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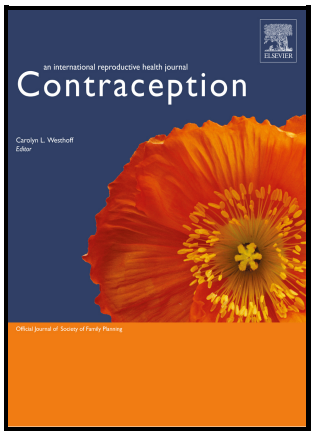

THE IMPACT OF MALE CONTRACEPTION ON GLOBAL SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS

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THE IMPACT OF MALE CONTRACEPTION ON GLOBAL SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS

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Abstract:

The right to health and other health-related human rights are legally binding commitments enshrined in international human rights instruments. While these positions are known and ratified by policy makers, little has been done to actualize men's sexual and reproductive health (SRH) as an integral part of attaining these important global goals. Not addressing men's SRH over and above supporting their female partners sustains the sexual and reproductive risks and burdens that women must bear. Advances in contraceptive technology with several male contraceptive candidates in advanced clinical trials bolsters expectations for a broader contraceptive method mix including greater choice of male contraceptives. This would potentially increase awareness and investments in the men's SRH and promote health systems strengthening and gender equity including shared responsibility for prevention of pregnancy, sexually transmitted infections, and HIV. This paper is a review and synthesis of published literature

including research publications, reports, global policies and commitments and technical documents available online and in organizational repositories such as the WHO IRIS on male contraception and men's SRH. We provide insights on the impact of male contraception including novel methods and the spillover effects on global SRH. We call on all stakeholders to invest in men's SRH since the attainment of the SDG target 3.7 on Universal access to SRH cannot be met without addressing this neglected topic.

1.0 Background:

In 1994, the World Health Organization (WHO) and representatives from 179 countries convened, as part of the International Conference on Population and Development (ICPD), to advance global standards for sexual and reproductive health and develop strategies for their universal attainment [1]. This was reaffirmed in 2015 under the Sustainable Development Goal (SDG) target 3.7 that called on governments and stakeholders to ensure universal access to Sexual and Reproductive Health (SRH) services for all by 2030 [2]. They defined sexual and reproductive health as "a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity in all matters relating to the reproductive system and to its functions and processes;" with sexual and reproductive health care being "the constellation of methods, techniques and services that contribute to reproductive health and wellbeing by solving reproductive health problems." [1]. Essential elements of SRH include sexual health, maternal and perinatal health, family planning /contraception, infertility, sexually transmitted infections (STIs), reproductive tract cancers, prevention of unsafe abortion, sexual and gender-based violence, and adolescent sexual and reproductive health among others [3,4].

1.1 Rationale for investing in Men's Sexual and Reproductive Health:

A critical aspect of the ICPD's Program of Action was its recognition that men have distinct SRH needs that should be addressed in parallel with those of women [1]. In many settings however, little attention is paid to men's SRH needs beyond their role in supporting their female partners' access and utilization of SRH services. A recent report by the Global Action on Men's Health revealed significant under representation of men's SRH issues in regional and global sexual and reproductive health policy [5]. The limited focus of SRH public policy, programs, financing, advocacy, research, service provision, measurement, information, and education on men has resulted in the area being regarded as a women's issue [6, 7]. Data to support the need to address men's SRH alongside that of women includes: a high proportion of infertility (40%) attributable to male factors [8], higher age-standardized incidence rates of sexually transmitted infections in men compared to women [9], high human papilloma virus (HPV) prevalence in men of 31% [10], increasing prostate cancer prevalence [11], and high prevalence of sexual dysfunction with >50% of men 40 – 70 years describing some degree of sexual dysfunction [12]. These findings amplify the need to address men's SRH issues which are inextricably linked to women's. Notwithstanding, the call to address men's SRH "is in no way intended to detract from the sexual and reproductive health and rights, nor to divert resources from much-needed SRH services and programs for women and adolescent girls" (13). Rather, addressing men's SRH issues at the level of scrutiny as has been done for women is aimed at alleviating the inequitable burden of diagnosis, intervention, and prevention placed on women while affording men access to SRH information and services for themselves.

1.2 Concerns around male contraception and SRH:

To date there are 3 male-directed contraceptive methods available for use: withdrawal, male or external condoms, and vasectomy--all with unique problems that impact their acceptability, accessibility, and effectiveness. The development of novel male contraceptive methods seeks to address some of these gaps by providing a wider range of male directed methods and increasing choice of contraception. The introduction of novel male contraceptives however raises several issues that warrant further reflection by developers, funders, policy makers, program managers, rights groups, implementation partners and other stakeholders at global regional and country level.

- Are additional male directed methods a 'good buy' for the global SRH landscape?
- With society's attention to raising awareness about and ensuring access primarily to the range of female-controlled contraceptive methods, resources for men have been comparatively limited. How will education and healthcare have to change to ensure the inclusion of men and new male contraceptive options?
- As men have historically not needed to interact with the healthcare system for contraceptive care because of the widespread availability of condoms, the healthcare system may be unprepared to deliver new male contraceptives and by extension men's reproductive health services in primary care settings. How will the healthcare system need to change to ensure availability, accessibility, and affordability?
- With the physical burden of carrying pregnancy falling on women, men do not directly benefit from using contraceptives that would otherwise only cause side effects or risk adverse events. As such, what, (if any), additional benefits would men need to perceive for them to 'risk' taking novel male contraceptives?
- As the development of female hormonal contraceptives contributed significantly to women's empowerment and agency, might the availability of new male contraceptives affect women's reproductive autonomy and social progress towards gender equity?
- Metrics on men's SRH are generally limited to those relevant to infertility and impotence. With the development of new male contraceptives, how might broader SRH metrics be influenced? Which relevant metrics should be collected?

We anticipate that introducing new male contraceptive will do more than just prevent pregnancy. In this paper, we present areas of broad additional value for SRH, including fostering integrated health services, strengthening health systems, enhancing health information and education, strengthening SRH metrics, and ensuring universal access to SRH for all within a gender transformative and human rights environment.

2.1 Male contraception as an entry point for integrated SRH services for men and boys:

For many individuals, the pursuit of family planning services is their first independent entry point into the healthcare system [14]. Contraception services for women are traditionally provided in tandem with other SRH services, such as screening and management of sexually transmitted infections and reproductive tract cancers. With time more services have been added, including blood pressure measurement, HIV testing, smoking cessation, mental health screening, among others. Men also need these services however, their poor health seeking behaviour hinders their engagement with the health system [7]). Failure to access all-inclusive and integrated quality services has been cited as one of the most important reasons for men's poor involvement in reproductive health services [15]. Introduction of novel male contraceptive methods affords a reason for men to visit a health facility and potentially receive

comprehensive SRH services [16]. Availing integrated health services where other SRH and medical comorbidities for women can be diagnosed and managed in tandem with contraception is more efficient and enhances the client experience, which may consequently incentivise men to seek health services. Moreover, interventions that need partner testing and treatment such as HIV testing and STI treatment often expect affected women to either take the prescription to their partners or inform the partner to come for testing as part of curbing the transmission cycle. Rather than accruing the positive spillover effects of partner testing and treatment, this often triggers gender-based violence [17]. Enhanced male engagement and partner support may be attained by strengthening communication and education around SRH issues as part of the integrated service delivery.

2.2 Male contraception as trigger for health systems strengthening.

2.2.1 Policy and financing:

The WHO Human Reproduction Program has elucidated 'Critical considerations and actions for achieving universal SRH access in the context of Universal Health Coverage (UHC). Among them is the inclusion of SRH services in national health policies and plans [18]. While women's SRH is well articulated in global and regional policy and has dedicated strategies to spur investments, a recent review of global and regional SRH related policies revealed very limited inclusion of men, with only 16% specifically addressing men's inherent need for SRH services [5]. This paucity of men's SRH in global policy has far reaching implications on regional and national policy, guidance, research, and programming, including resource allocation by governments and partners.

