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Research Article

Integration of family planning services into HIV services in Nigeria: Evidence from the Performance Monitoring and Accountability 2020 survey in seven states

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Despite global calls for stronger linkages between family planning and HIV, a growing body of evidence in sub-Saharan Africa suggests that the integration of family planning and HIV service delivery is suboptimal in some countries. In this study, we assess the integration and quality of family planning services in health facilities that provide HIV-related services in Nigeria. This study analysed secondary data from the Performance Monitoring and Accountability 2020 cross-sectional survey conducted between May and July 2016 in seven states in Nigeria. Our study sample was restricted to 290 health facilities providing HIV services. We performed descriptive statistics and binary logistic regression analyses. Ninety-five per cent of the health facilities reported offering family planning counselling, provision of family planning methods, and/or referral for family planning methods to clients accessing HIV services. About 84% of these health facilities with integrated family planning and HIV services reported that they discussed the preferred method, dual methods, instructions and side effects of the chosen method, and the reproductive intentions with clients during an HIV consultation. None of the health facilities' characteristics was significantly associated with the integration of family planning services into HIV services. Private health facilities (aOR 0.3, 95% CI 0.07–0.92), urban health facilities (aOR 3.8, 95% CI 1.64–8.76), and provision of postnatal care (aOR 3.9, 95% CI 1.10–13.74) were statistically associated with the quality of family planning services provided to clients accessing HIV services. Family planning services were integrated into HIV services in a majority of the health facilities in our study. However, our findings indicate the need for improvement in the quality of family planning services provided to clients accessing HIV services.

Keywords: contraception, HIV, linkage

Background

In sub-Saharan Africa, there is a concurrent high burden of unintended pregnancy and HIV among women of reproductive age, and many of the supply- and demand-side barriers that affect the uptake of family planning services also affect HIV-prevention and treatment services (Wilcher et al., 2009; Cohen et al., 2013; Crankshaw et al., 2016). Given the intersection between family planning and HIV, there have been global calls over the past decades to strengthen linkages¹ between the two at different levels, including policy, funding, and service delivery (Berer, 2004; Duerr et al., 2005; Wilcher et al., 2009). In 2004, the *Glion call to action on family planning and HIV/AIDS in women and children* highlighted the importance of family planning as a tool for the prevention of HIV in women and children

and declared policy and programme recommendations for the strengthening of linkages between family planning and HIV/AIDS (World Health Organization [WHO], 2004). Studies have shown that the integration² of family planning and HIV service delivery can improve access to and uptake of both services (Spaulding et al., 2009; Wilcher et al., 2013; Haberlen et al., 2017). Different models exist for integrating family planning services in HIV-related services or vice versa. For example, at the health facility level, family planning services can be provided in the same building with HIV services (one-stop-shop model) (Haberlen et al., 2017). Variants of this model may include service provision by the same provider in the same room, or different providers in the same building (ibid.). The provision of family planning services can also be by referral to another location outside the HIV clinic (enhanced referral model) (ibid.).

However, despite the advocacy for stronger linkages between family planning and HIV programmes, a small but growing body of evidence in sub-Saharan Africa suggests that the integration of service delivery is suboptimal in some countries (Johnson et al., 2012; Bintabara et al., 2017; Close et al., 2019; Kanyangarara et al., 2019). In a recent analysis of secondary data from nationally representative facility-level surveys conducted between 2012 and 2015 in 10 countries, among facilities offering HIV care and support, routine provision of family planning counselling to people living with HIV (PLHIV) ranged from 63% in Benin to 100% in Zimbabwe (Kanyangarara et al., 2019). In Tanzania and Malawi, of the facilities providing family planning services, 38% and 39% offered HIV treatment and/or care and support services respectively (Close et al., 2019). Some of the factors that have limited the integration of family planning services in health facilities include the paucity of trained health care providers, a lack of policies, guidelines and standard operating procedures, and vertical supply chain management and coordination mechanisms (International Planned Parenthood Federation et al., 2010; Lusti-Narasimhan et al., 2014; Hopkins & Collins, 2017).

