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Health facility factors affecting the provision of post-abortion care services in Trans- Nzoia County, Western Kenya

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Abstract

Introduction: *globally, millions of women suffer from abortion and its complications, and they require post-abortion care (PAC) services. The existence of suboptimal PAC services aggravates the situation. The study investigated health facility factors affecting the provision of post-abortion care by primary healthcare facilities in Trans-Nzoia County, Kenya.* ***Methods:*** *a cross-sectional study that adopted a mixed methods design where one hundred and sixty primary healthcare facilities were sampled across the five sub-counties. Qualitative data were analyzed using NVIVO, while quantitative analysis was performed using SPSS version 21. Descriptive statistics were used for continuous variables. The association between categorical independent variables and the dependent variable, with a p-value of 0.05 considered significant. Qualitative data were transcribed verbatim and organized into themes.* ***Results:*** *one hundred and sixty primary healthcare facilities were sampled across the five sub-counties. Public facilities were 64 (49.2%), private 51 (39.2%), and faith-based organizations 15 (11.5%). The majority of the facilities, 72 (55.4%), were operational five days a week. Community Health Promoters (CHPs) highlighted a lack of 24-hour services in PHC facilities. The cost of PAC services was statistically high, with a p-value of < 0.001, patient waiting time p-value of < 0.001. The main reason for the prolonged waiting time is the inability to pay for PAC services in 82 (63.1%) facilities. The distribution of nurses in PHC facilities was significant with a p-value of 0.03.* ***Conclusion:*** *the findings show that health facility factors affecting PAC services in PHC facilities in Trans Nzoia County were facility operating hours, staffing levels for nurses, and availability of a budget specific to PAC services. Consequently, the study recommends the use of the health facility factors to inform PAC interventions.*

Introduction

Women require postabortion care services after the termination of pregnancy, which could occur naturally without human interference or could be induced [1]. Abortion is the loss of a pregnancy where the products of conception are expelled before the fetus attains maturity to survive on its own [2]. Post abortion care (PAC) is the provision of medical, social, psychological, and spiritual care and support to a woman after an abortion [3]. Post abortion care (PAC) comprises the management of complications that arise after an abortion, counselling services, the provision of contraceptives, and linkage to other relevant departments.

Approximately 210 million women become pregnant annually in low- and middle-income countries (LMICs), and close to 50 million pregnancies end in abortion [4]. Consequently, approximately 8 million women who suffer postabortion complications do not receive quality PAC services [5], causing the deaths of almost 900,000 women [6]. Estimates between 2015 and 2019 show that the sub-Saharan region experiences almost 8 million abortions annually [7]. The majority of these are unsafe and constitute 62% of abortion-related deaths globally [2]. According to the World Health Organization (WHO), unsafe abortion is the termination of a pregnancy by people who lack the required technical skills in an environment that is contaminated or unsafe, or both [8]. Maternal deaths due to unsafe abortion represent 30 women per 100,000 complications in developed countries, 141 women per 100,000 complications in Africa [9], and 520 women per 100,000 complications in sub-Saharan Africa (SSA) [10]. The postabortion complications experienced in SSA include pelvic infections, bleeding, physical injury, retained products of conception, and retained foreign bodies [11].

The East African region has experienced an increase in abortion rates since 1990, with an estimated 2·7 million abortions annually, the

majority of which are unsafe and result in postabortion complications [12]. An estimated seven women per hundred unsafe abortions experience serious complications that can be fatal [13], and one woman dies per hundred unsafe abortions [14]. Kenya experiences close to 500,000 abortions annually, and approximately 60% of gynecological emergency hospital admissions are due to postabortion complications [15]. According to the Kenya Health Information System (KHIS) data, 1803 women sought PAC services in Trans Nzoia County in 2022 alone.

Postabortion care (PAC) is a cost-effective public health strategy that minimizes deaths and disability due to postabortion complications [3]. However, the African region has not attained non-discriminatory and continued access to efficient health systems, and geographical variations exist, especially in rural areas where postabortion care is still a challenge [11,16,17]. In sub-Saharan Africa, women primarily seek PAC services in primary health care facilities and public hospitals [10]. However, most primary healthcare facilities in both SSA and East Africa are unable to provide PAC services [18], which could be due to challenges at the health facility level [19,20]. Kenya faces the same challenges, resulting in multiple referrals and delays in care, hence worsening postabortion complications and leading to maternal deaths [5,21].

From the Kenya Health Information System (KHIS) data, 1803 women sought PAC services in Trans Nzoia County in the year 2022 alone, utilizing both government and nongovernmental health facilities. However, most Patients sought PAC services from Kitale County Hospital (KCH) despite coming from peripheries where there are both government and nongovernment primary health care (PHC) facilities. This approach contradicts the PHC concept of ensuring that every individual accesses essential health services wherever they are, as per the Alma-Ata Declaration of 1978. PHC is the immediate level of a healthcare system where an individual initially interacts with the healthcare system and acts as a link to higher levels of care (Astana Declaration, 2018).

Sustainable Development Goal three (SDG 3) aims to reduce the global maternal mortality rate (MMR) to less than 70 per 100,000 live births by the year 2030. MMR is the number of women who die due to complications during pregnancy, childbirth, or within six weeks after childbirth. Countries are therefore striving to attain global targets, and no country should have an MMR twice the global target by the year 2030 [6]. The Kenya Population and Housing Census Report of 2019 indicates that Kenya has a national MMR of 355 per 100,000 live births. The MMR per 100,000 live births in counties is 641 in Garissa, 586 in the Tana River, 469 in Murang´a, 516 in Homabay, 473 in West Pokot, 287 in Trans Nzoia, 204 in Uasin Gishu, 238 in Bungoma, 171 in Kiambu, and 67 in Nyeri. Forty-six counties (including Trans Nzoia County) out of the 47 counties have an MMR that is more than twice the SDG 3 target; hence, counties need to implement strategies to lower maternal mortality and achieve global targets by the year 2030.

