

# Consistent condom and lubricant use and associated factors amongst men who have sex with men in sub-Saharan Africa: A systematic review

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A total of 687 articles were reviewed, of which 40 studies were eligible. Out of the 40 studies included in this review, 29 studies reported consistent condom use, 9 studies reported consistent condom use with lubricants, and 6 studies reported consistent condom use with water-based condom-compatible lubricants.

Consistent condom use varied according to the participants' sexual behavior. The prevalence of consistent condom use ranges between 48% and 75%. The results of this review indicate that MSM who engaged in insertive anal sex with casual partners were more likely to use condoms with lubricants consistently with estimates ranging between 29% and 35% compared to receptive anal sex with regular partners (12.4%-32%).

The prevalence of consistent condom use with water-based CCLs among regular sex partners ranges from 1.3% to 31% and 11% to 21.7% in casual sex partners.

## BACKGROUND

- HIV is still an issue of public concern in sub-Saharan Africa (SSA), where many young adults engage in unprotected and transactional sexual relationships [1].
- Men who have sex with men (MSM) are the most disproportionately affected by the HIV burden compared to adult men in the general population [2].
- Since unprotected anal sexual intercourse is a highly-risk behavior for HIV transmission, the use of condoms with condom-compatible lubricants (CCLs) correctly and consistently is very crucial in reducing further HIV acquisition amongst the MSM population in SSA [2,3].
- However, consolidated data on consistent condom use with lubricants among MSM in SSA is limited.
- In this regard, this study aimed to consolidate existing evidence of consistent condom usage with lubricants, as well as context-specific factors associated with condom and lubricant use among the MSM population in SSA.

## METHODS

- The systematic review was registered with the International Prospective Register of Systematic Reviews (registration number: CRD42023437904)
- The review was compiled between July 2023 and July 2024 following the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) principles and guidelines.
- Database searches were done in PubMed, Google Scholar, Science Direct, Scopus, and governmental and non-governmental organizations using the keywords "Men who have sex with men", "condom use", "consistent condom use", "lubricant use", "HIV prevention", and "SSA"
- Relevant articles that were available in full-text, published in English, conducted between 2005 and 2024, focused on MSM aged ≥15 years, and reported condom and lubricant use were considered for this review.
- Covidence and RefWorks were used for data extraction.
- The results were summarized and presented using tables and graphs.

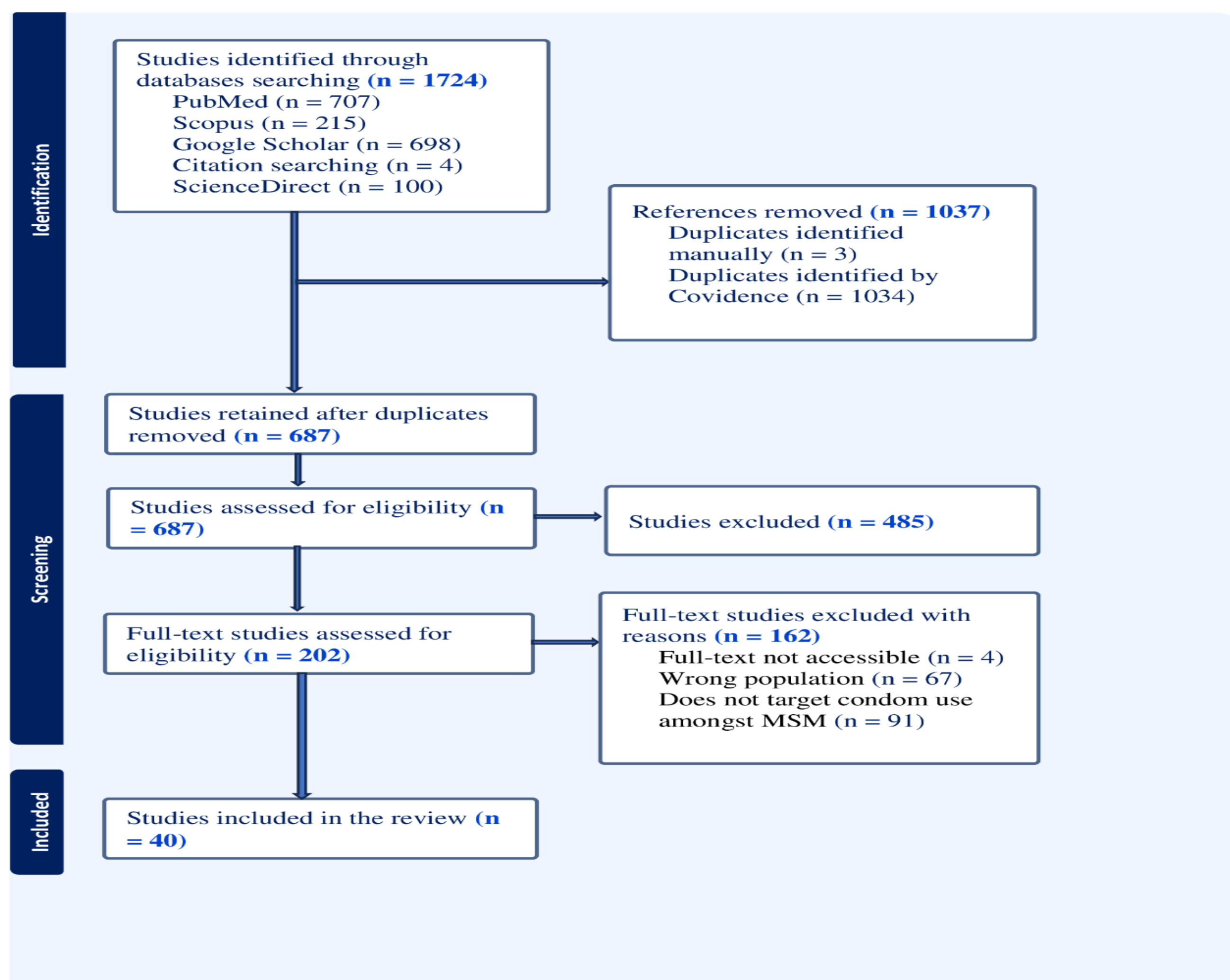


Fig 1: PRISMA diagram for the review selection process.