In many countries, female contraceptives and male condoms are part of the essential health service package and included in the UHC compendium and benefit package. The concept of financial risk protection within UHC is intended to improve access while mitigating out-of-pocket expenditures for essential health services [18]. Notwithstanding, contraceptive programs in many countries rely heavily on stagnating donor funds [19, 20]. Further, a UNAIDS report noted decreasing investments in condom procurement and distribution between 2010 and 2022 [21] adversely impacting access and utilisation of one of the few male methods available. The introduction of novel male contraceptives warrants a review of global and national SRH policies and strategies to include men's SRH in the essential health benefit package to ensure that all contraceptive methods (male and female) are covered equitably and assure financial risk protection without which uptake of novel male contraceptive in development will not be possible.

2.2.2 Health workforce:

Limited access and availability of SRH services, perceptions that SRH facilities are not male friendly spaces, and lack of focus on men's SRH contribute to poor SRH service uptake among men in low- and middle-income countries (LMICs) [22, 23]. Sadly, the health systems' capacity to deliver the essential package of SRH services in many countries is weak. This gap is grossly evident with vasectomy where weak infrastructure, insufficient numbers, and weak competencies of health workers hamper the provision of services [23]. Furthermore, there is inadequate medical training to deal with SRH issues, especially for men [24]. Specialists in male SRH are few as compared to the need [25], and often inaccessible given that they are commonly based in tertiary health care facilities. While almost all female contraceptives and male condoms may be provided by nurse midwives and other advanced practice clinicians,

the WHO guidelines on task shifting recommend that vasectomy and tubal ligation be offered by physicians and physician associates [26]. However, few doctors seem to have vasectomy competencies [27], and training opportunities and resources are becoming scarcer [28]. This has gross implications especially for vaso-occlusive novel male contraceptives that will heavily rely on the expertise of vasectomy providers. Moreover, ensuring universal access to male contraception requires that these services are available in primary care facilities, which are not traditionally staffed by physicians. Considering the very limited workforce for vasectomies and the insufficient competencies in male SRH that will be encountered when novel male contraceptives reach the market, it will be imperative to focus on infrastructure for training in and offering vasectomy which requires changes in policy, regulations, scope of practice, and training curricula.

2.2.3 Infrastructure:

The entry of novel male contraceptives into the contraceptive method mix demands a review of the health systems capacity to support introduction and scale up. The current health facility infrastructure in many places does not cater for men's SRH and would need to be reworked to ensure male-friendly service delivery spaces or dedicated service areas where men can obtain SRH services, with privacy, confidentiality and dignity, appropriate equipment, and supplies, the lack of which has been found discourage men's participation in SRH services [7].

2.2.4 Service delivery:

The Essential Package of Healthcare Services (EPHS) comprises health services that individual governments designate to be provided free of charge or at minimum cost to everyone accessing them through public facilities at the point of receiving the service" [29]. Nonetheless, some of these services may for a variety of reasons be unavailable in public health facilities forcing those needing them to go to private health facilities and thus incur out of pocket expenditures. The UHC has provided for a "Health Benefit Package' (HBP) that denotes a selection of services linked to a financing mechanism and therefore more likely to be available without financial risk to the user [29]. Generally, family planning methods including male methods are in the EPHS, however services like vasectomy are consistently missing from the HBPs [30]. Including novel male contraception in both the EPHS and HBP is critical to guarantee availability and access in contexts where vasectomy and other male directed methods might be cost prohibitive. New male contraceptive methods need to be added to the list of essential medicines and devices- to do otherwise essentially negates investments in male contraceptive development.

2.3 Male contraception as an opportunity for strengthening SRH education and stigma reduction:

Education around SRH, including male contraception is critical for raising awareness, dispelling myths and misconceptions, promoting contraceptive uptake, and can facilitate early recognition, and management of various SRH conditions. Studies have linked men's underutilization of SRH and misinformation about SRH interventions to lack of reliable information and knowledge gaps around SRH services [16, 22, 32]. Addressing cultural perceptions that SRH is a women's issue, negative norms and stigma surrounding contraception and men's involvement can lead to better support for female partners and improve men's SRH and health-seeking behaviours [32, 33]. Male contraception may serve as an entry point for providing information and education around other Male SRH issues in line with the integrated approach to health care, leveraging appropriate approaches for integrated SRH/ FP services in

women [34]. As new male contraceptive methods emerge, key messages and communication strategies around method choice and decision-making among individuals and couples will need to be reworked. Digital strategies may be leveraged to reach adolescent populations and enhance their SRH literacy [35].

