

Acceptability of Ambulatory Surgical Services and Its Predictors among Residents of Budondo Sub-County—Jinja District, Uganda

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Abstract

Background: 25% of all people requiring surgical care are not able to access it due to its high cost. These people stand a high risk of preventable severe morbidity and mortality due to poor prognosis of surgically correctable illnesses. Ambulatory surgical care services are significantly cheaper than orthodox surgical care and have become very relevant in this time and age where health conditions that can only be treated with surgical intervention are on the rise. The acceptability of ambulatory surgical care services will determine how this model increases universal health coverage. **Objective:** To assess the acceptability of ambulatory surgical services and its predictors among residents of Budondo Sub-County—Jinja district. **Methods:** The study was cross-sectional targeting 371 household heads in Budondo Sub-County, which was stratified by parish, with villages in each randomly sampled. Systematic random sampling was used to sample households and households therein were purposively sampled. Structured interviews and questionnaires were the data collection techniques, and data was analyzed in SPSS version 25 using descriptive statistics and a binomial logit model. **Results:** The level of acceptability of ambulatory surgical care services among residents of Budondo Sub-County was found to be near-universal, at 96.5%. The odds of accepting ambulatory surgical care were least among household heads who agreed that surgery done in a hospital would be cheaper than surgery done at community level (aOR = 0.174 [CI = 0.055 - 0.553]), those who had health insurance (aOR = 0.105 [95% CI = 0.030 - 0.371]), and household heads who were covered with private health insurance (aOR = 0.078 [95% CI = 0.008 - 0.792]). Acceptability of ASC was higher among household heads who agreed that they would trust ambulatory surgical centers with their life were more likely to accept ambulatory surgical care (aOR = 1.124, [95% CI = 1.122 - 3.218], P = 0.000), and household heads from households that had less than five members with sur-

gery history were twice as likely to accept ambulatory surgical care (aOR = 2.431 [95% CI = 1.122 - 5.898], P = 0.000). **Conclusion:** Acceptability of ambulatory surgical care services among residents of Budondo Sub-County is high, and near-universal. It is mainly predicted by intrapersonal correlates and to a small extent by socio-demographic characteristics, with the implication that the administration of Global Surgical Initiatives in Kyabirwa ought to focus on modifying or uphold the intrapersonal characteristics found to be antagonists and protagonists of acceptability, respectively.

Keywords

Acceptability, Ambulatory Surgery, Predictors, Jinja District

1. Introduction

Within the wide spectrum of healthcare service delivery, surgical care has been recognized as one of the most important for the achievement of goal 3.1 [1] [2], following the resolution by the World Health Assembly (WHA), that it is a vital component towards achieving UHC [2]. Of concern, it is one of the most affected by apparent gaps in UHC not only due to low accessibility as a result of restrictions by the COVID-19 pandemic [3] [4], but also due to its high direct health care costs [5] [6]. Universal access to surgical care is currently being ensured by the establishment of ambulatory surgical centers [7] especially in developing countries. Such centers are meant to provide out-of-facility very low-cost surgical care, however being a new healthcare reform in Africa, their use and effectiveness will largely depend on acceptability among targeted beneficiaries. Ambulatory Surgical services are the domain of healthcare that includes the provision of surgical services on a same-day outpatient basis [8] [9]. Such surgical care is provided in specialized facilities referred to Ambulatory surgical centers (ASCs) that provide services in the range of Cataract surgery, orthopedic surgery, Upper Gastrointestinal endoscopy, ophthalmology, gastroenterology in general, Inject foramen epidural, Upper Gastrointestinal biopsy, pain management, plastic and reconstructive, surgery, Colonoscopy, lesion removal colonoscopy, a wide range of obstetric surgery, cataract laser surgery, diagnostic colonoscopy among others [9] [10]. It has been reported that Ambulatory surgical services (ASS) are of a relatively higher quality, and cost significantly less than conventional facility-based surgical care [8].

The aforementioned merits of ASSs in part accrue from the fact that in ASCs, as compared to hospital-based outpatient departments, surgeons in ASCs can conveniently and rapidly schedule cases [10]. Surgeons in ASCs also have significantly more autonomy to customize surgical environments, recruit more specialized surgeons in real-time and use more sophisticated technologies for any procedure [10]. The comparative advantage of ASC over conventional hospital OPDs has led to their steady growth over the years, with more than half of all

surgeries in the developing world conducted in ASCs with the number of expected to grow [8]. Ambulatory surgical centers have also been set in some low and middle countries including Uganda. Being novel surgical facilities contrary to the used-to hospitals, the main challenge that they may face is acceptability, especially in communities that most need them, that is, those that can't afford hospital-based care. Low acceptability has been found to be a challenge in numerous novel healthcare interventions set up to bolster healthcare services delivery and improve healthcare quality [11] [12] [13] [14] [15]. However, whereas acceptability can hamper the uptake of any healthcare intervention, with negative consequences on health, non-acceptability of ambulatory surgical services provided at ASCs, particularly in this era of the COVID-19 pandemic could have disproportionate consequences on not only the health of persons but also on national health systems. That follows evidence that currently, the incidence of surgical emergencies including acute trauma, severe gastrointestinal complications, intrapartum complications requiring surgical intervention, acute appendicitis, peritonitis, among others are on the rise [16]-[26].

