Measurement and conceptualisation of male involvement in family planning: a bibliometric analysis of Africa-based studies

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ABSTRACT

Background: Male involvement in Family Planning (FP) is an exercise of men's sexual and reproductive health rights. However, the measurement of male involvement has been highly inconsistent and too discretional in FP studies. As a result, we used bibliometric tools to analyse the existing measures of male involvement in FP to recommend modifications where required.

Methods: We searched for research articles ever published on male involvement in FP from Scopus, Web of Science and PubMed databases using developed search terms. The search results were filtered for studies that focused on Africa. A total of 152 research articles were selected after screening and bibliometric analysis was performed in R.

Results: Results showed that 54% of the studies measured male involvement through approval for FP, while 46.7% measured it through the attitude of males to FP. About 31% measured male involvement through input in deciding FP method, while others measured it through inputs in the choice of FP service centre (13.6%), attendance at FP clinic/service centre (17.8%) and monetary provision for FP services/materials (12.4%). About 82.2% of the studies used primary data, though, the majority (61.2%) obtained information on male involvement from women alone. Only about one in five studies (19.1%) got responses from males and females, with fewer focusing on males alone.

Conclusion: Most studies have mainly measured male involvement in FP through approval for FP. However, approval does not translate to involvement because it is not necessarily backed by the action that involvement entails. Measuring male involvement in FP almost exclusively through the responses obtained from females might be misleading. Other more encompassing measures of male involvement are recommended.

Keywords: Family planning, Male involvement, Men, Africa, Measurements

BACKGROUND

Family planning (FP) plays a crucial role in improving sexual and reproductive health (World Health Organization [1]. FP entails using contraceptive methods to limit the number of childbirths to the desired level [2]. Thus, FP is used interchangeably with contraceptive use. FP allows people to delay or space pregnancies, thereby making it a veritable tool for reducing risks of pregnancy complications associated with closely spaced pregnancies [3]. Health interventions have also relied on FP to reduce infant morbidity and mortality that may result from unplanned, adolescent or advanced maternal pregnancies [1]. The proper and consistent use of male and female condoms, which are FP methods, has proven effective in protecting individuals from sexually transmitted infections such as gonorrhoea and chlamydia [4]. Among HIV-discordant couples or sexual partners, condoms have been an effective tool for preventing the transmission of HIV [5]. Moreover, FP can help individuals and couples build financial security by allowing them to raise a family that they can adequately care for.

The interpersonal relationships inherent in FP make the involvement of males and females crucial to maximising its benefits [6]. Traditionally, FP has been conceived as women's affairs [7] since females play the biological role of carrying pregnancies. However, with increasing levels of information and awareness of sexual and reproductive health rights [8], there has been a paradigm shift in the role of men in FP. Male involvement in FP is now recognised as an exercise of men's sexual and reproductive health rights [9]. Through their involvement, men can benefit from FP counselling, improve their knowledge of contraceptive choices and protect themselves from health risks [10]. In Africa, male involvement in FP has peculiar significance because the prevailing patriarchy that weaves men's dominance into societal norms favouring men as key decision-makers [11, 12]. Partner attitudes and beliefs about sexual and reproductive health impact women's utilisation of FP services, especially in settings where the uptake and consistent use of contraception, desired family size and timing of pregnancies are controlled by men (6, 13]. As a result, men play essential roles in determining women's uptake of FP and the continuity of FP use [14]. Men's involvement in FP is vital for policy and programmes that aim to advance the achievement of FP goals in Africa. To this end, numerous studies and FP interventions have recommended that male involvement be incorporated into FP programmes [12, 15]

However, despite the widely acknowledged importance of male involvement in achieving FP goals [12, 16], there have been no standard metrics for measuring it. The measurements adopted have been highly inconsistent and too discretional. For instance, some studies measured male involvement as communication and discussion with male partners about contraception [17, 18]. Some conceptualised male involvement as men's perceptions and attitudes towards family planning [19, 20], while some measured it as approving the use of FP [21, 22]. Another measure that has also been adopted is the use of male method of contraception, as well as men accompanying their partner to the clinic [10]. Studies rely on one or a combination of these

activities to measure men's involvement in family planning [17-20], drawing attention to the inconsistency in measurement.