2.4 Male contraception as an opportunity to address gender-based inequities in SRH and contraceptive services:

It is imperative that men are engaged not just as supporters but beneficiaries of SRH services and products if gender equity in SRH is to be fully realized [36]. However, global SRH efforts have focused on women, with male engagement often misconstrued as empowering, enabling, or in nominal support of their female partners to access and utilize family planning services, inclusive of contraception. Consequently, women continue to bear the burden not only of pregnancy and childbirth, but also pregnancy prevention and the management of an unwanted pregnancy. The burden of contraception for women is underscored by the disproportionate risks and side effect profiles of female-controlled contraceptives, as compared to available male contraceptives. The focus on female contraception has had wide repercussions on global commitments, funding, contraceptive research, training, and even national health systems. The absence of new male contraceptive alternatives has been termed 'a matter of social justice' [6] in the face of numerous user perspective research consistently showing men's willingness to use novel male contraceptives and women's willingness to trust their partners to use male directed contraception [37].

The efficiencies subsumed in effective male contraception cannot be underrated in that in the period that a woman carries only one pregnancy to term, a man can impregnate several women. The introduction of new male contraceptives affords an opportunity for men to share the responsibility for pregnancy prevention, access SRH information and services, and support their partners better. It further fosters choice for men – a major determinant for uptake, and adherence [38]. This demands clear innovative, more comprehensive, integrated, and male friendly service delivery approaches that are complementary to existing women's SRH services.

Additionally, availability of men's SRH services has the potential to impact access and utilization of SRH services by special groups including adolescent boys, men who have sex with men, and gender diverse persons by destigmatizing SRH and male contraception, facilitating information and education, and creation of safe places for diverse populations to obtain SRH services. It is also relevant for different settings including incarceration, emergencies, and complex humanitarian situations.

2.5 Male contraception as a catalyst for updating SRH metrics:

Data on male contraception and men's SRH is scanty and most global policies and frameworks have minimal or no specific measurements targeting men [5]. This inadvertently limits the understanding of the magnitude and effects of men's SRH issues and deters the designing and implementing of evidence-based solutions. The Demographic and Health surveys is a program that supports countries to collect, analyse and disseminate accurate data on population and health including on family planning [40]. It includes the 'Man's questionnaire' which collects some data on contraceptive use, STIs and HIV, but which is nonetheless very lean on other aspects of men's SRH. While these areas have been surveyed individually and valuable data obtained on men, there is need for inclusion of dedicated questions on men's SRH in global instruments and survey tools, and for incorporation of specific indicators and targets into global policies and frameworks to highlight the need for investments and to monitor impact.

An understanding of factors that influence the uptake and use of male contraception such as educational initiatives, access to male contraception services and affordability may be obtained through evaluation of policies and programs that promote male contraception use and can be applied across the wider SRH [41]. Sales and prescription data for male contraception products is another good source of data on consumer behaviour and market trends [42].

Recognizing advancements in male contraceptive development, male reproductive health indicators should be included in the Health Management Information Systems (HMIS) [43, 39]. Incomplete standardization of contraception indicators, inclusive of male contraception, is a major gap [44] and consensus is needed on specific data points to be collected including prevalence of use, method choice, discontinuation rates, and reasons for non-use, to ensure consistency in reporting of these indicators across different regions and countries. Moreover, many countries need continuous advocacy and support to integrate male SRH indicators, inclusive of male contraception, into existing national health monitoring frameworks.

While efforts have been made to develop data collection tools, there is a need for ongoing refinement and validation to ensure that they accurately capture male SRH/contraception data. Additionally, innovative data collection methodologies, including the use of digital health technologies, could enhance the accuracy and timeliness of male contraception data. Training programs and resources focused on male reproductive health data collection and management can help to strengthen the capacity of healthcare workers and data managers to effectively collect, record, and report male contraception data [45,46, 47] and improve the quality and completeness of the data.

