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ABSTRACT

Introduction: **The past few years have seen a global explosion of aesthetic surgery development. While aesthetic surgery has historically been associated with more developed countries in the global North and emerging markets of Asia, the World Health Organization (WHO) Africa region is reporting an increase in aesthetic surgery uptake, with various institutions offering aesthetic procedures.**

Objective: **The primary objective of this study was to assess the practice of aesthetic surgery in Kenya.**

Methodology: **A qualitative cross-sectional study was conducted on a subset of 105 patients from a pool of 500 who underwent aesthetic surgery between January 2021 and December 2022. Participants were selected through non-probability purposive sampling, and data was collected from previous records. Questionnaires were fully completed without errors, and demographic details, procedure types, and costs were retrieved. Data was coded and analyzed using SPSS version 22 in line with the study objectives.**

Results: **A total of 105 participants were included, with most being female (87.6%) and Black/ African (98.1%), residing in urban Kenya (95.2%). The highest age group was 35–44 years (44.8%). The most common procedures performed were abdominoplasty (28.6%), followed by liposuction (21.9%), mastopexy (10.5%), breast augmentation (9.5%), and Brazilian Butt Lift (8.6%). The most commonly performed procedures had a mean cost as follows; abdominoplasty 662,500 Ksh, liposuction 360 at 516,363 Ksh, and mastopexy at 313,793 Ksh.**

Conclusion: **The scope of practice of aesthetic surgery in Kenya was comparable to other African countries and the rest of the world. The cost of surgery in Kenya was relatively cheaper when compared to the USA and was at par with Asian and other African counterparts.**

INTRODUCTION

Background

The American Board of Cosmetic Surgery defines aesthetic surgery as the upgrading of a patient's appearance and enhancing of symmetry (1). Shiffman conducted an extensive study into the history of aesthetic surgery and contends that procedures including the special aspects of breast reduction, mastopexy, liposuction, otoplasty and rhinoplasty can be traced to hundreds of years ago (2). However, it was not until the early 1920s that literature on cosmetic surgery began to permeate the scientific journals. But while the history of the development of aesthetic surgery can be traced to over a century ago, it was not until the advent of World War I that the seed of the advance of aesthetic surgery began to blossom. By the1960s,it would be planted across many parts of the developed world (3). This was not the case with most of the developing world and particularly the WHO Africa region, where cosmetic surgery has developed at a slower pace.

Sub-Saharan Africa has had slower development in terms of the provision of both reconstructive and aesthetic surgeries as compared to developed countries in the Global North as well as emerging economies of South-East Asia (4). Lack of infrastructure and specialist resources are only part of a host of reasons

why there is a slower pace of development of aesthetic surgery in Africa, the other reason may be the low utilisation of existing local aesthetic surgery services.

Aesthetic Surgery in Sub-Saharan Africa

Trends of aesthetic surgery in the sub Saharan Africa region cannot be understood outside the analysis of the evolution of beauty standards that have been made by popular culture transposed from the Global North. With shifting beauty standards such as the local standard of "big is beautiful" evolving to a thinner beauty ideal. In countries such as Nigeria, Ghana, Rwanda, Sudan and Kenya, more Africans are going under the knife to remove excess fat, breast lift and tummy tuck. Many Africans have been influenced by Western lifestyle and media; this includes the shift toward preference for a smaller waistline". The relationship between the two factors is directly proportional, which may explain to some degree the historical preference of African patients to seek aesthetic surgery in the Global North.

While this has changed, with South-East Asia becoming the premier destination for aesthetic surgery procedures for Africans and persons from the West alike, the nature of aesthetic procedures being sought, both invasive and non-invasive, is reflective of beliefs about what beauty is (4). The universality of this definition is at the heart of the growing market for aesthetic surgery. While in the past there was high demand for reconstructive surgery, the demand for aesthetic surgery is equally increasing (5). Ibrahim concurs, arguing that the skill sets of plastic surgeons which were historically focused largely on reconstructive surgery, also address a wide range of soft-tissue conditions prevalent in sub- Saharan Africa (6).

