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POST-ABORTION CARE SERVICES FOR YOUTH AND ADULT CLIENTS IN KENYA: A COMPARISON OF SERVICES, CLIENT SATISFACTION AND PROVIDER ATTITUDES

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Summary. Unsafe abortion accounts for 35% of maternal mortality in Kenya. Post-abortion care (PAC) reduces maternal death and provides an opportunity to prevent unwanted pregnancies. Few studies have documented how the receipt of PAC services varies by client age. In this study, descriptive data were collected from clients, providers and eight health facilities in Kenya's Central and Nairobi provinces to examine receipt of PAC services by client age, client satisfaction and provider attitudes. Delivery of PAC treatment, pain management, HIV and STI services and violence screening did not vary by age. However, fewer youth between the ages of 15 and 24 received a contraceptive method compared with adult clients (35% versus 48%; $p = 0.02$). Forty-nine per cent of youth reported not using a family planning method due to fears of infertility, side-effects or lack of knowledge compared with 22% of adults. Additional efforts are needed in Kenya to bolster the family planning services that young PAC clients receive and increase the uptake of contraception.

Introduction

Abortion is illegal or severely restricted in many developing countries causing women to seek unsafe abortions that can result in serious complications, injury, infertility and death. Worldwide, unsafe abortion is common, with an estimated 19 million unsafe abortions occurring annually, resulting in 70,000 deaths and 5 million women suffering disability (World Health Organization, 2007). In Africa, the proportion of women aged 15–19 who have had an unsafe abortion is higher than in any other region of the world (World Health Organization, 2007). Hospital-based studies in Kenya have shown that

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abortion accounts for over one-third of maternal mortality and morbidity, though significant under-reporting is likely. A significant proportion (48%) of abortions and complications occur among women aged 25 and below (Center for Adolescent Health and Development & National Council for Population and Development, 2004; Ministry of Health-Kenya *et al.*, 2004; World Health Organization, 2007; Biddlecom, 2008; Center for Reproductive Rights, 2010).

Post-abortion care (PAC) – the treatment of obstetric complications from unsafe abortion and incomplete spontaneous abortion – reduces maternal death and morbidity but also provides an opportunity to prevent future unintended pregnancies, prevent repeat abortions and address other sexual and reproductive health concerns. The core components of PAC include: emergency treatment, counselling and contraceptive provision, referral for other sexual and reproductive health concerns and partnerships between community members and service providers to prevent unwanted pregnancy and unsafe abortion (Corbett & Turner, 2003; Solo *et al.*, 2004). The counselling component includes providing information on: contraception, potential post-abortion complications and other sexual and reproductive health needs such as HIV and sexually transmitted infection (STI) services.

Several operations research studies have reported increases in contraceptive uptake among PAC clients after family planning counselling and methods are made available (Johnson *et al.*, 2002; Solo *et al.*, 2004; Billings & Benson, 2005). However, evidence is less robust on the content of post-abortion services and the impact of counselling for other SRH needs on PAC patients' use of other sexual and reproductive health services (Miller *et al.*, 2002; EngenderHealth & Centro de Estudios Sociales, 2003; Rasch *et al.*, 2006). This study aims to increase the limited data available on the content of PAC services, including other sexual and reproductive health services received during post-abortion care or as a result of referral from a PAC provider.

Post-abortion care is particularly important for young women as PAC services may be their first contact with a reproductive health service and an opportunity to receive comprehensive counselling on pregnancy and HIV/STI prevention. Research has shown that the provision of contraceptive counselling and services during the PAC visit is a critical factor in reducing repeat abortions and offers a cost-effective way to reach young women, who often have an unmet need for contraception (FIGO *et al.*, 2009; Curtis *et al.*, 2010). Both the WHO and the PAC Consortium contend that the needs of youth – those women between the ages of 15 and 24 – differ from those of older women seeking PAC services (Olukoya *et al.*, 2001). In part, this is because younger women differ from adult women in that they are more likely to delay seeking an abortion and are more likely to seek an unsafe abortion, increasing their risk of complications. Youth are also less likely to seek PAC treatment once complications occur (Pathfinder International *et al.*, 2001; Youth Friendly PAC Working Group, 2006). Providers of PAC therefore need to be equipped with adequate counselling skills to meet the specific needs of youth; yet very few PAC programmes specifically train providers to address the needs of young women.

