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## PATIENT SATISFACTION AFTER BUTTOCK ENLARGEMENT WITH FAT GRAFTING IN NAIROBI - KENYA

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### ABSTRACT

**Background:** Buttock augmentation utilizing fat graft, often referred to as Brazilian butt lift (BBL), is an increasingly popular aesthetic surgical procedure globally, mostly in the western world, and is gradually gaining popularity in Africa as well. The procedure is aimed at improving buttock contour, size, shape and relation with adjacent anatomic regions while preserving and or maintaining or improving skin appearance. The utility of autologous fat grafting as opposed to implants, is considered the gold standard for gluteal augmentation, achieving a satisfaction rate of up to 97.1% as reported in some Asian studies. With only a few satisfaction studies reported in the west and in China, no reports have had a reference to an African population.

**Objective:** We determined short-term (6months period) satisfaction of patient receiving gluteal enhancement surgery using fat gluteal enhancement for the first time.

**Design:** This was a multicenter prospective cohort, Patient Reported Outcome (PRO) study in Kenya.

**Setting:** The study was carried out in four private facilities located within Nairobi-Kenya.

**Subjects:** 47 eligible participants were recruited during consultative clinic visits over a seven months period, those recruited consisted of mostly women, requesting buttock enhancement surgery for the first time. Subjects meeting the selection criteria were then followed up for six-months.

Assessment of level of satisfaction with their surgical outcome of the buttocks was then performed, employing the BODY-Q™ for buttocks and a 5-part Likert scale.

**Results:** Data was analyzed using SPSS version 25 and descriptive statistics. Pie charts for visualization, and Chi-square tests to compare satisfaction levels, level of significance  $p < 0.05$ .

Of 47 subjects, 41 responses were obtained. The mean age was  $32.6 \pm 6.4$  years, and mean body mass index (BMI)  $27.3 \pm 3.1$  kg/m<sup>2</sup>. The majority of participants reported an hourglass body shape. 92.7% to 100% were somewhat to very satisfied with their buttock appearance.

**Conclusion:** Autologous fat grafting for gluteal enhancement has a high patient satisfaction of up to 92.7% in Kenya.

**Key words:** Autologous fat, Brazilian butt lift (BBL), Gluteal enhancement, Patient reported outcome.

## INTRODUCTION

The female buttock is a vital feature of sexual attractiveness and beauty in all cultures. The parameters of attractive buttocks have differed based on ethnicity, culture and time(1). An accurate surgical technique, ought to target fulfilment of both, unanimously known ideals of an attractive buttock, incorporating all ethnic variations of "beautiful buttocks"(2). Gluteal enhancement is an aesthetic surgical procedure aimed at improving buttock contour, size, shape and relations with adjacent anatomic regions while preserving and or maintaining or improving skin quality

Surgical procedures to enhance the buttocks have advanced histrionically over the past years(1), Current research has defined the anatomical yardstick of the gluteal area based on volume, shape and projection(3). The original record of an autologous adipose tissue transfers dates to 1893, when Neuber reinjected autologous fat to a facial cicatricial depression. However, fat grafting for buttock lift solely came into the scene as an available filler following the dawn of liposuction in the 1980s(4), and is now one of the surgical procedures in the armamentarium of the plastic surgeon, for reconstructive and cosmetic reasons(5). The increasing utility of autologous fat grafting (AFG) due to its natural existence, easy harvest, ready availability, inexpensiveness, being homologous, immune inertness, and associated minimal donor-site morbidity(4). These benefits led to popularization of fat grafting for body contouring procedures. The word Brazilian butt lift (BBL) which not only aims at increasing the size of the buttocks, also focuses on creating harmony with the waist and thighs, is often credited to the Brazilian plastic surgeon Ivo Pitanguy. BBL is now considered the gold standard for buttock enhancement(6). One major issue however is unpredictability of graft take, leading to suboptimal outcomes(4). Clinical evaluation of the amount of fat resorbed is proposed to be 20 to 50 percent of that engrafted. This resorption occurs within 4 months based on MRI studies by Murillo(6). This affects the outcome and ultimately satisfaction, thus; to optimize outcome of gluteal fat grafting, some patient factors are considered, among which is adipose tissue proportion, with 20 to 30 percent or a BMI of 20 to 30 kg/m<sup>2</sup> deemed ideal, those with BMI < 20 kg/m<sup>2</sup> are non-ideal, as are those with BMI > 30 kg/m<sup>2</sup> (6,7). Gluteal ptosis and good skin quality.

With rising popularity of adipose tissue grafting for buttock enhancement, it is key to establish the level of satisfaction(8). A 90% satisfaction rate in a 7-year experience, was demonstrated by Nicareta *et al*(9) at 12 and 24 months follow-up. A similar study in an Asian population showed a satisfaction of 97.1% (2,6,7), In Kenya, a little over a hundred gluteal augmentation

procedures are performed annually, with numbers on the rise. However, no satisfaction studies have been done for in Kenya and the rest of African population.

