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National and international programmatic perspective on facilitators and barriers for Sudan’s health sector response on female genital mutilation (2016–2018): a qualitative study

Wisal Ahmed,1 Amira Adam,1 Nancy Puttkammer,1,2 Stephen Gloyd,3 Carey Farquhar4

ABSTRACT

Objectives To explore the facilitators and barriers that affected the design and implementation of the first 3 years of Sudan’s largest health programme on female genital mutilation (FGM).

Design We used a qualitative case study guided by the Consolidated Framework for Implementation Research to conduct in-depth interviews with programme managers and for thematic data analysis.

Setting About 14 million girls and women in Sudan are affected by FGM, which is mainly performed by midwives (77%). Since 2016, Sudan has received substantial donor funding to develop and implement the largest global health programme to stop midwives’ involvement and improve the quality of FGM prevention and care services.

Participants Eight Sudanese and two international programme managers representing governmental, international and national organisations and donor agencies participated in interviews. Their job positions required detailed involvement in planning, implementing and evaluating diverse health interventions in the areas of governance, building knowledge and skills of health workers, strengthening accountability, monitoring and evaluation and creating an enabling environment.

Results Respondents identified funding availability and comprehensive plans, integration of FGM-related interventions within existing priority health intervention packages and presence of an evaluation and feedback culture within international organisations as implementation facilitators. The barriers were low health system functionality, low inter-organisational coordination culture, power asymmetries in decision-making during planning and implementation of nationally-funded and internationally-funded interventions, and non-supportive attitudes among health workers.

Conclusion Understanding the factors affecting planning and implementation of Sudan’s health programme addressing FGM may potentially mitigate barriers and improve results. Interventions which change midwives’ supportive values and attitudes towards FGM, strengthen health system function and increase intersectoral and international coordination including equitable decision-making among relevant actors, may be needed to address the reported barriers. The impact of these interventions on the scale, effectiveness and sustainability of the health sector response merits further study.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The use of the Consolidated Framework for Implementation Research domains was helpful to methodologically identify influential factors and unpack data during data collection and analysis.

⇒ Programme managers as study participants provided a unique perspective that is often not captured in female genital mutilation-related health interventions literature.

⇒ The varied roles of study participants within diverse organisations generated rich data and data triangulation.

⇒ The sampling of senior programme managers at a national level may have missed the perspectives of implementers such as health workers and patients at the facility level.

⇒ Sharing an overview of interview questions beforehand and encouraging study participants to refer to previous activity reports minimised recall bias.

INTRODUCTION

Female genital mutilation (FGM) is defined by the WHO as the ‘partial or total removal of external female genitalia or other injury for non-medical reasons’.1 About 14 million girls and women in Sudan are affected by FGM with health costs estimated at 277 million dollars per year.2 Furthermore, FGM medicalisation is high: 64% of women (15–49 years) with FGM have had it performed by midwives.3

The national FGM abandonment strategy in Sudan is multisectoral and coordinated by a national taskforce led by the Ministry of Welfare and Social Security (MoWSS). The health sector played a minimal role until 2016,
when it was included in the ‘Sudan Free From Female Genital Cutting’ (SFFGC) programme. This programme was funded by the UK government’s Foreign, Commonwealth and Development Office (FCDO) in partnership with three UN agencies as the main funds recipients. Specifically, the UNICEF, United Nations Population Fund (UNFPA) and WHO worked closely with multiple governmental and non-governmental organisations to implement several multisectoral interventions. For the health sector specifically, the implementers included the Federal Ministry of Health (FMoH), Sudan Midwives’ Association (SMA), National Medical Council for Health Professionals (NMCHP), Sudan Health Professional Association for Nurses, Sudan Medical Specialization Board, Sudan’s Association for Pediatricians (SAP), Sudan’s Obstetric and Gynecological Society (OGSSD) and Medical Student International Network—Sudan (MedSIN-Sudan). The target population of interventions included diverse health professionals and students, health facilities, health service users and community members, as well as school children. However, the emphasis was mainly on midwives as they are the main driving force in FGM medicalisation. In parallel to the SFFGC programme, the government of Sudan financed two large midwifery-related FGM initiatives that were managed by MoWSS and FMoH (figure 1).

