# Gender Differences in Healthcare Seeking Behavior: Reviewing Surgical Outcomes at a Kenyan Referral Hospital

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## ABSTRACT

**Introduction**: A review of outcomes among surgical patients at a national referral center in Kenya revealed gendered trends that warrant further investigation to inform public health policies and initiatives.

**Methods:** This IRB-approved retrospective study was performed at Moi Teaching and Referral Hospital. Of 368 patients admitted to the general surgery ward from January to July 2018, 366 had sufficient data for inclusion. Demographic and clinical data were collected through chart review. Gender differences were calculated using unpaired t-tests, Wilcoxon ranked sum tests, and Chi Square tests. Alpha was set at 0.05.

**Findings:** The 366 patients analysed had a median age of 40 (IQR 28, 55), 95.6% underwent surgery and 8.6% experienced in-hospital death. Overall, patients presented equally from the emergency room, surgery clinic, and facility transfer (32.8%, 31.9% and 30.8%, respectively), with the remaining 4.4% presenting via other means. Men were significantly more likely to present via methods that require referral (clinic or transfer), with women more often presenting to the emergency department (p=0.0005). Women had significantly longer duration of symptoms prior to presentation (median 60.0 vs 7.0 days, p<0.0001) and were more likely to receive a cancer diagnosis, even with sex-specific cancers excluded (18.9% vs 10.9%, one-sided p=0.036). Among cancer patients who underwent surgery for their disease, women were significantly more likely to receive a palliative procedure (44.1% vs 13.0%, p=0.013).

**Interpretation:** Women demonstrated delayed healthcare seeking behaviour evidenced through their propensity to seek care via the emergency room, longer symptom duration, and need for palliation rather than curative intervention if diagnosed with a cancer. These patterns expose important gendered trends in healthcare seeking behaviour in western Kenya. More research is needed to elucidate reasons for these differences so that they may be addressed.

## BACKGROUND

Understanding healthcare seeking behavior is crucial to informing healthcare policy, investing in healthcare infrastructure, and interpreting data collected through clinical interactions. Women can face disproportionate cultural and societal barriers that may make accessing healthcare difficult, particularly in low- and middle-income countries, such as caretaking responsibilities and limited financial independence.

## MATERIALS and METHODS

**Study design**: cross-sectional retrospective chart review.

**Study location**: Moi Teaching and Referral Hospital (MTRH) in Eldoret (western) Kenya, one of two referral centres in Kenya

**Study population**: adult patients (defined as age ≥ 13 year) admitted to the MTRH general surgery ward from January to July 2018 for whom sufficient data on key variables was available (n=366)

**Excluded:** 1 patient missing gender, 1 patient missing key dates

**Outcomes**: frequency of surgery, frequency of in-hospital death, frequency of trauma as presenting complaint, frequency of incident cancer diagnosis, and frequency of palliative surgery for cancer

**Statistical analysis**: SAS 9,4 was utilized for all analysis. Unpaired t-tests, Wilcoxon ranked sum tests, and Chi Square test were used, depending on variable type and distribution. Results were statistically significant if p <0.05.

## RESULTS

- Women made up only 39.6% of general surgery patients at MTRH
- Women were significantly more likely to present directly to MTRH, while men were more likely to present following referral
- No significant differences between sexes in age, rates of undergoing surgery, or rates of in-hospital death

## RESULTS (continued)

- Women showed significant presentation delays, as measured by time between symptom onset and presentation to care
- Among cancer patients, women were significantly more likely to require palliative rather than curative procedures, suggesting later stage disease at time of hospitalization than male patients

**Table 1: Descriptive Epidemiology of General Surgery Ward Patients at MTRH from January through June 2018, Aggregate and Stratified by Sex**

| | All (n=366) | Male (n=221) | Female (n=145) | P-value |
|---|---|---|---|---|
| Age, median (IQR) | 40 (28, 55) | 40 (28, 56) | 340 (28, 53) | 0.91 |
| Symptom duration (days), median (IQR) | 14 (3, 180) | 7 (2, 60) | 60 (4, 365) | **<0.0001** |
| Marital status, n (%) | | | | **0.0017** |
| Single | 98 (28.5) | 70 (33.3) | 28 (20.9) | |
| Married | 202 (58.7) | 114 (54.3) | 88 (65.7) | |
| Separated/ Widowed | 44 (12.8) | 26 (12.4) | 18 (13.4) | |
| Household size, median (IQR) | 6 (4,8) | 7 (4,9) | 5 (4,7) | **0.0096** |
| Occupation, n (%) | | | | **0.0006** |
| Formal | 204 (56.8) | 139 (64.0) | 65 (45.8) | |
| Informal | 86 (24.0) | 36 (16.6) | 50 (35.2) | |
| Unemployed | 25 (7.0) | 15 (6.9) | 10 (7.0) | |
| Student | 44 (12.2) | 27(12.4) | 17 (12.0) | |
| Admission origin, n (%) | | | | **0.0005** |
| Casualty | 118 (32.8) | 72 (33.2) | 46 (32.2) | |
| SOPC | 115 (31.9) | 57 (26.3) | 58 (40.6) | |
| Outside facility | 111 (30.8) | 82 (37.8) | 29 (20.3) | |
| Other service | 16 (4.4) | 6 (2.8) | 10 (7.0) | |
| Health insurance coverage, n (%) | 177 (48.6) | 83 (37.9) | 94 (64.8) | **<0.0001** |

**Table 2: Key Outcome Variables for MTRH General Surgery Patients, Aggregate and Stratified by Sex**

| | All | Male | Female | P-value |
|---|---|---|---|---|
| Patients undergoing surgery, n (%) | 349 (95.6) | 213 (96.8) | 136 (93.8) | 0.17 |
| In-hospital mortality, n (%) | 31 (8.6) | 20 (9.2) | 11 (7.6) | 0.60 |
| Patients admitted for trauma, n (%) | 45 (12.3) | 39 (17.7) | 6 (4.1) | **0.0001** |
| Cancer diagnoses, all cancers, trauma patients included, n (%) | 61 (16.7) | 24 (10.9) | 37 (25.5) | **0.0002** |
| Cancer diagnoses, all cancers, trauma patients excluded, n (%) | 61 (19.0) | 24 (13.2) | 37 (26.6) | **0.0024** |
| Cancer diagnoses, sex-specific externally appreciable cancers (breast, vulvar) excluded, n (%) | 49 (13.8) | 24 (10.9) | 25 (18.8) | **0.036** |
| Cancer patients undergoing surgery requiring a palliative procedure, n (%) | 18 (31.5) | 3 (13.0) | 15 (44.1) | **0.013** |

## SUMMARY and CONCLUSIONS

- Women likely face numerous barriers to accessing healthcare despite increased insurance coverage, as suggested by their inpatient underrepresentation and delayed care seeking behavior
- These barriers are likely related to women having increased household responsibility and less stable independent finances, suggested by the smaller household size of female inpatients and their overrepresentation in the informal economic sector
- These delays and the increased rate of palliative (vs curative) interventions may indicate later disease stage at presentation
- Further investigation into gender-specific barriers to care are needed, perhaps through prospective or qualitative studies with female patients

## REFERENCES

This project was part of a larger manuscript, which is currently under review for publication. The references are too many to list here. Therefore, please access the reference list using the following QR code: