.9	97.7 ± 5.7	96.8 ± 9.8	
Psychological function				
Before	59.9 ± 15.0	69.5 ± 26.6	71.2 ± 22.5	0.170
After	98.6 ± 5.1	100.0 ± 0.0	97.4 ± 8.6	
Physical function				
Before	73.1 ± 30.4	63.0 ± 8.2	87.0 ± 16.3	0.034
After	93.6 ± 13.2	100.0 ± 0.0	98.8 ± 4.6	
Sexual function				
Before	41.9 ± 18.3	37.0 ± 20.1	55.9 ± 27.6	0.382
After	95.6 ± 16.3	88.8 ± 18.1	90.7 ± 16.5	
Satisfaction with abdomen				
Before	32.5 ± 9.4	1.2 ± 2.9	25.2 ± 26.9	0.008
After	95.6 ± 10.0	79.5 ± 17.2	90.6 ± 15.1	
Satisfaction with back				
Before	33.0 ± 12.9	22.0 ± 17.0	36.2 ± 23.2	0.364
After	97.6 ± 9.1	89.0 ± 13.9	93.3 ± 13.1	
Satisfaction with body				
Before	39.9 ± 12.7	31.0 ± 18.6	41.3 ± 19.9	0.314
After	97.2 ± 10.4	85.7 ± 19.4	91.4 ± 15.1	
Satisfaction with buttocks				
Before	58.7 ± 43.7	81.5 ± 21.4	55.6 ± 39.8	0.638
After	100.0 ± 0.0	90.8 ± 18.5	94.7 ± 13.3	
Satisfaction with chest				
Before	51.0 ± 0.0	61.0	48.8 ± 17.5	0.138
After	100.0 ± 0.0	61.0	64.2 ± 22.3	
Satisfaction with nipples				
Before	100.0			-
After	100.0			
Satisfaction with upper arms				
Before	5.7 ± 9.8	50.0 ± 70.7	29.6 ± 30.3	0.506
After	84.6 ± 12.4	84.5 ± 21.9	65.9 ± 36.6	
Satisfaction with inner thighs				
Before	16.0 ± 0.0	55.3 ± 50.8	56.6 ± 24.9	0.152
After	77.0 ± 0.0	88.7 ± 19.6	70.9 ± 12.9	
Satisfaction with hips and outer thighs				
Before	12.5 ± 15.8	66.0 ± 40.8	45.0 ± 24.9	0.123
After	82.5 ± 20.2	79.0 ± 19.2	85.0 ± 18.0	
Appraisal of excess skin				
Before	54.6 ± 24.7	56.7 ± 32.0	77.3 ± 30.2	0.210
After	97.1 ± 10.7	93.3 ± 16.3	93.3 ± 15.2	
Appraisal of stretch marks				
Before	57.3 ± 21.7	63.8 ± 19.8	67.0 ± 31.2	0.981
After	85.1 ± 21.1	74.0 ± 21.0	74.5 ± 25.6	
Appraisal of body contouring scars				
Before	76.9 ± 27.5	69.7 ± 24.5	85.7 ± 20.8	0.223
After	79.8 ± 21.0	76.5 ± 26.6	88.5 ± 19.7	

The results on Table 7 indicate that patients' surgical procedure had no effect on all domains of the BODY-Q apart from physical function (p-value = 0.034), and satisfaction with abdomen (p-value = 0.008). On physical function, those that had undergone the SAL procedure had a poor score for before procedure (63 SD8.2) when compared to the others. The after scores for the procedures were comparable with the SAL procedure having the highest score (100 SD0.0).

4.7 Liposuction Complications and Their Effects on Quality of Life and Patient Satisfaction

4.7.1 Patient Liposuction Complication and Their Effect on Satisfaction and Quality of Life

Table 8: Patient Liposuction Complication And Their Effect On Satisfaction And Quality Of Life

Appearance related psychosocial distress			
	Yes	No	p-value
Before	53.2 ± 10.9	53.7 ± 18.8	0.974
After	6.2 ± 12.0	6.1 ± 23.6	
Expectations			
Before	90.9 ± 12.9	96.5 ± 10.1	0.049
After	92.5 ± 14.2	97.2 ± 7.5	
Body image			
Before	41.2 ± 33.8	36.2 ± 23.3	0.395
After	83.8 ± 20.3	96.9 ± 9.7	
Social function			
Before	67.9 ± 20.8	69.9 ± 21.3	0.498
After	94.9 ± 11.6	98.4 ± 6.4	
Psychological function			
Before	75.7 ± 22.5	69.3 ± 22.5	0.452
After	97.8 ± 5.9	98.2 ± 7.7	
Physical function			
Before	77.4 ± 23.6	81.4 ± 21.6	0.614
After	97.3 ± 10.6	97.6 ± 6.9	
Sexual function			
Before	45.3 ± 22.0	51.6 ± 26.7	0.102
After	83.7 ± 21.8	95.3 ± 12.5	
Satisfaction with abdomen			
Before	11.9 ± 15.8	29.7 ± 23.9	0.004
After	83.6 ± 16.8	93.7 ± 12.6	
Satisfaction with back			
Before	33.6 ± 27.5	33.6 ± 21.6	0.922
After	93.3 ± 12.5	94.2 ± 12.3	
Satisfaction with body			

Before	38.2 ± 12.5	40.3 ± 20.0	0.592
After	90.6 ± 12.7	93.1 ± 14.4	
Satisfaction with buttocks			
Before	76.6 ± 28.1	52.9 ± 39.9	0.075
After	100.0 ± 0.0	92.6 ± 15.2	
Satisfaction with chest			
Before	51.0 ± 0.0	50.8 ± 16.4	0.041
After	100.0 ± 0.0	63.7 ± 20.0	
Satisfaction with nipples			
Before	100.0		-
After	100.0		
Satisfaction with upper arms			
Before	0.0 ± 0.0	27.4 ± 32.5	<0.001
After	21.3 ± 37.0	83.7 ± 15.5	
Satisfaction with inner thighs			
Before	66.0 ± 0.0	46.2 ± 34.9	0.759
After	66.0 ± 0.0	78.4 ± 15.5	
Satisfaction with hips and outer thighs			
Before	27.3 ± 24.5	49.8 ± 32.3	0.194
After	82.5 ± 19.2	83.5 ± 18.0	
Appraisal of excess skin			
Before	63.5 ± 33.3	70.6 ± 29.3	0.569
After	94.7 ± 14.1	94.3 ± 14.2	
Appraisal of stretch marks			
Before	59.8 ± 27.7	65.7 ± 27.7	0.851
After	79.5 ± 23.4	76.5 ± 24.3	
Appraisal of body contouring scars			
Before	83.1 ± 27.4	80.6 ± 22.0	0.712
After	86.3 ± 20.0	83.9 ± 21.7	