Data from the Department of Health Services and Sanitation of Trans Nzoia County show that the county has a total of 192 PHC facilities. There are 86 public PHC facilities in total (21 health centres and 65 dispensaries), whereas there are 106 non-governmental PHC facilities (NGOs, Faith-Based Organizations (FBO), and private practices) in total: 85 dispensaries and 21 health centres. Trans Nzoia County also has 9 level four facilities and one county hospital (Kitale County Hospital). The level four facilities include 6 subcounty hospitals, Mt. Elgon Hospital, 1 FBO, and 1 private facility. On the basis of the KHIS data, 1803 women sought PAC services in Trans Nzoia County in 2022 alone. Among these patients, 1,677 (93%) utilized public health facilities, and 126 (7%) patients sought PAC services from private facilities, FBO facilities, and NGO facilities. Among the 1677 patients who went to public health facilities, 1064 (63.4%) patients sought services from the Kitale County Hospital, according to data in the PAC service register at

KCH for the year 2022. A total of 379 patients (22.6%) were served at the 6 subcounty hospitals, whereas the 86 public PHC facilities served 234 (14%) patients.

Among the 1064 patients who went to KCH, 308 (28.9%) were referred by PHC facilities, whereas 197 (18.5%) were self-referrals from the peripheries; therefore, almost half (47.4%) of the PAC clients served at KCH were referrals from PHC facilities. Both referrals were for basic PAC services. For the entire year of 2022, 192 PHC facilities served a total of 360 patients (20%), with an average of 2 patients per facility per year. This research sought to determine why lower-level health facilities refer women seeking PAC services to KCH or why women do not prefer seeking PAC services from lower-level health facilities. The long distance to KCH and the crowding for PAC services resulted in delays in obtaining PAC services. This also exacerbates postabortion complications and sometimes leads to disability and death in women. This study, therefore, sought to investigate the factors affecting the provision of postabortion care by primary healthcare facilities in Trans-Nzoia County, Western Kenya.

Methods

Ethical approval for the study: ethical approval was sought from the Ethics and Scientific Review Committee of AMREF (protocol approval number: ESRC P1700/2024) dated September 11, 2024, and a licence for conducting the research was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), licence number: NACOSTI/P/24/40301 dated October 02, 2024. Permission to conduct the study was obtained from the Department of Health Services and Sanitation Research Committee of the County Government of Trans Nzoia (CGTN/HS/RD/02 VOL 1/2024) dated October 07, 2024. Informed consent was sought from the in-charge of PHC facilities and from KII before data was collected. The confidentiality of the information obtained from the study sites was maintained.

Study design: the study was a cross-sectional study that adopted a mixed methods design for data collection, with quantitative being use of structured questionnaires and qualitative being use of key informant interviews via key informant interview guides. Data collection was conducted for 40 days between 23rd October 2024 and 19th December 2024. One hundred and sixty primary healthcare facilities were sampled across the five sub-counties, and 130 responded to the PAC questionnaire, resulting in an 81.25% response rate.

Study site: the study was performed in Trans Nzoia County. The county consists of five sub-counties: Kiminini, Cherangany, Kwanza, Endebes, and Saboti (Kenya National Bureau of Statistics, 2019). Trans Nzoia County is one of the north-rift counties bordering Uganda, West Pokot County, Uasin Gishu County, Elgeyo Marakwet County, and Bungoma County, and is approximately 397 km from Nairobi (Figure 1).

Study population: the study targeted a total of 192 PHC facilities in Trans Nzoia County. There were 86 public PHC facilities (21 health centers and 65 dispensaries), 2 nongovernmental organization (NGO) facilities, 13 faith-based organizations (FBO), and 91 private practice facilities. All PHC facilities within Trans Nzoia County were included in the study, except for primary healthcare facilities within Trans Nzoia County whose facility officers in charge did not consent to participate in the study. A total of 23 key informant interviews were conducted among healthcare workers (facility in-charges and nurse managers) who were selected purposively based on their knowledge of service delivery at the PHC facility and their interactions with both the community and PHC providers.

Sample size calculation: the sample size was calculated via the Danial 1999 formula, where 384 facilities were targeted, and a correction factor was applied since the target population was less than 10,000. A sample size of 160 PHC facilities

was reached. This was divided proportionately to obtain the number of PHC facilities per stratum.

Study design: the study was a cross-sectional study that adopted a mixed methods design for data collection, with quantitative being use of structured questionnaires and qualitative being use of key informant interviews via key informant interview guides. Data collection was conducted for 40 days between 23rdOctober 2024 and 19thDecember 2024. One hundred and sixty primary healthcare facilities were sampled across the five sub-counties, and 130 responded to the PAC questionnaire, resulting in an 81.25% response rate.

Statistical analysis: descriptive and inferential statistics were performed on the data. Data analysis included both bivariate and multivariate analyses. Bivariate and multivariate analyses were used to test the distribution differences in variables between facility factors and the provision of PAC services at the significance level of $P < 0.05$. All the statistical analyses were performed via IBM SPSS Statistics v23. Qualitative data were analysed via NVIVO software. All interview recordings were transcribed verbatim. Interview transcripts were then imported to NVivo 12 software for data management, coding, and analysis. A thematic analysis approach was adopted, which involved data familiarization through reading and re-reading the transcripts, generating initial codes, grouping these codes to develop the coding framework, and conducting first and second-level analysis i.e., identifying patterns and relations and building bigger categories. All the data were coded on NVivo, guided by the developed coding framework. The coded data was then used to support the presentation of emerging themes, which are presented in the results section below. Thematic analysis was used to identify and understand themes or patterns related to factors influencing PAC service provision in PHC facilities within Trans-Nzoia County.

Results

Facilities: the study was conducted in PHC facilities in all five sub-counties in Trans Nzoia County, Kenya. The sub-counties are Kiminini, Cherangany, Kwanza, Endebess, and Saboti. Among the 130 PHC facilities that responded, the Kiminini and Cherangany sub-counties had 28 (21.8%) PHC facilities each, the Kwanza sub-county had 30 (23.1%) facilities, the Endebess sub-county had 13 facilities (10%), and the Saboti sub-county had 31 (23.8%) facilities (Figure 2). The County Government of Trans Nzoia, under the devolved health system, owned 64 (49.2%) facilities, followed by 51 private sector facilities (39.2%) and 15 (11.5%) FBO facilities (Figure 3). There were 60 (46.2%) male respondents and 70 (53.8%) female respondents. Saboti subcounty had the highest number of respondents, 31 (23.9%), followed by Kwanza subcounty, 30 (23.1%); Kiminini and Cherangany, 28 (21.5%); and Endebess subcounty, the lowest percentage.