The health interventions funded by the SFFGC programme were guided by WHO’s four pillars of action: strengthen governance and funding (pillar 1); increase...
health workers’ knowledge and skills (pillar 2); improve monitoring and evaluation (M&E) and accountability (pillar 3); and create a supportive environment (pillar 4).  

Between 2016 and 2018, Sudan had significant achievements in the health component of SFFGC programme, prompting further in-depth study to understand how and why this occurred. The present study contributes to a much-needed programmatic evidence base on complex health interventions in low-income FGM prevalent settings, in contrast to the current body of evidence, which has addressed singular health interventions or factors affecting FGM-related health interventions in high-income settings.  

We conducted in-depth interviews with programme managers to identify the factors and their mechanisms of influence on the health sector component of the SFFGC programme during the first 3 years (2016–2018).

METHODS

Study setting
Sudan is located in northeast Africa and covers an expansive area (1.9 million km²) equivalent to one-quarter of the size of the USA. Sudan’s gross domestic product per capita of US$764, is categorised as low income. The public health sector is structured around its political administrative divisions at federal level, the country’s 18 states and its 189 localities.

Materials
We used WHO’s four pillars of action as the framework to categorise the reported scope of the health plan and activities because it guided Sudan’s response. In addition, we used the Consolidated Framework for Implementation Research (CFIR) to develop the interview guide and data analysis because of its conceptual strength, empirical evidence and its qualitative codebook template. In brief, CFIR has five domains with a total of 39 constructs: (1) intervention characteristics (8 constructs); (2) outer setting (4 constructs); (3) inner setting (12 constructs); (4) characteristics of the individuals (5 constructs); and (5) process (8 constructs). We adapted the five domains and 12 of its constructs (table 1) including the codebook to align with Sudan’s context, as depicted in figure 1.

Our structured interview guide had four questions in English and Arabic. The first question was on the type and scale of health sector activities that the participant’s organisation was engaged in. The remaining questions were structured around CFIR’s domains, to probe on the factors and their mechanism of influence in planning and implementation of FGM-related interventions.

In order to protect respondents’ identities there were no demographic questions.

Study participants
We obtained the names of institutions and the focal persons that were involved in the health component of SFFGC programme during 2016 through 2018, from project documents in a prior programmatic review study. The institutions involved were the FMOH; Sudan country offices for WHO, UNFPA, UNICEF and FCDO; Khartoum SMA; NMCHP; SAP; OGSSD; and MedSIN-Sudan. We contacted the focal persons to verify programme officers’ roles and duration of work from 2016 through 2018. Within each organisation we purposively selected those who were most involved in the planning and/or implementation of interventions and had the longest work experience covering the time frame of interest, to generate high information power. We used phone and email to invite 14 individuals to participate in the study. Four did not respond and 10 agreed to participate in the study. We were not able to include a representative from MedSIN-Sudan due to lack of up-to-date contact details.

Procedures
We shared the objectives of the interview with the study participants in advance to allow time for reflection or review of past project reports, since the events occurred 3–5 years earlier. The co-investigator (AA) conducted interviews in the respondents’ language of preference, with the principal investigator (WA) as the notetaker. Eight interviews were conducted through voice-over-internet protocol and two used a hybrid method where AA and the interviewee were present physically and the WA attended virtually. The interviewer(s) shared the study purpose and affirmed the participants’ anonymity and non-linkage of data in order to create a safe space for the interview. The team obtained verbal consent for data collection and audiorecording for the interviews conducted between August 2021 and January 2022. The audio recordings, ranging between 27 and 66 min, were transcribed and translated by MA while WA proofread and audited the transcripts. Interviewees were asked to describe their roles, the health interventions they were involved in and the factors including their influence mechanism during planning and implementation of health interventions.