The results in Table 8 indicate that patients' post-op complications had no effect on all domains of the BODY-Q with the exception of expectations (p-value = 0.049), satisfaction with the abdomen (p-value = 0.004), satisfaction with the chest (p-value = 0.041), and satisfaction with upper arms (p-value < 0.001). Patient expectations scores for before and after for those with complications were lower when compared to those patients without complications, and the differences between the scores for the two groups were borderline significant (p-value = 0.049). For satisfaction with the abdomen, the scores were lower for both before and after for the patients that experienced complications when compared to those patients without complications, though the differences in the scores for before and after for the two groups were comparable (p-value = 0.004). On satisfaction with chest, the differences in the before and after for the patients with complications, and the differences for the before and after for those without complications were statistically significant (p-value = 0.041). For satisfaction with upper arms,

the differences in the before and after for the patients with complications, and the differences for the before and after for those without complications were statistically significant (p-value < 0.001).

4.7.2 Quality of Life Before and After

Table 9: Quality of life before and after

	Before	After	p-value
Appearance related psychosocial distress	53.5 ± 16.7	6.1 ± 20.6	<0.001
Expectations	94.8 ± 11.2	95.8 ± 10.1	0.578
Body image	37.7 ± 26.6	93.0 ± 14.8	<0.001
Social function	69.3 ± 21.0	97.3 ± 8.3	<0.001
Psychological function	71.2 ± 22.5	98.1 ± 7.1	<0.001
Physical function	80.2 ± 22.1	97.5 ± 8.0	<0.001
Sexual function	49.7 ± 25.3	91.8 ± 16.5	<0.001
Satisfaction with abdomen	24.3 ± 23.2	90.7 ± 14.6	<0.001
Satisfaction with back	33.6 ± 23.2	94.0 ± 12.2	<0.001
Satisfaction with body	39.7 ± 18.0	92.3 ± 14.7	<0.001
Satisfaction with buttocks	59.6 ± 38.0	94.7 ± 13.2	<0.001
Satisfaction with chest	50.9 ± 13.9	72.8 ± 23.9	0.089
Satisfaction with nipples			
Satisfaction with upper arms	23.3 ± 31.4	74.3 ± 29.5	<0.001
Satisfaction with inner thighs	49.5 ± 32.5	76.3 ± 14.9	0.046
Satisfaction with hips and outer thighs	43.9 ± 31.5	83.3 ± 17.9	<0.001
Appraisal of excess skin	68.5 ± 30.4	94.4 ± 14.0	<0.001
Appraisal of stretch marks	63.9 ± 27.6	77.4 ± 23.9	<0.001
Appraisal of body contouring scars	81.3 ± 23.5	84.6 ± 21.0	0.058

Except for expectations for the surgery (p-value = 0.578), satisfaction with the chest (p-value = 0.089), and appraisal of body contouring scars (p-value = 0.058), the quality of life of the patients improved after the surgery compared to before. The scores for expectation for the surgery increased marginally after the surgery; the results were not statistically significant. The satisfaction with the chest increased after the surgery substantially. However, these results were not statistically significant. The scores for appraisal for body contouring scars increased marginally. The results, too, were not statistically significant.

5.0 CHAPTER FIVE DISCUSSION, CONCLUSION & RECOMMENDATIONS

5.1 Discussion

In the past, a surgical intervention was considered a success if the surgeon was satisfied ⁽¹⁾. However more recently, as health care becomes more patient centered, psychosocial functioning is increasingly considered more essential with improvements in self-esteem, quality of life and body image being used as criteria to evaluate the benefits of a medical intervention ⁽¹¹⁾. This study was conducted to determine the effects of liposuction on patients' quality of life and body image.

5.1.1 Impact of Liposuction on Patient Satisfaction and Quality of Life

Quality of life (QoL) parades a key criterion besides the objective clinical outcome when evaluating treatment success. A person with a high QoL is characterized as having satisfactory relationships, active, self-confident, has a fundamental mood of joy, a feeling of well-being and a relief of mental distress (38). Attention should shift to the multidimensionality as well as subjectiveness of QoL. Widely acceptable and standardized instruments of testing must be employed in the evaluation of the complex construct of QoL (6). The BODY-Q is a meticulously created Patient-Reported-Outcome (PRO) measure constructed to assess consequences for obese patients who achieve weight loss via exercise, diet and/or bariatric surgery/medicine, as well as body contouring patients (following enormous weight loss and for cosmetic reasons). The BODY-Q is composed of a sequence of independently functioning scales that measure three domains (appearance, HRQL, and experience of healthcare). In this study we focused on the first two domains.

The study findings reiterated the positive effect aesthetic surgery such as liposuction has on QoL. Our findings showed significantly higher scores post operatively in most of the appearance and HRQL domains. Thus, liposuction was noted to significantly improve body image, social, physical, psychological and sexual function ($p < 0.001$). Additionally, it also helped to significantly reduce appearance related psychosocial distress. This is similar to a prospective study carried out by Saariniemi et al (2015) where body satisfaction was improved post operatively and the risk for an eating disorder was reduced significantly. Liposuction also helped to improve the general perception of personal appearance with patients in this study being noted to have increased satisfaction post operatively with their back, abdomen, buttocks, upper arms, hips and outer thighs. In contrast, a study conducted by Nyakiongora et al.(33) noted that the use of liposuction was not found to have an effect on patient satisfaction.

5.1.2 The Impact of The Age of The Patient on Satisfaction and Quality of Life Pre and Post Liposuction

Our patients' demographic data containing age and BMI, which was found to be normal on average, were in line with previous studies. In the current study there is consistency in all the age groups for the scores of the BODY-Q questionnaire before and after self-assessment except in two domains-social function and appraisal of excess skin. Patients aged less than thirty had higher scores post-liposuction compared to other age groups. Age was also noted to be a notable factor when appraising excess skin with significantly higher scores post liposuction (Table 5). This is in contrast to previous studies whereby age was not statistically significant in determining patient satisfaction (33) or was actually a predictor of poor outcomes post operatively (34).