Only a few studies have specifically examined youth PAC patients, and evidence on the content of the care youth receive and providers' attitudes towards youth is limited (Leke, 1989; Archibong, 1991; Henshaw & Kost, 1992; Thapa *et al.*, 1992; Barnett,

1993). Some evidence from Latin America suggests that negative provider attitudes towards youth PAC clients results in PAC providers offering services begrudgingly, if at all (Farfan *et al.*, 1997; Díaz *et al.*, 1999; EngenderHealth & Centro de Estudios Sociales, 2003). One qualitative research study in the Dominican Republic and Malawi found that PAC counselling was generally not provided for youth, despite their need for information and services, particularly on contraception (Girvin, 2004). A case-control study in the Dominican Republic found that older women and adolescents received STI/HIV and contraceptive counselling at similar rates; however, the types of method women were discharged with varied. Adolescents were more likely to be discharged with an injectable contraceptive method while older women were discharged with a variety of methods (McCarraher *et al.*, 2010). These studies suggest that age is an important factor in PAC service delivery.

It is estimated that 21,000 women are admitted to Kenyan public hospitals for treatment for incomplete abortion annually; 28% of those experience severe complications such as uterine perforations and shock (Guttmacher Institute, 2008). Accurate data on induced abortion, unsafe abortion in particular, and the outcomes of unsafe abortion are difficult to obtain, however, making a true calculation of the extent of harm caused by unsafe abortion to Kenyan women particularly problematic (Henshaw *et al.*, 1999).

Abortion is highly restricted in Kenya; at the time data were collected for this study abortion was legal only to save a woman's life and had to occur in a hospital with three medical practitioners certifying the procedure was necessary (Guttmacher Institute, 2008). The 2010 Constitution changed that to state that 'Abortion is not permitted unless, in the opinion of a trained health professional, there is need for emergency treatment, or the life or health of the mother is in danger,' (Kenya Law, 2010). Post-abortion care is, and has been, permitted, however, and PAC services have been implemented in Kenya since 1989. Though the focus has primarily been on introducing manual vacuum aspiration services to improve emergency treatment, reproductive health guidelines from the Kenyan Ministry of Health (MOH) include a section on post-abortion care including the importance of providing counselling and services to PAC clients (Solo *et al.*, 1999).

In 2007, Pathfinder International and the Kenyan MOH began to work together to make existing PAC services more 'youth friendly' in order to meet the needs of young women seeking PAC. An initial baseline assessment in public sector hospitals in Nairobi and Central provinces revealed key gaps in service quality and, based on these findings, providers were trained to address the needs of youth seeking post-abortion care (Pathfinder International, 2008). Providers from eight facilities received training on the provision of post-abortion care, including: emergency treatment, contraception counselling and method provision, dual protection counselling, risk assessment for STIs/HIV, pain management and referrals to other sexual and reproductive health services. Additionally, providers were trained in either youth-friendly health services in general or youth-friendly PAC (YFPAC) specifically. All facilities were provided with the equipment and supplies necessary for PAC provision and a set of YFPAC job aids developed by the Kenyan Ministry of Health, the Extending Service Delivery Project and Pathfinder International to facilitate youth-friendly post-abortion care. Three of the facilities

received additional community-based programmatic inputs to strengthen YFPAC provision. These consisted of: training of peer educators and theatre groups to conduct community outreach on preventing unintended pregnancy, unsafe abortion and PAC services and training for community members to raise community awareness of unsafe abortion and YFPAC (Burket *et al.,* 2008). Following these youth-focused programmatic activities, a descriptive study was conducted to:

(1) Document the provision of PAC services, client satisfaction with those services and provider attitudes towards PAC services.
(2) Identify any differences in the delivery of PAC services, client satisfaction and provider attitudes for youth and adult clients.

Methods

A descriptive, post-intervention study of PAC services was conducted in eight facilities in Central and Nairobi provinces. Data were collected from September to December 2009 using structured phone interviews with PAC clients, in-person interviews with providers and facility checklists.