Conceptualising and measuring male involvement is crucial for maximising men's involvement in achieving FP goals. The lack of a standard measure is a methodological gap in empirical investigations [23]. Hence, there is a need to review the measures adopted in existing studies to analyse the extent of their adoption and evaluate their validity to recommend modifications where required. A veritable tool to achieve this is bibliometrics [24, 25]. Bibliometric analysis is a scientific computer-assisted statistical technique that helps review studies' methodologies and metadata and their relationships by covering all the publications related to a defined topic or field [26]. The computing power of bibliometrics enables it to review many studies, and researchers have leveraged this power [24, 25]. Bibliometrics has been used to analyse childhood immunisation research productivity [27] and COVID-19 research output in Africa [28]. In this study, we used it to analyse the measurements of male involvement in African FP studies.

METHODS

Data source and search strategy

We searched for published articles within the title, abstract and keyword query string of PubMed, Scopus and Web of Science databases. We developed search terms by combining keywords using Boolean operators (AND, OR, NOT) and Boolean logic (TRUE, FALSE). The search terms used include 'male involvement" OR "partner involvement" OR "men involvement" OR "husband involvement" OR "male participation" OR "partner participation" OR "men participation" OR "husband participation"' and 'contraceptive OR "family planning" OR contraception' (see appendix A for the complete query string).

Eligibility and Study Selection

A total of 519 search result was found. Four were pre-prints, and 22 were non-English and were thus removed. The remaining 493 articles were filtered for African countries, and this left the search output with a total of 193 research articles. Ethiopia (42), Nigeria (38), South Africa (26), Uganda (21), Kenya (18), Ghana (13), Tanzania (11), Malawi (9), Rwanda (8), Mozambique (5), Zimbabwe (4), Senegal (4), Zambia (3), Cameroon (3), the Democratic Republic of Congo (2), Congo (2), Botswana (2), Angola (2), Togo (1), Somalia (1), Sierra Leone (1), Egypt (1) and Burkina Faso (1). Ninety-five articles were removed because they had no clear country focus. We manually checked the abstract and title of the remaining 193 articles to select studies that made a direct conclusion about male involvement either as the outcome on its own or as a factor (variable) influencing contraceptive practice or family planning. During the manual checks, secondary review articles were removed, and we were left with 152 research articles. The screening flowchart of the research articles is illustrated in the PRISMA Flowchart shown in Figure 1.