## MATERIALS AND METHODS

**Design:** This was a prospective cohort Patient Reported Outcome (PRO) study.

**Setting:** This was a multicenter study involving four selected private facilities within Nairobi-Kenya, that provided consent for the study.

**Subjects and Methods:** We collected data from participants that were recruited over a study period of seven months. Our respondents were mostly female. The women requesting buttock enhancement for the first time were selected, those with previous history of gluteal surgery, trauma or any deformity were eliminated. We recruited a total of forty-seven participants into the study at clinic consultation, pre-operatively over the study period, from our minimum target sample size of 35. We obtained and recorded parameters such as age, height, weight and calculated BMI, we also recorded preoperative body shapes as indicated from surgeons' assessment notes. Each respondent was then followed up for six-months into the post-operative period. Six participants were lost to follow up.

**Sampling technique:** We used complete enumeration sampling method owing to the finite population and the limited span of the study period. The entire population was examined for the data collection period of seven months, with target population sample of 35 since the research target population was specific and typically small. This helped reach the numbers for analysis and reduced sampling bias. Consecutive eligible patients who gave informed assent were interviewed with questionnaire.

**Selection criteria:** Clients who had had a single gluteal augmentation procedure using autologous fat graft.

**Data Collection:** We assessed level of satisfaction with surgical outcome of gluteal enhancement, of forty-one (41) respondents using the BODY-Q™ for buttocks and 5-point Likert scale responses with (1= Very dissatisfied, 2=Dissatisfied, 3= Neutral, 4=Satisfied, 5 =Very satisfied).

Pre-operative concern/reason for consultation was documented / assessed, say; lack of volume, projection in all cases,

Patients seeking the procedure had clinical history and relevant physical examination findings documented, those who met the inclusion criteria had serial

numbers assigned and the study explained, informed written consent and contact information obtained. They were followed up until six months and then contacted for administration of questionnaire.

Both tools were administered six months after operation.

The questionnaire was shared online or presented physically for filling depending on patient accessibility and comfort.

The questionnaire was composed of biodata as specified (without name) and:

**The BODY -Q** for buttocks and Likert scale was administered to consented patients (Appendix 1)

The BODY-Q™ is a comprehensive validated Patient Outcome tool tailored for weight loss and/or body Sculpting(Klassen *et al.*, 2016).

**Data Analysis:** Data was analyzed using SPSS version 25 and descriptive statistics. Pie charts for visualization, and Chi-square tests to compare satisfaction levels, level of significance used is  $p < 0.05$ .

First, we involved basic descriptive data analysis to observe level of satisfaction for ordinal data. We visualized the frequencies using pie-charts for Modes and medians. Chi-square was used to analyze and compare the change in different levels of satisfaction at 6-month post operatively.

**Ethical Considerations:** The approval for this study was obtained from Kenyatta National Hospital –

University of Nairobi Ethical and Research committee (KNH-UON ERC) and Institutional Review Board (IRB). Permissions to carry out the study was also obtained from the various private facilities carrying out gluteal enhancement.

A written informed consent was obtained from each participant meeting the inclusion criteria to participate in the study.