The two coders (WA and AA) read the transcripts several times prior to coding. They then independently coded different sections of three transcripts using hybrid deductive and inductive coding. Both coders then compared, discussed and agreed on definitions and codes, and finalised the codebook. Coding and analysis were conducted in ATLAS.ti V.9 with >80% inter-rater agreement.

Respondents’ institutions were categorised into ‘government’ (GOV), ‘international non-governmental and governmental agencies’ (INGGA) or ‘national nongovernmental organizations’ (NNGO) to minimise identification of individual study participants. We used WHO’s four pillars of action and CFIR’s domains and constructs for the thematic analysis of the reported FGM interventions and for the reported factors that influenced planning and implementation, respectively. The scale of interventions was defined by resources (time, money, people) invested, geographical or targeted populations coverage or language strength. The degree of influence...
of each reported factor during implementation was coded as ‘strong’ when two or more respondents reported the same factor.

The principal investigator’s (WA) interest in implementation research and health sector responses to reduce FGM in low-income settings over the 7 years prior to the study influenced the study methodology and data interpretation.

**Public patient involvement statement**

This research did not involve patients in the development of research questions and outcomes. The present study builds on findings from a prior programme review study to understand the factors that affected planning and implementation using programme managers’ perspectives. Because we had no records on patients’ involvement at programme planning and/or implementation or as service users for the study period, it was not feasible to include clients in this research. We note the limitation of the perspectives captured in the discussion section.

**RESULTS**

This section begins by briefly describing the profile of respondents, followed by the type and scale of activities they were involved in, and finally their cited facilitators and barriers, categorised by CFIR’s five domains, including table summaries.
Respondents profile

The study participants comprised eight Sudanese nationals and two internationals who represented 7 out of the 10 organisations involved in the health component of the SFFGC programme. The seven organisations included donor, international and national governmental and non-governmental agencies. The respondents were involved in planning, coordination, technical oversight, financial management and/or participated in implementation of a wide range of activities that mainly targeted midwives.

The scope of health interventions

Respondents’ reported activities for strengthening governance and finance (pillar 1), included health sector plan development and establishing various technical and multisectoral coordination committees at national and state level. In addition, participants reported multisectoral national or state level advocacy and championing integration of FGM.

With respect to activities in strengthening knowledge and skills of health workers (pillar 2), respondents mentioned the development of national guidelines on FGM management, social norm change training modules and the roll out of FGM content in pre-service and in-service trainings to diverse health professionals.

Respondents cited several activities that aimed to strengthen M&E and accountability (pillar 3). This included the development of FGM medicalisation clauses in midwives’ code of conduct as well as an accountability framework to guide regulation of health professionals who perform FGM. In addition, they were involved in the development of FGM-related indicators to integrate into the national health information system. They also reported involvement in generating data on FGM-related knowledge, attitudes and practices among diverse health professionals and traditional birth attendants, and NNGO’s preparedness to provide health-related interventions including FGM. Moreover, respondents reported developing research agendas and designing and pretesting FGM surveillance models.

Finally, respondents’ cited activities that contributed to creating a supportive environment (pillar 4) mainly targeted health professions and students through awareness raising, social norm change trainings and change agents’ activities that resulted in public declarations against FGM and calls for a law. In addition, one activity in this pillar targeted school children through the development of FGM content within the primary school health manual.

The scale of health interventions

Respondents estimated the funding allocation to the health component of SFFGC programme was between 18% and 30% of the total budget (US$20 million), with a complementary government investment in midwives’ training. However, respondents reported that the number of states supported by SFFGC programme funding reduced from 10 to 4 from 2016 to 2018. They also indicated that most of the activities were allocated to and implemented by FMoH compared with NNGO. Finally, one respondent felt that the programmatic interventions did not translate into wide availability or quality improvement of FGM prevention and care services within primary level of care.

Facilitators and barriers in planning and implementation

Facilitators

Features of health plan and activities

Most respondents felt that the health plan was well designed because it was evidence-informed and comprehensively addressed WHO’s four pillars to stop FGM medicalisation.