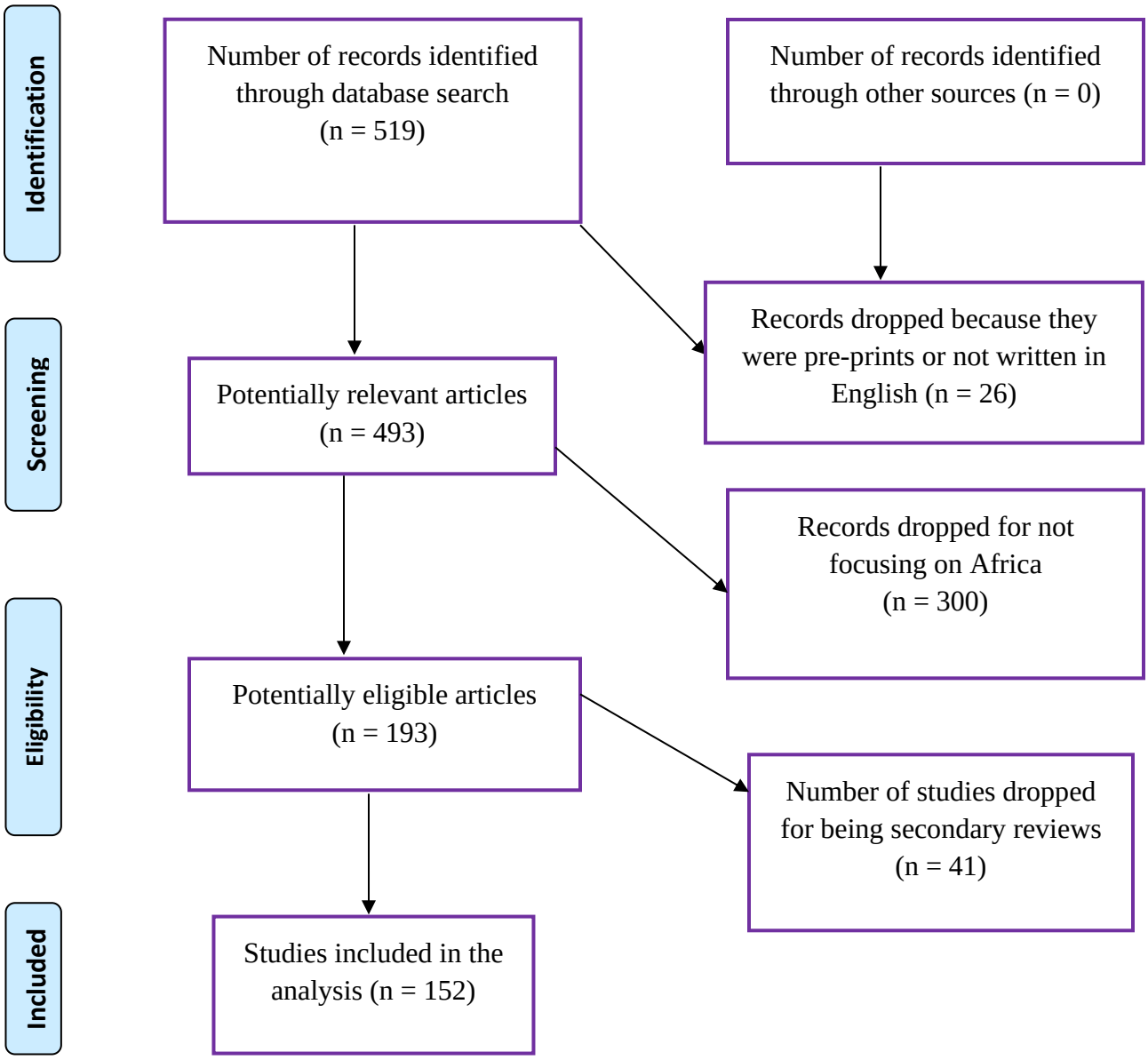

Figure 1: PRISMA Flow Chart

Table 1 presents an overview of the main information of the research documents reviewed in this study. The 152 research articles were written by 916 authors and published in 81 academic journals. Each paper had an average of 5 authors and about 17 citations. The annual growth rate in producing research articles focusing on male involvement in family planning in Africa is 7.2%.

Variable Measure and Data Analysis Techniques

We carried out a descriptive analysis to show the basic characteristics of the selected research articles. Some of the characteristics are i., the time span, measured as the period range within which the selected articles were published. ii. International co-authorship, measured as the proportion of research articles with at least one of the authors affiliated with an institution outside the country of study; iii. Document average age, measured as the average number of years since the articles were published, and annual growth rate – the percentage increase in the number of articles published within two consecutive years.

Based on the reviewed studies, the measurements and conceptualisation of male involvement in FP are as follows: i. Perceived support or positive attitude of males towards FP: This question asked whether or not men would support or would not go against the use of FP or contraceptives. e.g. Would your husband support your use of FP or contraceptives?; ii. Expressed approval or consent of males for FP: This question asked whether or not men expressed support for using FP or contraceptives. e.g. Did your husband/partner support your use of FP/contraceptives?; iii. Male involvement in discussion about FP/contraceptive: This measure referred to whether or not the respondents had engaged in any discussion about their use or intention to use FP; iv. Male involvement in FP/contraceptive method choice: This measured whether men had any input in choosing an FP method being used or to be adopted; v. Male involvement through monetary provision for FP service or material costs: This measured whether the male partner ever provided money to pay for the cost of FP materials or services; and vi. Self-use: This measured whether men used any method of FP/contraception. The others are male involvement in the choice of place to access FP/contraceptive services and whether men attended or accompanied their partner to an FP clinic/service centre.

To depict relations among the keywords used for database search, a co-occurrence network analysis was carried out with VOSviewer (see appendix B). We carried out a bibliometric analysis of the selected articles using Bibliometrix, which is an R package for mapping analysis of scientific studies [24, 25].

RESULTS

Table 1 Basic Information of the Included Studies

Variables	*Values*
Time span	1996 – 2023
Authors	916
Authors of single-authored docs	4
Co-authors per Doc	5.29
Sources (*academic journals*)	81
Documents	152
Document Average age	6.12
Average Citations per doc	16.65
International Co-authorship	53.37%
Annual growth rate	7.18%

Results as presented in Figure 2 show that authors affiliated with the University of California, University of Gondar and Makerere University had the top three volumes – 26, 25 and 22, respectively - of research articles focused on male involvement in family planning in Africa.