Where both services are integrated, the quality of family planning services, which may refer to both the level of preparedness of health facilities to offer services and the way in which clients are cared for (RamaRao & Mohanam, 2003), may affect the uptake of family planning methods (RamaRao & Mohanam, 2003; Arends-Kuenning & Kessy, 2007; Tumlinson et al., 2015). For PLHIV receiving family planning services, their situation and intentions need to be assessed; they should be counselled on family planning methods, assisted with decision-making, and then provided or referred for the chosen method (WHO, 2012). In assessing the quality of family planning services (which can be multifaceted and complex), Bruce (1990) proposed a framework comprising six elements: (1) choice of methods (offering a wide range of contraceptive methods); (2) information given to clients (providing information about the different contraceptive methods, including their contra-indications, advantages, disadvantages, and side-effects, to help clients choose and properly use the chosen method); (3) technical competence (the ability of the healthcare provider to safely provide clinical methods, observing standard guidelines and protocols); (4) interpersonal relations (the personal dimension of service delivery, described as the affective content of communication between the providers and clients); (5) follow-up and continuity mechanisms (following up on clients through established mechanisms such as mass media, home visits, and future appointments to encourage continuity of contraceptive use); and (6) an appropriate constellation of services (situating family planning services in locations that are convenient and acceptable to clients and able to meet other health needs) (Bruce, 1990; Tumlinson et al., 2015). Several indicators for measuring quality of care based on these elements have been proposed (Bertrand et al., 1994).

While the availability of integrated family planning and HIV services has been reported for some countries in sub-Saharan Africa, little is known about Nigeria, which has the largest burden of new paediatric HIV infections globally (Joint United Nations Programme on HIV/AIDS [UNAIDS],

2020b). Accordingly, this study's objectives were to assess the integration of family planning services in health facilities that provide HIV-related services in Nigeria, and the quality of family planning services offered in the integrated facilities. This study's findings may inform interventions to address the gaps in the integration and quality of family planning services in health facilities that provide HIV services in Nigeria.

Methods

Study design and setting

This study analysed secondary data from a cross-sectional survey of service delivery points conducted between May and June 2016 in seven states in Nigeria. Nigeria is located in West Africa and has an estimated population of about 194 million as of 2016 (Nigeria Data Portal, 2020). It is a federation made up of the Federal Capital Territory (Abuja) and 36 states grouped into six geopolitical zones: North West, North East, North Central, South West, South East, and South-South. The estimated HIV prevalence among people of reproductive age (15–49 years) is 1.4% (UNAIDS, 2020a). Women account for 60% of the 1 300 000 persons 15–49 years old living with HIV (UNAIDS, 2020a). With 22 000 new paediatric HIV infections, Nigeria was the largest contributor to new HIV infections among children globally in 2019 (UNAIDS, 2020a). The unmet need for family planning is estimated as 48% and 19% among sexually active unmarried and currently married women respectively (National Population Commission [NPC] & ICF, 2019).

Data source and study sample

The data used in this study was obtained from the Performance Monitoring and Accountability 2020 (PMA2020) (now Performance Monitoring for Action) survey (<https://www.pmadata.org/>). It is an annual, nationally representative survey on family planning and other health indicators conducted in nine countries that have committed to the Family Planning 2020 programme, including Nigeria. The survey involves interviewing women of reproductive age (15–49 years) and a probability sample of service delivery points (i.e. health facilities, pharmacies, and retail outlets) (PMA2020, 2020). In this study, we used the service delivery points data from the 2016 PMA2020 National Round 1 survey. The 2016 survey was used in this study because it collected information on the offering of family planning services, including counselling, provision and referral, to clients who come in for HIV services in service delivery points that provide HIV services. The 2016 Nigeria PMA2020 National Round 1 survey used a two-stage cluster design (PMA2020, 2017). The survey was conducted in seven states: Anambra, Kaduna, Kano, Lagos, Nasarawa, Rivers, and Taraba (PMA2020, 2017). Using the probability proportional to size sampling procedure, one state was selected per zone from among those in each of the six zones, with the seventh state (Kaduna)³ allocated to the North West zone (PMA2020, 2017). Our study sample was restricted to 290 health facilities (hospitals and primary health care centres) that reported provision of services related to diagnosis, treatment, or supportive services for HIV.