What is of most concern is not only the fact that the emergencies are fatal when not attended to in time but also the fact their increase is concurrent with socio economic inequity [27] [28] [29] [30] whose increase has been mainly due to destabilization by COVID-19. Such inequity has made access to modern hospital-based surgical care impossible due to the high direct costs of surgery [31]. Given the effect that delays due to surgical service non-availability and socio-economic inequity can have on treatment outcomes, many countries have adopted the ASC model of surgical treatment, whose current market value is 75.2 billion USD [8]. Most countries with ASCs are in the developed world [9], but African countries have also implemented them, Uganda being one. But, there is no global, regional or local documentation of the extent to which the surgical services provided at ASCs will be acceptable and hence usable among its intended beneficiaries. At Mount Sinai's Kyabirwa Ambulatory Surgical Facility in Budondo Sub-County (Eastern Uganda) there have been reports of hesitance to use the services among a section of the rural populace, most of who cannot afford hospital-based care. Kyabirwa Surgical Centre has been providing Ambulatory Surgical care to residents of Jinja district since the year 2019, with over of 380 cases of various types of surgery treated at the facility, as of the first quarter of the year 2021.

The reported number was significantly lower than it was anticipated to be, given the large catchment of surgery cases in the district. It was therefore highly likely that most of the potential cases were not seek surgical care from the facility due to hesitance, with the majority of those noted in Budondo Sub-County where the ASC is located. The possibility of hesitance being the influencer of non-use of ASSs at the facility was evidenced by a string of hesitance cases dating back to 2019. That year 232 cases of patients who had to undergo surgery after being referred from various health facilities in the area (Budondo) declined to receive emergency care from the center. In 2020, there were 78 Cases

of Hernia repair that were referred to the facility for specialized cares of which 24 didn't consent, reportedly citing preference of Jinja regional referral hospital that they are used to. However, the aforementioned evidence was certainly not representative of what the magnitude of acceptability of ASSs might be despite being indicative of its reality among targeted beneficiaries of Budondo Sub-County. There is a knowledge gap of what the level of acceptability of ASSs might be among residents of Budondo Sub-County and perhaps a larger gap when it came to what the predictors of acceptability of those services might have been. There was certainly no study that had been conducted to assess the acceptability of ambulatory surgical services and their predictors in Uganda, it being a novel surgical service in the country. That justified the conduction of the current study, taking Budondo Sub-County, where an ASC has been set up, as the context. The study thus aimed at determining the level of acceptability, the socio-demographic predictors and intrapersonal predictors of ambulatory surgical services acceptability among residents of rural Budondo Sub-County—Jinja district, Uganda.

2. Methods

2.1. Study Design and Area

The study used a cross sectional design, given that with it, it was possible to only target a representative sample of household heads in Budondo Sub-County, and study each of them at one instance without follow up [32] since there was no need to find out if the sampled respondents had started using ASSs. Cross sectional study designs involve the use of questionnaires as the main data collection tools, which hence implied that with that design, it was possible to collect quantifiable data that was appropriate for use in achieving all the three study objectives.

The study was conducted in Budondo Sub-County in Jinja district-Uganda because Budondo as is apparently the only sub-county in the country that has an ambulatory surgical center in Uganda presented an unbiased study area. Jinja District is in the Southeastern part of Uganda. The district is comprised of 3 counties, 6 Sub-Counties, 46 Parishes and 381 villages. Budondo sub country is where Mt Sinai built an ambulatory surgical center, Kyabirwa Surgical Centre. The center has been providing Ambulatory Surgical care to residents of Jinja district since the year 2019 with over of 380 cases of various types of surgery treated at the facility, as of the first quarter of the year 2021 [33].

2.2. Study Population and Sample Size

The study population was household heads in Budondo Sub-County, because they are the top decision-making persons in health seeking behavior decisions. Therefore, their levels of acceptability of ASS are certainly highly reflective of what the same situation is or can be among all members of the household they head. The study excluded household heads who or their household members had

accessed surgical care at the ambulatory Center.