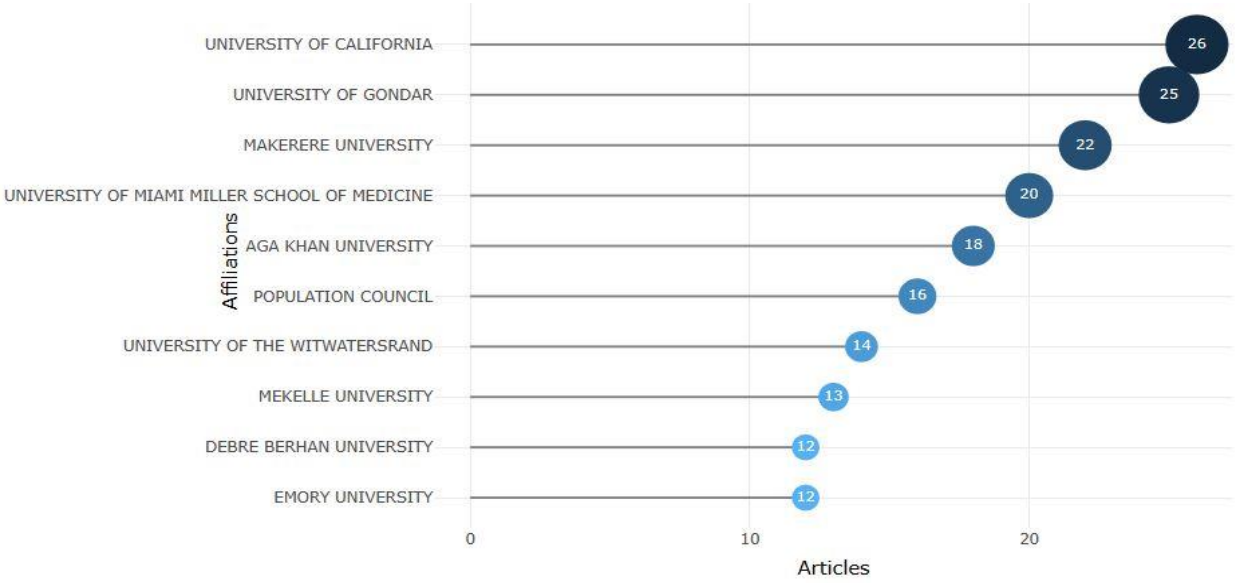

Figure 2 Most relevant affiliations

Figure 3 shows, using graded colours, the pattern of country collaboration among authors to research male involvement in family planning in Africa. As shown on the World Map, the country that collaborated most with African countries was the United States. The United Kingdom, Canada and Australia followed this. The top three African countries collaborated with are Nigeria, South Africa and Ethiopia.