5.1.3 The Effect of Patient's BMI On Satisfaction and Quality of Life Pre and Post Liposuction

In this study, patients with normal BMI were more likely to be satisfied with their back pre-operatively compared to patients with a high BMI. Post-operatively the scores were comparable except for those with a BMI>30 whose scores were significantly lower. This is similar to a study conducted by Young et al. (35) on morbidly obese patients who were undergoing abdominal lipectomy whereby all patients were noted to obtain symptomatic respite but astonishingly majority had looked forward to being more attractive following surgery, denoting the significance of deliberating this facet preoperatively. In contrast however, a study by Nyakiongora et al.(33) showed that patients with higher BMI prior to abdominoplasty were more satisfied with the procedure than those with lower preoperative BMI. This is further echoed by the study by Hammond et al that found high satisfaction rates in patients with high BMI (36).

5.1.4 The Effect of The Type of Surgical Procedures Done on Patient Satisfaction, Quality of Life and Body Image 6 Months Postoperatively

In this study 28% of the patients underwent Power Assisted Liposuction (PAL), 12% underwent SAL and in the remaining 60% VASER was performed (Table 3). The ideal procedure for liposuction for many years has been the "Suction Assisted Liposuction" also known as SAL. This is echoed in our study whereby, patients who has undergone SAL in our study had significantly higher post-operative scores in the physical function domain compared

to those who used the other two techniques. However, latest technologies have since emerged with variable assertions on skin retraction, complete and painless evacuation of fat as well as a quicker recuperation (37). Patients who underwent SAL in our study had more appearance-related psychosocial distress post operatively compared to those who underwent liposuction using other techniques. This could be attributed to the fact that VASER device's 0-Low occurrence of complications, while mean complication occurrence with earlier devices is approximately 5 percent. Additionally, VASER not only aids in comprehensive fat removal in normal as well as challenging areas but also aids in achieving some extent of skin retraction (37). On the other hand, Power Assisted Liposuction (PAL) has several advantages as well: the micro cannulas are often employed in PAL thus resulting in smaller scars; PAL has no potential for burn injury and liposuction lasts a lot less making PAL securer for patients; and post-op pain is also decreased with PAL.

5.1.5 Effect of Liposuction Post-Op Complications on Quality of Life and Patient Satisfaction

The severe complications rate post-liposuction is relatively low ranging from 0.7 percent to 1.4 percent as evidenced by current studies with the many patients exhibiting localized reversible complications (6). However, 30% of the patients in this study experienced at least one post-operative complication. The most common complication was the formation of a seroma (33.3%) followed by the occurrence of anaemia (20%) and infection (20%). Patients with complications had significantly lower expectations post operatively compared to those with no complications ($p=0.049$) ((Table 8). This is unlike patients with no complications post operatively who had higher scores reflecting higher and more unrealistic expectations.

5.2 Conclusion

The findings in this study serve to emphasize the positive effect that liposuction has on patients' quality of life, self-esteem, body image, and satisfaction with their body. Thus, this study has provided local data that will aid healthcare providers during the provision of liposuction. Further, it shall help improve public awareness of the benefits of liposuction apart from aesthetic concerns.

5.3 Recommendations

Further research is recommended to investigate how beauty is perceived differently across the nation and the world at large, and how this affects views on liposuction. It is important to conduct similar studies in various regions to obtain a broader perspective. Moreover, a longitudinal cohort study should be conducted to examine the long-term impact of liposuction on patient satisfaction, quality of life, and body image. Additionally, patients should be followed up to investigate whether they were able to maintain their body contours and by extension their quality of life, body image, and satisfaction. Suction-assisted liposuction remains to be a comparable surgical technique and is recommended in resource-limited environments.

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APPENDICES

Appendix I: Participant Information and Consent Form

Title of study: DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION, QUALITY OF LIFE AND BODY IMAGE: A PROSPECTIVE STUDY IN A KENYAN POPULATION.

Principal Investigator Dr Reuben Kangangi Kamundi

Institutional affiliation: Department of Surgery, School of medicine, University of Nairobi

Co-investigators and institutional affiliation: Dr Adan A. Abdullahi, Dr. Joseph Kimani Wanjeri, Prof Stanley Ominde Khainga, Department of Surgery, School of medicine, University of Nairobi

This informed consent has three parts:

- 1) Information sheet (to share information about the research with you)
- 2) Certificate of consent (for affirmation/ signatures if you agree to take part)
- 3) Statement by the researcher

You will be given a copy of the full informed consent

Part 1: Information Sheet

Introduction

My name is Dr Reuben Kangangi Kamundi a post graduate student in Plastic, Reconstructive and Aesthetic Surgery at the University of Nairobi. I am conducting research to determine the effect of liposuction on patient satisfaction, quality of life and body image in a sample Kenyan population.

Purpose Of the Study

The desire to be considered physically attractive and the urge to match the conventional ideal of beauty is continually gaining importance in our modern society. This is further worsened by the unrealistic ideals that are depicted in the media which for most people, are unattainable in a natural way. Further, genetics, pregnancy, lifestyle and dietary excesses and the ageing process also chip into the change of body contour. The ensuing dissatisfaction with one's body image has led to low self-esteem, social isolation, impairment of sex life, anxiety as well as feelings of rejection from their peers which negatively impacts their quality of life. As a result, liposuction is one of the aesthetic procedures with the highest demand as it aids in weight redistribution according to a patient's ideal. This study thus aims to find out whether undergoing liposuction has any effect on a patient's quality of life and body image.

I am going to give you information and invite you to be a participant in this research. There may be some words that you do not understand or that you may need clarification on. Please ask me to stop as we go through the information and I will clarify.

Name of the proposed procedure: Liposuction

BODY-Q Questionnaire

Description of Procedure

The BODY-Q questionnaire shall be administered to you, the questionnaire will be asking about **how undergoing/not undergoing liposuction** has affected your physical health, social life and sexual well-being. 3 months after surgery the same questionnaire will be administered through a phone call. This study shall not change the course, mode or manner of your treatment. The final findings of the project shall be shared with you the patient. If not undergoing the surgery (in the control group), you will fill in the questionnaire only once.

Voluntary Participation/right to Refuse or Withdraw

You are free to participate or decline participation in this study. Whether you choose to participate or not will not change your current management and treatment, that is routinely offered in this hospital for your particular condition. You have a right to refuse or withdraw from this study at any point.

Confidentiality

The information obtained shall be treated with the utmost confidentiality and only be available to the principal investigator and his research team. Your name will not be used and you shall remain anonymous. We shall not be sharing the identity of anyone participating in this research.

Sharing the results

The knowledge that we get from this study shall be shared with the internationally and locally, policy makers in the government and non-government institutions in health care, insurance, the medical professionals and the public through publications, conferences, journals and presentations. Confidential information shall not be shared with any third party.

Risks

There are no risks in this study. All parameters are verbal and observations of your current management. No invasive investigations shall be used during this study.

Cost and Compensation

There will be no extra cost incurred for participating in this study.

Please read the Following:

I understand that you cannot guarantee me that a particular person will perform the procedure. The person undertaking the procedure will, however, have appropriate experience

I understand that any photographs taken and tissue removed as part of the procedure will remain anonymous and may be used for teaching or quality control and stored or disposed of in a manner regulated by appropriate, ethical, legal, and professional standards.

I understand that this research has been approved by the Kenyatta National Hospital/ University of Nairobi Ethics Review Committee (KNH/UON-ERC) and undertaken under appropriate ethical, legal and professional standards.

I understand that data about me will be held electronically and may be passed between the Kenyatta National Hospital, University of Nairobi; Platinum Surgery Centre, Da Vinci Hospital and any other university/ hospital, research institute collaborating with KNH/UON, to facilitate research and my care

I understand that my involvement in this research will be through clinical evaluation and that you will not expose yourself to any risks if I consent to participate

I understand that there will be **NO** financial benefits

I understand that results from this study may be published to enhance scientific knowledge

I understand that refusal to participate or withdrawal from the study will not in any way compromise the quality of care and treatment are given to me.

Please tick the box below to indicate if you either

Agree

Disagree

Contacts

Participant

Telephone number:

Alternative telephone number:

KNH/UON-ERC

This study has been reviewed and approved by the KNH/UON-ERC which is a committee whose work is to make sure research participants are protected from harm. The contact information is given below if you wish to contact any of them for whatever reason:

Secretary:

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P.O. Box 20723-00202 KNH, Nairobi

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Dr. Joseph Kimani Wanjeri

MBChB, MMED (Surg), MPH (UON), IPTM (Tel Aviv).

Consultant Plastic, Reconstructive, and Aesthetic Surgeon

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Prof. Stanley Ominde Khainga

MBChB, MMED (Surg), Cert Microvascular Surgery (MEDUNSA), FCS(Plast), FCS (COSECSA)

Consultant Plastic, Reconstructive, and Aesthetic Surgeon

Professor of Surgery and Chairman Kenya Medical Practitioners and Dentists Council.

+254 723436408

Signed: _____ Date: _____

PART II: Certificate of Consent

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research. I hereunder impress my signature/thumbprint as proof of my consent.

Patient/parent/guardian signature: **Date:**

Name (PRINT):

Witness' signature: **Date:**

Name (PRINT):

Statement of the interpreter (if appropriate)

I confirm that I have interpreted the information to the best of my ability, and in a way in which I believe she/he has understood:

Interpreter's signature **Date:**

Name (PRINT):

If Illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Witness' signature: **Date:**

Name (PRINT):

Thumb print of participant:



PART III: Statement by the Researcher

I have accurately read out the information sheet to the patient and/or guardian(s), and to the best of my ability made sure that the patient or guardian understands the following:

- Refusal to participate or withdrawal from the study will not in any way compromise the care of treatment.
- All information given will be treated with confidentiality.
- The results of this study might be published to enhance the knowledge and understanding of medical professionals regarding the subject of the study.

I confirm that the participant was allowed to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Informed Consent Form has been provided to the participant.

Researcher's signature Date:

Name (PRINT): Designation:

Appendix II: Assent Form

Title of the Study: DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION, QUALITY OF LIFE AND BODY IMAGE: A PROSPECTIVE STUDY IN A KENYAN POPULATION.

This informed assent form is for patients who shall be **undergoing liposuction**. I am inviting you to participate in this research voluntarily.

Principal Investigator: Dr Reuben Kangangi Kamundi

Institution: Department of Surgery, School of Medicine, University of Nairobi

Supervisors: Dr Adan A. Abdullahi, Dr. Joseph Kimani Wanjeri, Prof. Stanley Ominde Khainga Department of Surgery, School of medicine, University of Nairobi.

This Informed assent form has four parts:

- 1) Information Sheet (to share information about the research with you).
- 2) Certificate of assent (for affirmation/signatures if you agree to take part).
- 3) Statement by the researcher.
- 4) Informed assent

You will be given a copy of the full informed assent form.

PART I: Information Sheet

Introduction

My name is **Dr Reuben Kangangi Kamundi**, a postgraduate student in Plastic, Reconstructive and Aesthetic Surgery at the University of Nairobi. I am carrying out research to determine the effects of liposuction on patient satisfaction, quality of life and body image in a sample Kenyan population.

Purpose of the Research

The desire to be considered physically attractive and the urge to match the conventional ideal of beauty is continually gaining importance in our modern society. This is further worsened by the unrealistic ideals that are depicted in the media which for most people, are unattainable in a natural way. Further, genetics, pregnancy, lifestyle and dietary excesses and the ageing process also chip into the change of body contour. The ensuing dissatisfaction with one's body image has led to low self-esteem, social isolation, impairment of sex life, anxiety as well as feelings of rejection from their peers which negatively impacts their quality of life. As a result, liposuction is one of the aesthetic procedures with the highest demand as it aids in weight

redistribution according to a patient's ideal. This study thus aims to find out whether undergoing liposuction has any effect on a patient's quality of life and body image.

I am going to give you information and invite you to be a participant in this research. There may be some words that you do not understand or that you may need clarification on. Please ask me to stop as we go through the information and I will clarify.

Name of the proposed procedure: Liposuction

BODY-Q questionnaire

Description of procedure

The BODY-Q questionnaire shall be administered to you, the questionnaire will be asking about **how undergoing/not undergoing liposuction** has affected your physical health, social life and sexual well-being. Six weeks after surgery the same questionnaire will be administered through a phone call. This study shall not change the course, mode or manner of your treatment. The final findings of the project shall be shared with you the patient. If not undergoing the surgery (in the control group), you will fill in the questionnaire only once.

Voluntary participation/right to refuse or withdraw

You are free to participate or decline participation in this study. Whether you choose to participate or not, will not change your current management and treatment, that is routinely offered in this hospital for your particular condition. You have a right to refuse or withdraw from this study at any point.

Confidentiality

The information obtained shall be treated with the utmost confidentiality and only be available to the principal investigator and her research team. Your name will not be used and you shall remain anonymous. We shall not be sharing the identity of anyone participating in this research.

Sharing the results

The knowledge that we get from this study shall be shared with the internationally and locally, policy makers in the government and non-government institutions in health care, insurance, the medical professionals and the public through publications, conferences, journals and presentations. Confidential information shall not be shared with any third party.