Health facility operations

Health facility operation hours: the majority of PHC facilities 72 (55.4%) were operating five days a week, Monday to Friday, between 8:00 am and 5:00 pm. This was followed by 25 (19.2%) facilities operating six days a week, Monday to Saturday, between 8:00 am and 5:00 pm. Only 13 (10%) facilities were operating 24 hours a day. Another 13 (10%) facilities offered day-only services seven days a week, 4 (3.1%) facilities offered morning-only services, and 3 (2.3%) facilities offered evening-only services (Figure 4). In-depth interviews with community health promoters (CHPs) highlighted the lack of 24-hour services in PHC facilities as a barrier to providing PAC services since all public dispensaries and some health centers were operational only five days a week and only during the day, i.e., 8 am to 4 pm. Women seeking PAC services in these facilities either during weekends or nights were referred by security personnel at the primary facility to other facilities that operate 24 hours within the locality. “R: They operate up to five in the evening… at

night, we refer PAC clients directly to Endebess. Therefore, if it could operate for 24 hours, then it could provide services - those whom we currently refer to as Endebess could all be served there for 24 hours."

Payment of PAC services: forty-eight (36.9%) PHC facilities offering PAC were charging for services, whereas 36 (27.7%) PHC facilities were not charging for PAC services. Some 7 (5.4%) facilities sometimes charge for PAC services depending on the availability of PAC health products and technologies at the PHC facility. Payment of PAC services was not applicable in 39 (30%) of the facilities. Thirty (56.6%) of the 53 charging facilities were public PHC facilities, 13 (24.5%) of which charged between Ksh. 1 to Ksh. 2000, two (3.8%) facilities charged Ksh. 2001 to Ksh. 4000, and ten facilities (18.9%) charged Ksh. 4001 to Ksh. 6000, three facilities (5.7%) charged Ksh. 6001 to Ksh 8000, and two facilities (3.8%) charged Ksh 8001 to Ksh 10,000. For privately owned facilities, 19 (35.8%) charged clients between Ksh. 4001 to Ksh. 6000. Only 4 (7.5%) faith-based facilities charged for PAC services. Cost was statistically significant at $p<0.05$, df=24, $\chi 2 = 59.202$, and $p<0.001$*. Both the subcounty medical officers of health and community health promoters interviewed reported that the cost of postabortion care services varied depending on the type of facility ownership, i.e., public, faith-based, or private. In most public and faith-based primary health care facilities, it was reported that reproductive health services, including PAC services, were not supposed to be charged, i.e., no out-of-pocket payments. One informant reported that some of the few providers trained on PAC services sometimes charge unofficial payments. "R: Yeah, they are doing some underground illegal charges…the service is supposed to be free, but now, because they are the only ones who are doing that, in fact, they´ve owned those rooms as if they are their things… and then maybe you hear clients complaining that they were charged, which is not an official payment."

Patient waiting time: patient waiting time (the time taken by PAC clients from arrival at the health facility to the time they first received PAC services or were referred to another facility) was assessed in 82 (63.1%) facilities. According to the study, 51 (39.2%) private health facilities attended or referred PAC clients in less than two hours from arrival, whereas 15 (11.5%) FBO facilities attended all their clients in less than three hours. In public facilities, 6 (4.6%) facilities served or referred PAC clients in less than 1 hour, 51 (39.2%) facilities took between one and two hours, 6 (4.6%) facilities took between 2 and 3 hours, and 1 (0.8%) facility took more than 3 hours and was statistically significant at $p<0.05$, df=24, $\chi 2 = 31.009$, and $p<0.001$*. Various reasons for waiting time in PHC facilities have been identified. The ability to pay for PAC services by the client was a major reason in 82 (63.1%) PHC facilities. Normal protocols came in second place in 40 (30.8%) facilities, and the availability of PAC providers affected 7 (5.4%) facilities, while the availability of supplies was the lowest, with only 1 (0.8%) PHC facility citing that.

Human resource factors affecting the provision of postabortion care services

Healthcare worker distribution in facilities: the study findings indicate that 121 (93.1%) PHC facilities did not have a medical officer, two health facilities had two medical officers each, and seven facilities had one medical officer each. Those with a medical officer were 7 private facilities and 2 FBO facilities. A total of 64 (100%) public PHC facilities did not have a medical officer. The distribution of medical officers was not statistically significant at df=4, with a p-value of 0.147. A total of 64 (49.2%) PHC facilities did not have a registered clinical officer; one clinical officer was found in 16 (34.8%) public facilities, 4 (8.7%) in FBOs, and 26 (56.5%) in private facilities. Two clinical officers were found in 5 (35.7%) public (GOK) facilities, 4 (28.6%) in FBOs, and 5 (35.7%) in the private sector. Three clinical officers were in private facilities (3 (60.0%), GOK 1 (20.0%), and 1 (20.0%) in the FBO). Four clinical officers were

available in only one GOK facility. The distribution of clinical officers was not statistically significant, df=8, and the p-value was 0.19.