The plan had a broad scope (encompassing), … [FGM] surveillance, [FGM services in] primary and secondary levels of care … [skill building in] midwifery trainings … awareness raising and accountability framework [for FGM medicalization]. (GOV 2)

Respondents thought that activities where FGM was mainstreamed within existing interventions such as in-service midwifery training packages facilitated scale through complementary, government-funded midwifery training initiatives.

Environment characteristics

Respondents reported Sudan’s high FGM medicalisation prevalence facilitated health sector inclusion in the SFFGC programme and that this unique global opportunity motivated exemplar performance. Furthermore, respondents felt the availability of substantial long-term funding facilitated NNGO’s involvement and FGM uptake within the FMoH priority health agenda. However, the specified funding for FGM interventions also created dilemmas, tension and long discussions among FMoH decision makers who felt they did not have self-determination and autonomy in setting health agenda priorities and resource allocation.

The INGGA interest in FGM was a ‘double edged weapon’ [meaning it had both positive and negative effects]… it helped to push FGM and prioritize it … [but] there was sensitivity that it was donor driven … [creating tense discussions and raising questions such as] ‘Will the FMoH follow whatever INGGA[s] want … because of their funding or follow its own vision on health priorities? (GOV 2)

In addition, respondents felt that the social sector’s monthly incentives through FMoH to unemployed midwives indirectly strengthened midwives’ accountability framework enforcement. Finally, a respondent felt ‘Saleema’ initiative created an enabling environment for health sector interventions. The ‘Saleema’ initiative used a social marketing approach to positively brand girls who have not undergone FGM as being ‘Saleema’, an Arabic word that means ‘healthy in body and mind...
or unharmed’, to counter the existent negative social branding of girls who do not undergo FGM.

**Organisation characteristics**

Respondents from INGGAs expressed strong evaluation and feedback mechanisms because the SFFGC programme’s performance was tied to funding continuity.

There was always auditors and evaluators coming from abroad … if performance score is very low, the program can be stopped. … in 2016 there was a program improvement plan [because of low performance] then later … an A+ score which secured a second 5 year phase. (INGGA 1)

In addition, respondents felt FMoH’s high commitment to address midwifery competencies and apply an integrated approach to siloed programmes created an opportunity to develop and integrate FGM within priority health programmes.

**Characteristics of organisation’s programme staff**

Respondents thought that the senior programme managers at FMoH and INGGAs based in the capital city had high self-efficacy, knowledge and commitment.

A lot of the individuals working directly on the program from INGGA were really brilliant … [and were] based in Khartoum … a program manager [named] at the Ministry was very impressive and [was] very supportive. (INGGA 5)

**Characteristics of target populations**

Respondents reported that engaged leadership among medical students and health specialists in obstetrics and gynaecology and paediatrics associations facilitated implementation. In particular, medical students used innovative approaches to engage their peers, such as the SCORAtalk, akin to ‘TEDx talks’, were set up to relay FGM-related messages in different art forms such as music, plays and poetry to 8,650 medical students who attended this event either in-person or virtually.

Medical students … sent messages to their peers and conducted a lot of forums with good attendance for example the “SCORAtalk” in 2017, they acted as change agents in universities in other states … they had amazing results! (INGGA 5)

**Organisation processes**

An INGGA respondent thought that engaging several diverse health stakeholders increased the implementation scale.

Further, respondents reported INGGAs’ continuous championing and advocacy for FGM and its integration facilitated the uptake of FGM as a public health issue and implementing interventions. Finally, one respondent felt that the donor agency processing timeline was clear, predictable and facilitated planning and implementation.

Table 2 summarises all the reported facilitators for Sudan’s health sector response on FGM.

**Barriers**

**Features of health plan and activities**

Respondents felt that the external design of some SFFGC-related research lacked depth in contextual understanding to be of any use.