Risks

There are no risks in this study. All parameters are merely observations of your current management; no invasive investigations will be used during this study.

Cost and compensation

There will be no extra cost incurred for participating in this study.

Please read the following:

I understand that you cannot give me a guarantee that a particular person will perform the procedure. The person undertaking the procedure will, however, have appropriate experience.

I understand that any photographs taken and tissue (including blood) removed as part of the procedure or treatment will be anonymous and may be used for teaching or quality control, and stored or disposed of in a manner regulated by appropriate, ethical, legal and professional standards.

I understand that this research has been approved by the Kenyatta National Hospital/University of Nairobi Ethics Review Committee (KNH/UoN-ERC) and undertaken under appropriate ethical, legal and professional standards.

I understand that data about me will be held electronically and may be passed between the Kenyatta National Hospital, the University of Nairobi, and any other University/ Hospital/ Research Institute collaborating with KNH/UoN, to facilitate research and my care.

I understand that my involvement in this research will be through clinical evaluation and that you will not expose yourself to any risks if you consent to participate.

I understand that there will be **NO** financial benefits.

I understand that results from this study may be published to enhance scientific knowledge

I understand that refusal to participate or withdrawal from the study will not in any way compromise the quality of care and treatment are given to me.

Please the tick box below to indicate if you either AGREE DISAGREE

Contacts

Participant

Telephone number:

Alternative telephone number:

KNH/UoN-ERC

This study has been reviewed and approved by the KNH/UoN-ERC which is a committee whose work is to make sure research participants are protected from harm. The contact information is given below if you wish to contact any of them for whatever reason:

Secretary:

KNH/UoN-ERC,

P.O. Box 20723-00202 KNH, Nairobi

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MB ChB, MMed(Surg), Cert Microvascular Surgery (MEDUNSA), FCS(Plast), FCS (COSECSA)

Consultant Plastic, Reconstructive, and Aesthetic Surgeon

Professor of Surgery and Chairman Kenya Medical Practitioners and Dentists Council.

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PART II: Certificate of Assent

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I assent voluntarily to participate in this research. I hereunder impress my signature/thumbprint as proof of my consent.

Patient/parent/guardian signature: Date:

Name (PRINT):

Witness' signature: Date:

Name (PRINT):

Statement of the Interpreter (if appropriate)

I confirm that I have interpreted the information to the best of my ability, and in a way in which I believe she/he has understood:

Interpreter's signature Date:

Name (PRINT):

If Illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Witness' signature: Date:

Name (PRINT):

Thumb print of participant:



PART III: Statement by the Researcher

I have accurately read out the information sheet to the patient and/or guardian(s), and to the best of my ability made sure that the patient or guardian understands the following:

- Refusal to participate or withdrawal from the study will not in any way compromise the care of treatment.
- All information given will be treated with confidentiality.
- The results of this study might be published to enhance the knowledge and understanding of medical professionals regarding the subject of the study.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Informed Assent Form has been provided to the participant.

Researcher's signature Date:

Name (PRINT): Designation:

Appendix III: Questionnaire I

SECTION 1

BIO DATA

1. PATIENT IDENTITY NUMBER _____
2. DATE _____
3. DATE OF BIRTH _____
4. AGE/YEARS _____
5. WEIGHT/KILOGRAMS _____
6. HEIGHT/CENTIMETERS _____
7. BODY MASS INDEX _____
8. TELEPHONE NUMBER _____
9. EMAIL ADDRESS _____
10. EDUCATION LEVEL _____
11. OCCUPATION _____

STUDY SITE

1. COPTIC MISSION HOSPITAL
2. PLATINUM SURGERY CENTRE
3. Da VINCI HOSPITAL

SECTION 2: INTRAOPERATIVE

<u>REGION</u>			TOTAL
SUCTIONED VOLUME(Millilitre s)			

1. DATE OF PROCEDURE _____
2. DURATION OF SURGERY _____
3. TECHNIQUE OF LIPOSUCTION.

SURGEON:

1. CONSULTANT
2. REGISTRAR

SECTION 3: POST-OPERATIVELY

COMPLICATIONS

MINOR	MAJOR
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Appendix IV: Body-Q Questionnaire



Memorial Sloan Kettering
Cancer Center

BODY-Q©

English Version



McMaster
University

The BODY-Q, authored by Drs. Andrea Pusic, Anne Klassen and Stefan Cano, is the copyright of Memorial Sloan Kettering Cancer Center (Copyright ©2013, Memorial Sloan Kettering Cancer Center). The BODY-Q has been provided under license from Memorial Sloan Kettering Cancer Center and must not be copied, distributed or used in any way without the prior written consent of Memorial Sloan Kettering Cancer Center.

NOTE TO LICENSED USERS

Each scale in this booklet can be used independently of the other scales (i.e., you don't have to use them all). For each scale that you use, the patients or research participants DO NOT NEED TO SEE:

- title of each scale
- notes at the bottom of the scale
- scoring table for the scale

We are able to provide you with a Word version of this booklet if needed. Send an email to: qportfolioteam@gmail.com

Patients or research participants only need to see the instructions, items, response options and the copyright notice at the bottom of the scale. Here's an example:

With your body in mind, thinking of the past week, how much would you disagree or agree with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I feel positive towards my body.	1	2	3	4
2. My body is not perfect but I like it.	1	2	3	4
3. I am happy with my body.	1	2	3	4
4. I am proud of my body.	1	2	3	4
5. I think my body is attractive.	1	2	3	4
6. I feel good about my body when I am naked.	1	2	3	4
7. I have the body I want.	1	2	3	4

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5. BODY-Q™ - APPEARANCE-RELATED PSYCHOSOCIAL DISTRESS

For each statement circle **only one** answer. These are statements people might use to describe themselves. With your **appearance in mind**, how much do you **disagree or agree** with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I feel unhappy about how I look.	1	2	3	4
2. I feel stressed about how I look.	1	2	3	4
3. I feel down about how I look.	1	2	3	4
4. I feel anxious when people look at me.	1	2	3	4
5. I worry that I don't look normal.	1	2	3	4
6. I worry that I am ugly.	1	2	3	4
7. I tend to avoid being around people.	1	2	3	4
8. I have little interest in doing things.	1	2	3	4