Measures

We defined the integration of family planning services into

HIV services as offering (1) counselling for family planning methods, (2) provision of family planning methods, and/or (3) referral for family planning methods to clients accessing HIV services (Adamchak et al., 2016). We examined the quality of family planning services in the facilities with integrated family planning and HIV service delivery using the following three elements from the Bruce-Jain framework (Bruce, 1990), with similar proxy indicators used by previous studies (Askew et al., 1994; Tumlinson et al., 2015):

(1) Choice of method

- (a) Does the provider discuss the family planning method preferred by the patient during an HIV consultation?; and
 - (b) Does the provider discuss dual method use during an HIV consultation?;
- (2) Information given to clients: does the provider discuss instructions and the side effects of the chosen family planning method during an HIV consultation?;
- (3) Interpersonal relations: does the provider ask the patient about reproductive intentions during an HIV consultation?

We assessed the overall quality of family planning services overall and by state. Based on evidence from previous studies (Tessema et al., 2016; Bintabara et al., 2017; Kanyangarara et al., 2019), we considered the following characteristics of the health facilities as independent variables that may be associated with the integration of family planning and HIV services and the quality of family planning provided to clients accessing HIV services: type of health facility (hospital/primary health care centres); location (rural/urban); managing authority (government/private); number of doctors (0–2/≥3), and number of nurses (0–2/≥3); provision of antenatal care (yes/no); and provision of postnatal care (yes/no).

Data analysis

We used descriptive statistics to summarise the data. To determine the health facility characteristics that were significantly associated with the integration of family planning and HIV services and quality of family planning services provided to clients during an HIV consultation, we conducted bivariate and multivariate binary logistic regression analyses and reported the odds ratio (OR) and adjusted odds ratio (aOR) with their 95% confidence intervals (CI), respectively. All variables conceptualised to be associated with the dependent variables were included in the adjusted model, regardless of their significance level at the bivariate level. All analyses were considered statistically significant at $p < 0.05$. The statistical analysis was performed using SPSS version 26. The survey data did not include weights for the service delivery points data; hence no weights were applied.

Ethical considerations

The study was a secondary analysis of publicly available, de-identified data; hence, no ethical approval was required. The PMA2020 was approved by the National Health Research Ethics Committee of Nigeria (NHREC/01/01/2007-08/03/2016).

Results

The characteristics of the health facilities are shown in Table 1. Of the 290 facilities included in this study, 93%

were government-owned and 66% were primary health care centres. About 52% were located in urban areas. Nearly 76% had less than two doctors, while 56% had three or more nurses. Over 90% provided antenatal and postnatal care.

Approximately 93% of the health facilities reported offering family planning counselling to clients accessing HIV services, while provision of family planning methods and referral for family planning methods were reported by 82% and 66% respectively (Table 2). Overall, family planning services (i.e. counselling, provision, and/or referral) were offered in about 95% of the health facilities (Table 2). The integration of family planning services into HIV services varied across the states, ranging from 77.8% of the facilities in Taraba State to 100% in Kano State (Table 2).

Table 3 shows the quality of family planning services provided to clients accessing HIV services during consultation in the health facilities with integrated family planning and HIV service delivery. Approximately 98% (268/273) of the health facilities reported that they talk with clients about their preferred method, while 91% (245/270) reported discussing dual methods with clients during consultation. About 95% (262/271) indicated that they discussed the instructions and side effects of the chosen family planning method and 97% (266/274) reported that they asked clients about their reproductive intentions. Only 86% (233/270) reported performing all four during an HIV consultation (Table 3). This varied across the states, from 46.2% in Kano State to 100% in Kaduna State (Table 3).

The findings of the regression analyses are shown in Tables 4 and 5. Facilities owned by the government, located in rural areas, with three or more doctors, with three or more nurses and that provide antenatal care or postnatal care were more likely to report the integration of family planning services into HIV services. However, none of the associations was statistically significant in the bivariate and multivariable logistic regression analyses (Table 4). On

Table 1: Characteristics of health facilities providing HIV services, Nigeria, PMA2020 (2016)

Characteristic	Number (n)	Per cent (%)
Managing authority		
Government	270	93.1
Private	20	6.9
Type		
Hospital	74	25.5
Primary health care centre	216	74.5
Location		
Rural	139	47.9
Urban	151	52.1
Number of doctors		
0–2	220	75.9
≥3	70	24.1
Number of nurses		
0–2	127	43.8
≥3	163	56.2
Provide antenatal care		
No	10	3.4
Yes	280	96.6
Provide postnatal care		
No	21	7.2
Yes	269	92.8