Research [was] from an international point of view … the international consultants have a limited understanding of what is going on, they come in for a short period of time asking questions in a very standardised way that never resulted in anything very deep and thoughtful. (INGGA 2)

Further, one respondent remarked that the international consultant’s recommendation to have artists and musicians as change agents was inappropriate explaining that artists are not considered role models to relay messages on sensitive topics like FGM which are linked to female genitalia and sexual expression.

The experts who were brought … had the mind set of foreigners not the mind set of Sudanese, … despite the sensitivity on FGM they talked about artists and musicians as ambassadors for change … they were far from the reality of Sudan, because [FGM has] … additional sensitivity [being] related to reproductive health which is highly sensitive [and requires a credible and trustworthy role models, eg, health workers to act as change agents]. (GOV 2)

Study participants reported that implementing the accountability framework for FGM medicalisation was highly complex. They explained that midwifery and licensure trainings would need to produce competent midwives who are aware of FGM’s harm. In addition, the FMoH would need to employ and provide adequate salaries to reduce financial incentives related to performing FGM.

The accountability framework … had an administrative and competency part for the FMoH and a licensing part for the health professional council but midwives lacked competencies … and 24,000 were unlicensed and mostly unemployed. (INGGA 4)

Furthermore, the respondent reported the lack of social protection services to protect and care for children in case of legal proceedings against their parents.

Who will take care of children of imprisoned parents? (GOV 2)

Participants also felt that the complicit agreements between midwives and families even with midwives’ knowledge of FGM medicalisation punitive measures, led to poor reporting and developing insidious strategies to avoid detection, such as travelling outside their states of residence.
Who will notify an agreed issue between the midwife and the family? (GOV 2)

After midwives were sensitized to punitive measures … FGM medicalization was not publicly done, but it continued … either the mothers took their daughters to another state or in some cases midwives travelled to other states. (GOV 3)

Environment characteristics

Respondents reported that the donor agency was under pressure to demonstrate SFFGC programme’s results to UK ministers and their constituents to secure approval for funding continuation. This resulted in reducing geographical coverage and focusing on quicker gains, referred to by an INNGA respondent as ‘low hanging fruits’.

In addition, respondents reported a low level of political leadership commitment to end FGM slowed down national law ratification as well as the rapid inflation rate complicated financial management during implementation.

Though there was consensus on national law ratification as a facilitator, state-specific law enforcement was observed to conflict with the accountability framework’s ability to regulate FGM medicalisation.

For legally reported FGM medicalization cases … the midwifery council will either not know … or be able [with the process] … till [midwives’] prison release … also their licenses are revoked through the judiciary system [not the professional regulatory bodies]. (GOV 1)

Further, one respondent predicted a paradoxical increase in FGM cases before law enforcement, citing a similar situation in 1946 when there were plans to ban the severest form of FGM, which resulted in an anecdotal rise in the practice to bypass the anticipated law’s penalties.

### Table 2  Facilitators for Sudan’s health sector response addressing female genital mutilation (2016–2018) as perceived by programme managers and health professionals working for national and international governmental and non-governmental organisations and the donor agency

<table>
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<tr>
<th>Features of health plan and activities</th>
<th>Environment characteristics</th>
<th>Organisation characteristics</th>
<th>Characteristics of organisation’s programme staff and health programme target population</th>
<th>Organisation processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated approach for implementing FGM activities.</td>
<td>Substantial donor funding and well-funded governmental health and social sector initiatives.</td>
<td>Strong evaluation and feedback and learning culture among donor agency and international non-governmental organisations.</td>
<td>High self-efficacy and expertise of senior programme staff in Ministry of Health and international organisations in capital city.</td>
<td>Participatory planning among international non-governmental organisations and formative phase.</td>
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<tr>
<td>Health plan was comprehensive and informed by evidence.</td>
<td>Ongoing effective social norm change interventions at community level.</td>
<td>High commitment of donor agency and international and national non-governmental organisations to address FGM.</td>
<td>Committed leadership among specialists and members among health students.</td>
<td>Continuous championing and advocacy for FGM as priority health topic.</td>
</tr>
<tr>
<td>International positionality as only country with highest donor investment into health sector.</td>
<td>High commitment within federal Ministry of Health to strengthen midwifery competencies and implement integration of siloed programmes.</td>
<td>Communities increasingly receptive to FGM messages and less taboo to discuss in urban settings.</td>
<td>Donor funding processing timeline was clear.</td>
<td></td>
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<td>High FGM medicalisation in Sudan.</td>
<td></td>
<td></td>
<td>Engagement of diverse health stakeholders in implementation.</td>
<td></td>
</tr>
</tbody>
</table>

Facilitator as reported by one respondent.