Ten private facilities did not have a nurse at all, 13 (50.0%) public and 12 (46.2%) private facilities, and 1 (3.8%) FBO had only one nurse. Two nurses were in 32 (62.7%) public facilities, 13 (25.5%) private facilities, and 6 (11.8%) FBO facilities. Facilities with three nurses were 7 (41.2%) public, 7 (41.2%) private facilities, and 3 (17.6%) FBO facilities. Only one private facility had eleven nurses. The distribution of nurses in the facilities was statistically significant at p<0.05, df=20, and p=0.03* (Table 1). Across the sub-counties, key informants highlighted human resources for health shortages within public PHC facilities as a major challenge to PAC service provision. Most public PHC facilities have very few staff to offer quality PAC services. *R: It is quite a challenge; there is a shortage, especially in dispensaries. We just have - if it's nurses, we have two nurses. Maybe the health center, but it´s not all the departments. Even at the hub level, it is a struggle.* Similarly, private facilities are also perceived to be experiencing staffing shortages, which are further worsened by frequent staff turnover. *R: …However, for private, yes, they are having a shortage because we always have the privilege of also visiting the private facilities; they have a shortage—even if they don´t have a shortage, they have a high staff turnover—large staff turnover.*

Facilities with service providers officially trained and certified to offer PAC services: only 50 PHC facilities had PAC providers who were officially trained and certified to offer PAC services as follows: 24 (48%) public facilities, 22 (44%) private facilities, and only 4 (8%) FBO facilities. Thirty-six facilities did not have officially trained and certified PAC providers, including 21 (58.3%) public facilities, 10 (27.7%) private facilities, and 5 (13.9%) FBO facilities. Providers who were officially trained and certified were found not to be statistically significant at p<0.05, with df=4 and a p value of 0.478. In 11.5% of the assessed facilities, PAC providers were directly trained by a partner/nongovernmental organization supporting health services in Trans Nzoia County. The training entailed 1 week of classroom sessions and one week of practical work in health facilities, after which trained staff obtained certification. The PAC providers of 28.5% of the PHC facilities had only college training on PAC, whereas most PAC providers in 72 (55%) facilities were trained through on-the-job training.

Trained and certified PAC providers consisted of staff from 15 partner-trained facilities and 35 on-the-job trained facilities that were partner-facilitated. The facilitated-on-the-job training was performed by qualified mentors in each subcounty, who identified and trained mentee staff on the job, over a period of 3 months. Thereafter, the qualified mentees were certified as PAC providers. The other 37 facilities that were not partners implemented some informal mentorship programs that were unstructured and mostly depended on the availability of the mentor and mentee, where the mentee staff were trained only on specific PAC services and not the entire PAC package. The mode of training was not statistically significant at p<0.05, df=6, and a p value of 0.18. *"R: For the health facilities that are offering PAC services, you will find that there is usually one staff member who is trained on PAC, but the rest are just on-the-job. Therefore, many times when they are overwhelmed with work, the PAC services will wait specifically for that one who was trained and then brings a lot of delays, and maybe patients will even go elsewhere to seek services when that officer is not around."*

Provision of family planning methods to clients before leaving the facility: PHC facilities 69 (53.1%) provide postabortion family planning to PAC clients before leaving the facility. These include 31 private facilities, 34 public facilities, and four faith-based facilities. The provision of family planning before leaving the health facility was not statistically significant at p<0.05, df=2, and p value of 0.67, and more than half of both public and private facilities offered counselling services to PAC clients, unlike faith-based facilities, where

86.7% of the facilities did not offer counselling services to PAC clients. Research findings indicate that half of the facilities assessed lack basic equipment, such as MVA kits, i.e., 63 (48.5%) facilities. Among these facilities, 29 (46%) were public facilities, 21 (33.3%) were private facilities, and 13 (20.6%) were faith-based facilities. Most public PHC facilities have zero-to-one functional MVA kits, whereas two to three functional MVA kits are mostly found in private facilities. Thirteen out of the fifteen (86.7%) faith-based facilities had no functional MVA kits. The distribution of functional MVA kits was statistically significant at $p<0.05$, df=6, $\chi2 = 33.251$, and $p< 0.001$*.

Facilities with budgets specific for postabortion care: ninety-four (72.3%) PHC facilities did not have a budget specifically for PAC services, with 63 (67%) being public facilities. Only 36 (27.7%) facilities had a budget specific to PAC services, 31 (86.1%) of them were private facilities, and 4 (11%) were faith-based facilities. These facilities were equally well stocked with HPTs since they could plan and procure on time to avoid stock-outs. Only 1 (1.6%) public PHC facility had a budget specific for treating PAC complications. Facilities with budgets specific for PAC services were statistically significant at $p<0.05$, df=2, and a p value of < 0.001*.

Number of clients referred to other facilities for PAC services: from the assessed facilities, a total of 471 PAC clients were referred out of the primary PHC facility to seek PAC services elsewhere in the year 2024 in Trans Nzoia County. Sixty-two (48%) public facilities had the highest number of referrals out of PAC clients, totaling 264 patients. Only two public facilities did not refer PAC clients out. Referrals for public facilities ranged from 2 to 11 clients, with 21 facilities (52.5%) referring to three clients each. Fifty-one (39.2%) private facilities referred out a total of 155 PAC clients, with a facility referral range of 0-7 PAC clients. Fifteen (11.5%) FBO facilities referred out 52 PAC clients in total.

Discussion

Globally, postabortion care (PAC) is known to be a cost-effective public health intervention that saves women following postabortion complications [17,19]. Women in sub-Saharan Africa primarily seek PAC services in primary healthcare facilities [10]. Among the 130 facilities assessed, 64 (49.2%) were public PHC facilities (Government of Kenya-GoK, owned), which are currently managed by the County Government of Trans Nzoia under the devolved health system. There were 51 private facilities (39.2%) and 15 FBO facilities (11.5%). Only 13 (10%) facilities were operating 24 hours daily, of which 6 (46%) were private facilities, and 2 (15%) were faith-based facilities. The findings show that both private and faith-based facilities are key stakeholders that play a complementary role in PAC service delivery; hence, strong linkages among public, private, and FBO PHC facilities need to be created. The government needs to identify strategies to strengthen the private sector and faith-based facilities through capacity building and resource allocation to ensure the continued provision and affordability of PAC services.

The Kenya Primary Healthcare Strategic Framework of 2019 acknowledges PHC as the backbone of the healthcare system, with the expectation that it should meet the essential health service needs of Kenyans, including PAC services (Kenya Primary Healthcare Strategic Framework, 2019--2024). The PHC facilities should therefore provide quality PAC services to any woman presenting to the facility with postabortion complications in a timely and patient-centred manner [22]. Health facility operations that were significant were health facility operating hours df=5, $\chi2 = 18.281$, $p = 0.003$; treatment of PAC clients df=4, $\chi2 = 21.974$, $p < 0.001$; cost of PAC services, df=24 and p value of <0.001; and patient waiting time, df=24, $\chi2 = 31.009$, p value of <0.001, with the main reason for prolonged waiting time being the ability to pay for PAC services in 82 (63.1%) facilities at df=6, and

p value of <0.001 and the location where counselling services were offered at df=8, and p value of < 0.001. However, paying for PAC services and referrals to other health facilities were not statistically significant at p<0.05, df=0.325, and p=0.325.