Table 2: Integration of family planning services into HIV services

State	Provide HIV services (%)	Counsel on family planning methods (%)	Provide family planning methods (%)	Refer for family planning methods (%)	Counsel, provide, and/or refer for family planning methods (%)
Anambra	32	84.4	56.3	62.5	90.6
Kaduna	62	93.5	93.5	82.3	98.4
Kano	13	100.0	84.6	84.6	100.0
Lagos	72	95.8	87.5	48.6	95.8
Nasarawa	43	93.0	81.4	88.4	97.7
Rivers	50	96.0	88.0	48.0	96.0
Taraba	18	77.8	55.6	72.2	77.8
Total	290	92.8	82.4	66.2	95.2

Table 3: Quality of family planning services provided to clients accessing HIV services

State	Facilities with integrated family planning and HIV services (n)	Discuss preferred method (%)*	Discuss dual method use (%)*	Discuss instructions and side effects of chosen method (%)*	Ask reproductive intention (%)*	Discuss preferred method, dual method use, instructions and side effects of chosen method and ask reproductive intention (%)*
Anambra	29	92.9	74.1	85.7	93.1	64.3
Kaduna	61	100.0	100.0	100.0	100.0	100.0
Kano	13	92.3	76.9	84.6	84.6	46.2
Lagos	69	98.6	98.5	98.6	98.5	94.2
Nasarawa	42	100.0	82.9	100.0	97.6	80.5
Rivers	48	100.0	89.1	100.0	97.9	88.6
Taraba	14	92.9	85.7	85.7	92.9	78.6
Total	276	98.2	90.7	94.9	97.1	86.3

*Percentages were based on the number of facilities that responded "yes" or "no". Those who responded "don't know" were excluded.

Table 4: Logistic regression of factors associated with the integration of family planning services into HIV services

Characteristic	Counsel, provide and/or refer for family planning methods		Bivariate OR 95% CI	Multivariate aOR 95% CI
	Yes n (%)	No n (%)		
Managing authority				
Government	248 (91.9)	22 (8.1)	1	1
Private	17 (85.0)	3 (15.0)	0.5 (0.09–2.02)	0.5 (0.08–2.67)
Type				
Hospital	71 (95.9)	3 (4.1)	1	1
Primary health care centre	205 (94.9)	11 (5.1)	0.8 (0.21–2.90)	1.4 (0.23–8.40)
Location				
Rural	133 (95.7)	6 (4.3)	1	1
Urban	143 (94.7)	8 (5.3)	0.8 (0.27–2.39)	0.7 (0.22–2.38)
Number of doctors				
0–2	208 (94.5)	12 (5.5)	1	1
≥3	68 (97.1)	2 (2.9)	2.0 (0.43–8.99)	1.6 (0.24–11.02)
Number of nurses				
0–2	119 (93.7)	8 (6.3)	1	1
≥3	157 (96.3)	6 (3.7)	1.8 (0.59–5.21)	1.7 (0.43–6.93)
Provide antenatal care				
No	9 (90.0)	1 (10.0)	1	1
Yes	267 (95.4)	13 (4.6)	2.3 (0.27–19.39)	0.5 (0.04–7.11)
Provide postnatal care				
No	18 (85.7)	3 (14.4)	1	1
Yes	258 (95.6)	11 (4.1)	3.9 (1.00–15.28)	3.9 (0.82–18.91)

the quality of family planning services provided to clients accessing HIV services, managing authority, location, number of doctors and nurses, provision of antenatal and postnatal care showed significant associations at the bivariate level (Table 5). In the multivariate analysis, managing authority, location, and provision of postnatal care remained statistically significant. Based on all four indicators, the odds of reporting the provision of quality family planning services to clients during an HIV consultation was significantly lower in private health facilities (aOR 0.3, 95% CI 0.07–0.92). The odds of reporting the provision of quality family planning services to clients in the facilities located in the urban areas (aOR 3.8, 95% CI 1.64–8.76) or providing postnatal care (aOR 3.9, 95% CI 1.10–13.74) were nearly four times that of facilities in the rural areas or not providing postnatal care respectively.

Discussion

This study assessed the integration and quality of family planning services in health facilities that provide HIV services in seven states in Nigeria. Our results showed that 95% of the health facilities offered family planning counselling, family planning methods, and/or referral for family planning methods to clients accessing HIV services. About 86% of the health facilities with integrated family planning and HIV services reported discussing the preferred method, dual methods, the instructions and side effects of the chosen method, and the reproductive intention with clients accessing HIV services. The integration and quality of family planning services in the health facilities varied across the

seven states. None of the health facility characteristics we assessed was significantly associated with the integration of family planning services into HIV services. However, managing authority, location, and the provision of postnatal care were associated with the quality of family planning services provided to clients accessing HIV services.