Strong facilitator as reported by two or more respondents.

FGM, female genital mutilation.
**Organisation characteristics**

The reported barriers in this domain included a lack of clarity in roles, multiple, diverse and siloed organisational cultures, as well as FGM-related health programming inexperience which negatively affected coordination and performance in the beginning of the SFFGC programme.

It was very difficult ... each INGAA and its ministry had its own identity, culture and organizational objectives so ... the partnership evolved more slowly. (INGGA 5)

Furthermore, interviewees reported competing roles and limited coordination between health and social ministries especially at state level caused constant conflicts, at times halted activities.

The state council for child welfare officials thought all the activities in the national FGM strategy were theirs ... they worked independently with midwives which made the FMoH intervene. (GOV 3)

With regards to Ministry of Health organisational barriers, respondents cited the assignment of junior staff to FGM-related programming at state level was indicative of low commitment. Furthermore, FMoH’s lack of recognition of community midwives as skilled health workers, and high unemployment rates and low pay for midwives were cited as FGM medicalisation drivers. Finally, FMoH’s strict positioning as the sole implementer of midwifery in-service training limited participation of other health stakeholders and reduced the scale of implementation.

There was a general consensus that the lower number and higher turnover of human resources in states outside Khartoum among all implementing organisations affected the scope, quality and scale of activities, especially in remote settings.

The availability of the health cadres affected planning ... in remote areas you can find a big well-constructed hospital but with no personnel ... no services. It is not possible for INGGA to recruit and pay government staff. (INGGA 1)

**Programme staff**

The knowledge of FGM health consequences and the lived experiences of FMoH staff did not factor into decision-making when it came to prioritisation of FGM as a public health topic. There was a sense that health topics related to societal norms were also not prioritised in general.

[FMoH] leaders are doctors and even female managers who experienced FGM questioned whether FGM should be taken up with other priorities like maternal mortality. (GOV 2)

There is limited support for social ... related topics among [FMoH] decision makers. (GOV 3)

**Target population**

Paramedical professions such as medical assistants, nurses and midwives were reported to have limited knowledge on health consequences and its violation of code of conduct, had supportive attitudes towards FGM and were reluctant to provide FGM prevention interventions. This was explained by societal influence and non-exposure to the topic of FGM during training.

The nurses and midwives ... see this practice as part of culture ... no one explained it or showed them what not to do or its complications ... during awareness raising sessions, they tell me ‘We didn’t know’. (GOV 4)

Furthermore, a respondent thought that paediatricians recognised their role in FGM prevention but were unable to make time in their busy practice or engage as pro bono change advocates.

**Organisation processes**

The late engagement of FMoH in the SFFGC programme weakened its ownership and buy in at the beginning.

There was a lot of discussion [to engage FMoH to take up FGM within its agenda], I remember the meetings between INGGA, and the Ministry were a lot! [meaning that it took time and effort]. (GOV 3)

Furthermore, FMoH did not engage NNGOs during planning and approved non-sufficient funds to NNGOs resulting in low awareness of the programme and reduced potential to scale up interventions, respectively.

The funding of the multi-health topic in-service training package to midwives was reported to take several months to obtain approval from donor.

Table 3 summarises all the reported barriers for Sudan’s health sector response on FGM.