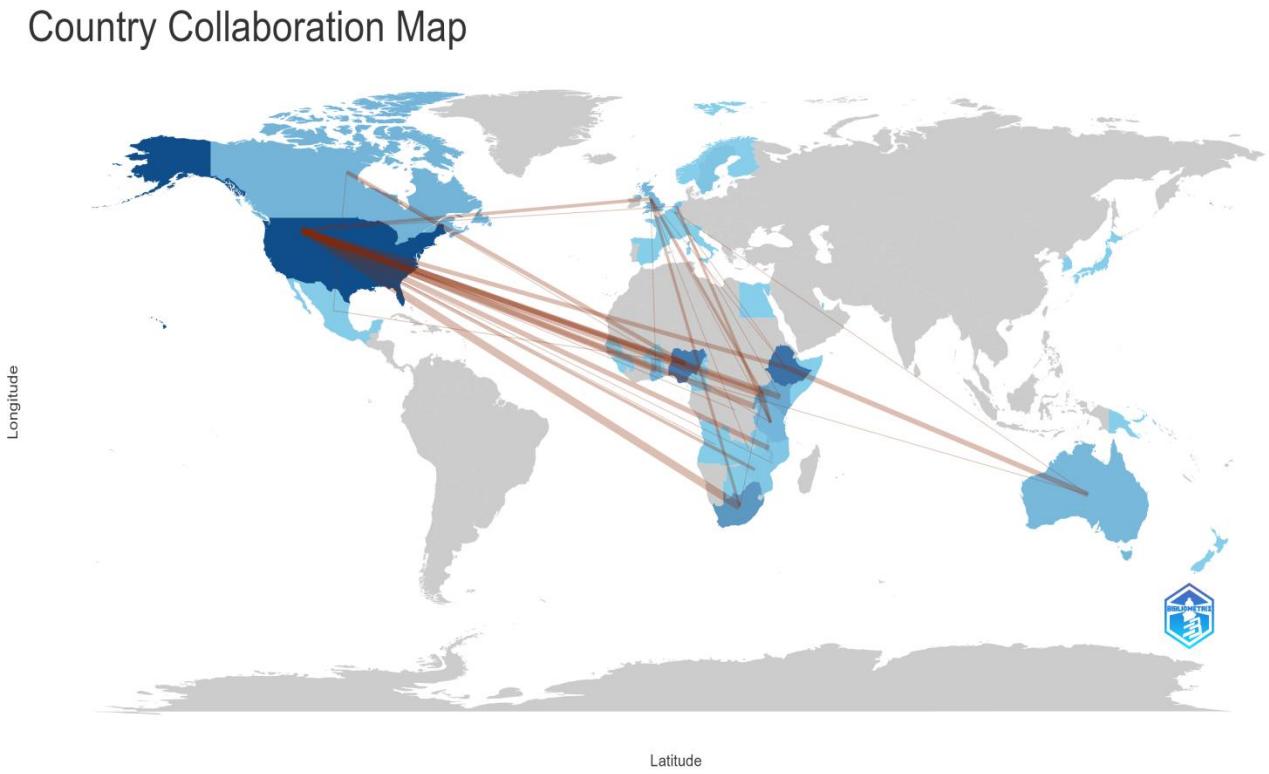

Figure 3 Collaboration Word Map

The commonest way (54%) through which authors measured male involvement in family planning was by asking if men approved the use of family planning on contraception (see Table 2). Another way it was measured in 46.7% of the studies was by asking women if they thought or perceived that their partners would support their use of family planning. About 42% of the authors measured male involvement by asking if men were engaged or participated in family planning discussions with their partners. About 28% measured male involvement through men's use of contraceptive methods, while the least adopted measure was whether men made input or participated in deciding where to access family planning services.

Table 2 Measurement and Conceptualisation of Male Involvement

How studies have measured and conceptualised men's involvement in FP	*The proportion of studies that adopted specific measurements (%)*
Expressed approval or consent of males for FP	54.0
Perceived support or positive attitude of males towards FP	46.7
Male involvement in the discussion about FP/contraceptive	41.5
Male involvement in FP/contraceptive method choice	30.9
Self-use by male	28.3
The male attended or accompanied his partner to the family planning clinic/service centre	17.8
Male involvement in the choice of place to access FP/contraceptive services	13.6
Male involvement through monetary provision for FP service or material costs	12.4

As presented in Table 3, results show that 61.2% of studies on male involvement in FP collected data from women. About one-fifth (21.1%) of the studies obtained information from men, while 19.1% collected data from both men and women. The majority of the studies (82.2%) used primary data (data collected by the authors), while the rest used secondary data (e.g. Demographic and Health Survey Data).

Table 3 Methods used for reporting male involvement

Methods of reporting	*The proportion of studies that adopted specific methods (%)*
Reporting by male alone	21.1
Reporting by female alone	61.2
Reporting by both male and female	19.1
Studies with intervention	8.6
Studies that used primary data	82.2

As presented in Table 4, results show the disparities in reporting male involvement in FP based on the reporting methods. The results show that very few (7.5%) of studies in which responses were obtained from women measured male involvement as self-use. The most commonly adopted measure of male involvement in studies that used men alone as respondents was self-use (75%). The most frequently adopted measure of male involvement in studies using women alone as respondents was asking them if they thought their partner supported FP (89.2%). The second most common method was asking women whether or not their partners (men) approved or consented to FP (52.7%). Expressed approval or consent for FP was the most commonly used measure of male involvement (69%) in studies that used both male and female as respondents. Less than half of the studies measured male involvement in FP by asking whether men/male participated or were engaged in discussion/communication about family planning. No more than 20% of the studies, regardless of who was used as respondents, measured male involvement through men's attendance at family planning clinics.

Table 4 Disparities in reporting, based on reporting sources

	Measurement of Male Involvement in FP					
Sources	Self-use (%)	FP Method choice (%)	Expressed approval or consent for FP (%)	Perceived support for FP	Discussion on family planning (%)	Accompany or attend a family planning clinic (%)
Studies that obtained responses from men alone	75.0	46.9	46.9	0.0	25.0	18.8
Studies that obtained responses from women alone	7.53	19.4	52.7	89.2	45.2	16.1
Studies that obtained responses from both men and women	48.3	55.2	69.0	14.2	44.8	20.7

DISCUSSION

This study was based on a bibliometric analysis of 152 peer-reviewed articles published between 1996 and 2023. The study identified and analysed the various measures and concepts used to capture male involvement in FP in Africa. This analysis is crucial for understanding the validity of male involvement measures in FP and identifying the need for modification where required [29]. The study shows that the top three measures of male involvement in FP were through expressed approval, inferred approval and communication/discussion around FP. These measures are similar to some adopted by authors outside Africa [21, 22]. Within Africa, some metrics have also been used to measure male involvement in other sexual and reproductive health affairs, such as antenatal care, post-natal care and child immunisation [30, 31]. The predominant use of

approval and communication as measures of male involvement in FP should not be surprising. This is because approval may suggest that men support FP and could motivate women to practice FP in a non-clandestine manner. Approval may create a healthy avenue for sexual partners to discuss FP and improve their knowledge of the benefits of FP to their peculiar situation [32]. When men approve of FP, it may legitimise women's use of available resources, e.g. money to pay for services and time to visit FP service centre.

