

# Sexual health (excluding reproductive health, intimate partner violence and gender-based violence) and COVID-19: a scoping review

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## ABSTRACT

**Objectives** The COVID-19 pandemic has exposed and exacerbated existing socioeconomic and health disparities, including disparities in sexual health and well-being. While there have been several reviews published on COVID-19 and population health disparities generally—including some with attention to HIV—none has focused on sexual health (ie, STI care, female sexual health, sexual behaviour). We have conducted a scoping review focused on sexual health (excluding reproductive health (RH), intimate partner violence (IPV) and gender-based violence (GBV)) in the COVID-19 era, examining sexual behaviours and sexual health outcomes.

**Methods** A scoping review, compiling both peer-reviewed and grey literature, focused on sexual health (excluding RH, IPV and GBV) and COVID-19 was conducted on 15 September 2020. Multiple bibliographical databases were searched. Study selection conformed to Joanna Briggs Institute (JBI) Reviewers' Manual 2015 Methodology for JBI Scoping Reviews. We only included English-language original studies.

**Results** We found that men who have sex with men may be moving back toward pre-pandemic levels of sexual activity, and that STI and HIV testing rates seem to have decreased. There was minimal focus on outcomes such as the economic impact on sexual health (excluding RH, IPV and GBV) and STI care, especially STI care of marginalised populations. In terms of population groups, there was limited focus on sex workers or on women, especially women's sexual behaviour and mental health. We noticed limited use of qualitative techniques. Very few studies were in low/middle-income countries (LMICs).

**Conclusions** Sexual health research is critical during a global infectious disease pandemic and our review of studies suggested notable research gaps. Researchers can focus efforts on LMICs and under-researched topics within sexual health and explore the use of qualitative techniques and interventions where appropriate.

## INTRODUCTION

The COVID-19 pandemic disproportionately affects the sexual health of people of colour,<sup>1</sup> ethnic minority groups,<sup>2</sup> women,<sup>3</sup> and sexual and gender minority (SGM)<sup>4</sup> populations. Sexual health research, broadly defined, is the study of an individual's physical, emotional, mental and social

well-being in relation to sexuality; it goes beyond the absence of disease, dysfunction or infirmity.<sup>5</sup> In this respect sexual health has psychosocial dimensions, in addition to physical dimensions. Sexual health research includes studies that centre on sexual minorities as a population and comprises sexual behaviour and access to high-quality sexual healthcare. For the purposes of this review, due to a lack of research and that systematic reviews on these areas are currently being conducted, reproductive health (RH), intimate partner violence (IPV) and gender-based violence (GBV) were not considered components of sexual health.

Regulations restricting mobility or movement, the resulting economic impact on individuals and families, and the need to shift healthcare resources (including money, clinical space and staff) towards the COVID-19 response may have affected sexual health. Certain marginalised populations may be even more affected. For example, a decrease in economic opportunities may reduce access to sexual healthcare resulting in reduced STI/HIV testing and treatment. This may be especially pronounced among marginalised populations such as SGM. Similarly, sex workers worldwide may not seek medical care due to reduced healthcare provision. In some countries, such as the USA, SGM individuals are also less likely to have health insurance, possibly exacerbated by economic pressures due to the pandemic, increasing negative economic impacts if they acquire COVID-19. These factors may increase socioeconomic marginalisation and further decrease access to sexual health services.

While several reviews have sought to synthesise existing and fast-changing evidence on COVID-19 and health outcomes, little attention has been paid to the pandemic's effects on sexual health and well-being. There have been, however, several reviews focused on HIV specifically,<sup>6–8</sup> but not on sexual health more broadly. Sexual health is a central feature in overall health and well-being, and in the socioeconomic development of communities and countries<sup>9</sup>; understanding if and how the COVID-19 pandemic has affected sexual health is, therefore, critically important.

Drawing on the WHO's holistic definition of sexual health, this review sought to include a broad range of sociobehavioural factors and outcomes



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relative to sexual health,<sup>5</sup> excluding RH, IP and GBV. This scoping review compiled peer-reviewed and grey literature in the field to identify gaps in current knowledge of sexual health (excluding RH, IPV and GBV) and COVID-19, support public health efforts, and guide intervention efforts and resource distribution. The broad research questions were, 'What has been reported on sexual health (excluding RH, IPV and GBV) in the COVID-19 era?' and 'What are the gaps in the current knowledge base on sexual health (excluding RH, IPV and GBV) and COVID-19 across marginalised populations?'

## METHODS

A scoping review of both peer-reviewed and grey literature was conducted by 14 individuals: 13 researchers from several universities worldwide, from a range of disciplines (eg, medicine, sociology, demography, public health, criminology, economics, psychology, epidemiology), and an informationist from the Harvey Cushing/John Hay Whitney Medical Library at Yale University. We chose to conduct a scoping review rather than use other methods of research synthesis because scoping reviews are appropriate for mapping an area of research<sup>10</sup>; we were not examining the effect of an intervention on an outcome of interest, as per a systematic review; and sexual health research outcomes (excluding RH, IPV and GBV) were not sufficiently similar to each other to warrant pooling or formal meta-analysis regarding a specific outcome. Research objectives, inclusion criteria and methodological techniques were determined before study commencement using the Joanna Briggs Institute (JBI) Reviewers' Manual 2015 Methodology for JBI Scoping Reviews.<sup>11</sup> Our process adhered to the JBI framework: (1) identifying research question; (2) identifying relevant studies; (3) developing comprehensive search strategy; (4) selecting studies; (5) charting data; and (6) collating, summarising and reporting results. The study team developed a search strategy as recommended by the 2015 Methodology for JBI Scoping Reviews.<sup>11</sup> Reporting of results conformed to Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews.<sup>12</sup> We published a study protocol<sup>13</sup> and registered the study on the Open Science Framework (osf.io/PRX8E) to enhance methodological transparency and improve reproducibility of results and evidence synthesis.

### Study selection criteria

Published researches (peer reviewed and grey literature where primary data were collected such as reports, research letters and briefs) investigating sexual health (excluding RH, IPV and GBV) and COVID-19 in all populations, settings and study designs, for example, studies with small samples, quantitative and qualitative studies, were eligible for inclusion (see online supplemental file 1 for more detail).

### Study selection

Two independent reviewers (ASF, KJ) screened each title and abstract using the inclusion/exclusion criteria. Inter-rater reliability estimates were calculated and a third reviewer (NK) acted as a tie breaker when there was lack of consensus. We obtained full-text articles of all potential eligible studies and evaluated article eligibility, similar to the abstract screening phase. If only abstracts and not full texts were available, we contacted authors where necessary if the abstracts did not provide sufficient information.<sup>14</sup>

### Search method

Studies were reviewed across 12 databases focusing primarily on peer-reviewed literature. We searched the literature published

from January 2020, which was the month in which the first COVID-19 report was provided to the WHO,<sup>15</sup> until September 2020 (see online supplemental file 1 for more detail).

### Data extraction

Reviewers underwent practice exercises and then separately extracted study details from studies. Reviewers abstracted the study details using a pretested data extraction template (see online supplemental file 1 for more detail).

## RESULTS

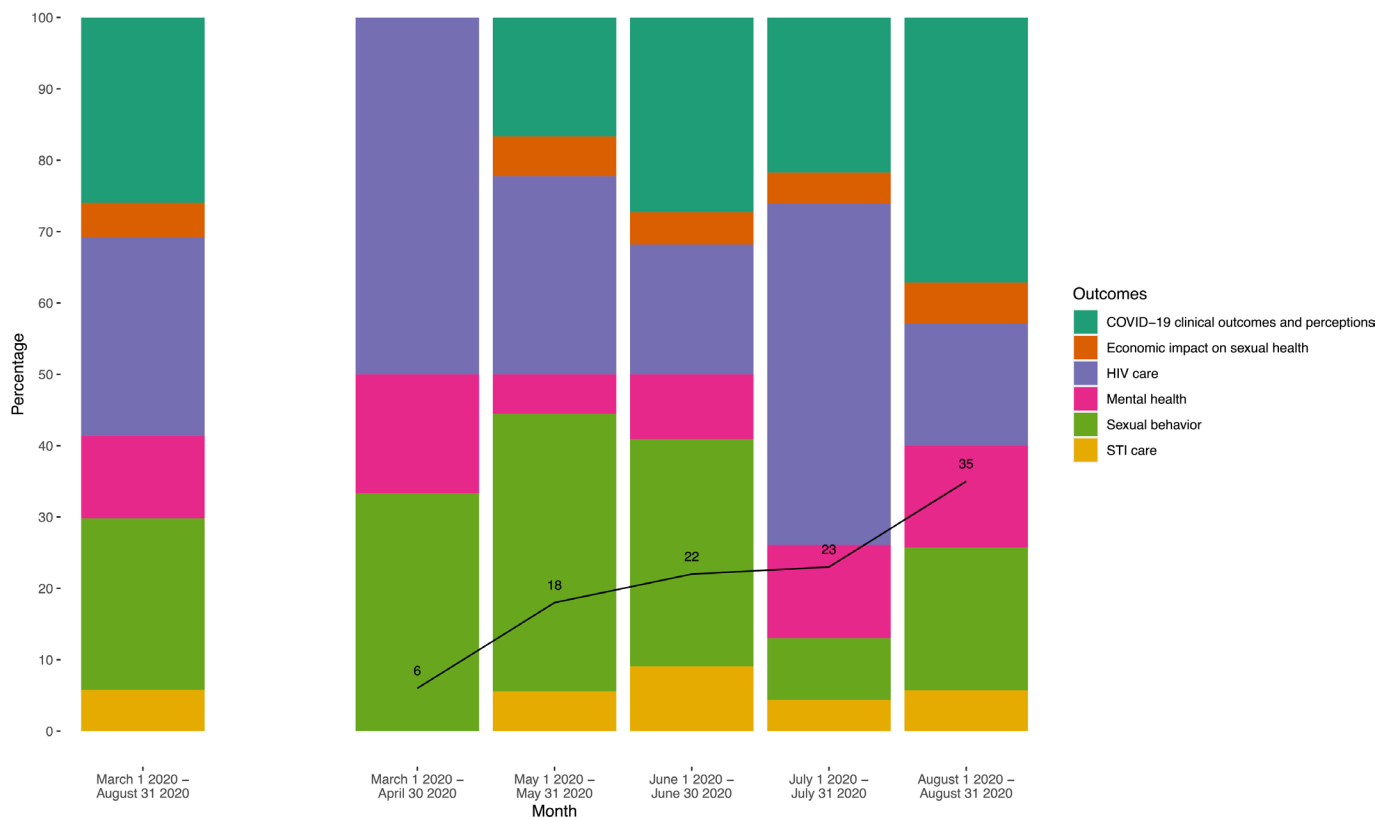
Our search yielded 7776 results (databases: 7684, grey literature: 92) with 1529 duplicates, resulting in 6247 articles that were subjected to title and abstract review. Of those, 5934 were excluded at the abstract screening phase as they did not meet our inclusion criteria, most were excluded as they were not relevant to our research questions. Three hundred and twenty-six full-text articles were then screened and 194 were removed because they were case reports (84) or not relevant to the research question (110). The remaining 119 articles were included in the scoping review (online supplemental figure 1). Online supplemental table 1 showed the distribution of study setting, methodology and sample size for the included studies across 71 countries. Studies were published from March 2020 to September 2020, with an increasing proportion published July 2020 onward. Thirty per cent (N=36) of studies were conducted in the USA, 10% (N=12) in Italy and 7% (N=8) each in China, South Africa and the UK.

Studies assessed a variety of outcomes, such as HIV care (27%, N=32), sexual behaviour (24%, N=29), COVID-19 clinical outcomes and perceptions (23%, N=29), mental health (16%, N=19), STI care (6%, N=7) and the economic impact on sexual health (excluding RH, IPV and GBV) (3%, N=4). These outcomes were mainly assessed among people living with HIV (PLHIV) (41%, N=49), SGM (27%, N=32), the general public (24%, N=28), sex workers (4%, N=5) or women (4%, N=5). Of the studies included, 39% (N=47) were cross-sectional observational quantitative studies, 25% (N=30) were prospective observational cohort quantitative studies, 18% (N=21) were retrospective observational cohort quantitative studies, 8% (N=9) were qualitative studies, 4% (N=5) were mixed methods and 5% (N=6) were modelling studies. No interventions were found, and some quantitative studies had small samples (<20), possibly affecting quality of results.

Online supplemental table 2 presented a synthesis of results organised by the six outcomes and the five populations. **Figure 1** indicated outcomes over time, and **figure 2** detailed populations over time. Studies at the beginning of the pandemic mostly concerned COVID-19 clinical outcomes and HIV care, but outcomes such as STI care and the economic impact on sexual health (excluding RH, IPV and GBV) became more prominent as the pandemic progressed. Research generally detailed the general public and PLHIV at the advent of COVID-19, but included other populations such as women and sex workers with pandemic progression.

### Overview of research by outcomes and populations

Overall, we found some notable themes. First, we found that after an initial decrease, men who have sex with men (MSM) may be moving back toward pre-pandemic levels of sexual activity.<sup>16</sup> Then, we noted that STI and HIV testing rates seemed to have decreased,<sup>17 18</sup> perhaps due to reduced test seeking but not necessarily reduced sexual activity.



**Figure 1** Outcome breakdown for all studies (1 March 2020–31 August 2020) and for each month. Each colour within a bar represents: N of studies representing a particular outcome/total N of studies in that time period. Studies with no date reported were not included. Total number of studies per month indicated by the black line. Studies after 31 August were not included in the above figure as our literature search did not cover the full month of September.

### COVID-19 clinical outcomes and perceptions

Twenty-eight studies addressed COVID-19 clinical outcomes and perceptions.<sup>15 19–44</sup> Most (75%, N=21) were retrospective observational quantitative studies exploring clinical outcomes of COVID-19 among PLHIV.

#### People with HIV

Twenty-five studies addressed PLHIV.<sup>15 19–41</sup> Most of these compared COVID-19 health outcomes between PLHIV and the general population. Ten studies found no difference in COVID-19 risk or outcomes between PLHIV and the general population,<sup>15 21 23 28 32 34 37 38 40 41</sup> while other studies found that PLHIV with COVID-19 were more likely to have comorbidities such as diabetes and hypertension.<sup>26 29 31 35 36</sup>

#### Sexual and gender minorities

Three studies centred on SGM.<sup>42–44</sup> A Taiwanese cross-sectional observational quantitative study found that sexual minorities were more likely to demonstrate health anxiety with regard to COVID-19 compared with heterosexual individuals.<sup>42</sup> A cross-sectional US study found that most MSM believed COVID-19 could be transmitted sexually.<sup>44</sup>

#### Economic impact on sexual health

Four studies evaluated the economic impact on sexual health (excluding RH, IPV and GBV), exploring the impact of the pandemic on sex workers.<sup>45–50</sup> A retrospective observational quantitative study with a global sample found a decrease in the number of active online sex worker profiles during the pandemic and an increase in risk-reduction strategies such as the cessation of in-person services

and enhanced sanitary practices.<sup>46</sup> A qualitative study conducted in Singapore also found a decline in sex work-related activities due to facility closures during the pandemic.<sup>48</sup>

#### HIV care

Thirty-four studies assessed outcomes related to HIV care.<sup>17 18 51–80</sup> Several (42%) were cross-sectional observational quantitative studies assessing the effect of the pandemic on HIV clinic attendance and procedures.

#### General public

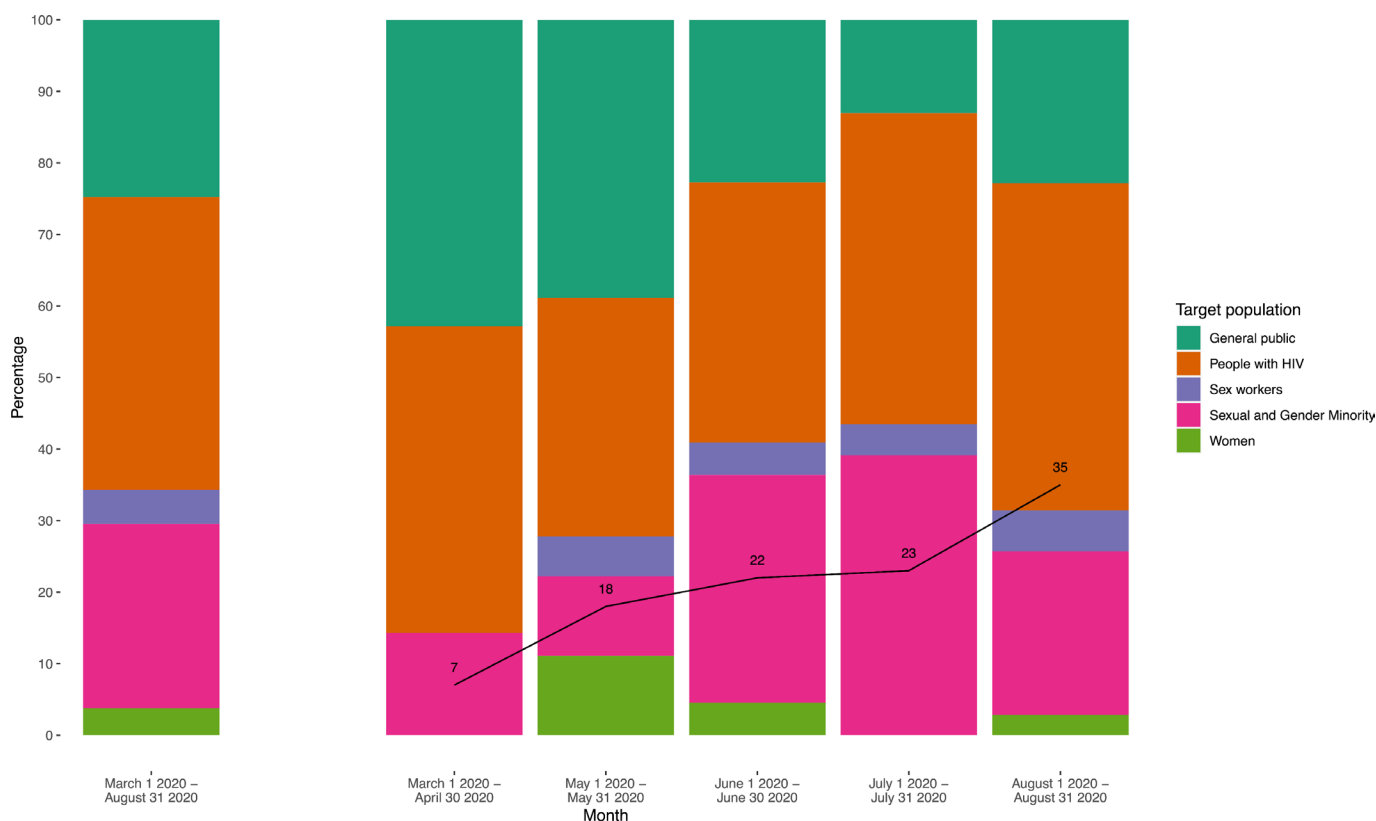
Five studies focused on the general public.<sup>17 18 51–53</sup> All reported a decline in interaction with HIV care services following the pandemic. Two retrospective observational quantitative studies, conducted in Belgium and China, respectively, reported a decrease in the number of HIV tests conducted with pandemic progression.<sup>18 52</sup>

#### People with HIV

Nineteen studies assessed PLHIV.<sup>54–72</sup> Three modelling studies predicted a significant increase in HIV-related deaths in African countries due to treatment disruption with the pandemic.<sup>61–63</sup> A US retrospective observational quantitative study found that shelter-in-place orders had a negative impact on antiretroviral therapy adherence, especially among homeless PLHIV.<sup>71</sup>

#### Sex workers

A qualitative study conducted in Kenya found that sex workers experienced greater HIV risk due to limited condom access during the pandemic.<sup>75</sup>



**Figure 2** Population breakdown for all studies (1 March 2020–31 August 2020) and for each month. Each colour within a bar represents: N of studies representing a particular population/total N of studies in that time period. Studies with no date reported were not included. Total number of studies per month indicated by the black line. Studies after 31 August were not included in the above figure as our literature search did not cover the full month of September.

### Sexual and gender minorities

Eight studies evaluated HIV care outcomes among SGM.<sup>76–80</sup> Two cross-sectional observational quantitative studies, one in Australia and the other global, reported a decline in pre-exposure prophylaxis (PrEP) use among sexual minority individuals during lockdown.<sup>77–80</sup> A global study found that MSM experienced greater difficulty in accessing condoms during lockdown.<sup>74</sup>

### Women

One prospective observational study conducted among women in South Africa reported an increase in missed PrEP appointments during lockdown.<sup>50</sup>

### Mental health

Fifteen studies evaluated mental health outcomes.<sup>81–85</sup> Most (67%) were cross-sectional observational quantitative studies detailing the mental health impact of the pandemic on SGM.

### People with HIV

Five studies detailed PLHIV.<sup>81–85</sup> A cross-sectional observational quantitative study conducted in Turkey found a relationship between generalised anxiety levels and COVID-19-related anxiety among clinical patients with HIV.<sup>85</sup> A US-based study found that the decision to social distance was associated with COVID-19-related stigma and fears.<sup>81</sup>

### Sexual and gender minorities

Ten studies detailed SGM.<sup>86–94</sup> Most reported an increase in anxiety or depression during the pandemic.<sup>86–92</sup> A cross-sectional observational quantitative study found an increase in

experiences of mental distress, anxiety or depression among American SGM college students.<sup>89</sup> A Brazilian cross-sectional quantitative study found an association between low psychological well-being and non-compliance with shelter-in-place orders.<sup>86</sup> A qualitative study of US lesbian, gay, bisexual and transgender youth reported an increase in distress from being confined at home with unsupportive parents.<sup>87</sup>

### Sexual behaviour

Thirty-one studies detailed sexual behaviour.<sup>16 95–125</sup> Most (65%) were cross-sectional observational quantitative studies detailing decreased sexual activity during the pandemic.

### General public

Seventeen studies assessed sexual activity and desire during the pandemic among the general public.<sup>95–111</sup> Ten studies indicated that the pandemic had affected participants' sexual lives.<sup>97–109</sup> A Chinese cross-sectional observational quantitative study found that the number of sexual partners decreased during the pandemic.<sup>108</sup> An Australian cross-sectional study reported decreased sexual activity during the pandemic.<sup>101</sup> A cross-sectional observational quantitative study conducted in the USA found that respondents (nationally representative US sample) experienced conflict with their romantic partners due to the pandemic.<sup>109</sup> This may have contributed to less frequent sex.<sup>109</sup> A US cross-sectional study found that a majority of respondents (Indian convenience sample) believed kissing could spread COVID-19, but that unprotected sexual intercourse could not.<sup>111</sup>



### Sexual and gender minorities

Ten studies evaluated SGM.<sup>16 112–121</sup> Few (30%, N=6) reported an increase in risky sexual behaviour during the pandemic.<sup>16 119 121</sup> One cross-sectional observational quantitative study found an increase in casual sexual encounters during the pandemic among Brazilian and Portuguese MSM.<sup>16</sup> The increase in casual sex encounters may be due to MSM feeling isolated due to the long sheltering period and then seeking a larger need for social contact.<sup>94</sup> A Welsh prospective observational quantitative study reported a decrease in the frequency of condomless sex among MSM.<sup>113</sup>

### Women

Four studies detailed sexual behaviour in women, generally centring on reduced sexual function.<sup>122–125</sup> A Polish prospective observational quantitative study reported an increase in female sexual dysfunction.<sup>122</sup>

### STI care

Seven studies addressed STI care outcomes.<sup>126–132</sup> Three of these were prospective observational quantitative studies.

### General public

Six studies assessed the general public.<sup>126–131</sup> A Ugandan cross-sectional observational quantitative study found reduced access to STI testing and treatment during lockdown<sup>128</sup> and two other studies (Italy, Spain) found a decline in the number of STI cases reported since the onset of the pandemic.<sup>126 127</sup>

### Sexual and gender minorities

One prospective observational quantitative study reported an increase in the number of syphilis diagnoses among MSM in Italy.<sup>132</sup>

## DISCUSSION

In this scoping review, we provided a comprehensive synthesis of the published literature on sexual health (excluding RH, IPV and GBV) in the COVID-19 era. This work builds on previous reviews on specific sexual health issues and COVID-19, which generally focused on the intersection of HIV and COVID-19 and did not examine sexual health more broadly.<sup>6–8</sup> We found that MSM may be moving back toward pre-pandemic levels of sexual activity. Abstinence-based strategies to limit HIV transmission are generally ineffective<sup>133</sup> and it is not reasonable to expect people to refrain from sexual activity amid a pandemic. Thus, strategies to manage STI and HIV transmission during COVID-19 transmission should hinge on safer sexual activities rather than abstinence, for example, engaging in sex after quarantine has been completed and all parties asymptomatic.<sup>134</sup> We noted that STI and HIV testing rates seem to have decreased, perhaps due to reduced test seeking but not necessarily reduced sexual activity. As the pandemic progresses, we suggest that self-testing for STIs and HIV may be a useful tool given reduced clinic attendance. However, we recognise the limitations of this approach, for example, where this requires accessing tests/services online, then for those with low digital literacy, this could potentially worsen health inequalities.

The bulk of included studies here centred on outcomes such as HIV care and COVID-19 clinical outcomes and perceptions, with minimal focus on outcomes such as the economic impact on sexual health (excluding RH, IPV and GBV) and STI care, especially STI care of marginalised populations, due to a lack of research. The limited focus of the economic impact on sexual health (excluding RH, IPV and GBV), in line with COVID-19, may be due to the

immediate focus on the purely health aspects of the pandemic and an economic focus may arise as COVID-19 progresses. In this vein, there have been calls to focus specifically on the economic aspects of COVID-19.<sup>135</sup> The minimal research on STI care is reflective of the limited research on STI care (eg, gonorrhoea and chlamydia) compared with HIV care.<sup>136</sup> Similarly, several nations, such as China, have well-supported testing provision for HIV, but lack similar infrastructure for STI testing.<sup>136</sup>

In terms of population groups, studies tended to focus on PLHIV and SGM; there was limited focus on sex workers or on women. There was a dearth of published studies on women's sexual behaviour and mental health. The limited focus on women may in part be due to the exclusion of RH, IPV and GBV in our selection criteria and also due to the male-as-norm bias prevalent in health research,<sup>137</sup> where men are the standard for research studies. There have been calls to reduce the male bias in COVID-19 research,<sup>138</sup> and our work provides evidence for a potential bias regarding the intersection of women and sexual health research (excluding RH, IPV and GBV). The limited research on sex workers and COVID-19 may be because most in-person sex work has largely stopped due to social distancing and lockdown measures, or continued as a 'black market', at least in the USA. However, the pandemic may increase stigma, discrimination and violence for sex workers, and thus research can focus on whether policing of sex workers has changed during the pandemic, and whether the number or characteristics of people involved in sex work has changed during the pandemic, so that adequate and appropriate health, economic and social services can be made available for persons involved in sex work.

A broad range of methods were applied to study sexual health (excluding RH, IPV and GBV) during the COVID-19 pandemic. However, we noticed limited use of qualitative techniques. The limited qualitative research may be due to the relatively limited funding for COVID-19-specific qualitative research, and the complexities of conducting qualitative research in a pandemic, usually involving face-to-face meetings. Limited qualitative work around sexual health (excluding RH, IPV and GBV) and COVID-19 may obscure understanding on how marginalisation and structural forces shape sexual health within the pandemic, as qualitative research can aid understanding of natural phenomena with an emphasis on the lived experiences around disease, care and pandemic responses.