The study findings revealed that 55% of the PHC facilities were operational only on weekdays, from 8 am to 5 pm, and that 40% of the assessed PHC facilities did not offer PAC services. Therefore, in most PHC facilities, PAC services are either completely unavailable or unavailable at night, during weekends, and on public holidays, leading to long waiting times. Since postabortion care is an emergency service, PAC clients should access PAC services on a need basis. However, restricted facility operating hours and a lack of PAC services in some PHC facilities limit access to emergency care, resulting in delays in obtaining care, worsening complications, unnecessary referrals, and sometimes disability and death in women.

These findings are consistent with a study performed in Meru County, Kenya, on postabortion care [5] and another multicountry study in low- and middle-income countries on health system preparedness to provide PAC [23], where 90% of PHC facilities in Kenya lacked 24-hour PAC services, and the nearest PHC facility lacked the capacity to offer PAC services. A similar study in Ethiopia reported that at least 95% of public facilities in Ethiopia provide postabortion care or safe abortion services [24]. In Uganda, at least 78% of public facilities reported providing PAC services [18], whereas data from Burkina Faso and Nigeria have shown that more than half of the PHC facilities in these countries offer 24-hour services seven days a week and hence improved access to PAC services [18]. In India, access to PAC services is suboptimal in rural areas, regardless of the PHC facility being the first level of contact with PAC clients, since 64% of health facilities do not provide PAC services daily for the entire week [25]. During the COVID-19 pandemic, as in China, some acknowledged the emergency nature and importance of PAC services and hence prioritized the continuity of PAC services by ensuring that the clock PAC services in PHC facilities were closed [26].

The cost of PAC services was identified as a key factor influencing PAC service provision by PHC facilities. Fifty-three (40.7%) PHC facilities, consisting of public, private, and faith-based facilities, were charging for PAC services, and the cost ranged from Ksh. 1,000 to Ksh. 10,000. In all charging facilities, PAC clients were required to pay out of pocket prior to accessing the services, irrespective of whether the patient had active social health insurance. The amount of money charged for PAC services was highly dependent on facility ownership, the availability of HPTs in the facility, and PAC provider discretion. Some public and private facilities charged up to Ksh. 10,000, whereas facilities with HPT stockouts charged above Ksh. 4,000.

There was no standardized cost of PAC for PHC facilities that were charging. In some facilities, the charges were formal service fees, whereas in others, they were informal service fees, money to buy the required HPTs for the health facility or service a client´s prescription, whereas in others, the money was meant to fuel the ambulance to refer the patient to the nearest facility offering PAC services. Patients who could not raise the required funds were either sent back home to try and raise the required charges or referred to another facility if they could afford their own transport costs. Eventually, this delayed access to PAC services led to worsening complications and, hence, poor outcomes. The referred patients also incur other indirect costs, such as transport charges to the referral facility, increasing the overall cost of PAC.

In Trans Nzoia County, PAC services are charged in the main hospitals under social health insurance or out-of-pocket payment. However, public PHC facilities are not supposed to charge for PAC services following the government directive of the year 2013, where all user fees in PHC facilities were removed (Kenya Primary Healthcare

Strategic Framework, 2019). Public PHC facilities are supposed to have all their HPTs, human resources, and infrastructure requirements met by the county department of health services and sanitation. In contrast, private PHC facilities charge for PAC services. The cost is determined by the individual facility since these facilities have to cover HPTs, human resources, and infrastructural costs on their own. Patients´ ability to pay for PAC services indirectly determines the facility where the client obtains PAC services.

Kenya is transitioning from the National Health Insurance Fund to the Social Health Authority (SHA), which consists of the Primary Healthcare Fund (PHF), Social Health Insurance Fund (SHIF), and Emergency, Chronic, and Critical Illness Fund (ECCIF). Postabortion care is classified under the ECCIF since it is an emergency; hence, any woman enrolled under the SHA should access quality PAC services in PHC facilities without incurring direct costs. For patients to utilize the ECCIF, they must register with SHAs and ensure that they pay their monthly subscription so that their coverage is up to date. Healthcare providers in PHC facilities are required to offer PAC services and then claim reimbursement from the fund. Healthcare services are not free of cost in Kenya since they are subsidized by the government in public facilities, but not in private facilities [5]. The Constitution of Kenya 2010 guarantees every Kenyan the right to life-saving care, such as PAC, notwithstanding the patient´s ability to pay. However, some facilities deny PAC patients certain services because of their inability to raise the required funds, whereas other patients are discharged from facilities without having received critical treatment procedures because of nonpayment of the required funds.

Studies in sub-Saharan Africa have shown that prohibitive PAC costs are a major hinderance to accessing PAC services [18], leading to delays in obtaining care and worsening postabortion complications, which lead to disability or death of women [21], hence, in some countries, such as Zimbabwe, PAC services in public PHC facilities are free of cost to improve access [22]. Countries such as Uganda, Rwanda, and Senegal have demonstrated that countries can provide affordable PAC services by having their respective governments subsidize PAC services [27]. The Jackson Women's Health Organization ruling in the United States of America on June 24th, 2022, changed the dynamics of postabortion care in the USA. Women in the USA have to pay for postabortion care via health insurance or out of pocket, and those who cannot afford it do not access PAC services [28]. Moreover, in some 34 states, health insurance, i.e., Medicaid, does not cover PAC services, and the only option is for PAC clients to pay out of pocket, which hinders access to PAC services.

The human resource factor that was significant was the distribution of nurses in PHC facilities, with a df of 20 and a p-value of 0.03. According to the Kenya Health Sector Strategic and Investment Plan, 2014-2018, the optimum staffing level for a health center is 12 clinical officers and 35 nurses. On the other hand, a dispensary should have 2 general clinical officers and 8 nurses. The recommended staff numbers per level of facility ensure that health centers and dispensaries have adequate staff to offer a range of services 24 hours per day for seven days per week without interruption. Adequate staffing levels guarantee patient safety by protecting staff against burnout, which may compromise the quality of care for patients.