There hadn't been any studies conducted to assess the prevalence or level of acceptability of ambulatory surgical care services in Uganda or elsewhere and so, the study could not rely on the use of formula for single proportions when computing the sample size. However, since the number of households in Budondo was known, as provided by the Uganda Bureau of Statistics [34], the study used a formula by Krejcie and Morgan (1970) [35] to estimate the sample size. The formula by Krejcie and Morgan was used because it only requires the substitution of only the target population size integer, for the computation to be done. The formula is given by;

$$s = \frac{X^2 * N * P(1-P)}{d^2 (N-1) + X^2 * P(1-P)}$$

where; X = Confidence interval = 1.962, N = Target population size = 11060 households, P = Probability of unknown magnitude of the outcome of interest = 50% = 0.050 and d = Margin of error = 5%.

Therefore,

$$\begin{aligned} s &= \frac{1.96^2 \times 11060 \times 0.25}{0.05^2 (11060 - 1) + 1.96^2 \times 0.5(1 - 0.5)} \\ s &= \frac{10620}{0.0025(11059) + 0.9604} \\ s &= \frac{10620}{28.6079} \end{aligned}$$

$s = 371$ Household heads

2.3. Sampling Procedures

This study was community based, targeting an entire sub-county, and so, given that the final sampling had to be done at the household level, a multistage approach was used. It started with the stratification of the sub-county by parish given that the use of stratified random sampling would allow for the inclusion of all parishes in the sub-county as constituents of the sampling frame. The stratification resulted in 5 strata, representing the 5 parishes in the sub-county. The parishes were then stratified as well, so that the entire sub-county would be represented, following which simple random sampling was done to sample one village from each of the strata representing a parish. The simple random sampling procedure was conducted using the lottery approach with which all names of the constituent villages per strata were number-listed and the numbers written on pieces of paper. The pieces of paper were folded and put in a box representing a given stratum (parish), and ruffled following which a piece of paper was picked without replacement. The number on the unfolded pieces of paper corresponded with the number on the list of villages earlier made, with the village name numbered the same taken as being sampled in that stratum. That process was conducted for each stratum and it thus resulted in the

sampling of a total of 5 villages. In each of the villages sampled, systematic random sampling was used to sample households, with the household heads purposively sampled. The number of households which were required from each parish was calculated by proportionating the sample size according to the population size in each parish.

2.4. Data Collection Methods & Tools

Structured interviews were used to collect the required data, given that they are close ended in nature and could thus collect responses in a close ended format that can then be numerically analyzed and used in descriptive and inferential analysis. All responses provided by the household heads were captured using structured questionnaires; given that such questionnaires are designed with close ended or multiple-choice questions. The questionnaires could therefore capture quantifiable data that was required to achieve the objectives of this study.

2.5. Data Analysis and Management

Data collected was first and foremost analyzed descriptively, to provide the frequency distributions and valid percentages of each of the variables in the objectives. That was then followed by the analysis of cross-tabulation distributions, as the first part of bivariate analysis following which all variables were subjected to bivariate analysis. The cross-tabulations were analyzed between each of the independent variables and the dependent variable (acceptability of ambulatory surgical care), and that was done to ascertain how each of the dependent variables is distributed with the dependent variable. The bivariate analysis was further done using one of the generalized linear models; with a logit link function since such models given their proven accuracy [36] [37] [38] [39]. The binomial logit model was the one used, given that part of the outcome indicators was less than 10%, at which point, logistic regression models like the binomial logit model can be used to provide accurate data, without over estimating the p-value [36] [37] [38] [39]. Findings at this point were reported using crude odds ratios (cOR) since there were no adjustments for confounders made at that stage. Statistical significance was set at 5%, that is, all p values less than 0.050 were considered significant. All variables that were found to be significant following the bivariate analysis were fitted in a multivariate binomial logit model, in which each significant variable was analyzed against the dependent variable, along with potential confounders that it was adjusted for. Statistical significance was still set at 5%, and the findings henceforth reported in terms of adjusted odds ratios (aOR).

2.6. Ethical Considerations

Approval to conduct the study was obtained from the research ethical committee of Clarke International university, who provided a letter that was used to seek permission from the sub-county offices. All sampled household heads were allowed to exercise their right to self-determination by providing them with in-

formation about the study so that they could choose whether to participate or not. All household heads sampled were assured that all the information they would provide in this study would be kept very confidential. Their responses will not be shared with any of their leaders in the area, at least not with any of you personally-identifying information. Their names were also not captured on the questionnaire of consent forms and all interviews were conducted in private. They were told that participation in the current study was strictly voluntary, that they would not be given any incentives and that therefore, they were free to withdraw from the study at any time without any consequences. In observance of the standards operation procedures for protection from COVID-19, the other ethical consideration was the protection of the respondents from harm. Social distancing (1 meter) was maintained and both the interviewers and interviewees had their masks on whenever there was the need for closer contact between the two parties.