Enhanced coordination and collaboration among international organizations, governments, and non-governmental organizations is essential to drive progress in setting global indicators and inclusion in HMIS for male contraception and SRH. This includes sharing best practices, harmonizing data collection efforts, and aligning strategies for data reporting.

Conclusions and recommendations:

The potential impact of new male contraceptive products on global sexual and reproductive health goes beyond its impact on men alone, extending to women and girls via its promotion and facilitation of a more gender equitable society. Indeed, studies have demonstrated positive impact of male engagement in SRH on reproductive maternal and child health [48, 49]. With selected novel male contraceptive in advanced clinical trials, time is ripe for instituting systems to facilitate introduction, scale up and sustainability of male contraception programs which can serve as a nidus for integrated SRH care for men. This will entail ramping up advocacy for recognition of men's SRH as a public health concern and therefore an area for investments, strengthening health systems to deliver men's SRH services, increasing public information and awareness around men's SRH including the value addition for women's health and gender equity, and strengthening data and metrics for men's SRH. In this way we shall have contributed to the SDG 3.7 target 'By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information & education, & the integration of reproductive health into national strategies' [2].

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Limitations of the review:

The authors recognize that some publications may have been missed during the review and note the formidable task to cite all available publications on this subject as this would go above the allowable reference limit. Notwithstanding the authors believe that the references are representative of the situation on ground.

Author Contributions:

NK**:** Conceptualization, visualization, writing- original draft, project administration

BTN: Conceptualization, visualization, writing- review and editing.

NH: Conceptualization, Writing - review and editing of SRH metrics

JK: Conceptualization, writing -review and editing, project supervision.

All authors have read and agreed to the submitted version of the manuscript and are accountable for its intellectual content.

Conflicts of Interest:

Brian T. Nguyen (BTN) is a consultant for the ongoing WHO Global Study on men's and women's male contraceptive knowledge attitudes and behaviours using mixed methods. BTN reports a relationship with Sebela Pharmaceuticals Inc that includes consulting or advisory. BTN reports a relationship with Sumitomo Pharma America Inc that includes consulting or advisory.

NK, NH, and JK are current staff of the World Health Organization, Geneva, Switzerland and have no competing interests to declare.

Check List

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REFERENCES

1. UNFPA Program of Action. adopted at the International Conference on Population and Development Cairo, 5 – 13 September 1994. https://www.unfpa.org/sites/default/files/event-pdf/PoA_en.pdf; accessed 15 June 2024
2. United Nations: Transforming our World: The 2030 Agenda for Sustainable Development. A/RES/70/1. UN 2015. https://undocs.org/en/A/RES/70/1 accessed 01 June 2024
3. World Health Organization. (2004). Reproductive health strategy to accelerate progress towards the attainment of international development goals and targets. World Health Organization. https://iris.who.int/handle/10665/68754 accessed 01 June 2024
4. Starrs A. M, Ezeh A C, Barker G, Basu A, Bertrand J, Blum R, et al: Accelerate progress—sexual and reproductive health and rights for all: report of the Guttmacher–Lancet Commission, Lancet 2018; 391: 2642–92 June 30, 2018. http://dx.doi.org/10.1016/ S0140-6736(18)30293-9

5. Shand T, Evoy C. Out Of Focus: The representation of men in regional and global sexual and reproductive health policy. Global Action on Men's Health. London, 2024. https://gamh.org/wp-content/uploads/2024/08/Sexual_Health_Report_SEPT24FINAL.pdf. Accessed 13 September 2024

6. Lisa Campo-Engelstein: Contraceptive Justice: Why we need a male pill. AMA journal of ethics, February 2012; *Virtual Mentor*. 2012;14(2):146-151. doi: 10.1001/virtualmentor.2012.14.2.msoc1-1202.