Study sites

Sites were eligible for participation if they were public sector hospitals that provided PAC services, were equipped with PAC supplies and staffed with at least one provider trained to provide youth-friendly services. In order to maximize the number of PAC clients interviewed for the study the eight facilities with the heaviest PAC client load, according to client registers, were selected from among the twelve meeting the above criteria.

PAC client interviews

Female clients were eligible for interview if they met three criteria: (1) were over the age of 15, (2) had received services for treatment of incomplete induced or spontaneous abortion at a participating facility and (3) had access to a mobile phone. Interviews with PAC clients were conducted via mobile phone for several reasons. First, PAC services are offered in gynaecological wards, which are generally crowded and offer little privacy. Given the sensitive nature of the survey questions and the difficulties in maintaining client confidentiality in these conditions, clients may have felt uncomfortable completing a facility-based interview. In addition, due to the physical, emotional and mental stresses associated with PAC treatment, clients may not have felt well enough to answer survey questions at the time of services. Finally, using mobile phones for interviews reduced data collection costs and allowed more facilities, and therefore potentially more adolescents, to be included in the study. In order to determine PAC clients' access to mobile phones, three months of exploratory data were collected prior to the study in six Central province PAC facilities. This exploratory phase found that 86% of PAC clients reported having access to a mobile phone.

Prior to discharge providers described the study to all PAC clients and gave them a brochure describing the research. Clients with mobile phones who gave their phone number to study staff were called one month after discharge and asked to participate in a telephone interview. Client interviews were conducted one month after the initial PAC visit to enable the client to have time to access all the services they were referred to as a result of the PAC treatment visit. Potential participants were called up to eight times to complete the interview. Clients not reached by six weeks post-discharge were considered lost to follow-up. Client survey questions included demographics, use of family planning, services received and satisfaction with services. For their participation, clients received one hour of mobile phone airtime as compensation.

Of the 824 clients receiving PAC services at study facilities during the data collection period, 58% reported having access to a mobile phone and agreed to leave a phone number with the nurse. All those who left a number were called by the study staff to request participation. Of the 479 clients who were contacted by the study staff, 283 (59%) were reached and completed the interview. Of those interviewed 104 (37%) were youth between the ages of 15 and 24.

Provider interviews

All providers who offered PAC services in the eight study facilities consented to participate and were interviewed for the study, regardless of whether they received PAC training formally or on-the-job. Each study facility had at least two PAC providers, for a total of 20 interviews. Nineteen interviews were conducted in-person and one over the phone; questions included demographic information, training, knowledge, and attitudes about providing family planning and PAC services to women of all ages.

Facility checklists

To determine whether facilities had the necessary PAC equipment and supplies, facility checklists were completed by the study staff during site visits. In addition, study staff extracted data on PAC client load, by age group, from clinic log books to determine the number of women eligible for the study.

Definition of variables

To investigate whether youth were treated differently from adult PAC clients, two participant age groups were used: youth were defined as those aged 15–24, according to the WHO definition, and adults were defined as 25 or older. Uptake of a contraceptive method was defined as receipt of a contraceptive method on the day of PAC treatment or within the following month. Questions regarding client satisfaction, client perception of provider's behaviour and provider attitudes were asked as 5-point Likert scales. In some instances (e.g. satisfaction and perceptions of provider attitudes towards clients), the five Likert categories were combined into three categories during analysis. This was done because responses were overwhelmingly skewed and because theory suggested that a meaningful difference between adjacent categories did not exist.

Table 1. Demographic characteristics of PAC clients, Central and Nairobi provinces, Kenya, 2009

Variable	Youths ($n = 104$)	Adult ($n = 179$)	All ($n = 283$)
Mean age, years (range; SD)	22 (16–24; 2.0)	32 (25–49; 5.5)	28 (16–49; 6.7)
Married (%)	65	78*	74
Has living children (%)	43	87**	71
Mean number of living children (range; SD)	1 (1–2; 0.4)	2 (1–8; 1.3)	2 (1–8; 1.2)
Education (%)			
Primary or less	43	50	48
Secondary	41	35	37
Post-secondary	15	15	15
Ever used family planning (%)	70	93**	85

*Proportion of adult participants differs significantly from proportion of youth participants, $p < 0.05$.
**Proportion of adult participants differs significantly from proportion of youth, $p < 0.01$.