However, while men's approval is essential [34], it may not translate to involvement in FP. According to the Cambridge Dictionary, 'involvement' connotes "the fact or condition of being involved with or participating in something". It may thus be argued that measuring male involvement in FP through approval is not a valid measure of male involvement in FP. This is because in many African settings where men are the breadwinners of a home/household/family [35, 36] and where FP costs are serviced from out-of-pocket payments [37], mere approval may not translate to women's capacity to afford a suitable FP method. It is convenient to equate approval with responsibility erroneously. This may explain why the current study shows that only 12.4% of African studies measured male involvement in FP through monetary provision for FP services and material costs. Most likely, approval will encourage women to use an FP method that might not be the most suitable. Meanwhile, FP is most effective when women use the most appropriate method recommended after a careful evaluation by competent providers [23, 38].

Our bibliometric analysis showed that about one-third of the analysed studies measured male involvement in FP through men's input in choosing the FP method. Fewer than this proportion measured male involvement through self-use, attendance at the FP clinic, deciding on an FP service centre and paying for FP services. Again, these measures of male involvement have been adopted in previous studies both within Africa [17, 18] and outside Africa [20]. One common feature of these measures is that they require action from men, unlike mere 'approval' that does not necessarily require men to act. Existing evidence shows that a known factor negatively affecting FP use is the fear or experience of adverse effects, which vary by FP methods [15, 40]. Therefore, where men are involved in the choice of FP method, this involvement may lead to the choice of a method with minimal adverse effects, which may improve their satisfaction with FP services. Men's self-use of FP is arguably a valid measure of male involvement because it requires them to act. However, men's self-use may not be necessary if their female partners consistently and correctly use a modern method [18, 40].

It may be argued that attending or accompanying female partners to family planning clinics or service centres is one of the most encompassing measures of male involvement in FP. It captures men's actions and signals their positive attitude to FP [41, 42]. Attending an FP clinic with female partners likely indicates that both sexual partners discussed FP and agreed to explore its benefits. Moreover, through joint attendance, sexual partners would have the opportunity to get answers and clarity, which may positively shape their FP use experience. Moreover, joint attendance connotes a fair distribution of FP responsibilities between males and females and may

encourage women to use FP [34]. However, only 17.8% of the analysed studies adopted this measure of male involvement in FP.

Furthermore, measuring male involvement through their input in deciding the choice of FP service centre is very important, but only 13.6% of the analysed studies adopted this measure. In healthcare service delivery, where confidentiality is a significant determinant of health-seeking behaviour [43], men may be favourably disposed to accessing FP service in a service centre of their choice, perhaps where confidentiality is guaranteed. This is more so because the gender norms in Africa tend to arrogate family planning roles to women [44, 45]. Under this norm, African men accompanying their wives to the FP clinic may be perceived as 'less busy' or someone under control'. While some African men may not be deterred by such socially undesirable labelling, the majority of them could be. Therefore, it is recommended that the measurement of male involvement in FP should incorporate men's inputs in deciding the place of service delivery.

Beyond the measurement and conceptualisation of male involvement, our bibliometric analysis shows that more than three-fifths (61.2%) of the analysed studies measured male involvement through responses obtained from women. This is the method widely practised in studies [17, 20], and the reason for this may not be far-fetched. One, it is a common assumption that women are more concerned than men about sexual and reproductive health matters and are more likely to accurately report their FP situation [46]. Two, given men's socially acceptable polygamous status in Africa [47], their involvement in FP may differ with wives and may thus distort their reporting. Also, women are biologically configured to disproportionately bear the burden of failed FP [48]. These may explain why global goals, such as the Sustainable Development Goals (SDGs) 2030 and the Africa Agenda 2063, make a direct reference to females without commensurate references to males. While these points are valid, they should not suffice to mean that men's side of the story need not be told during empirical investigations.