**DISCUSSION**

Our study found that many facilitators and barriers for SFFGC’s health programme planning and implementation in its first 3 years were related to Sudan’s context and FMoH characteristics. The main facilitators were funding availability, integrating FGM within other priority health programmes, strong evaluation and feedback culture. In contrast, the main barriers were competing health areas, power asymmetry in decision-making and engagement of relevant health actors during planning and implementation processes for both nationally-funded and internationally-funded interventions, low intra and intersectoral coordination, and unsupportive health system functionality and attitudes among health workers and society at large.

The accountability for international funds was mostly external but we found in a separate analysis that governmental funding investment was substantial and equal to donors’ investment in midwifery training. The pressure to demonstrate results shifted SFFGC funded...
interventions away from remote populations\textsuperscript{21} as well as from interventions that addressed health system functionality such as monitoring and evaluation and accountability systems for health professions practice. Further, respondents thought the power asymmetry in funding accountability and decision-making during programme design

| Table 3 | Barriers for Sudan’s health sector response addressing female genital mutilation (2016–2018) as perceived by programme managers and health professionals working for national and international governmental and non-governmental organisations and international aid agency |
|---|---|---|---|
| Features of health plan and activities | Environment characteristics | Organisation characteristics | Characteristics of organisation’s programme staff (technical and administrative)/target population (health professions/student, school children, community members) | Organisation processes |
| External design of some communication activities and research. | Donor funds require quick results for funding continuity limiting scale. | Low senior leadership commitment in federal and state ministries of health. | Medical and paramedical staff have limited understanding and willingness to provide FGM prevention services. | Slow approval process for donor funded plans and supporting mainstreaming within other health interventions. |
| Complexity increased with low health and social sector functionality and health workers and society’s early stage of change. | Law procedures over-rode and duplicated Ministry of Health accountability processes. | Low functionality and coverage of health workers’ accountability system, health information system and school health programme, limited human resource and low pay. | Knowledge of FGM complications and lived experience of senior Ministry of Health managers has low weight to other competing health issues. | Late engagement of Ministry of Health in donor funded programme. |
| Low national political commitment to ratify law. | Low experience in health programming to address female genital mutilation. | Technical capacity of programme staff outside Khartoum state weaker and limited contextual understanding among international consultants. | Limited engagement of other stakeholders in Ministry of Health planning processes. |
| Donor funds create tension in Ministry of Health autonomy in priority setting. | Competing mandates and roles in the beginning and especially between health and social sectors at state level. | Paediatricians’ brain-drain and limited investment as change agents. |
| High inflation rate complicated administrative processes and reduced spending. | Stringency of Ministry of Health as sole trainer for midwives limited implementation scale. | Low stage of change and agency among women in remote rural setting. |

\textsuperscript{21}Barrier as reported by one respondent.  
\textsuperscript{22}Strong barrier as reported by two or more respondents.  
FGM, female genital mutilation.
reduced NGO awareness, participation, resources and implementation scale. Institutional reforms that allow decentralising and localising decision-making for funding accountability frameworks and programme design could be considered in future programming. Furthermore, a systematic review found strong evidence that policy and organisational decisions guided by stakeholder participation that is inclusive of beneficiaries, improves outcomes. For the case of Sudan, this would mean engaging health professionals as well as their clients and FGM survivors, as well as NGOs and relevant legal and social sectors. Studying the impact of these stakeholders’ involvement in stopping FGM medicalisation and in improving quality of services would add to the existing limited body of evidence.

Although Sudan hosted the first international conference on FGM in 1979 during which WHO condemned FGM medicalisation, the FMoH did not take up an active role in stopping FGM until 2016. Our study findings indicated reluctance in the leadership to prioritise FGM despite their knowledge of its health complications and, for some, having had a lived experience with FGM. It seems from our data that the availability of funding on FGM together with active championing was critical to secure commitment. It was also reported that there was an organisational culture to deprioritise health topics intertwined with societal norms possibly because senior governmental programme managers recognise its complexity that would be onerous to multiple sectors’ systems with limited functionality and coordination.