Data management and analysis

Research staff entered data twice using EpiInfo v.6; analysis was conducted with SAS v.9.2. Statistical significance was tested using *t*-tests for continuous variables and Pearson's chi-squared test for proportions. Any cross-tabulations with very small cell counts were tested for significance using Fisher's exact test.

Results

The age of study participants ranged from 16 to 49 years, with an average age of 28 (standard deviation 6.7 years, Table 1). Almost three-quarters of all clients reported they were married. Participants over the age of 25 were more likely to have children than their younger counterparts (87% vs 43%; $p = 0.0001$). About half of the clients had a secondary education or higher. Past family planning use was high (85%) and the proportion of older participants who had ever used family planning was higher than that of younger participants (93% vs 70%; $p < 0.0001$). One-third of participants reported they were using contraception at the time they became pregnant (Table 2). The most commonly used methods at the time of the pregnancy were pills, followed by injectables and natural family planning methods.

Provider attitudes towards PAC service provision

All providers reported favourable attitudes towards PAC provision; this included strong agreement that PAC services are important (Table 3). The vast majority of providers reported attitudes that support equal treatment for PAC clients regardless of age or marital status; 90% of providers reported that unmarried youth aged 18–24 should be treated the same as all PAC clients, and 85% reported that unmarried youth aged 15–17 should be treated the same.

Table 2. Contraceptive use, by age and time of use, of PAC clients, Central and Nairobi provinces, Kenya, 2009

	Used at time of pregnancy			Received after PAC services[a]		
Family planning method	15–24 ($n = 104$)	25+ ($n = 179$)	All ($n = 283$)	15–24 ($n = 104$)	25+ ($n = 179$)	All ($n = 283$)
All methods	27	34	31	35	48*	44
Pill	7	16*	13	17	24	22
Injectables	7	11	9	8	16	13
Natural[b]	4	3	4	1	1	1
EC	4	2	3	1	0	<1
Condoms	6	1	3	8	6	6
IUD	0	1	1	0	1	1
Sterilization	0	0	0	0	1	<1
Implant	0	0	0	0	1	1

[a]Includes women who received method day of the PAC treatment visit, or in the month following that visit.
[b]Natural included rhythm, standard days, lactational amenorrhoea method (LAM), withdrawal.
*Proportion of adult participants differs significantly from proportion of youth participants, $p < 0.05$.

Table 3. Provider attitudes towards PAC service provision, Central and Nairobi provinces, Kenya, 2009

	Percentage of providers ($n = 20$)				
Attitude	Strongly Agree	Agree	Neither	Disagree	Strongly disagree
Providing PAC services is important	65	35	0	0	0
Unmarried youth aged 18–24 seeking PAC should be treated like all other PAC clients	50	40	5	0	5
Unmarried youth aged 15–17 seeking PAC should be treated like all other PAC clients	40	45	5	5	5
Unmarried youth aged 15–24 should not have sex until they are married	20	25	20	25	10
It is wrong to provide PAC services to women	0	0	0	40	60

Providers' attitudes towards marriage and sexual activity, however, were divided. Forty-five per cent agreed that youth should wait until marriage for sexual activity, while 25% disagreed and 20% neither agreed nor disagreed (Table 3). However, these attitudes did not seem to have an impact on providers' self-reported beliefs regarding PAC services. All reported that family planning should be provided to youth regardless of marital status and 95% of providers stated they generally counsel all clients on family planning (data not shown).