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BODY-Q™ - EXPECTATIONS

For each statement circle _____ answer. These are statements people might use to describe how their life will change after a cosmetic procedure. With your **appearance in mind**, how much do you **disagree or agree** with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I will look fantastic.	1	2	3	4
2. People will tell me how great I look.	1	2	3	4
3. People close to me will be proud of how I look.	1	2	3	4
4. I will be transformed.	1	2	3	4
5. Good things will happen to me.	1	2	3	4
6. I will feel like I fit in.	1	2	3	4
7. My close relationships will improve.	1	2	3	4
8. New people will want to get to know me.	1	2	3	4

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For each statement, circle only one

BODY-Q™ - BODY IMAGE

_____ answer. With your body in mind, thinking of the past week,
how much would you disagree or agree with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I feel positive towards my body.	1	2	3	4
2. My body is not perfect but I like it.	1	2	3	4
3. I am happy with my body.	1	2	3	4
4. I am proud of my body.	1	2	3	4
5. I think my body is attractive.	1	2	3	4
6. I feel good about my body when I am naked.	1	2	3	4
7. I have the body I want.	1	2	3	4

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For each statement, circle only one

BODY-Q™ - SOCIAL FUNCTION

_____ answer. With your **body** in mind, thinking of the past week,
 how much would you **disagree or agree** with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I feel at ease at social gatherings with people I know.	1	2	3	4
2. People listen to what I have to say.	1	2	3	4
3. I feel accepted by people.	1	2	3	4
4. I feel included in social situations.	1	2	3	4
5. I make a good first impression.	1	2	3	4
6. I take part in life instead of sitting back.	1	2	3	4
7. It is easy for me to make new friends.	1	2	3	4
8. I feel confident when I am in group situations (e.g., meetings).	1	2	3	4
9. I am relaxed around people that I don't know well.	1	2	3	4
10. I feel confident when I walk into a room full of people I don't know.	1	2	3	4

For each statement, circle

BODY-Q™ - PSYCHOLOGICAL FUNCTION

only one answer. With your body in mind, thinking of the past week, how much would you disagree or agree with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. I believe in myself.	1	2	3	4
2. I am proud of myself.	1	2	3	4
3. I feel happy.	1	2	3	4
4. I like myself.	1	2	3	4
5. I am emotionally strong.	1	2	3	4
6. I feel in control of my life.	1	2	3	4
7. I feel confident.	1	2	3	4
8. I am accepting of myself.	1	2	3	4
9. I am comfortable with myself.	1	2	3	4
10. I feel great about myself.	1	2	3	4

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Note to Investigators: This scale can be used independently of the other scales.

BODY-Q™ - PHYSICAL FUNCTION

For each question, circle only one answer. With your body in mind, in the past week, how often have you had a problem with the following:

	All the time	Often	Sometimes	Never
1. Getting up from a bed?	1	2	3	4
2. Bending from side to side?	1	2	3	4
3. Walking or moving around?	1	2	3	4
4. Bending over (e.g., to tie your shoes)?	1	2	3	4
5. Doing moderate exercise (e.g., going for a brisk walk)?	1	2	3	4
6. Walking up or down stairs?	1	2	3	4
7. Standing for a long period of time?	1	2	3	4

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Note to Investigators: This scale can be used independently of the other scales.

BODY-Q™ - PHYSICAL SYMPTOMS

For each question, circle only one answer. With your body in mind, in the past week, how often have you experienced the following:

	All the time	Often	Sometimes	Never
1. Feeling tired during the day?	1	2	3	4
2. Back pain?	1	2	3	4
3. Joint pain?	1	2	3	4
4. Leg pain or discomfort?	1	2	3	4
5. Feeling off balance?	1	2	3	4
6. Feeling weak?	1	2	3	4
7. Short of breath with mild exercise?	1	2	3	4
8. Swollen feet?	1	2	3	4
9. Skin rash or infection?	1	2	3	4
10. Too much perspiration?	1	2	3	4

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Instructions

BODY-Q™ - SEXUAL FUNCTION

For each statement, circle **only one** answer. With your **body** in mind, how much would you **disagree or agree** with each statement:

	Definitely Disagree	Somewhat Disagree	Somewhat Agree	Definitely Agree
1. Sex is fulfilling for me.	1	2	3	4
2. I am comfortable undressing in front of my partner.	1	2	3	4
3. I am satisfied with my sex life.	1	2	3	4
4. I am comfortable having the lights on during sex.	1	2	3	4
5. I feel sexually attractive when I am undressed.	1	2	3	4

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Instructions

BODY-Q™ - SATISFACTION WITH ABDOMEN

Only one answer. With your abdomen (i.e., your belly or tummy area) in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How your <u>clothes fit</u> your abdomen?	1	2	3	4
2. The <u>size</u> of your abdomen?	1	2	3	4
3. How your abdomen looks from the <u>side</u> (i.e., profile view)?	1	2	3	4
4. The <u>shape</u> of your abdomen?	1	2	3	4
5. How your abdomen looks in a <u>swimsuit</u> ?	1	2	3	4
6. How <u>toned</u> your abdomen looks?	1	2	3	4
7. How your abdomen looks when you are <u>naked</u> ?	1	2	3	4

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Instructions

BODY-Q™ - SATISFACTION WITH BACK

only one answer. With your back in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How <u>smooth</u> your back looks?	1	2	3	4
2. How your back looks from different <u>angles</u> ?	1	2	3	4
3. How <u>toned</u> your back looks?	1	2	3	4
4. How your back looks when you are <u>naked</u> ?	1	2	3	4

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Instructions**BODY-Q™ - SATISFACTION WITH BODY**

only one answer. With your entire body in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How your body looks when you are <u>dressed</u> ?	1	2	3	4
2. How your <u>clothes fit</u> your body?	1	2	3	4
3. The <u>size</u> (i.e., weight) of your body?	1	2	3	4
4. The <u>shape</u> of your body?	1	2	3	4
5. How your body looks in <u>photos</u> ?	1	2	3	4
6. How your body looks from <u>behind</u> ?	1	2	3	4
7. How your body looks from the <u>side</u> (i.e., profile view)?	1	2	3	4
8. How your body looks in <u>summer clothes</u> (e.g., shorts, t-shirts)?	1	2	3	4
9. How your body looks in a <u>swimsuit</u> ?	1	2	3	4
10. How your body looks in the mirror <u>unclothed</u> ?	1	2	3	4

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Note to Investigators: This scale can be used independently of the other scales.