But while reconstructive surgery has a longer history on the continent, the past decade has seen an exponential increase in the demand for aesthetic surgery, both in terms of the procedures and institutions offering the procedure. While South Africa continues to dominate in terms of the number of institutions and surgeons providing aesthetic surgery procedures, other countries are beginning to catch up (7). Kenya is leading the charge in East Africa and has become a regional hub for training and provision of aesthetic surgery (8).

Global and Local Perspectives

Rogers et al conducted a triangulated study looking at the scope of cosmetic surgery, and their data demonstrated that perception regarding the scope of plastic surgery is grossly limited not only on the part of patients but also on junior doctors, particularly those in public health sector plastic surgery practice (9). Agarwal made the same observation in India almost a decade ago using a questionnaire administered to four population groups of respondents who were surveyed at random, and his data revealed that the majority of the public needs more information about the benefits of aesthetic surgery (10). The implications of these were felt in economic losses to African countries because of overseas aesthetic treatment. The growing demand for aesthetic surgery by Kenyans and Africans as a whole is indicative of the availability of disposable income within the populace. This offers an opportunity for utilization not only for aesthetic surgery services and facilities, but also for medical tourism in Kenya.

MATERIALS AND METHODS

Study Setting

The study was conducted across five different Aesthetic Surgery Centers located in Nairobi, the capital city of Kenya. The specific aesthetic surgery institutions where research was conducted were as follows:

- Da Vinci Clinic, Nairobi
- AfroBeauty Clinic, Nairobi
- Kenyatta National Hospital, Nairobi
- Platinum Surgery Center, Nairobi
- Karen Hospital

Study Design

A retrospective cross-sectional descriptive design was employed. A structured data collection form was used to collect information on patient demographics, clinical characteristics, and surgical costs from existing medical records.

Sample size and Sampling procedure

The catchment population was estimated at 500 patients for the two years, at 250 each year. Given that this was across 5 defined aesthetic surgery institutions, this implied an average of 50 patients per institution per year. A sample size of 105 derived from the 500 catchment population was derived as follows;

$$\text{Sample size} = \frac{(\text{Z score})^2 \times \text{Proportion}\,(1\text{-Proportion})}{(\text{Margin of error})^2}$$

With a 90 percent confidence level, 0.5 estimated proportion and a margin of error of +/- 8 percent, the sample size to be used was calculated as follows:

$$\text{Sample size} = \frac{(1.64)^2 \times 0.5(0.5)}{(0.08)^2}$$

$$\text{Sample size} = \frac{(2.6896 \times 0.25)}{0.0064}$$

Sample size = 105.06

The sample size for this study was therefore 105

For this research, non-probability purposive sampling was used in which samples were selected based on the subjective judgment of the researcher as opposed to a random selection. A non-randomised technique was used to draw the sample, which in this case was specific to individuals who had undergone aesthetic procedures in Kenya.

Inclusion criteria

- Individuals who underwent aesthetic surgery within the last two years.
- Individuals aged 18 years and above
- Patients with no psychiatric problems

Exclusion Criteria

- Individuals with Body Dysmorphic Disorder and other Psychiatric conditions
- Institutions that declined to give consent

Data Collection

Data of patients who underwent aesthetic surgery procedure between January 2021 and December 2022 at the selected plastic surgery centers was collected via a data abstraction tool that captured information on patient demographics, type of surgery performed, marital status, employment status, residence and nationality and estimated cost of procedure.

Independent Variable

Independent variables in this study were age, gender, and year of procedure, service provider and type of procedure performed.

Dependent Variable

The main output variables were the type of aesthetic surgical procedure performed.

Data Management and Analysis

Data were verified, cleaned, categorised and captured using the software package SPSS version 22 for statistical analysis. The folder containing data was password protected and uploaded to a cloud storage drive, with daily backup to prevent missing entries.