All the 130 PHC facilities that participated in the study meet the recommended staffing levels. A total of 64 (49.2%) PHC facilities did not have a registered clinical officer, 46 (35.4%) facilities had one registered clinical officer each, 14 (10.8%) facilities had two registered clinical officers each, and 5 (3.8%) facilities had three registered clinical officers each. Only 1 (0.8%) facility had four registered clinical officers. For the nursing staff, 10 facilities (7.7%) did not have a nurse, 26 (20%) facilities had one nurse, 51 (39.25%) facilities had two nurses each, 17 (13.1%) facilities had three nurses each, 8 (6.2%) facilities had four nurses each, and 1 (0.8%) facility had 11 nurses. The

critical staff managing health centres and dispensaries are usually nurses and clinical officers. However, owing to the shortage of the two cadres, only 13 (10%) PHC facilities offered 24-hour services, but the remaining 117 (90%) facilities were only operational during daytime hours. Hence, PAC clients who sought services from closed facilities at night, during weekends, or public holidays were informally referred by security personnel to the nearest functional facility. Such referrals were noted only in the security services registry and reported to the PHC facility management the following day.

The number and distribution of PAC providers were inadequate, with 40.8% of the PHC facilities having zero PAC providers, 31.5% having only one PAC provider, 21.5% having two PAC providers, and only 6.1% of the facilities having three PAC providers. The total number of PAC providers was 121, distributed across 5 subcounties, of which only 50 PAC providers were officially trained and certified to offer PAC services. The remaining 71 PAC providers acquired their knowledge through college training or on-the-job training, which they admitted was not sufficient in equipping some of them with the requisite knowledge and skills. Some of them admitted having sufficient skills in only one or two components of PAC services, but lacking skills in other components of PAC services. In the absence of a trained and certified PAC provider, some facilities refer PAC clients to other facilities for basic PAC services.

Forty percent of officers in charge of PHC facilities were unaware of the 2019 postabortion care guidelines of the Ministry of Health. This was due to partial dissemination of the guidelines and failure to update newly employed staff within the Department of Health Services and Sanitation in Trans Nzoia County. The PAC guidelines of 2019 are key in equipping service providers with knowledge and skills related to the scope of PAC services; patient-centered care; infrastructural, human resource, and HPT requirements for PAC services; and the integration, continuity, and monitoring and evaluation of PAC services. Facility management, which is well sensitized to the 2019 postabortion care guidelines, ensures adequate resource allocation and continuity of PAC services. PAC providers who have been adequately trained and certified are fully aware of the legal framework governing PAC services and have undergone value clarification and attitude change (VCAT). Therefore, they have the capacity to offer quality PAC services and navigate myths, misconceptions, and threats that may hinder PAC service provision.

Healthcare workers´ strikes were a major issue, leading to disruptions in PAC service provision in PHC facilities. In the year 2024 alone, Trans Nzoia County had three healthcare workers´ strikes in a row—doctors, clinical officers, and nurses—each lasting more than two months. During industrial strikes, PAC clients seek services from private facilities, are referred by facilities, or self-refer to the nearest facility offering PAC services. This leads to delays in obtaining PAC services, worsening of complications, increased costs of care, and unstructured referrals to other facilities. Owing to delays, some patients are further complicated and suffer disability or even death.

The availability of a few trained and certified PAC providers who are also partially aware of the existing legal framework governing PAC services was reported to compromise the quality of PAC services in previous studies in Kenya and contributed to repeated evacuations due to insufficient provider skills and misdiagnosis [23]. Some providers offering partial and sometimes substandard PAC services only have college training and work under fear due to ignorance of the MoH postabortion care guidelines of 2019. Studies on PAC services in Tanzania highlighted a few and unequal distributions of healthcare providers and trained PAC providers across health facilities in Tanzania as a major drawback in the decentralization of PAC services to lower-level facilities [29]. Ghana also faces challenges concerning the equitable distribution of trained healthcare providers to health facilities [30]. In India, the lack of trained PAC providers in at least

60% of health facilities, especially public facilities, is the main reason for the lack of PAC services in health facilities [29]. Studies in England have shown that well-trained PAC providers are better equipped to improve the general PAC patient experience by providing quality PAC services that are patient-centred, respectful, empathetic, and meet the recommended standards [31].

In 2024 alone, Kitale County Hospital (KCH) received referrals from 103 (79.2%) PHC facilities out of the 130 facilities assessed. Among the facilities referred to at KCH, 45 (43.7%) were private facilities, 44 (42.7%) were public facilities, and 14 (13%) were faith-based facilities. Other facilities that received referred PAC clients were Cherangany Subcounty Hospital, which received referrals from six facilities; Kwanza Subcounty Hospital and Endebess Subcounty Hospital, which received referrals from 5 facilities each; Matunda Subcounty Hospital, which received referrals from three facilities; Kapsara Subcounty Hospital; Kapkoi Health Centre; and a facility that was open and available, which received referrals from two facilities each; and Maili Saba and Kaplamai health centers, which received referrals from 1 facility.

Patient referrals introduce extra transfer costs, especially when facilities are far apart. The findings of this study indicate that all public PHC facilities lack ambulances to transfer patients between facilities during referrals, and they mostly rely on one ambulance based at the subcounty hospital, which more often has maintenance issues and lacks up-to-date insurance or fuel. PAC patients are sometimes asked to fuel the ambulance to be transferred to the referral facility, whereas those who cannot afford it are forced to use private means such as motorbikes and bicycles, their ability to pay fare and their medical condition notwithstanding. This further impedes the timeliness and quality of PAC services due to provider burnout [32]. These findings further explain why public PHC facilities are ideally stocked out on almost all essential medicines, basic PAC equipment, and non-pharmaceutical supplies, and experience erratic supplies of HPTs. These findings are consistent with a study on the accessibility of essential medicines for noncommunicable diseases in Trans Nzoia County, which recommended prioritizing and increasing HPT budgetary allocation by county governments to enable facilities to purchase adequate essential medicines on a regular basis [33].