In line with global recommendations, the integration of family planning and HIV services has been an important approach to tackling the burden of HIV in Nigeria (Federal Ministry of Health, National AIDS and STI Control Programme, 2016). The strategies for integrating HIV and family planning services in Nigeria have included creating an enabling environment for integrated services, improving the capacity of health care workers to provide integrated services, ensuring the availability of commodities, and generating demand for the uptake of integrated services (Global HIV/AIDS Initiative Nigeria, n.d.; McCarragher et al., 2011). These concerted efforts may have accounted for the high proportion of facilities reporting the integration of family planning services into HIV services in this study. Due to differences in operational definitions, our findings cannot be directly compared with studies from other African countries that have reported on the integration of family planning and HIV services delivery. Nonetheless, a similar level of integration has been found in some countries (Johnson et al., 2012; Kanyangarara et al., 2019). For example, 95% and 96% of the prevention of mother-to-child transmission of HIV (PMTCT) units reported the provision of family planning counselling in Namibia and Kenya respectively (Johnson et al., 2012). In Kenya, about 91% of these sorts of units reported the provision of family planning methods (ibid.).

Table 5: Logistic regression of factors associated with the quality of family planning services in the health facilities with integrated family planning and HIV services

Characteristic	Discuss preferred method, dual method use, instructions and side effects of chosen method, and reproductive intention during an HIV consultation		Bivariate OR (95% CI)	Multivariate aOR (95% CI)
	Yes n (%)	No n (%)		
Managing authority				
Government	221 (87.4)	32 (12.6)	1	1
Private	12 (70.6)	5 (29.4)	0.3 (0.12–0.95)*	0.3 (0.07–0.92)*
Type				
Hospital	63 (91.3)	6 (8.7)	1	1
Primary health care centre	170 (84.6)	31 (15.4)	0.6 (0.27–1.40)	1.1 (0.33–3.47)
Location				
Rural	101 (78.3)	28 (21.7)	1	1
Urban	132 (93.6)	9 (6.4)	3.8 (1.83–7.91)***	3.8 (1.64–8.76)**
Number of doctors				
0–2	169 (83.3)	34 (16.7)	1	1
≥3	64 (95.5)	3 (4.5)	3.7 (1.27–10.75)*	1.7 (0.45–6.36)
Number of nurses				
0–2	91 (77.1)	27 (22.9)	1	1
≥3	142 (93.4)	10 (6.6)	2.9 (1.48–5.75)**	1.7 (0.68–3.99)
Provide antenatal care				
No	5 (62.5)	3 (37.5)	1	1
Yes	228 (87.0)	34 (13.0)	4.7 (1.20–18.19)*	1.0 (0.17–6.13)
Provide postnatal care				
No	11 (64.7)	6 (35.3)	1	1
Yes	222 (87.7)	31 (12.3)	3.9 (1.42–10.79)**	3.9 (1.10–13.74)*

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Beyond the availability of integrated services, the quality of family planning services is essential to influence contraceptive use. In Kenya, Tumlinson and colleagues (2015) reported that asking about client preferences, assistance with method selection, and the provision of information on side effects were significantly associated with an increased likelihood of current modern contraceptive use. Most health facilities with integrated family planning and HIV services in our study reported that they discuss reproductive intention, the preferred method, dual methods, and the instructions and side effects, though with variations across the state. Despite all the facilities in Kano State reporting integration of family planning services into HIV services, less than 50% reported discussing all four topics with clients during an HIV consultation. While the reasons that health facilities do not discuss these topics need to be further examined, evidence from other climes suggests that a high client load and inadequate training may be contributing factors (Kim et al., 1998; Shahidzadeh-Mahani et al., 2008). Health care providers delivering HIV services may also not see it as their responsibility to discuss these topics.

Inadequate training of health care providers, limited supervision and a lack of standardised procedures may also explain why the likelihood of discussing these topics with clients accessing HIV services was lower in private health facilities or those located in the rural areas (Hutchinson et al., 2011; Kuyinu, 2011; Keesara et al., 2015). Our result also showed that facilities with postnatal care had higher odds of reporting all four indicators of quality care. Where it is offered, postnatal care presents opportunities to counsel HIV-infected patients about family planning. A new pregnancy during the postpartum period puts mothers and babies at elevated risks of adverse health outcomes (Conde-Agudelo et al., 2007; Conde-Agudelo et al., 2012; Kozuki et al., 2013). The significance of preventing unintended pregnancies during this period may explain the observed quality of service.