Descriptive statistics such as frequencies and percentages were used to describe demographic characteristics like age and sex. Following this, the qualitative data were analysed through the use of content analysis. Data is presented as figures, text, tables and graphs.

Ethical Consideration

Ethical approval was granted for this research KNH-UoN ERC under ethical approval number P672/08/2021. Permission to assess the records and collect data was sought from the institutions Protection of Personal data was ensured throughout the research process. A password-protected computer database was generated to store recorded data. Additionally, paper records were stored in a locked file cabinet.

RESULTS

Participant Demographics

Most of the respondents were female, comprising 87.6% (n=92) of the participants, while the male respondents were 12.4% (n=13). 98.1% of the participants were of African descent (n=103) while 0.9% were Asian (n=2). Most of the participants were Kenyan (97.0%) and residing within urban regions of the country (95.2%). Table 1 summarizes the demographic characteristics of the participants.

Table 1: Summary of demographic characteristics of participants

Variable		Frequency	Percentage
Gender	Female	92	87.6%
	Male	13	12.4%
Race	Kenyan African	103	98.1%
	Kenyan Asian	2	0.9%
Nationality	Kenyan	102	97.0%
	Other	3	3.0%
Residence	Native	99	94.3%
	Expatriate	4	3.8%
	Abroad	2	1.9%
Location	Urban	100	95.2%
	Peri-urban	4	3.8%
	Semi-rural	1	1.0%

Age of Participants

The majority of the respondents (44.8%) seeking aesthetic surgery procedures fell within the age range of 35-44 years as seen in table 3.

Table 2: Age of participants seeking aesthetic surgery procedures in Kenya

Age Range	Frequency	Percentage
18-24 years	7	6.7%
25-34	28	26.7%
35-44	47	44.8%
45-54	19	18.1%
55-64	3	2.9%
65 and above	1	1.0%
Total	105	100%

Aesthetic Surgery procedures in male participants

Table 3 highlights selected cosmetic procedures in male patients. Procedures such as otoplasty, facial fat grafting, and penile enlargement, were performed exclusively on male patients.

Table 3: Proportion of Male Patients Undergoing Selected Cosmetic Procedures

Procedure	Number of Male Patients (N)	% Male (of all patients)
Hair Transplant	3	75.0%
Abdominal Liposuction	3	42.0%
Facial rejuvenation	1	100.0%
Thigh Liposuction	2	66.6%
Otoplasty	2	100.0%
Penile Enlargement	2	100.0%

Aesthetic procedures done

As summarized in table 4, the top five aesthetic procedures done were as follows: Abdominoplasty (28.6%), Liposuction (21.9%), Mastopexy (10.5%), Breast augmentation (9.5%), and Brazilian Butt Lift (8.6%).

Table 4: Summary of aesthetic procedures done among participants

Procedure	Frequency	Percentage
Abdominoplasty	30	28.6%
Liposuction • Abdominal (7) • Leg (2) • Liposuction 360 (11) • Thigh liposuction (3)	23	21.9%
Mastopexy	11	10.5%
Breast Augmentation Silicone implants (7) Fat grafting (3)	10	9.5%
Brazilian Butt lift	9	8.6%
Hair transplantation	4	3.8%
Brachioplasty	3	2.9%
Leg augmentation	2	1.9%
Otoplasty	2	1.9%
Vaginoplasty	2	1.9%
Penile enlargement	2	1.9%
Lip augmentation	2	1.9%
Rhinoplasty	1	1.0%
Facial rejuvenation	1	1.0%
Face lift	1	1.0%
Blepharoplasty	1	1.0%
Body lift	1	1.0%

Cost of aesthetic procedures in Kenyan Shillings (Ksh)