Study limitations: the study was cross sectional that targeted a sample of primary healthcare facilities; therefore cannot infer causality because the results cannot be generalized on other counties in Kenya.

Conclusion

The study concludes that health facility factors influence PAC service provision in Trans Nzoia County, Kenya. Consequently, the study recommends the provision of adequate and sufficient resources to health facilities to offer 24-hour PAC services and commissions an interventional study to address PAC implementation bottlenecks.

What is known about this topic

- *Pregnancy loss is a common occurrence among women, and it can occur naturally or be induced;*
- *Pregnancy loss can lead to post-abortion complications, which can lead to maternal morbidity and or mortality;*
- *Timely and quality post abortion care is cost-effective and saves the lives of affected women; primary health care facilities can offer post-abortion care as an outpatient service.*

What this study adds

- *Health facility factors affecting PAC services in Trans Nzoia County;*
- *The study findings serves as a resource mobilization tool for post-abortion care in Trans Nzoia County.*

Competing interests

The authors declare no competing interests.

Authors' contributions

Vyntine Nanjala Mukhwana, Joachim Osur, and Faith Muhonja were involved in the conception and design of the study. Vyntine Nanjala Mukhwana collected the data and supervised the interviews. Vyntine Nanjala Mukhwana performed the statistical analysis, and Vyntine Nanjala Mukhwana prepared the manuscript. Joachim Osur and Faith Muhonja provided guidance and mentorship during the implementation of the study. Vyntine Nanjala Mukhwana takes the first authorship responsibilities. All the authors have read and approved the final manuscript.

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Tables and figures

Table 1: heath care providers distribution in the primary healthcare facilities in Trans Nzoia County
Figure 1: map of Kenya showing the locations of Trans Nzoia County and Kitale town
Figure 2: health facility by sub-County distribution showing public, private, and faith facilities
Figure 3: health facility ownership and management showing public, private, and faith facilities
Figure 4: health facility operation hours, showing facility working hours and days

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Table 1: heath care providers distribution in the primary healthcare facilities in Trans Nzoia County							
		Facility ownership			Total		
		GOK	FBO	Private		Df	p value
Doctors	0	62 (51.2%)	15 (12.4%)	44 (36.4%)	121 (100%)	4	0.147
	1	0 (0.00)	2 (28.6%)	5 (71.4%)	7 (100%)		
	2	0 (0.0%)	0 (0.0%)	2 (100%)	2 (100%)		
Clinical officers	0	41 (64.1%)	6 (9.4%)	17 (26.6%)	64 (100%)	8	0.19
	1	16 (34.8%)	4 (8.7%)	26 (56.5%)	46 (100%)		
	2	5 (35.7%)	4 (28.6%)	5 (35.7%)	14 (100%)		
	3	1 (20.0%)	1 (20.0%)	3 (60.0%)	5 (100%)		
	4	1 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)		
Nurses	0	0 (0.0%)	0 (0.0%)	10 (100%)	10 (100%)	20	0.03*
	1	13 (50.0%)	1 (3.8%)	12 (46.2%)	26 (100%)		
	2	32 (62.7%)	6 (11.8%)	13 (25.5%)	51 (100%)		
	3	7 (41.2%)	3 (17.6%)	7 (41.2%)	17 (100%)		
	4	3 (37.5%)	3 (37.5%)	2 (25.0%)	8 (100%)		
	5	4 (66.7%)	1 (16.7%)	1 (16.7%)	6 (100%)		
	6	0 (0.0%)	0 (0.0%)	2 (100%)	2 (100%)		
	7	4 (80.0%)	0 (0.0%)	1 (20.0%)	5 (100%)		
	9	1 (50.0%)	1 (50.0%)	0 (0.0%)	2 (100%)		
	10	0 (0.0%)	0 (0.0%)	2 (100%)	2 (100%)		
	11	0 (0.0%)	0 (0.0%)	1 (100%)	1 (100%)		
Total		64 (49.2%)	15 (11.5%)	51 (39.2%)	130 (100%)		
Significant at p<0.05, GOK: Government of Kenya, FBO: Faith Based Organisations							

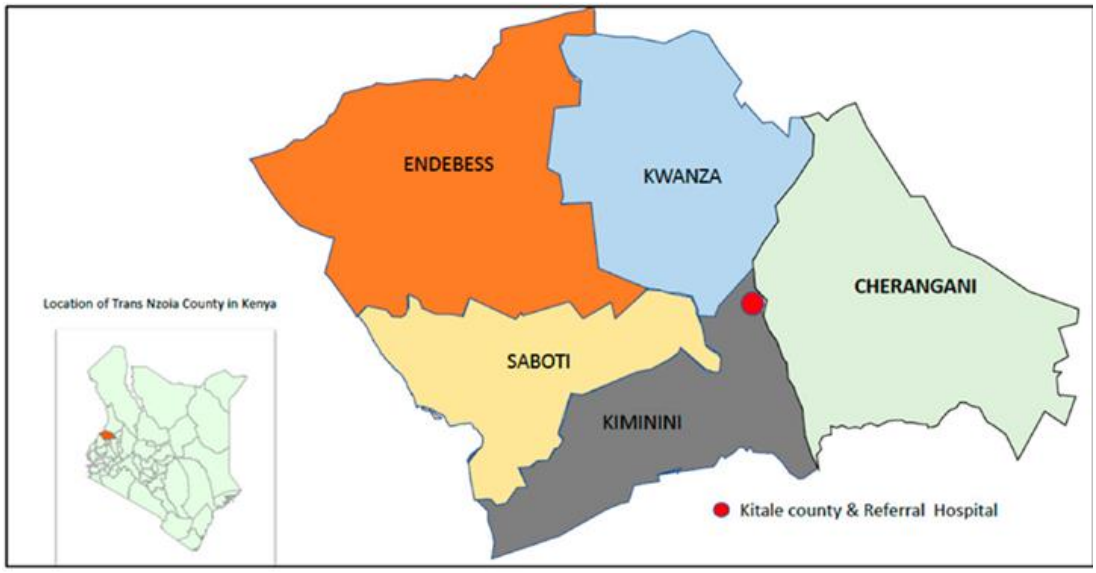

Figure 1: map of Kenya showing the locations of Trans Nzoia County and Kitale town