3. Findings

3.1. Socio-Demographic Characteristics of the Respondents (Table 1)

More than two thirds of the respondents were females 252 (67.9%), a quarter of them were aged between 20 and 29 years 95 (25.6%), while close to a third of them were Muslims 114 (30.7%). The majority had received formal education 281 (75.7%), and almost half of those educated to Secondary (O level) 128 (45.6%). More than two thirds of the respondents were married 258 (69.5%), and nearly a quarter of them were residents of Kibibi parish 90 (24.3%).

3.2. Ambulatory Surgical Service Acceptability

Almost all the respondents reported that they would accept to seek and receive surgical care from an ambulatory surgical facility set up, in case need arises in future 358 (96.5%), and that they would also allow any family member to seek surgical care from an ambulatory surgical center 361 (97.3%). That makes the level of acceptability of ambulatory surgical care services among residents of Budondo Sub-County to be near universal, at 96.5% (Table 2).

3.3. Predictors of Ambulatory Surgical Services Acceptability among Residents of Budondo Sub-County

All the five variables that were found to be significant at bivariate level remained statistically significant after adjustment for confounders. The odds of accepting ambulatory surgical care were least among household heads who agreed that surgery done in a hospital would be cheaper than surgery done at the community level (aOR = 0.174 [95% CI = 0.055 - 0.553], P = 0.030) compared to those who did not agree as such. Households heads who had health insurance were less likely to accept ambulatory surgical care (aOR = 0.105 [95% CI = 0.030 - 0.371], P = 0.000) compared to those who had no health insurance. Acceptance

Table 1. Socio-demographic characteristics of the respondents.

Variable	Category	Frequency	%
Gender	Female	252	67.9
	Male	119	32.1
Age	Less than 20 years	2	.5
	20 - 29 years	95	25.6
	30 - 39 years	74	19.9
	40 - 49 years	89	24.0
	50 - 59 years	73	19.7
	60 - 69 years	29	7.8
	More than 69 years	9	2.4
Religious denomination	Catholic	75	20.2
	Anglican	107	28.8
	Islam	114	30.7
	SDA	17	4.6
	Born again	58	15.6
Received formal education	Yes	281	75.7
	No	90	24.3
Level of education	Primary (Lower)	47	16.7
	Primary (Upper)	83	29.5
	Secondary (O level)	128	45.6
	Secondary (A level)	14	5.0
	Post-secondary	9	3.2
Married	Yes	258	69.5
	No	113	30.5
Parish	Kibibi	90	24.3
	Evunamba	75	20.2
	Buwagi	46	12.4
	Bwase A (Kibibi)	36	9.7
	Lukolo	32	8.6
	Kyomya	39	10.5
	Nawangoma	15	4.0
	Buleba	31	8.4
	Bufula B	7	1.9

of ambulatory surgical care was particularly least likely among household heads who were covered with private health insurance (aOR = 0.078 [95% CI = 0.008 - 0.792], P = 0.031) compared to those who were covered under community-based health insurance schemes. Household heads who agreed that they would trust

Table 2. The level acceptability of ambulatory surgical services among residents of Budondo Sub-county—Jinja district.

Variable	Category	Frequency	%
Will accept to seek and receive surgical care from an ambulatory surgical facility(ies) set up, in case need arises in future	Yes	358	96.5
	No	13	3.5
Will allow any family member to seek surgical care from an ambulatory surgical center	Yes	361	97.3
	No	10	2.7

ambulatory surgical centers with their life were more likely to accept ambulatory surgical care (aOR = 1.124, [95% CI = 1.122 - 3.218], P = 0.000) compared to those who disagreed. Household heads from households that had less than five members with surgery history were twice as likely to accept ambulatory surgical care (aOR = 2.431 [95% CI = 1.122 - 5.898], P = 0.000) compared to those from households that had more than five members with surgery history.

4. Discussion

4.1. Prevalence of the Level of Acceptability of Ambulatory Surgical Services among Residents of Budondo Sub-County—Jinja District

With the gradually increasing incidence of non-communicable diseases, particularly those of cardiovascular, gastrointestinal and urological nature, the increasing incidence of trauma and musculoskeletal injuries, and the increasing incidence of obstetric complications that require surgical intervention, the need for easy access to surgical care has never been higher [16] [18] [19] [20] [21] [23] [24] [25]. However, the downside with access to that much needed orthodox surgical care are the direct healthcare costs associated with it [6] [23] [40], which have over the years proven to be significant barriers to service access. As a counter to the costly hospital-based orthodox surgical care, ambulatory surgical care was developed [41]. In the Ugandan context, ambulatory surgical care is about to make five years since its introduction. Whereas it has garnered popularity especially among residents in Budondo Sub-County, there still happened to be instances of preference for the costly orthodox hospital-based surgical care, most likely due to acceptability gaps. That assertion was premised on the fact that the adoption of a given behavior (use of Ambulatory surgical care) is immediately preceded by intentions (acceptability), according to the TPB [42].