7. Baroudi M, Stoor JP, Blåhed H, Edin K, Hurtig A: Men and sexual and reproductive healthcare in the Nordic countries: a scoping review. BMJ Open 2021;11: e052600. doi:10.1136/ bmjopen-2021-052600

8. World Health Organization. (2023). Infertility prevalence estimates: 1990–2021. Geneva, World Health Organization 2023.License CC BY NC-SA 3.01GO. https://iris.who.int/handle/10665/366700. License: CC BY-NC-SA 3.0 IGO. Accessed 20 May 2024

9. Fu L, Sun Y, Han M, Wang B, Xiao F, Zhou Y, et al. Incidence trends of five common sexually transmitted infections excluding HIV from 1990 to 2019 at the global, regional, and national levels: Results from the global burden of disease study 2019. Front Med (Lausanne). 2022 Mar 2;9:851635. doi: 10.3389/fmed.2022.851635. PMID: 35308518; PMCID: PMC8924524.

10. Bruni L, Albero G, Rowley J, Alemany L, Arbyn M, Taylor M, et al. Global and regional estimates of genital human papillomavirus prevalence among men: a systematic review and meta-analysis. Lancet Glob Health. 2023 Sep;11(9):e1345-e1362. doi: 10.1016/S2214-109X(23)00305-4. PMID: 37591583; PMCID: PMC10447222.

11. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, Jemal A. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2024 May-Jun;74(3):229-263. doi: 10.3322/caac.21834. Epub 2024 Apr 4. PMID: 38572751.

12. Anderson D, Laforge J, Ross MM, Vanlangendonck R, Hasoon J, Viswanath O, et al. Male sexual dysfunction. Health Psychol Res. 2022 Aug 20;10(3):37533. doi: 10.52965/001c.37533. PMID: 35999971; PMCID: PMC9392840.

13. IPPF and UNFPA (2017). Global sexual and reproductive health service package for men and adolescent boys. London: IPPF and New York City: UNFPA. https://www.unfpa.org/sites/default/files/pub-pdf/IPPF_UNFPA_GlobalSRHPackageMenAndBoys_Nov2017.pdf; accessed 25 May 2024.

14. Gold R B: The role of family planning centers as gateways to health coverage and care; Guttmacher policy review, Spring 2011/Vol14/number 2. https://www.guttmacher.org/gpr/2011/06/role-family-planning-centers-gateways-health-coverage-and-care. Accessed 30 May 2024

15. UNFPA: Assessment of sexual and reproductive health integration in selected Arab countries, regional report; UNFPA 2017. https://arabstates.unfpa.org/sites/default/files/pub-pdf/assessment_of_sexual_and_reproductive_health.pdf. Accessed 15 May 2024

16. Roudsari RL, Sharifi F, Goudarzi F. Barriers to the participation of men in reproductive health care: a systematic review and meta-synthesis. BMC Public Health. 2023 May 4;23(1):818. doi: 10.1186/s12889-023-15692-x. PMID: 37143008; PMCID: PMC10158256.

17. Lariat J, Chikwari CD, Dauya E, Baumu VT, Kaisi V.., Bernays S et al. It's not safe for me and what would it achieve?" Acceptability of patient-referral partner notification for sexually transmitted infections to young people, a mixed methods study from Zimbabwe. Sex Reprod Health Matters. 2023 Dec;31(1):2220188. doi: 10.1080/26410397.2023.2220188. PMID: 37565610; PMCID: PMC10424614

18. WHO: Critical considerations and actions for achieving universal access to sexual and reproductive health in the context of universal health coverage through a primary health care approach. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO. https://iris.who.int/bitstream/handle/10665/357614/9789240052659-eng.pdf?sequence=1. Accessed 01 June 2024.

19. United Nations Population Fund (2019). Costing the three transformative results. New York, January 2020 New York. https://www.unfpa.org/sites/default/files/pub-pdf/Transformative_results_journal_23-online.pdf. Accessed 25 May 2024

20. KFF: Donor government funding for family planning in 2021- Report. https://files.kff.org/attachment/REPORT-Donor-Government-Funding-for-Family-Planning-in-2021.pdf. Accessed 25 May 2024

21. UNAIDS: HIV prevention: From crisis to opportunity, Key findings from the 2023 Global HIV Prevention coalition scorecards. Geneva: Joint United Nations Programme on HIV/AIDS; [2024]. Licence: CC BY-NC-SA 3.0 IGO. https://www.unaids.org/sites/default/files/media_asset/2023-global-hiv-prevention-coalition-scorecards-key-findings_en.pdf. Accessed 20 May 2024

22. Nyalela M, Dlungwane T. Men's utilization of sexual and reproductive health services in low- and middle-income countries: A narrative review. S Afr J Infect Dis. 2023 Jun 20;38(1):473. doi: 10.4102/sajid.v38i1.473. PMID: 37435118; PMCID: PMC10331170.