Table 4. Client versus provider report of PAC services provided, Central and Nairobi provinces, Kenya, 2009

Provided service	Percentage of clients report receiving service			Percentage of providers report routinely providing service ($n = 20$)
	15–24 ($n = 104$)	25+ ($n = 179$)	All ages ($n = 283$)	
Explanation of PAC procedure	45	45	45	100
Provision of pain medication	79	79	79	100
Discussion of return to fertility	51	53	52	85
Family planning counselling	52	60	57	95
Family planning method provision	35	48*	44	90
Received day of treatment	12	18	16	na
Received at later date	23	30	28	na
HIV counselling & testing	50	50	50	65[a]
STI counselling & testing	24	27	26	65[a]
Abuse or violence screening	13	12	12	40[a]
Counsel for other RH needs	3	13*	9	80

[a]Provider counsels/screens 'most' or 'all' of his/her PAC clients.
*Proportion of adult participants differs significantly from proportion of youth participants, $p < 0.05$.

Almost universally, providers reported that they do not refuse treatment because clients are young or unmarried. In all cases where providers reported they did not provide treatment to youth, it was because the cases were referred to another facility due to clinical complexity (data not shown) or because the client refused treatment.

Quality of post-abortion care services

The quality of PAC services was assessed using client and provider reports of services delivered and by examining differences in service delivery by client age. In addition, client satisfaction with services and facility characteristics related to service quality were examined.

Services provided and received. A significant discrepancy between client reports of services received and provider reports of services routinely provided was found (Table 4). In terms of the PAC procedure itself, only 45% of clients reported that the provider explained the procedure to them, whereas all providers reported routinely doing so. More than three-quarters (79% of clients) said that they received pain medication, whereas all providers said they routinely provide it. When asked about family planning counselling, just over half of clients said that a provider discussed their return to fertility or provided family planning counselling while most providers said that they routinely provide these services. Similarly, while over 40% of clients reported that either they received a family planning method on the day of treatment or within a month of PAC services, 90% of providers reported that they routinely provide a method to PAC clients.

Table 5. Client report of PAC service confidentiality, privacy and responsiveness, Central and Nairobi provinces, Kenya, 2009

	Percentage of clients		
	15–24 ($n = 104$)	25+ ($n = 179$)	Total ($n = 238$)
Provider answered all questions, among those with questions	88	90	89
Adequate privacy	78	84	82
Provider assured confidentiality	42	44	43

All comparisons between youth and adults are non-significant at $p < 0.05$.

Finally, client reports on the provision of other counselling included in PAC services (HIV counselling and testing, STI counselling and testing, abuse or violence screening and counselling for other reproductive health needs) were fairly low, with reports by providers again, much higher.

Other aspects of quality were reported to be very good. A high number of clients reported that providers answered their questions (89%) and ensured adequate privacy (82%). However, less than half of clients (43%) stated that providers assured them of their confidentiality (Table 5).

More clients were using a family planning method after receiving PAC services than at the time they became pregnant (Table 2). The percentage of women using a method increased from 31% to 44%. Furthermore, PAC reached women who were not using contraception prior to pregnancy; of those women who received a method during PAC, 60% were not using a method when they became pregnant and 14% of those who had never used a method received one as a result of care (data not shown). The methods most commonly received during PAC services were contraceptive pills, injectables and condoms. Implants, while desired by clients, were rarely provided; this is probably because more facilities reported stock-outs of implants than any other method (data not shown).

Differences in service delivery by age. Despite the positive attitudes towards the provision of family planning for all PAC clients, receipt of certain services during post-abortion care did vary significantly by client age (Table 4). Forty-eight per cent of clients aged 25 and older received a method, while only 35% of clients aged 15–24 received a method ($p = 0.02$). Among those women who did not receive a method, the most common reasons for both age groups were: desire for a child, lack of exposure to risk of pregnancy (e.g. no partner), feeling unwell and fear of side-effects (Table 6). About one-third (34%) of youth clients did not use a method because of lack of knowledge or misconceptions about family planning, including: not knowing about methods or where to get them, fear of infertility and side-effects. Significantly less than one-fifth (18%) of adult clients reported the same reasons ($p = 0.02$).