The non-incorporation of the male's perspective and a preponderant use of non-valid measures of male involvement in FP may be a reason why achieving target 3.7 of SDGs - universal access to family planning - does appear to be in sight in Africa [49]. Not only have programmes neglected men [50], research efforts appear not to have come to terms with the need to incorporate men's perspectives into understanding how male involvement could be maximised. For instance, although the majority (82.2%) of the analysed studies used primary data collection, permitting researchers to determine who their respondents would be, only 19.1% obtained responses from males and females. Meanwhile, getting responses from men, or at least from both men and women, would have improved the quality of the reporting in some ways. Interviewing men about their involvement may create awareness that they are expected to be involved. Two, it will provide a clearer understanding of what involvement means to men, which may help guide appropriate intervention to inform men about what their involvement should be. Also, since there are male FP methods [51], including men as respondents in studies measuring male involvement could help unveil important information on promoting male method adoption.

Strength and Limitations

This study documents the measures used to capture and conceptualise male involvement in FP in Africa. The study pointed out some metrics that could not validly measure male involvement but which have been widely used in studies. Some measures that could validate male involvement but were largely neglected in studies were also identified. We suggested how these valid measures could be used with improvement, particularly through better engagement of men in empirical investigations that focus on male involvement. An important strength of this study lies in its detailed description of the methods used to implement the study, thus promoting reproducibility, an essential tenet in scientific procedures. The study advances methodological adoption in social research with the application of computational tools (Bibliometrix in R). However, the study has some limitations, which readers need to be informed about. We did not include unpublished research articles and those published in journals not indexed by the searched databases (Scopus, Web of Science and PubMed). This might have led to the exclusion of some research articles written on male involvement in FP in Africa. We, however, justified such exclusion on the strength of preferring quality to quantity.

CONCLUSION

Most studies have mainly measured male involvement in FP through expressed or perceived approval for FP, but this does not sufficiently capture male involvement in FP. Even though the studies claimed to have measured male involvement, very few obtained responses from men. Other more encompassing measures of male involvement, such as finding out if men are involved in deciding the FP method, choice of FP service centre, and whether they attend or ever attended a FP clinic with their partners, are recommended. These proposed measures require actions from men, and their adoption in future studies will help improve understanding of how male involvement could help achieve FP goals.

Declarations

List of Abbreviations

FP Family Planning

SDG Sustainable Development Goals

Funding

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Competing interests

The authors declare no competing interest

Data availability

The extracted data analysed in this study are available upon request. The corresponding author should be contacted for this

Consent to publish

Not applicable

Authors' contributions

TOO and RP conceptualized the study and reviewed the literature. TOO, RP, OOB, AB and AIA extracted data on the variables used in the published studies and manually reviewed the extracted data to prevent omission and duplication. TOO and AIA developed the methodology. TOO performed the data analysis and AB and OOB interpreted the results. TOO discussed the findings and all the authors proofread the article for grammatical coherence. All the authors approved the submitted version of the manuscript.

Ethics approval and consent to participate

The study collected no primary data and thus had to interaction with respondents. All the reviewed studies obtained ethical clearance and were implemented in accordance with the Declaration of Helsinki.