23. Moyo E, Dzinamarira T, Moyo P, Murewanhema G, Ross A. Men's involvement in maternal health in sub-Saharan Africa: A scoping review of enablers and barriers. Midwifery. 2024 Jun;133:103993. doi: 10.1016/j.midw.2024.103993. Epub 2024 Apr 7. PMID: 38626505.

24. Shattuck D, Perry B, Packer C, Chin Quee D. A review of 10 years of vasectomy programming and research in low-resource settings. Glob Health Sci Pract. 2016 Dec 28;4(4):647-660. doi: 10.9745/GHSP-D-16-00235. PMID: 28031302; PMCID: PMC5199180.

25. Goel A. Urology in India: numbers and practice. Indian J Urol. 2019 Oct-Dec;35(4):245-247. doi: 10.4103/iju.IJU_246_19. PMID: 31619860; PMCID: PMC6792408.

26. WHO: Task sharing to improve access to Family Planning / Contraception. WHO/RHR/17.20 © WHO 2017. https://iris.who.int/bitstream/handle/10665/259633/WHO-RHR-17.20-eng.pdf?sequence=1. Accessed 30 June 2024

27. Nguyen BT, Jochim AL, Shih GH. Offering the full range of contraceptive options: a survey of interest in vasectomy training in the US family planning community. Contraception. 2017 May;95(5):500-504. doi: 10.1016/j.contraception.2017.01.002. Epub 2017 Jan 11. PMID: 28088497.

28. Patel J, Nguyen BT, Shih G, Or M, Harper DM. Vasectomy training in family medicine residency programs: A national survey of residency program directors. Fam Med. 2022 Jun;54(6):438-443. doi: 10.22454/FamMed.2022.649054. PMID: 35675457.

29. Ravindran TKS, Govender V. Sexual and reproductive health services in universal health coverage: a review of recent evidence from low- and middle-income countries. Sex Reprod Health Matters. 2020 Dec;28(2):1779632. doi: 10.1080/26410397.2020.1779632. PMID: 32530387; PMCID: PMC7887992.

30. Hagos N, Taqi I and Singh S, How universal health coverage can increase access to sexual and reproductive health services in Sub-Saharan Africa, New York: Guttmacher Institute, 2023, https://www.guttmacher.org/report/universal-health-coverage-access-to-srhservices-subsaharan-africa. https://doi.org/10.1363/2023.300337. Accessed 01 June 2024

31. "Male utilization in integrated SRH and HIV services," Steps to Integration, Issue 8. Washington, DC: Integra Initiative, 2015. https://knowledgecommons.popcouncil.org/departments_sbsr-rh/813/. Accessed 20 May 2024

32. Ongolly FK, Bukachi SA. Barriers to men's involvement in antenatal and postnatal care in Butula, western Kenya. Afr J Prim Health Care Fam Med. 2019 Jul 15;11(1):e1-e7. doi: 10.4102/phcfm.v11i1.1911. PMID: 31368318; PMCID: PMC6676928.

33. Ganle, J.K., Dery, I. 'What men don't know can hurt women's health': a qualitative study of the barriers to and opportunities for men's involvement in maternal healthcare in Ghana. *Reprod Health* **12**, 93 (2015). https://doi.org/10.1186/s12978-015-0083-y

34. WHO Integration of HIV testing and linkage in family planning and contraception services: implementation brief; WHO 2021. https://apps.who.int/iris/bitstream/handle/10665/346345/9789240035188-eng.pdf accessed 30 June 2024

35. Fitzpatrick PJ. Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners. Front Digit Health. 2023 Nov 17; 5:1264780. doi: 10.3389/fdgth.2023.1264780. PMID: 38046643; PMCID: PMC10693297

36. Greig A, Flood M. Discussion paper. Work with men and boys for gender equality: a review of field formation, the evidence base and future directions. UN Women, No. 37, November 2020.

https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2020/Discussion-paper-Work-with-men-and-boys-for-gender-equality-en.pdf. Accessed 20 May 2024.