Table 5: Cost of Cosmetic procedures performed in Kenya

Procedure	N	Minimum (Ksh)	Maximum(Ksh)	Mean (Ksh)
Breast Augmentation (fat grafting) (n=3)	3	250,000	450,000	350,000
Breast Augmentation (silicone implants) (n=7)	7	400,000	800,000	600,000
Brazilian Butt Lift (n=9)	9	450,000	800,000	650,000
LegAugmentation (n=2)	2	150,000	250,000	200,000
Abdominal liposuction (n=7)	7	250,000	400,000	325,000
Leg liposuction (n=2)	2	100,000	140,000	120,000
Liposuction 360 (n=11)	11	260,000	800,000	516,363
Thigh liposuction (n=3)	3	300,000	300,000	300,000
Brachioplasty (n=3)	3	120,000	800,000	423333
Rhinoplasty (n=1)	1	250,000	250,000	250,000

Hair transplant (n=4)	4	70,000	100,000	92500
Facial rejuvenation (fat graft) (n=1)	1	200,000	200,000	200,000
Face lift (n=1)	1	400,000	400,000	400,000
Abdominoplasty (n=30)	30	350,000	750,000	662500
Lip Augmentation (n=2)	2	120,000	150,000	135,000
Mastopexy (n=11)	11	200,000	500,000	313793
Blepharoplasty (n=1)	1	700,000	700,000	700,000
Otoplasty (n=2)	2	200,000	350,000	275,000
Vaginoplasty (n=2)	1	650,000	650,000	650,000
Upper body lift (n=1)	1	550,000	550,000	550,000
Penile enlargement (n=2)	2	120,000	300,000	250,000

The most commonly performed procedures were abdominoplasty (n=30) with a mean cost of 662,500 Ksh, liposuction 360 (n=11) at 516,363 Ksh, and mastopexy (n=11) at 313,793 Ksh

DISCUSSION

The range of aesthetic surgical services provided in Kenya is diverse. As the availability of diverse cosmetic surgery expands, there has been a notable increase in the uptake of these procedures among Kenyans, both male and female (11). More women than men sought cosmetic surgery according to this study. This is consistent with the global statistics and broader societal pressure women face to conform to prevailing beauty standards (12). While the number of male patients seeking aesthetic surgery was fewer, some procedures were exclusively or more frequently performed among male patients. Hair transplant was also more common among the male patients. Otoplasty, facial rejuvenation, and penile enlargement were carried out solely in male patients, accounting for 100% of those who underwent these procedures. Hair transplantation was also more frequent among male clients highlighting gender specific preferences in surgery. Globally, hair transplantation is more common among male clients which is likely due to the higher prevalence of androgenic alopecia among men as compared to women (13).

Our study showed that the most prominent age group seeking cosmetic surgery was between 35 and 44 years, with most patients residing in urban areas. This mirrors global trends, where individuals in their 30s and early 40s are a key demographic for aesthetic procedures (14). This could likely be as a result of greater financial stability and increased concern with age-related appearance changes. Similarly, urban populations are more likely to seek cosmetic surgery, given their better access to services, stronger exposure to global beauty standards, and reduced stigma around aesthetic enhancement.

This study has made a determination that the five most prevalent procedures, based on the number of clients who underwent these procedures during the study period were: abdominoplasty liposuction; mastopexy; breast augmentation and a Brazilian Butt Lift. A critical observation noted in the report by Odengo was that Kenyans want to enhance features that were deemed characteristic of "African beauty", which was characterised by voluptuousness. This was particularly true of Kenyan women who according to a report were driving the cosmetic surgery industry in the country (15). The other procedures done in order of decreasing prevalence were: hair transplantation; penile enlargement; brachioplasty; leg augmentation; lip augmentation; vaginoplasty and rhinoplasty.