## RESULTS

Table 1. Distribution of studies by country

Studies Distribution by Country					
No.	Country	Number of Studies	No.	Country	Number of Studies
1	Benin	1	8	Rwanda	2
2	Cameroon	2	9	South Africa	5
3	Cote d'Ivoire	2	10	Swaziland	1
4	Kenya	7	11	Tanzania	5
5	Malawi	2	12	Togo	3
6	Mali	2	13	Uganda	1
7	Nigeria	6	14	Zambia	1

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## RESULTS CONTINUED

Table 2: Studies reporting on consistent condom use with lubricants

First Author, Year	Consistent condom use with or without lubricants
1. Mmbaga et al. (2020)	More than two-thirds (78%) used condoms with water-based lubricants during the last anal sex.
2. Hessou et al. (2020)	Amongst those who reported using condoms consistently (43%), 35% used them with lubricants which then increased to 47% at 30 months during the follow-up.
3. Crowell et al. (2019)	Out of those (1,530) who reported receptive anal sex at enrollment, 469 (30.7%) reported using condoms always. Participants who used condoms consistently during insertive anal sex was 36.3% (578/1592).  About one-third (29.2%) of those who reported always using condoms during receptive anal sex did so consistently with lubricants, with 21.7% of them using water-based lubricants.  Less than a third (25.4%) of those who had insertive anal used condoms consistently with water-based CCLs but later increased to 56.2% after nine months of follow-up
4. Wirtz et al. (2015)	Almost a third (29%; 28/97) of the participants reported consistent condom usage with lubricants. This rose to 74% (71/96; p<0.001) after the 3rd follow-up.
5. Aho et al. (2014)	Consistent condom use was reported by one-third (34.8%) of the MSM.
6. Ayoola et al. (2013)	Only a small percentage of the participants (9.9%) consistently used condoms with water-based lubricants. Consistent condom use was practiced by 40.5% of respondents during the last 10 sexual encounters.  Out of the percentage of MSM who reported consistent condom use (40.5%), only 67.9% used lubricants consistently with condoms.
7. Baral et al. (2013)	Condom use with main male partners in the past 12 months (48.1), casual male partners (46.1%), regular female partners (38.2, and casual female partners (44.4%).  Out of all those who reported consistent condom use, only 12.6% used condoms with lubricants consistently with male partners, 24.7% with female partners, and only 1.3% used condoms with water-based CCLs consistently with all sexual partners.
8. Strömdahl et al. (2012)	More than half (53%, n = 155/290) of participants reported always using condoms with male partners and 43% (n = 95/219) with female partners in the past six months.  Only 11% (n = 16/144) reported always using condoms with water-based condom-compatible lubricant with both male and female partners.
9. Beyrer et al. (2010)	Consistent condom use was reported by 16.7% of the participants in bisexual relationships, 22% by casual partners, and 17.4% by regular partners.  More than half (63.7%) of those who reported using condoms, used them with lubricants. And out of those who used condoms with lubricants, 38% used water-based lubricants.

Table 3: Factors associated with consistent condom and lubricant use

Factors associated with consistent use of condoms with lubricants	
<b>Positively associated factors</b>	<ul style="list-style-type: none"> <li>• Older age.</li> <li>• HIV positive status</li> <li>• Having had an HIV test.</li> <li>• A high level of self-worth.</li> <li>• Higher levels of education.</li> <li>• Having a casual sex partner.</li> <li>• Having a main female partner</li> <li>• Extensive risk-reduction counseling.</li> <li>• Widespread availability of condoms to MSM</li> <li>• Being a member of HIV/STD prevention activities.</li> <li>• Having appropriate knowledge of condoms and lubricant use.</li> </ul>
<b>Negatively associated factors</b>	<ul style="list-style-type: none"> <li>• Interference with sexual pleasure and a negative influence on sexual performance Practical difficulties with using condoms (such as breakage).</li> <li>• Lack of knowledge and misinformation about condom use.</li> <li>• Low financial status/ socio-economic vulnerability</li> <li>• Sex under the influence of alcohol and drugs.</li> <li>• Poor condom negotiation skills.</li> <li>• Unplanned sexual intercourse.</li> <li>• Partner's dislike for condoms.</li> <li>• Attractiveness of the partner.</li> <li>• Perceived condom quality.</li> <li>• Financial incentives.</li> <li>• Access challenges.</li> </ul>

## CONCLUSION

- The review indicates that consistent condom use with/without lubricants is low amongst the MSM population in SSA and therefore poses a significant threat to HIV control and prevention in the SSA.
- The variation seen in the consistency of condom use with lubricants amongst the MSM population with different sexual behaviors, suggests that context-specific factors undoubtedly influence consistent usage.
- Both positively and negatively associated factors influenced consistent condom use with lubricants.
- Factors that hindered the consistent use of condoms with lubricants can be addressed through the provision of comprehensive information and education and the development of intervention strategies and models to improve correct and consistent usage.

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