37. Nguyen BT, Jacobsohn TL. Men's willingness to use novel male contraception is linked to gender-equitable attitudes: Results from an exploratory online survey. Contraception. 2023 Jul;123:110001. doi: 10.1016/j.contraception.2023.110001. Epub 2023 Mar 15. PMID: 36924819. Volume 123, July 2023, 110001

38. Ross J, Stover J. Use of modern contraception increases when more methods become available: analysis of evidence from 1982-2009. Glob Health Sci Pract. 2013 Jul 26;1(2):203-12. doi: 10.9745/GHSP-D-13-00010. PMID: 25276533; PMCID: PMC4168565. Sci Pract. 2013 Jul 26;1(2):203-12.

39. Ross J, Hardee K. Use of male methods of contraception worldwide. Journal of Biosocial Science. 2017;49(5):648-663. doi:10.1017/S0021932016000560

40. Demographic and health survey mans questionnaire https://dhsprogram.com/Methodology/Survey-Types/DHS-Questionnaires.cfm#CP_JUMP_16181 accessed 15 May 2024

41. Rottach, E, DeGraw E. 2021. A policy framework for engaging men and boys in Family Planning programs and services. Washington, DC: Palladium, Health Policy Plus. June 2021. http://www.healthpolicyplus.com/ns/pubs/18504-18908_MaleEngagementPolicyFramework.pdf. accessed 15 May 2024

42. Page ST, Blithe D, Wang C. Hormonal male contraception: getting to market. Front Endocrinol (Lausanne). 2022 Jun 3; 13:891589. doi: 10.3389/fendo.2022.891589. PMID: 35721718; PMCID: PMC9203677

43. Waites GM. Development of methods of male contraception: impact of the World Health Organization task force. Fertil Steril. 2003 Jul;80(1):1-15. doi: 10.1016/s0015-0282(03)00577-6. PMID: 12849793.

44. Barden-O'Fallon J, Ijdi RE. Need for standardized measure of modern method availability: Assessment of indicators using health facility data from three country contexts. Stud Fam Plann. 2023 Mar;54(1):251-263. doi: 10.1111/sifp.12220. Epub 2023 Jan 24. PMID: 36692830.

45. Sharma A, Rana SK, Prinja S, Kumar R. Quality of health management information system for maternal & child health care in Haryana State, India. PLoS One. 2016 Feb 12;11(2):e0148449. doi: 10.1371/journal.pone.0148449. PMID: 26872353; PMCID: PMC4752326.

46. Mboera LEG, Rumisha SF, Mbata D, Mremi IR, Lyimo EP, Joachim C. Data utilisation and factors influencing the performance of the health management information system in Tanzania. BMC Health Serv Res. 2021 May 25;21(1):498. doi: 10.1186/s12913-021-06559-1. PMID: 34030696; PMCID: PMC8146252.

47. Lee NM, Singini D, Janes CR, Grépin KA, Liu JA. Identifying barriers to the production and use of routine health information in Western Province, Zambia. Health Policy Plan. 2023 Oct 11;38(9):996-1005. doi: 10.1093/heapol/czad077. PMID: 37655995; PMCID: PMC10566315.

48. Fletcher R, Forbes F, Dadi AF, et al. Effect of male partners' involvement and support on reproductive, maternal and child health and well-being in East Africa: a scoping review. Health Sci Rep. 2024; 7:e2269. doi:10.1002/hsr2.2269

49. Rosado C, Fernandes ÂR, Rodrigues AG, Lisboa C. Impact of Human Papillomavirus vaccination on male disease: A systematic review. Vaccines (Basel). 2023 Jun 9;11(6):1083. doi: 10.3390/vaccines11061083. PMID: 37376472; PMCID: PMC10302589.