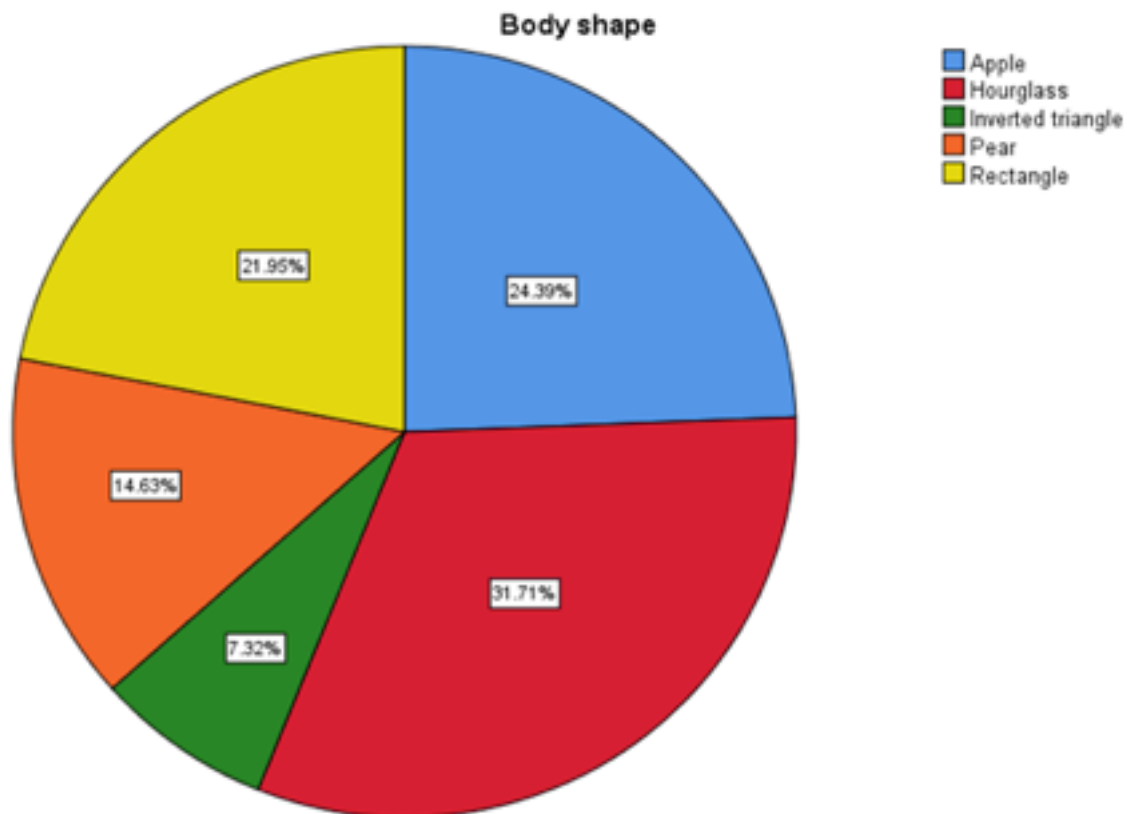
**RESULTS**

A total of 41 participants completed the questionnaire, representing a 117.1% of the projected sample of 38 for a six months period. Only one respondent was male. The average age of participants was  $32.6 \pm 6.4$  years, with a mean BMI of  $27.3 \pm 3.1$  kg/m<sup>2</sup>. The hourglass figure was the commonest body shape reported at 31.7%. Figure 1 illustrates distribution of body shapes.

65.9% of the respondents reported being very satisfied with size, none expressed dissatisfaction. 61% were very satisfied with side profile, while only 7.3% (only 3) were somewhat dissatisfied. 73.2% were very satisfied, with shape, only two participants expressing slight dissatisfaction. Two participants (4.9%) reported being somewhat dissatisfied with smoothness of the buttocks, while the rest were either somewhat or very satisfied. Lastly, over half of the participants (56.1%) were very satisfied with the appearance of the skin. Table 1.

**Table 1:** Level of satisfaction with appearance of buttocks

Appearance of buttock	% Proportion of patients who were:			
	Very dissatisfied	Somewhat dissatisfied	Somewhat satisfied	Very satisfied
Size	0.0	0.0	34.1	65.9
Side view	0.0	7.3	31.7	61.0
Shape	0.0	4.9	22.0	73.2
Smoothness	0.0	4.9	29.3	65.9
Skin	0.0	4.9	39.0	56.1

**Figure-1:** A pie-chart showing respondents' body shape distribution

## DISCUSSION

Most of the respondents in this study were female, only one participant was male, as per the general trend of females being more concerned with buttock appearance compared to males. In a study by de Runz *et al.*, six out of 55 participants were male, while other studies had exclusively female participants(9,10). According to the 2018 American Society for Aesthetic Plastic Surgery (ASAPS) data, 99.2% of patients undergoing buttock augmentation with fat grafting were female, with 80% aged between 18 and 50 years(6).

The average age of participants in our study was 32.6 years (range: 24–57), comparable to ASAPS data and previous studies(9,11).

The mean BMI of participants was 27.3 kg/m<sup>2</sup> (range: 22.9–34.8), which aligns with findings from de Runz *et al.* (28.2 kg/m<sup>2</sup>) and Sozer *et al.* (24.6 kg/m<sup>2</sup>) (10,11). However, Nicareta *et al.* reported a slightly lower BMI, their study included a much larger cohort. Despite these variations, our mean BMI, along with those from comparable studies, falls within the ideal patient range(7).

Following AFG, 92.7 - 100% of participants were satisfied with all aspects of their buttock appearance, including size, shape, side profile, smoothness, and skin appearance, this is comparable to that reported

by O'Neill *et al.* with a satisfaction rate of 97.1%(6). In contrast, Nicareta *et al.* reported a lower satisfaction rate (70%), possibly due to methodological differences. Additionally, they had longer follow-up period of 12 months, which may have captured greater volume loss over time, a known occurrence(9), as opposed to our follow up time of six months.

Most of our participants had an hourglass or apple body shape. A pear or hourglass shape has been associated with better surgical outcomes compared to "apple" shapes(7). Although certain body shapes are linked to better outcomes, our findings did not indicate any direct association with patient satisfaction.

Despite its insights, our study has limitations that warrant cautious interpretation. First, our sample size was small for robust statistical analysis, though the relatively even distribution of participants allowed for meaningful comparisons. Aesthetic surgeries can significantly alter body perception, potentially unmasking preexisting personality disorders(10), which may have influenced satisfaction levels.

## CONCLUSION

Autologous fat gluteal enhancement is associated with high overall patient satisfaction in Nairobi, indicating that individuals seeking this procedure are likely to

benefit from it. The body shape had no statistically significant effect on the level of satisfaction with outcome of buttock enhancement.

This is valuable when obtaining patient consent for the procedure.

Further studies with larger sample size and long follow-up periods are needed to determine if satisfaction rate remains consistent beyond 6 months and explore factors influencing patient satisfaction, such as volume injected, marital status, and occupation.

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