A smaller proportion of youth clients received counselling for other reproductive health needs (e.g. infertility, breast cancer screening and cervical cancer screening) compared with adults (3% vs 13%, $p = 0.005$) (Table 4). Neither marital status (data

Table 6. Clients' reasons for not receiving a family planning method during PAC, Central and Nairobi provinces, Kenya, 2009

Reason for non-receipt of family planning	Percentage of clients		
	15–24 ($n = 67$)	25+ ($n = 92$)	All ($n = 159$)
Wanted a child	27	23	25
Partner/family disapproves	7	3	5
Fears and lack of knowledge	34	18*	25
Fear of infertility	10	4	7
Fear of side-effects	19	18	19
Didn't know about methods	16	0*	7
Didn't know where to get methods	4	0	2
Health problems/feel unwell	15	28*	23
Not married/no partner/not sexually active/partner far away	28	26	27
Waiting to have menses first	1	14**	9

*Proportion of adult participants differs significantly from proportion of youth participants, $p < 0.05$.
**Proportion of adult participants differs significantly from proportion of youth, $p < 0.01$.

Table 7. Post-abortion care client satisfaction, by selected facility characteristics, Central and Nairobi provinces, Kenya, 2009

	Percentage client satisfaction		
	Overall ($n = 283$)	25+ ($n = 179$)	15–24 ($n = 104$)
Satisfied	88	88	88
Neither	3	4	2
Dissatisfied	9	8	10

All comparisons between youth and adults are non-significant at $p < 0.05$.

not shown) nor age was found to affect the receipt of all other PAC services, including: explanation of PAC procedure, receipt of pain medication, discussion of return to fertility, HIV or STI counselling and testing or violence screening.

Client satisfaction. Post-abortion care clients in this study reported high levels of satisfaction with PAC services; 88% of clients reported they were either satisfied or very satisfied with the services they received (Table 7). Only 9% reported that they were dissatisfied or very dissatisfied. Clients also held positive views of PAC providers; approximately 80% of clients agreed or strongly agreed that providers treated them with respect, were non-judgmental and compassionate and had a positive view of clients (Table 8). Neither client satisfaction (Table 7) nor perception of PAC services (Table 8) significantly differed by client age ($p > 0.05$).

Table 8. Client perceptions of PAC providers, Central and Nairobi provinces, Kenya, 2009

	Percentage of clients					
	25+ ($n = 179$)			15–24 ($n = 104$)		
Perception	Agree	Neither	Disagree	Agree	Neither	Disagree
Provider treated me with respect	87	4	8	91	3	6
Provider was not judgmental	82	9	9	85	10	5
Provider was compassionate	85	8	7	84	9	8
Provider had a positive view of me	78	12	10	80	12	8

All comparisons between youth and adults are non-significant at $p < 0.05$.

Facility characteristics. All facilities offered contraceptive pills, implants, injectables and condoms to PAC clients and more than half offered intrauterine devices (IUDs), emergency contraception (EC) and female sterilization; only a quarter offered male sterilization or counselling on natural family planning methods (data not shown). Of the facilities in which information on stock-outs in the last 6 weeks was available, two of the six had no implants, one of seven reported no injectables, and one of six had no emergency contraceptive pills. Study facilities stored family planning methods in a variety of locations; three facilities stored methods in the PAC treatment room, one in an adjacent room and four facilities stored them in another building.

Discussion

This study examined differences in PAC services received by youth and adult clients. The delivery of many services, including HIV and STI services, PAC treatment counselling, pain management, family planning counselling and abuse/violence screening, did not vary by client age. No differences in client satisfaction were found between older PAC clients and youth, with the majority of clients reporting high levels of satisfaction with services and positive attitudes towards providers. Providers also reported favourable attitudes towards PAC clients.

However, differences were found in the uptake of family planning between youth (35%) and adult clients (48%). This finding was disappointing because contraceptive use is important for all women following abortion or miscarriage; both USAID and WHO recommend an interval of at least 6 months before pregnancy in order to reduce the risk of adverse maternal and perinatal outcomes (USAID & ESD, 2009). Both youth and adult clients frequently cited similar reasons for not initiating contraceptive use, including: wanting a child, not having a partner and fear of contraceptive side-effects. However, youth were more likely to report fear of infertility (10%, not significant) and not knowing about contraceptive methods (16%, $p < 0.05$) than were older women (4% and 0%, respectively). This reinforces results from Girvin and McCarraher indicating that youth failed to use family planning following PAC due to fear of infertility, and suggests that youth are more in need of information about contraception in general and its impact on fertility than older women (Girvin, 2004;

McCarraher *et al.*, 2010). Finally, overall contraceptive uptake was lower than anticipated among study women at 40%. This is significanly lower than found in other research conducted in Kenya by Solo *et al.*, where contraceptive use among post-abortion clients was reported to be between 63% and 82% (Solo *et al.*, 1999). The reasons for the lower rate of contraceptive uptake are unknown, but could be attributed to a less robust family planning programme in the study sites.