Although there are very few studies that have been conducted to assess the acceptability of ambulatory surgical care, perhaps because it is a novel surgical service model, there exist studies that have been done to assess ambulatory care acceptability that the findings of the current study can be compared with. The level of acceptability of ambulatory care among residents of Budondo is higher than what has been reported in studies by [43] in Britain, [41] in Greece, [44] (84%) in Ireland, [45] (50%) in Japan, [46] (72%), [47] (85%) (60%) in Australia,

[48] in the United States (94%) and by [49] in Uganda. The main difference between the findings of the current study and the findings of some of the other studies is they did not explicitly focus on only surgery [41] [43] [48] [49] and others did not explicitly focus on ambulatory surgery [46]. Therefore, there were methodological differences between the studies, given that acceptability of surgical care models significantly differs from acceptability thresholds of non-surgical care models. As for the study by [44] in Ireland, where the focus on ambulatory gynecological care, the slight difference in acceptability levels is premised on the fact that the current study focused on general ambulatory care that included a wider range of services, as compared to the study by [44] where only ambulatory gynecological care was focused on. That possibly made acceptability to be slightly lower than in this study.

The differences between studies notwithstanding, the fact remains that the level of acceptability of ambulatory surgical care among residents in Budondo Sub-County is very high, contrary to what had been earlier perceived, even among the administrators of the ambulatory surgical facility in Kyabirwa. The finding implies that in the near future, almost all residents of Budondo Sub-County will use ambulatory surgical care services provided by the Global Surgical Initiatives in Kyabirwa—Budondo or any other ambulatory facility, in case the need for surgical care arises. In other words, almost all residents in Budondo who might need surgical care intervention in future will benefit from financial risk protection that is provided by ambulatory surgical care use, and will hence be less likely to experience catastrophic health expenditure (CHE), at household level. That is in addition to being less likely to default from any surgical care continuum that may happen due to cost constraints, hence keeping many of them safe from severe sequelae and morbidity that may arise postoperatively. Among the residents of Budondo Sub-County therefore, odds are high that universal health coverage among them will be achieved, particularly in the context of surgical health care access.

4.2. Socio-Demographic Predictors of Ambulatory Surgical Services Acceptability among Residents of Budondo Sub-County—Jinja District

Similar to the assessment of acceptability of ambulatory surgical care, there are virtually no comparable studies that have assessed the predictors of ambulatory surgical care acceptability. Nonetheless, contrary to many studies that have assessed acceptability of healthcare services [23] [50]-[57] this study found only one significant socio-demographic predictor of ambulatory surgical care acceptability, and that was the number of household members with surgical history. The difference in the findings is clearly related to the difference in outcome variables between this study and the other studies. Whereas this study focused on ambulatory surgical care, the others focused on surgical healthcare services, and so there was a significant difference in the nature of exposure variables and their effect.

The findings showed that household heads from households that had less than five members with surgery history were 100 times as likely to accept ambulatory surgical care (aOR = 2.431 [95% CI = 1.122 - 5.898], P = 0.000) compared to those from households that had more than five members with surgery history. This finding is rather surprising given the expectation that with a high number of household members who have undergone surgery, a given household may have experience CHE, and the household head would have considered accepting ambulatory surgical which is cheaper. It is highly likely that as compared to household heads that had less than five members with surgical history, those who had more than five household members with surgical history had habituated more with orthodox hospital-based surgery. Having those many household members with surgical history, particularly major surgery (**Table 3**) is associated

Table 3. Relationship between socio-demographic characteristics and ambulatory surgical care acceptability.

Variable	n	%	ASC acceptability status		cOR (95% CI)	P Value	cOR (95% CI)	P Value
			Will accept [358]	Will not accept [n = 13]				
Gender								
Female	252	67.9	242 (96.0%)	10 (4.0%)	0.626 (0.169 - 2.317)	0.483		
Male	119	32.1	116 (97.5%)	3 (2.5%)	1.000			
Age								
Less than 20 years	2	0.5	2 (100.0%)	0 (0.0%)				
20 - 29 years	95	25.6	89 (93.7%)	6 (6.3%)				
30 - 39 years	74	20.9	70 (94.6%)	4 (5.4%)	n.a	n.a		
40 - 49 years	89	24.0	89 (100.0%)	0 (0.0%)				
50 - 59 years	73	19.7	73 (100.0%)	0 (0.0%)				
60 - 69 years	29	7.8	26 (89.7%)	3 (10.3%)				
More than 69 years	9	2.4	9 (100.0%)	0 (0.0%)				
Religious denomination								
Catholic	75	20.2	72 (96.0%)	3 (4.0%)				
Anglican	107	28.8	99 (92.5%)	8 (7.5%)				
Islam	114	30.7	112 (98.2%)	2 (1.8%)	n.a	n.a		
SDA	17	4.6	17 (100.0%)	0 (0.0%)				
Born again	58	15.6	58 (100.0%)	0 (0.0%)				
Received formal education								
Yes	281	75.7	273 (97.2%)	8 (2.8%)	2.007 (0.640 - 6.299)	0.232		
No	90	24.3	85 (94.4%)	5 (5.6%)	1.000			
Level of education								
Primary (Lower)	47	16.7	47 (100.0%)	0 (0.0%)				
Primary (Upper)	83	29.5	81 (97.6%)	2 (2.4%)				
Secondary (O level)	128	45.6	128 (100.0%)	0 (0.0%)	n.a	n.a		

Continued

Secondary (A level)	14	5.0	11 (78.6%)	3 (21.4%)		
Post-secondary	9	3.2	6 (66.7%)	3 (33.3%)		
Married						
Yes	258	69.5	248 (96.1%)	10 (3.9%)	0.676 (0.183 - 2.506)	0.558
No	113	30.5	110 (97.3%)	3 (2.7%)	1.000	
Employed						
Yes	156	42.0	148 (94.9%)	8 (5.1%)	0.440 (0.141 - 1.37)	0.158
No	215	58.0	210 (97.7%)	5 (2.3%)	1.000	
Nature of family						
Nuclear	195	52.6	187 (95.9%)	8 (4.1%)	0.683 (0.219 - 2.129)	0.512
Extended	176	47.4	171 (97.2%)	5 (2.8%)	1.000	
Any member of household ever undergone surgery						
Yes	178	48.0	169 (94.9%)	9 (5.1%)	0.397 (0.120 - 1.314)	0.130
No	193	52.0	189 (97.9%)	4 (2.1%)		
Number of members with surgery history						
Less than five	169	94.9	166 (98.2%)	3 (1.8%)	2.949 (1.373 - 6.588)	0.000 2.431 (1.122 - 5.898) 0.000
More than five	9	5.1	3 (33.3%)	6 (66.7%)	1.000	1.000
Category of surgery						
Minor surgery	39	21.9	36 (92.3%)	3 (7.7%)	0.541 (0.129 - 2.271)	0.402
Major surgery	139	78.1	133 (95.7%)	6 (4.3%)	1.000	
Type of surgery						
Cesarean section	76	42.7	70 (92.1%)	6 (7.9%)		
Circumcision	27	15.2	24 (88.9%)	3 (11.1%)		
Eye surgery	8	4.5	8 (100.0%)	0 (0.0%)		
Hernia	28	15.7	28 (100.0%)	0 (0.0%)		
Neuro	3	1.7	3 (100.0%)	0 (0.0%)	n.a	n.a
Dental surgery	10	5.6	10 (100.0%)	0 (0.0%)		
Fibroids (Myomectomy)	5	2.8	5 (100.0%)	0 (0.0%)		
Prostatectomy	5	2.8	5 (100.0%)	0 (0.0%)		
Colectomy	7	3.9	7 (100.0%)	0 (0.0%)		
Breast surgery	7	3.9	7 (100.0%)	0 (0.0%)		
Cataract surgery	2	1.1	2 (100.0%)	0 (0.0%)		
Household monthly healthcare costs						
Less than 50,000	167	45.0	163 (97.6%)	4 (2.4%)	1.881 (0.569 - 6.220)	0.301
More than 50,000	204	55.0	195 (95.6%)	9 (4.4%)	1.000	
Any household member diagnosed with chronic illness						
Yes	162	43.7	159 (98.1%)	3 (1.9%)	2.663 (0.721 - 9.841)	0.142
No	209	56.3	199 (95.2%)	10 (4.8%)	1.000	

Continued

Aware of what ambulatory surgical care is							
Yes	140	37.7	137 (97.9%)	3 (2.1%)	2.066 (.559 - 7.641)	0.277	
No	231	62.3	221 (95.7%)	10 (4.3%)			
Surgery done in a hospital is more effective than surgery done at the community level							
Strongly Agree	73	19.7	65 (89.0%)	8 (11.0%)			
Agree	30	8.1	28 (93.3%)	2 (6.7%)			
Undecided	59	15.9	56 (94.9%)	3 (5.1%)	n.a	n.a	
Disagree	126	34.0	126 (100.0%)	0 (0.0%)			
Strongly disagree	83	22.4	83 (100.0%)	0 (0.0%)			
Surgery done in hospital is cheaper than surgery done at community level							
Agree	84	22.6	76 (90.5%)	8 (9.5%)	0.168 (0.054 - 0.530)	0.002	0.174 (0.055 - 0.554) 0.030
Disagree	287	77.4	282 (98.3%)	5 (1.7%)	1.000		1.000
Have health insurance							
Yes	27	7.3	22 (81.5%)	5 (18.5%)	0.105 (0.032 - 0.347)	0.000	0.078 (0.008 - 0.792) 0.031
No	344	92.7	336 (97.7%)	8 (2.3%)	1.000		1.000
Kind of insurance							
Private health insurance	5	18.5	2 (40.0%)	3 (60.0%)	0.067 (0.007 - 0.668)	0.021	0.078 (0.008 - 0.792) 0.031
Community based health insurance	22	81.5	20 (90.9%)	2 (9.1%)	1.000		1.000
Surgery is very costly; not affordable by rural people							
Strongly Agree	134	36.1	128 (95.5%)	6 (4.5%)			
Agree	74	19.9	71 (95.9%)	3 (4.1%)	n.a	n.a	
Undecided	33	8.9	29 (87.9%)	4 (12.1%)			
Disagree	78	21.0	78 (100.0%)	0 (0.0%)			
Strongly disagree	52	14.0	52 (100.0%)	0 (0.0%)			
Would trust ambulatory surgical centers with my life							
Agree	324	87.3	322 (99.4%)	2 (0.6%)	1.298 (1.188 - 4.739)	0.000	1.124 (1.122 - 3.218) 0.000
Disagree	47	12.7	36 (76.6%)	11 (23.4%)	1.000		
I would only trust mainstream hospitals with my life in case of an operation							
Strongly Agree	54	14.6	43 (79.6%)	11 (20.4%)			
Agree	52	14.0	50 (96.2%)	2 (3.8%)			
Undecided	47	12.7	47 (100.0%)	0 (0.0%)	n.a	n.a	
Disagree	189	50.9	189 (100.0%)	0 (0.0%)			
Strongly disagree	29	7.8	29 (100.0%)	0 (0.0%)			
Have chronic illness							
Yes	79	21.3	79 (100.0%)	0 (0.0%)	n.a	n.a	
No	292	78.7	279 (95.5%)	13 (4.5%)			

*n.a indicates that p values and ratios for a particular couldn't be computed because of null integers in the cross tabulations.

with an experience of repetitive hospital admissions, and hence the development of a preconceived notion that all surgery should be followed by in-patient care. Such a preconceived notion can be a significant deterrent to the change of ones mindset to the possibility of having ambulatory surgical care where the post-operative period is entirely outpatient based. Households with less than 5 members (most of whom 1 member) having surgical history are more likely to accept ambulatory surgical care because of the relatively less habituation with hospital-based surgery and hence a higher likelihood to try out ambulatory care without any worries.

4.3. Intrapersonal Predictors of Ambulatory Surgical Services Acceptability among Residents of Budondo Sub-County-District

Intrapersonal characteristics were found to be relatively more important in predicting the acceptability of ambulatory surgical services among residents of Budondo Sub-County. A total of four intrapersonal characteristics were found to be significant, and that wasn't so surprising given that intentions, willingness and/or acceptability of a novel surgical service such as ambulatory surgical care mainly requires a positive personal perception, attitude, cognitive appraisal and self-efficacy, as per the theory of planned behavior. One of the intrapersonal findings was that the odds of accepting ambulatory surgical care were least among household heads who agreed that surgery done in a hospital would be cheaper than surgery done at community level (aOR = 0.174 [CI = 0.055 - 0.553], P = 0.030) compared to those who did not agree as such. This finding has all to do with both perception about ordinary hospital-based surgery and knowledge about ambulatory surgical care. The fact that ambulatory surgical care provided by the Global Surgical Initiative. Its Global Surgical Initiatives in Budondo Sub-County is significantly subsidized and hence significantly cheaper than ordinary hospital-based care and yet some household heads erroneously thought that it was more expensive implies that there was non-awareness about ambulatory surgical care as a service. Household heads who agreed that hospital surgery was cheaper than ambulatory probably thought that going by the nomenclature of "ambulatory surgery" the service was more expensive. With the already known cost burden of surgery, the household heads were certainly less likely to accept ambulatory surgical care with their perception of it being expensive.

Consistent with findings by [27] [51] [58] [59] [60] this study found a relationship between insurance and acceptability. The findings of this study showed that households heads who had health insurance were less likely to accept ambulatory surgical care (aOR = 0.105 [CI = 0.030 - 0.371], P = 0.000) compared to those who had no health insurance. It should be known that health insurance of any sort offers protection from financial risk and nullifies the burden of out-of-pocket expenditure. As such, people who have health insurance are less likely to feel the burden of direct healthcare costs and so, they wouldn't mind the cost of receiving orthodox hospital-based surgery care. That is especially true for pa-