Instructions

BODY-Q™ - SATISFACTION WITH BUTTOCKS

Only one answer. With your buttocks (i.e., bum) in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. The <u>size</u> of your buttocks?	1	2	3	4
2. How your buttocks look from the <u>side</u> (i.e., profile view)?	1	2	3	4
3. The <u>shape</u> of your buttocks?	1	2	3	4
4. How <u>smooth</u> your buttocks look?	1	2	3	4
5. How the <u>skin</u> on your buttocks looks?	1	2	3	4

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Note to Investigators: This scale can be used independently of the other scales.

Instructions



BODY-Q™ CHEST MODULE - SATISFACTION WITH CHEST

These questions ask about how your **CHEST (breast area)** looks. **NOTE:** If your CHEST (breast area) looks different on each side, answer the questions thinking about the side you are **least satisfied with**.

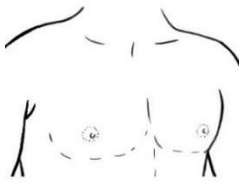
With your CHEST (breast area) in mind, in the PAST WEEK, how **dissatisfied or satisfied** have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How your CHEST (breast area) looks in a <u>loose</u> Tshirt?	1	2	3	4
2. How your CHEST (breast area) looks when you <u>lie on your back</u> ?	1	2	3	4
3. How <u>flat</u> your CHEST (breast area) looks when you <u>stand up straight</u> ?	1	2	3	4
4. How <u>masculine</u> your CHEST (breast area) looks?	1	2	3	4
5. How your CHEST (breast area) looks when you are <u>active</u> (e.g., run or jump)?	1	2	3	4
6. How your CHEST (breast area) looks in a <u>snug</u> Tshirt?	1	2	3	4
7. The <u>shape</u> of your CHEST (breast area) <u>without</u> a shirt on?	1	2	3	4
8. How your CHEST (breast area) looks when you <u>bend over</u> ?	1	2	3	4
9. How your CHEST (breast area) looks from the <u>side</u> (i.e., profile view) <u>without</u> a shirt on?	1	2	3	4
10. How your CHEST (breast area) looks in the <u>mirror</u> <u>without</u> a shirt on?	1	2	3	4

If you have had surgery on your CHEST (breast area), please answer the following question:

1. How the <u>scars</u> from your surgery look?	1	2	3	4
---	---	---	---	---

Instructions



BODY-Q™ CHEST MODULE - SATISFACTION WITH NIPPLES

These questions ask about how your **NIPPLES** look. **NOTE:** If your nipples look different from each other, answer the questions thinking about the nipple you are **least satisfied with**.

For each question, circle **only one** answer. With your **NIPPLES** in mind, in the past week, how **dissatisfied or satisfied** have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. The <u>shape</u> of your nipples?	1	2	3	4
2. The <u>size</u> of your nipples?	1	2	3	4
3. How <u>flat</u> your nipples look?	1	2	3	4
4. How much your nipples show through a <u>snug</u> T-shirt?	1	2	3	4
5. How your nipples look <u>without</u> a shirt on?	1	2	3	4

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BODY-Q™ - SATISFACTION WITH UPPER ARMS

only one answer. With your upper arms in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. The <u>size</u> of your upper arms?	1	2	3	4
2. How <u>smooth</u> your upper arms look?	1	2	3	4
3. The <u>shape</u> of your upper arms?	1	2	3	4
4. How the <u>skin</u> on your upper arms looks?	1	2	3	4
5. How <u>toned</u> your upper arms look?	1	2	3	4
6. How your upper arms look when you <u>lift them up</u> ?	1	2	3	4
7. How your upper arms look when they are <u>not covered</u> (e.g., in a sleeveless shirt)?	1	2	3	4

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BODY-Q™ - SATISFACTION WITH INNER THIGHS

only one answer. With your inner thighs in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How <u>smooth</u> your inner thighs look?	1	2	3	4
2. How the <u>skin</u> on your inner thighs looks?	1	2	3	4
3. How <u>toned</u> your inner thighs look?	1	2	3	4
4. How your inner thighs look when you are <u>naked</u> ?	1	2	3	4

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BODY-Q™ - SATISFACTION WITH HIPS AND OUTER THIGHS

only one answer. With your hips and outer thighs in mind, in the past week, how dissatisfied or satisfied have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. The <u>size</u> of your hips and outer thighs?	1	2	3	4
2. The <u>shape</u> of your hips and outer thighs?	1	2	3	4
3. How the <u>skin</u> on your hips and outer thighs looks?	1	2	3	4
4. How <u>smooth</u> your hips and outer thighs look?	1	2	3	4
5. How your hips and outer thighs look from <u>behind</u> ?	1	2	3	4

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BODY-Q™ - APPRAISAL OF EXCESS SKIN

only one answer. With your excess skin in mind, in the past week, how much have you been bothered by:

	Extremely Bothered	Moderately Bothered	A Little Bothered	Not at all Bothered
1. Your excess skin making you look <u>bigger</u> than you are (i.e., overweight)?	1	2	3	4
2. Having to dress in a way to <u>hide</u> your excess skin?	1	2	3	4
3. Not being able to wear <u>certain clothes</u> because of your excess skin?	1	2	3	4
4. How much your excess skin <u>hangs</u> ?	1	2	3	4
5. The <u>amount</u> of excess skin you have?	1	2	3	4
6. <u>People seeing</u> your excess skin?	1	2	3	4
7. How your excess skin looks when you are <u>naked</u> ?	1	2	3	4

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BODY-Q™ – APPRAISAL OF STRETCH MARKS

only one answer. With your stretch marks in mind, in the past week, how much have you been bothered by:

	Extremely Bothered	Moderately Bothered	A Little Bothered	Not at all Bothered
1. Not being able to wear <u>certain clothes</u> because of your stretch marks?	1	2	3	4
2. How <u>wide</u> your stretch marks are?	1	2	3	4
3. Having to dress in a way to <u>hide</u> your stretch marks?	1	2	3	4
4. The <u>length</u> of your stretch marks?	1	2	3	4
5. The <u>location</u> of your stretch marks (where they are on your body)?	1	2	3	4
6. How <u>old</u> your stretch marks make your body look?	1	2	3	4
7. How <u>noticeable</u> your stretch marks are?	1	2	3	4
8. The <u>amount</u> of stretch marks you have?	1	2	3	4
9. <u>People seeing</u> your stretch marks?	1	2	3	4
10. How your stretch marks look <u>up close</u> ?	1	2	3	4

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BODY-Q™ - APPRAISAL OF BODY CONTOURING SCARS

only one answer. With your body contouring scars in mind, in the past week, how much have you been bothered by:

	Extremely Bothered	Moderately Bothered	A Little Bothered	Not at all Bothered
1. Having to dress in a way to <u>hide</u> your scars?	1	2	3	4
2. How <u>wide</u> your scars look?	1	2	3	4
3. <u>Location</u> of your scars?	1	2	3	4
4. The <u>length</u> of your scars?	1	2	3	4
5. How <u>noticeable</u> your scars are?	1	2	3	4
6. The <u>color</u> of your scars?	1	2	3	4
7. How <u>thick</u> your scars look (i.e., raised or bumpy)?	1	2	3	4
8. Your scars looking <u>crooked</u> (i.e., not in a straight line)?	1	2	3	4
9. <u>People seeing</u> your scars?	1	2	3	4
10. How your scars look when they are <u>not covered</u> by clothes?	1	2	3	4

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Appendix V: Letter of Approval from Da Vinci Medical Group

Theta Lane off Lenana Road, Kilimani

The center of medical Specialist



P.O. Box 15007-00100, Nairobi
Tel: 0110 444 222
Mob. 0777 112010
info@davincimg.com
www.davincimg.com

02nd May 2022

Davinci Medical Group Hospital

P. O. Box 15007-00100

Nairobi, Kenya

Dr. Kamundi Reuben Kangangi

H58/1/521/2018

Mmed Plastic Reconstructive and Aesthetic Surgery

University of Nairobi

Dear Sir,

RE: APPROVAL TO CONDUCT RESEARCH AT DAVINCI MEDICAL GROUP HOSPITAL

Following your request to conduct a study titled: Determining the impact of liposuction on patient satisfaction of quality of life and body image: A prospective study in Nairobi, Kenya (P930/12/2021) you are hereby allowed to conduct your research at our facility.

Be advised to uphold patient confidentiality. This approval is valid for 1 year from 02/5/2022.

Yours Sincerely



Esther Mwangi

Chief Executive Officer

Appendix VI: Letter of Approval from Coptic Hospital



COPTIC HOSPITAL

Ngong Road, opposite China Centre, between Kindaruma Lane and Rose Avenue, Nairobi
P.O. Box: 21570-00505 Tel: +254 711043000 Mobile: +254 732341241 Email: info@coptichospitals.org

27TH May, 2022

DR. REUBEN KANGANGI KAMUNDI

REG: H58/11521/2018

University of Nairobi
M.Med Plastic Reconstructive and Aesthetic Surgery

Att. H.O.D. PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY

Dear Sir/Madam,

RE: APPROVAL FOR RESEARCH STUDY ON DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION ON QUALITY OF LIFE AND BODY IMAGE

I wish to inform you that we have offered the above-mentioned an opportunity to conduct a Prospective study with us effective on 27th May 2022 for a period of one year. The opportunity has been structured to accommodate and empower him appropriately.

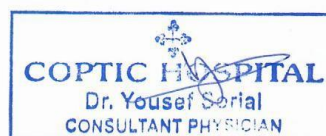
We hope that his professional association with us during the study will be a rewarding and fulfilling experience.

Kindly note to uphold patient confidentiality during and after this study.

If you have any questions pertaining to the research study, please do not hesitate to contact the Human Resource Department.

Yours Sincerely,

Dr. Yousef
Ass. medical Director



Dr. Sakr

Medical Director

Appendix VII: Letter of Approval from Platinum Surgery Center



☎ : 76239-00508, Nairobi, Kenya.
☎ : 0732 330011, 0743 689144
✉ : info@platinumsurgerycentre.com

2nd May 2022

Dr. Reuben Kanyangi Kamundi
H58/11521//2018
M.Med Plastic Reconstructive and Aesthetic Surgery
University of Nairobi

Dear Dr. Kamundi,

RE: APPROVAL TO CONDUCT RESEARCH AT PLATINUM SURGERY CENTER

Following your request to conduct a study titled: Determining the impact of liposuction on patient satisfaction of quality of life and body image: A prospective study in Nairobi, Kenya (P930/12/2021) we wish to inform you that we approve your request to conduct your research at our facility.

Kindly note that you are to uphold patient confidentiality during and after the research. This approval is valid for 1 year from 02 May 2022.






Yours Sincerely,

Dr. A. Adan

CONSULTANT PLASTIC, RECONSTRUCTIVE AND AESTHETIC SURGEON



Appendix VIII: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 968121	Date of Issue: 21/August/2022
RESEARCH LICENSE	
	
This is to Certify that Dr.. REUBEN KANGANGI KAMUNDI of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION OF QUALITY OF LIFE AND BODY IMAGE: A PROSPECTIVE STUDY IN NAIROBI, KENYA for the period ending : 21/August/2023.	
License No: NACOSTI/P/22/19507	
968121 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
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Appendix IX: KNH/UoN-ERC Letter of Approval



UNIVERSITY OF NAIROBI
FACULTY OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel: (254-020) 2726300 Ext 44355

KNH-UON ERC

Email: uonknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/256

4th July, 2022

Dr. Reuben Kangangi Kamundi
Reg. No. H58/11521/2018
Dept. of Surgery
Faculty of Health Sciences
University of Nairobi



Dear Dr. Kamundi,

RESEARCH PROPOSAL: DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION OF QUALITY OF LIFE AND BODY IMAGE; A PROSPECTIVE STUDY IN NAIROBI, KENYA (P930/12/2021)

This is to inform you that KNH-UoN ERC has reviewed and approved your above research proposal. Your application approval number is **P930/12/2021**. The approval period is 4th July 2022 – 3rd July 2023.

This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by KNH-UoN ERC.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KNH-UoN ERC 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH-UoN ERC within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to KNH-UoN ERC.

Protect to discover

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,



DR. BEATRICE K.M. AMUGUNE
SECRETARY, KNH-UoN ERC

- c.c. The Dean, Faculty of Health Sciences, UoN
The Senior Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information Dept., KNH
The Chair, Dept. of Surgery, UoN
Supervisors: Dr. Adan A. Abdullahi, Dept. of Surgery, UoN
Prof. Stanley O. Khainga, Dept. of Surgery, UoN

Appendix X: Certificate of Plagiarism

DETERMINING THE IMPACT OF LIPOSUCTION ON PATIENT SATISFACTION OF QUALITY OF LIFE AND BODY IMAGE: A PROSPECTIVE STUDY IN NAIROBI, KENYA

ORIGINALITY REPORT

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6	Nikolaos A. Papadopoulos, Mara J. Kolassa, Gerhard Henrich, Peter Herschbach et al. "Quality of life following aesthetic liposuction: A prospective outcome study", Journal of Plastic, Reconstructive & Aesthetic Surgery, 2019 Publication	<1 %