The study is not without limitations. Although the service delivery point survey was conducted in seven states, the data is not generalisable to the whole country. The family planning services offered were self-reported by one to three individuals on behalf of the facility and there might have been response bias and over-reporting of the services. Due to the unavailability of information, we were not able to disaggregate the types of HIV services provided by the health facilities or identify the types of contraceptive methods available specifically to clients accessing HIV services either on-site or through referral. Furthermore, in assessing the quality of family planning services we could only use three of the six elements from the Bruce-Jain framework and a few indicators as a result of the limited data specific to clients accessing HIV services in the dataset. To further investigate the delivery of integrated family planning and HIV services, future studies could consider the use of qualitative methods such as observation or exit interviews of people receiving HIV prevention, treatment and care services.

Conclusion

Family planning services are integrated into HIV services in a majority of the health facilities in our study. However, based

on the assessed elements of quality of care, our findings suggest the need for further improvement in the quality of family planning services provided to clients accessing HIV services. The considerably high level of integration of family planning and HIV services in these settings is encouraging, but it may not translate to the desirable uptake of family planning services where there are demand-side barriers.

Notes

1. Linkages: The bidirectional synergies in policy, programmes, services and advocacy between reproductive health and HIV (WHO, 2009).
2. Integration: Combining different kinds of reproductive health and HIV services or operational programmes to ensure and maximise collective outcomes (WHO, 2009). It would include referrals from one service to another and is based on the need to offer comprehensive services. Integration refers exclusively to health service provision and is therefore a subset of linkages (WHO, 2009).
3. The survey first started in Lagos and Kaduna States in 2014 and 2015. The two states were retained as the survey expanded to other states.

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References

- Adamchak, S. E., Okello, F. O., & Kaboré, I. (2016). Developing a system to monitor family planning and HIV service integration: Results from a pilot test of indicators. *Journal of Family Planning and Reproductive Health Care*, 42(1), 24–29. <https://doi.org/10.1136/jfprhc-2014-101047>
- Arends-Kuening, M., & Kessy, F. L. (2007). The impact of demand factors, quality of care and access to facilities on contraceptive use in Tanzania. *Journal of Biosocial Science*, 39(1), 1–26. <https://doi.org/10.1017/S0021932005001045>
- Askew, I., Mensch, B., & Adewuyi, A. (1994). Indicators for measuring the quality of family planning services in Nigeria. *Studies in Family Planning*, 25(5), 268–283. <https://doi.org/10.2307/2138058>
- Berer, M. (2004). HIV/AIDS, sexual and reproductive health: Intersections and implications for national programmes. *Health Policy and Planning*, 19(Suppl 1), i62–i70. <https://doi.org/10.1093/heapol/czh046>
- Bertrand, J. T., Magnani, R. J., & Rutenberg, N. (1994). *Handbook of indicators for family planning program evaluation*. University of North Carolina at Chapel Hill, Carolina Population Center, Evaluation Project.
- Bintabara, D., Nakamura, K., & Seino, K. (2017). Determinants of facility readiness for integration of family planning with HIV testing and counseling services: Evidence from the Tanzania service provision assessment survey, 2014-2015. *BMC Health Services Research*, 17(1), 844. <https://doi.org/10.1186/s12913-017-2809-8>
- Bruce, J. (1990). Fundamental elements of the quality of care: A simple framework. *Studies in Family Planning*, 21(2), 61. <https://doi.org/10.2307/1966669>
- Close, M. A., Barden-O'Fallon, J., & Mejia, C. (2019). Quality of family planning services in HIV integrated and non-integrated health facilities in Malawi and Tanzania. *Reproductive Health*, 16(S1), 58. <https://doi.org/10.1186/s12978-019-0712-y>