tients who have private health insurance, since it usually covers for surgery and all associated costs even in the postoperative period. That explains why acceptance of ambulatory surgical care was particularly least likely among household heads who were covered with private health insurance (aOR = 0.078 [CI = 0.008 - 0.792], P = 0.031) compared to those who were covered under community based health insurance schemes. Such household heads would thus most likely perceive the subsidized costs of surgery at an ambulatory facility to have no effect on them since they wouldn't be beneficiaries of the subsidization; hence the choice of hospital-based surgery. It is also possible that some of the household heads were aware that the available ambulatory surgical care facility in Budondo at the time, had no system that caters for insured patients, making them settled for accepting hospital-based care, that cater for insured patients. Worryingly however, among the patients who reported that they had health insurance, the majority had community based insurance, for which many administrative schemes do not cater for major surgery. Therefore, insured persons in Budondo face a risk for CHE and default from care in case them or their household members gets to a state where they require major surgery.

5. Conclusions

The findings of this study revealed that the level of acceptability of ambulatory surgical care services among residents of Budondo Sub-County is near universal, at 96.5%. This finding implied that about 9 in 10 household heads, and possibly 9 in 10 households in the sub-county were willing to uptake the ambulatory model of surgical care, despite being novel in Uganda.

Acceptability is mainly predicted by intrapersonal correlates and to a small extent by socio-demographic characteristics, with the implication that the administration of Global Surgical Initiatives in Kyabirwa ought to focus on modifying or uphold the intrapersonal characteristics found to be antagonists and protagonists of acceptability, respectively. Only one socio-demographic characteristic predicts the acceptability of ambulatory surgical care among residents of Budondo Sub-County, which is the number of members with surgery history in a given household.

Four intrapersonal characteristics predict acceptability of ambulatory surgical care among residents in Budondo Sub-County, they include: the perception that surgery done in a hospital would be cheaper than surgery done at community level, having health insurance, the type of health insurance cover, and trust in ambulatory surgical centers with one's life.

Recommendations for Policy and Practice

Whereas there is high acceptability of ambulatory surgical care among residents of Budondo Sub-County, there is need to ensure that it not only becomes universal but also that it can be later translated into actual use of the services. To do so, the local administration of Global Surgical Initiatives—capitalised at Kyabir-

wa—Budondo will have to implement a few interventions as deliberated below.

The administration of the ambulatory surgical facility in Budondo and any other organization that has plans of establishing ambulatory surgical facilities in other parts of Uganda, must consider prioritizing the education of all target populations about ambulatory surgical care, what it is, how it works, its benefits, and its comparative advantage over orthodox hospital-based surgical care. All channels of communication should be used in the process, with emphasis on mass media platforms. Such an activity will create awareness about the model of ambulatory care; to the possible extent that even households earlier fixated and habituated to utilizing hospital-based surgical care will be in position to choose ASC in future, following the demystification of any myths and negative perceptions regarding ASC. The resultant awareness creation will also dislodge the notion that hospital surgery is cheaper than ambulatory surgical care, and it will certainly increase trust in ambulatory surgical centers with one's life. Overall, the proprietors of ambulatory surgical facilities should invest relatively more resources in behavior change communication, health education and sensitization of masses about the surgical care model that ASC is.

In the medium term, the administration of the ambulatory surgical facility may consider introducing partnering with private health insurance schemes, so that patients with private insurance cover can access surgical care from the ambulatory facility without any financial risk or out of pocket expenditure. It could also be worthwhile for the facility to introduce a local community-based health insurance scheme to which rural residence targeted can pay an affordable premium to cater for surgery costs whenever they arise.

Recommendations for Further Study

This study was geographically delimited to Budondo Sub-County, where an ambulatory surgical facility has already been set up. Therefore, it would also be worthwhile to conduct a study about acceptability of ambulatory surgical care in another area, possibly one where the residents will have to just be briefed about the model of care, without necessarily having any facility in their area. Since acceptability has a lot to do with one's personal perception, it would be prudent to also conduct a similar study albeit with a pragmatic paradigm (mixed methods design).

Conflicts of Interest

This study had no conflict of interest.

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List of Acronyms

ACP	Advance care planning
AI	Artificial Intelligence
ASCs	Ambulatory Surgical Centers
ASS	Ambulatory surgical services
COVID-19	Coronal Virus Disease 19
OECD	Organization for Economic Development
OPDs	Outpatient Department
UHC	Universal Health Coverage
UN	United Nations
WHO	World Health Organization

Operational Definitions

Ambulatory Surgical Center	This term refers to a medical facility that provides surgical care on out-patient basis.
Ambulatory Surgical Care	This term refers to surgical healthcare (minor and major) that is provided on a same-day outpatient basis.
Acceptability	This term referred to the harboring of intentions to use ambulatory surgical services available, in the near future when need arises.
Predictors	This term referred to characteristics that were found to have statistically significant relationships with acceptability of ambulatory surgical services. They included socio-demographic and interpersonal characteristics.