In contrast to FMoH leadership, midwives’ low knowledge of and supportive attitudes seemed to drive FGM medicalisation and explains their reluctance to provide FGM prevention services. These findings are similar to findings in Guinea and a systematic review that included eight African countries. Furthermore, 34% of midwives are employed in Sudan and their monthly governmental salary—between US$75 and US$128—pales to the incentives they receive for performing FGM.

Most respondents felt that a law against the practice would be required to facilitate FGM interventions related to regulation and stopping midwives’ involvement. However, their experience in enforcing punitive administrative measures against midwives complicated case detection as the practice became more secretive, a finding similar to that of a literature review examining the effects of such laws. Sudan has had a long legislative history against FGM practice, starting under British rule in 1946 when the severest form was criminalised. Enforcement was not successful because the law was linked with colonial oppression and its continuation was considered a form of resistance. The penal code persisted after Sudan’s independence in 1956 until 1983 and then re-instated in 2020 when a new criminal law against all forms of FGM was issued nationally. Alongside this 30-year legal history, health sector-specific policies to stop its medicalisation and oaths made by midwives to not partake in the practice do not seem to be stop the increasing trend of FGM medicalisation. A change in attitudinal stances among midwives and the society at large is probably a prerequisite for laws and policies to be successfully enacted and followed. Furthermore, the health sector must address raising employment and pay levels for midwives in order to reduce monetary incentives for performing FGM.

The use of CFIR domains to identify factors strengthened comprehensiveness during data collection and the unpacking of the data during analysis. The principal investigator’s insider perspective brought a deeper contextual understanding but may have introduced personal bias. However, this bias may have been mitigated by the interviewer and co-principal investigator’s (AA) outsider perspective in data collection and analysis.

We think the information power was high because the respondents were involved in every detail of programming from planning to implementation including several self-reflection opportunities such as experience sharing meetings, evaluations and discussions with independent evaluation teams. Furthermore, the perspectives were comprehensive and diverse, permitting data triangulation, as respondents represented donors, international and national governmental and non-governmental agencies that were the main players in the health sector programme during that period.

Interestingly, our findings on factors which influenced FGM service provision at primary healthcare settings was similar to other qualitative studies which showed limited knowledge and skills and supportive FGM attitudes among healthcare providers, together with the absence of clinic protocols, recording systems and referral systems as factors that negatively affected services. Our sampling respondents at the national level as opposed to state level, was justified because these first years of programmatic implementation focused on establishing national foundational activities that were mostly conducted by FMoH. However, it will beimportant to capture additional insights from health service users and beneficiaries after states and localities implement these activities to scale. In addition, perspectives of other implementers who are not health professionals, as well as those in other sectors who played a larger role in health sector interventions prior to 2016 and continued in states outside the SFFGC programme focus, would need to be considered in future studies. Finally, because the events occurred 3–5 years prior to the study, there may have been recall bias. Our strategy to mitigate this through sharing questions in advance and recommending review of their programme reports seemed to reduce this as the activities discussed by respondents matched the activities we found in previous programmatic data review.

In conclusion, Sudan’s case study highlighted several facilitators and barriers in planning and implementation that were related to health systems and the context of the external environment. There is a need to apply ‘systems thinking’ which recognises the bidirectional interactions between interventions with the health sector systems and other contextual factors during planning.
and implementation. Furthermore, interventions to strengthen joint accountability, address power equity in decision-making and strengthen participatory engagement and intersectoral and multisectoral coordination would need to be considered in future programming. The impact of these interventions on programme’s effectiveness, scale and sustainability would also need to be studied.

Twitter Wisal Ahmed @WisalMAhmed

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Contributors WA conceptualised the study design, took notes during data collection and conducted analysis and interpretation and manuscript write up. AA collected data, conducted analysis as well as reviewed the manuscript. CF, NP and SG supervised WA and provided guidance in the whole process from conceptualisation to substantive input in manuscript write up. All authors read and approved the final manuscript. WAs responsible for the overall content as guarantor.

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ORCID iDs
Wisal Ahmed http://orcid.org/0000-0001-8155-8249
Nancy Puttkammer http://orcid.org/0000-0002-6693-9278

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