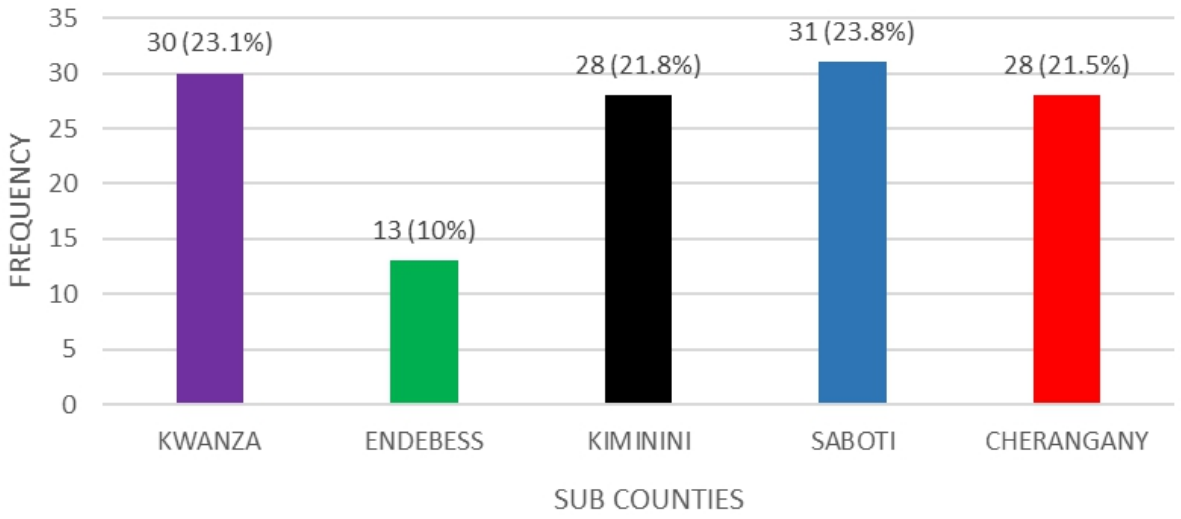

Figure 2: health facility by sub-County distribution showing public, private, and faith facilities

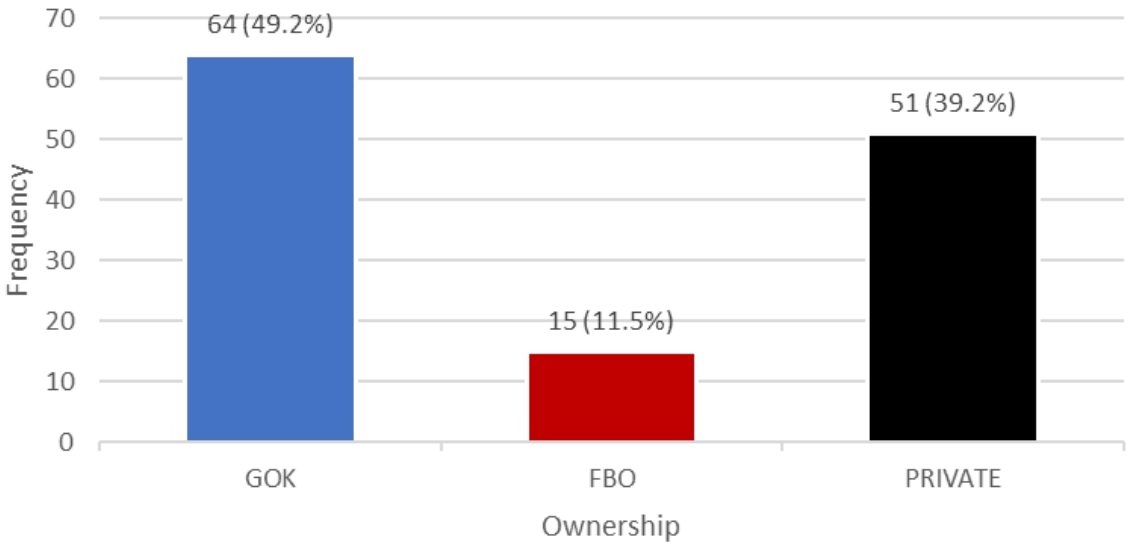

Figure 3: health facility ownership and management showing public, private, and faith facilities

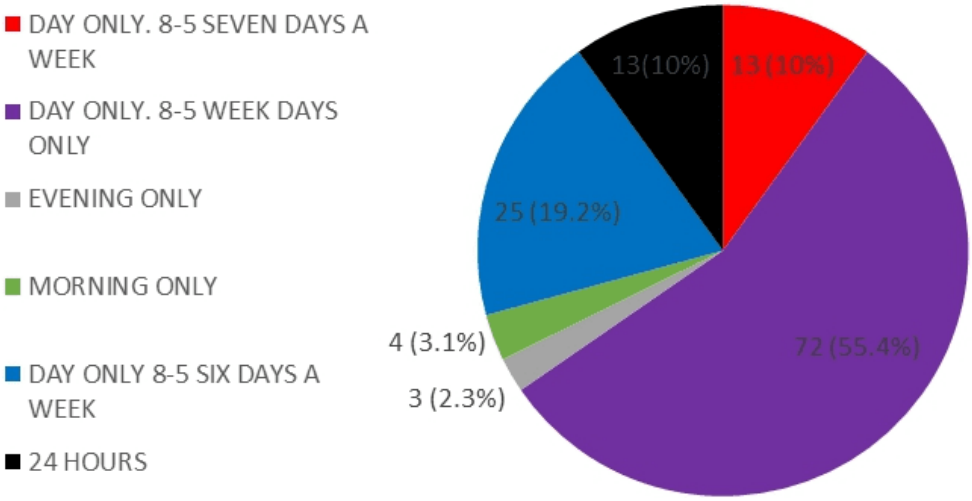

Figure 4: health facility operation hours, showing facility working hours and days