Consent to publish

Not applicable

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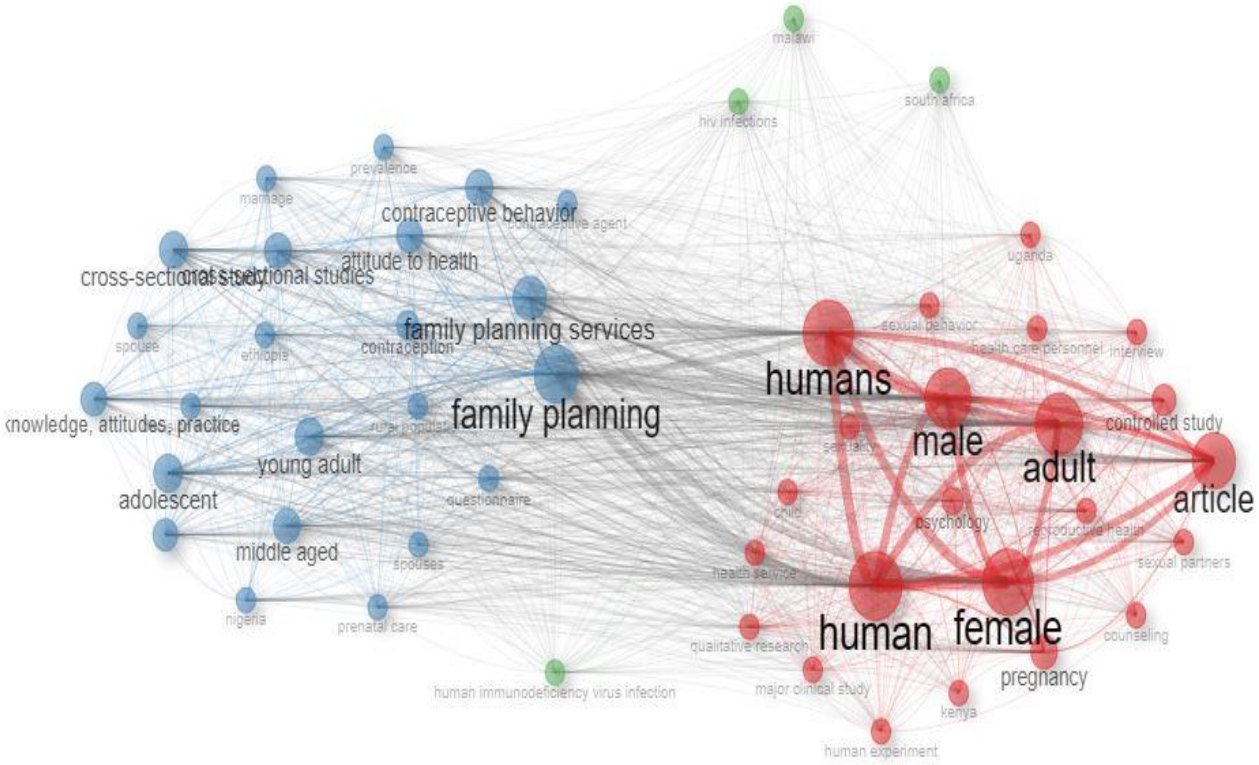
Appendix A (string query)

(TITLE-ABS-KEY ("male involvement" OR "partner involvement" OR "men involvement" OR "husband involvement" OR "male participation" OR "partner participation" OR "men participation" OR "husband participation")) AND (TITLE-ABS-KEY ("contraceptive" OR "family planning" OR "contraception")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (AFFILCOUNTRY , "Ethiopia") OR LIMIT-TO (AFFILCOUNTRY , "Nigeria") OR LIMIT-TO (AFFILCOUNTRY , "South Africa") OR LIMIT-TO (AFFILCOUNTRY , "Uganda") OR LIMIT-TO (AFFILCOUNTRY , "Kenya") OR LIMIT-TO (AFFILCOUNTRY , "Ghana") OR LIMIT-TO (AFFILCOUNTRY , "Tanzania") OR LIMIT-TO (AFFILCOUNTRY , "Malawi") OR LIMIT-TO (AFFILCOUNTRY , "Rwanda") OR LIMIT-TO (AFFILCOUNTRY , "Mozambique") OR LIMIT-TO (AFFILCOUNTRY , "Zimbabwe") OR LIMIT-TO (AFFILCOUNTRY , "Senegal") OR LIMIT-TO (AFFILCOUNTRY , "Zambia") OR LIMIT-TO (AFFILCOUNTRY , "Cameroon") OR LIMIT-TO (AFFILCOUNTRY , "Democratic Republic Congo") OR LIMIT-TO (AFFILCOUNTRY , "Burkina Faso") OR LIMIT-TO (AFFILCOUNTRY , "Egypt") OR LIMIT-TO (AFFILCOUNTRY , "Sierra Leone") OR LIMIT-TO (AFFILCOUNTRY , "Somalia") OR LIMIT-TO (AFFILCOUNTRY , "Togo") OR LIMIT-TO (AFFILCOUNTRY , "Angola") OR LIMIT-TO (AFFILCOUNTRY , "Botswana") OR LIMIT-TO (AFFILCOUNTRY , "Congo"))

Appendix B (co-concurrence network)


malawi
south africa
hiv infections
prevalence
marriage
contraceptive behavior
contraceptive agent
attitude to health
cross-sectional study
cross-sectional studies
uganda
family planning services
spouse
ethiopia
contraception
sexual behavior
health care personnel
interview
humans
family planning
knowledge, attitudes, practice
rural population
male
adult
controlled study
article
young adult
adolescent
questionnaire
child
psychology
reproductive health
middle aged
spouses
sexual partners
health service
human
female
nigeria
prenatal care
qualitative research
counseling
pregnancy
major clinical study
kenya
human immunodeficiency virus infection
human experiment