- Cohen, C. R., Bukusi, E., Rees, H., & Blanchard, K. (2013). Intersection of HIV and reproductive health. *AIDS Research and Treatment*, 2013(2013),4189918. <https://doi.org/10.1155/2013/418918>
- Conde-Agudelo, A., Rosas-Bermudez, A., Castaño, F., & Norton, M. H. (2012). Effects of birth spacing on maternal, perinatal, infant, and child health: A systematic review of causal mechanisms. *Studies in Family Planning*, 43(2), 93–114. <https://doi.org/10.1111/j.1728-4465.2012.00308.x>
- Conde-Agudelo, A., Rosas-Bermúdez, A., & Kafury-Goeta, A. C. (2007). Effects of birth spacing on maternal health: A systematic review. *American Journal of Obstetrics and Gynecology*, 196(4), 297–308. <https://doi.org/10.1016/J.AJOG.2006.05.055>
- Crankshaw, T. L., Smit, J. A., & Beksinska, M. E. (2016). Placing contraception at the centre of the HIV prevention agenda. *African Journal of AIDS Research*, 15(2), 157–162. <https://doi.org/10.2989/16085906.2016.1204330>
- Duerr, A., Hurst, S., Kourtis, A. P., Rutenberg, N., & Jamieson, D. J. (2005). Integrating family planning and prevention of mother-to-child HIV transmission in resource-limited settings. In *Lancet*, 366(9481), 261–263. [https://doi.org/10.1016/S0140-6736\(05\)66917-6](https://doi.org/10.1016/S0140-6736(05)66917-6)
- Federal Ministry of Health, National AIDS and STI Control Programme. (2016). *National guidelines for HIV prevention treatment and care*. Federal Ministry of Health, National AIDS and STI Control Programme.
- Global HIV/AIDS Initiative Nigeria. (n.d.). *GHAIN support to RH-HIV integration in Nigeria: End of project monograph*. [https://www.fhi360.org/sites/default/files/media/documents/GHAIN support to reproductive health-HIV integration.pdf](https://www.fhi360.org/sites/default/files/media/documents/GHAIN%20support%20to%20reproductive%20health-HIV%20integration.pdf)
- Haberlen, S. A., Narasimhan, M., Beres, L. K., & Kennedy, C. E. (2017). Integration of family planning services into HIV care and treatment services: A systematic review. *Studies in Family Planning*, 48(2), 153–177. <https://doi.org/10.1111/sifp.12018>
- Hopkins, J., & Collins, L. (2017). How linked are national HIV and SRHR strategies? A review of SRHR and HIV strategies in 60 countries. *Health Policy and Planning*, 32(Suppl 4), iv57–iv66. <https://doi.org/10.1093/heapol/czw119>
- Hutchinson, P. L., Do, M., & Agha, S. (2011). Measuring client satisfaction and the quality of family planning services: A comparative analysis of public and private health facilities in Tanzania, Kenya and Ghana. *BMC Health Services Research*, 11(1), 203. <https://doi.org/10.1186/1472-6963-11-203>
- International Planned Parenthood Federation, UNAIDS, UNFPA, & WHO. (2010). *Consultation to discuss country implementation of the rapid assessment tool for sexual and reproductive health and HIV linkages*. http://srhhivlinkages.org/wp-content/uploads/2013/04/ratconsultation_2010_en.pdf
- Johnson, K., Varallyay, I., & Ametepi, P. (2012). *Integration of HIV and family planning health services in sub-Saharan Africa: A review of the literature, current recommendations, and evidence from the service provision assessment health facility surveys*. DHS Analytical Studies No. 30. ICF International.
- Kanyangara, M., Sakyi, K., & Laar, A. (2019). Availability of integrated family planning services in HIV care and support sites in sub-Saharan Africa: A secondary analysis of national health facility surveys. *Reproductive Health*, 16(Suppl 1), 60. <https://doi.org/10.1186/s12978-019-0713-x>
- Keesara, S. R., Juma, P. A., & Harper, C. C. (2015). Why do women choose private over public facilities for family planning services? A qualitative study of post-partum women in an informal urban settlement in Kenya. *BMC Health Services Research*, 15(1), 335. <https://doi.org/10.1186/s12913-015-0997-7>
- Kim, Y. M., Kols, A., & Mucheke, S. (1998). Informed choice and decision-making in family planning counseling in Kenya. *International Family Planning Perspectives*, 24(1), 4–11&42. <https://doi.org/10.2307/2991913>