None of the studies identified in our scoping review were interventions. The lack of intervention studies may be because the research was conducted in the early phases of the pandemic and interventions, especially randomised controlled trials, take time to design, conduct, analyse and disseminate; and that research resources are increasingly allocated to COVID-19. Randomised controlled trials are key to determining efficacy of interventions and are essential to improving sexual health during the pandemic. We propose that researchers incorporate more qualitative techniques and conduct interventions, to complement existing quantitative research on sexual health and COVID-19. We suggest community-based crowdsourcing interventions for augmenting sexual health during the pandemic. Crowdsourcing involves non-experts and experts collaborating to solve an issue and then sharing solutions publicly.<sup>139</sup> Crowdsourcing has been implemented in resource-scarce settings to improve sexually transmitted testing uptake,<sup>136</sup> among other uses.<sup>140</sup>

Studies were conducted in a large range of nations, aligned to regions where the impact of the pandemic was relatively severe, but the largest proportions were in high-income nations, with very few in low/middle-income countries (LMICs). The paucity of sexual health (excluding RH, IPV and GBV) research in LMICs

may be due to limited resources, lack of equitable research and funding partnerships, redistribution of resources amid COVID-19, among other factors. Recent work has expressed concerns regarding limited COVID-19 research centred in LMICs,<sup>141</sup> which could worsen pandemic progression when combined with LMICs' inadequate healthcare infrastructure potentially leading to long-term consequences such as increasing numbers of HIV-related deaths. We build on these findings, indicating the lack of COVID-19 research in the sexual health context within LMICs. We suggest that the limited work around sexual health (excluding RH, IPV and GBV) and COVID-19 in LMICs could reduce sexual healthcare provision in LMICs, such as HIV programmes,<sup>61</sup> and by not measuring changes in sexual health during the pandemic we may miss important shifts and lose prior achievements regarding sexual health in LMICs.

Our findings should be read in line with some limitations. Although we searched several databases and grey literature sources, we may have missed some studies. Not all authors we reached out to responded and we thus may have missed some unpublished work. Our definition of sexual health did not include RH, IPV and GBV, and we were unable to provide evidence on these areas of sexual health.

The main strengths of the study are that we synthesised the research on sexual health (excluding RH, IPV and GBV) during COVID-19 and used a reproducible and clear procedure for the scoping review. We indicated the outcome, location, methodology, sample characteristics, along with data extraction and search strategies. Moreover, we centred solely on the scope of sexual health (excluding RH, IPV and GBV) and COVID-19 research. Although we noted several limitations, our review has important implications for interventions around mitigating poor sexual health due to the pandemic.

## CONCLUSION

We found that after an initial decrease, MSM may be moving back toward pre-pandemic levels of sexual activity, and that STI and HIV testing rates seemed to have decreased. We found limited work on key outcomes such as the economic impact on sexual health (excluding RH, IPV and GBV) and STI care, and populations such as women (in part due to exclusion of RH, IPV and GBV) and sex workers. Sexual health research is critical during COVID-19, and we indicated that some areas were clearly understudied potentially limiting adequate treatment for patients. There were a range of methodologies applied within sexual health (excluding RH, IPV and GBV) and COVID-19 research, but qualitative techniques and interventions were not commonly used. There was also limited research within LMICs. Researchers can focus efforts on LMICs and under-researched topics within sexual health and explore the use of qualitative techniques and interventions where appropriate.

## Key messages

- ▶ The scope of sexual health (excluding reproductive health, intimate partner violence and gender-based violence) and COVID-19 research was broad, but there was limited work on outcomes such as the economic impact on sexual health and STI care.
- ▶ Research should focus on low/middle-income countries and research gaps within sexual health.
- ▶ Researchers should explore the use of qualitative techniques and interventions where appropriate.

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