This study found significant discrepancies between client and provider report of PAC services. These discrepancies are probably due to a combination of factors, including: provider exaggeration of service provision, clients' failure to recognize or remember the services they received, or that services may not have been provided in a manner appropriate and understandable to PAC clients.

There were four key limitations to this study: the study design, the facility sample selection, the data collection technique and low response rate. Because of resource constraints, data were collected only following youth-friendly PAC programmatic efforts; there was no control group and results cannot be disaggregated according to whether facilities received the YFPAC training or the more general youth-friendly services. Second, in order to recruit enough PAC clients during the data collection period, the sample included a disproportionate number of larger facilities (i.e. hospitals). The final sample was therefore heavily dominated by the study populations associated with these facilities. Given these constraints, the study results cannot be generalized to facilities that did not receive the youth-friendly programmatic efforts or smaller facilities. While PAC clients were interviewed by phone in order to secure their privacy and confidentiality, the use of mobile phones might have excluded very poor women and youth from the study, or may have excluded women who did not want to be contacted via phone. With the available data, it is not possible to determine whether women who agreed to participate in the study differed systematically from women who did not elect to participate. The feasibility of using mobile phones for client data collection was confirmed during the exploratory phase of this study, however; far fewer clients reported having access to a mobile phone during the actual study data collection period. This discrepancy is probably due to client under-reporting of mobile phone access when faced with the possibility of being called as part of a research study as the exploratory data collection period only asked whether clients had access to a mobile phone and not whether a client would consent to being interviewed on the phone. Furthermore, as abortion is highly restricted in Kenya, women are likely to be wary about being contacted to discuss PAC services.

Participant, recall and social desirability biases may impact these study results. Given the study's low response rate, those participating in the study might have been more satisfied with PAC services than those who did not participate. Temporal or recall bias could explain some of the differences between client and provider report since client phone interviews were conducted one month after the initial PAC visit and clients were unlikely to want to remember the physically and emotionally challenging event. Another source of bias comes from providers whose report of PAC attitudes and services are likely to be inflated by social desirability, which could explain discrepancies between reported and actual rates of contraceptive counselling and method provision.

Future research on the provision of YFPAC services should include a more rigorous study design and data triangulation. Despite this study's design limitations, it advances knowledge on the delivery of PAC services and provides a first step towards improving services for younger PAC clients by documenting the content of PAC services from both the client and provider perspective and services received by client age.

Additional research and programmatic efforts are needed to ensure the systematic delivery of all elements of post-abortion care to clients of all ages. In order to reduce the discrepancy between client and provider reports of services, research is needed to understand message receptivity in the context of PAC services and to set reasonable expectations for PAC providers given the logistical and time constraints of service provision in these settings. More rigorous research is also needed to determine whether youth-friendly PAC services are essential for the provision of high-quality services for youth or whether high-quality PAC care for clients of all ages is sufficient to meet the needs of youth clients.

Ultimately, while PAC clients in study facilities received essential family planning and sexual and reproductive health services, many more women with abortion complications have no access to these services. For young women, family planning counselling focusing on the provision of information on family planning methods, issues related to correct and consistent use and efforts to dispel myths on how family planning use affects fertility, seems to be particularly important. Community education events could be an additional means of addressing discrepancies between youth and adult knowledge on family planning. Increasing the provision of family planning to all post-abortion clients, regardless of age, is supported by the joint statement issued by the International Federation of Gynaecology and Obstetrics (FIGO), the International Confederation of Midwives (ICM), the International Council of Nurses (ICN) and USAID (FIGO *et al*., 2009). Together with the joint statement, the study results can be used as a tool to advocate for continued attention to the quality and content of PAC services – especially contraception – for women of all ages.

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