- Kozuki, N., Lee, A. C., Silveira, M. F., Victora, C. G., Adair, L., Humphrey, J., Ntozini, R., Black, R. E., & Katz, J. (2013). The associations of birth intervals with small-for-gestational-age, preterm, and neonatal and infant mortality: A meta-analysis. *BMC Public Health*, 13(Suppl 3), S3. <https://doi.org/10.1186/1471-2458-13-S3-S3>
- Kuyinu, Y. (2011). Clients' perception of quality of family planning services in urban and rural health facilities in Lagos State. *Journal of Community Medicine and Primary Health Care*, 22(1–2), 6–18. <https://doi.org/10.4314/jcmphc.v22i1-2.68321>
- Lusti-Narasimhan, M., Collins, L., & Hopkins, J. (2014). Lessons learnt from sexual and reproductive health and HIV linkages for multipurpose prevention technology service delivery. *International Journal of Obstetrics & Gynaecology*, 121(Suppl 5), 87–91. <https://doi.org/10.1111/1471-0528.12845>
- McCarraher, D. R., Vance, G., Gwarzo, U., Taylor, D., & Chabikuli, O. N. (2011). Changes in contraceptive use following integration of family planning into ART services in Cross River State, Nigeria. *Studies in Family Planning*, 42(4), 283–290. <https://doi.org/10.1111/j.1728-4465.2011.00291.x>
- Nigeria Data Portal. (2020). *Demographic Statistics of Nigeria*. <https://nigeria.opendataforafrica.org/qrcvdsd/demographic-statistics-of-nigeria>
- National Population Commission & ICF. (2019). *Nigeria Demographic and Health Survey 2018*. National Population Commission and ICF.
- Population Monitoring and Accountability 2020. (2017). PMA2020 household and female survey sampling strategy in Nigeria. <https://www.padata.org/media/93/download>
- Population Monitoring and Accountability 2020. (2020). *Survey methodology*. <https://www.padata.org/data/survey-methodology>
- RamaRao, S., & Mohanam, R. (2003). The quality of family planning programs: Concepts, measurements, interventions, and effects. *Studies in Family Planning*, 34(4), 227–248. <https://doi.org/10.1111/j.1728-4465.2003.00227.x>
- Shahidzadeh-Mahani, A., Omidvari, S., Baradaran, H. R., & Azin, S. A. (2008). Factors affecting quality of care in family planning clinics: A study from Iran. *International Journal for Quality in Health Care*, 20(4), 284–290. <https://doi.org/10.1093/intqhc/mzn016>
- Spaulding, A. B., Brickley, D. B., Kennedy, C., Almers, L., Packel, L., Mirjahangir, J., Kennedy, G., Collins, L., Osborne, K., & Mbizvo, M. (2009). Linking family planning with HIV/AIDS interventions: A systematic review of the evidence. *AIDS*, 23(Suppl 1), S79–S88. <https://doi.org/10.1097/01.aids.0000363780.42956.ff>
- Tessema, G. A., Streak Gomersall, J., Mahmood, M. A., & Laurence, C. O. (2016). Factors determining quality of care in family planning services in Africa: A systematic review of mixed evidence. *PLoS One*, 11(11), e0165627. <https://doi.org/10.1371/journal.pone.0165627>
- Tumlinson, K., Pence, B. W., Curtis, S. L., Marshall, S. W., & Speizer, I. S. (2015). Quality of care and contraceptive use in urban Kenya. *International Perspectives on Sexual and Reproductive Health*, 41(2), 69–79. <https://doi.org/10.1363/4106915>
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2020a). *Nigeria*. <https://www.unaids.org/en/regionscountries/countries/nigeria>
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2020b). *Progress towards the Start Free Stay Free AIDS Free targets- 2020 report*. Joint United Nations Programme on HIV/AIDS.
- World Health Organization. (2004). *The Glion call to action on family planning and HIV/AIDS in women and children*. World Health Organization.
- World Health Organization. (2009). *Strategic considerations for strengthening the linkages between family planning and HIV/AIDS policies, programs, and services family planning HIV/AIDS*. World Health Organization.
- World Health Organization. (2012). *Reproductive choices and family planning for people living with HIV: Counselling tool*. <http://www.who.int/reproductive-health/>

Wilcher, R., Cates, W., & Gregson, S. (2009). *Family planning and HIV: strange bedfellows no longer*. <https://doi.org/10.1097/01.aids.0000363772.45635.35>

Wilcher, R., Hoke, T., Adamchak, S. E., & Cates, W. (2013). Integration of family planning into HIV services. *AIDS*, 27(Suppl 1), S65–S75. <https://doi.org/10.1097/QAD.0000000000000051>