Rhinoplasty was not a common procedure among Kenyans and Africans broadly. Given that African noses tend to be much broader than Caucasian, Latino and Asian noses, and that some authors had argued that Africans do cosmetic surgery in the quest for a Caucasian aesthetic, it was notable that rhinoplasty was the least prevalent aesthetic procedure in Kenya. This was especially curious because in the developed world, particularly in the USA, the past few decades have seen a notable growth in the number of African-Americans undergoing rhinoplasty and those who continue to present to surgeons for rhinoplasty evaluations (16). That this was not occurring in Kenya may be the result of African women seeing cosmetic surgery as a way to enhance their natural features rather than to transform them into a more Caucasian aesthetic. This signals a contestation of the questionable idea that cosmetic surgery for Africans was merely about looking Caucasian. Furthermore, the growth of ethnic rhinoplasty indicates that while Black women may desire slight changes to the shapes of their noses, such change was not necessarily aimed at presenting the leaner and pointier Caucasian shaped nose. Ethnic rhinoplasty is defined as the terminology given to patients who were not Caucasian who require special techniques due to the difference

in the anatomical structure and features of the nose (17). The techniques required for ethnic nose surgeries differ from those that were employed for Caucasian nose surgeries and were made with the specific geo-historical context of the patient in mind.

Literature indicates that cosmetic procedures were greatly linked to cultural preferences that were informed by the prevailing cultural norms in a society. It is for this reason that the aesthetic procedures that are prevalent in one geographical area may differ radically to those in another – sometimes even as they may be within the same continent.

In comparison with other leading plastic surgery markets in Africa, abdominoplasty, liposuction, and breast augmentation were common procedures in Kenya, South Africa, and Egypt. However, breast reduction and eyelid surgery appeared to be more frequently performed in South Africa, while facial fat grafting and rhinoplasty were more prevalent in Egypt. These variations likely reflect region-specific beauty ideals shaped by cultural norms, environmental factors, and population diversity. South Africa, for instance, is one of the most racially diverse countries on the continent, with a notable proportion of residents of European descent. This diversity may contribute to the demand for procedures such as eyelid surgery. Research, including a study by Dr. Hugh S. Taylor at Yale University School of Medicine, suggests that individuals with lighter skin tones may experience signs of aging, such as wrinkles, earlier due to increased sensitivity to sun exposure and reduced skin elasticity (18). These factors may help explain the relatively higher uptake of eyelid surgery in South Africa, illustrating how aesthetic preferences and needs can vary based on both cultural and physiological differences across regions.

One of the findings of this study was that aesthetic services in Kenya are relatively cheaper in comparison to developed countries such as the USA. It is within the same ranges when compared to semi-industrialising countries such as Brazil and India and to countries within the WHO Africa region such as South Africa and Egypt.

LIMITATIONS

While this study provides valuable insights into the practice of aesthetic surgery in Kenya, several limitations should be considered when interpreting the findings. The retrospective design relied on existing medical records, which may have been subject to inconsistencies or incomplete documentation. Additionally, data was collected from five aesthetic surgery centers located in Nairobi, limiting the geographic diversity of the sample. The decision to use a 90% confidence level with an 8% margin of error was influenced by challenges in data access, and while this allowed for feasibility, it does represent a trade-off in statistical rigor. Furthermore, the study did not explore patient satisfaction, postoperative outcomes, or psychological motivations, which are important dimensions in understanding the full scope and impact of aesthetic surgical practice. Future studies employing prospective designs, wider sampling across different regions, and inclusion of patient-reported outcomes would offer a more comprehensive picture.

CONCLUSION

The results of this study showed that the practice of aesthetic surgery performed in Kenya with reference to surgical procedures was more or less similar to the practice in the developed world and in the WHO African region. The cost of services is competitive and relatively cheaper when compared to the developed countries in the global North. The cost was comparable with semi-industrialised countries in the global South as well as to other African countries.

RECOMMENDATION

With the results of this study being limited to a short period of time which was done retrospectively, the recommendation is that studies are done in the future to assess the trends of aesthetic surgical procedures. This will give a more accurate analysis of factors in the large and rapidly increasing population of Kenyans seeking aesthetic surgery procedures, and what could be the factors influencing the types of procedures that are growing in prevalence.

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