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COVID-19 Gender Disparities and Mitigation Recommendations: A Narrative Review



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Abstract

The coronavirus disease 2019 (COVID-19) pandemic has rapidly created widespread impacts on global health and the economy. Data suggest that women are less susceptible to severe illness. However, sex-disaggregated data are incomplete, leaving room for misinterpretation, and focusing only on biologic sex underestimates the gendered impact of the pandemic on women. This narrative review summarizes what is known about gender disparities during the COVID-19 pandemic and the economic, domestic, and health burdens along with overlapping vulnerabilities related to the pandemic. In addition, this review outlines recommended strategies that advocacy groups, community leaders, and policymakers should implement to mitigate the widening gender disparities related to COVID-19.

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The coronavirus disease 2019 (COVID-19) pandemic, caused by the novel severe acute respiratory syndrome coronavirus 2, has rapidly evolved since the initial identification of the virus in Wuhan, China, in December 2019. More than 112 million confirmed cases of COVID-19 have been reported, with more than 2 million deaths worldwide.¹ The enormity of the situation has created widespread impacts on global health and the global economy.

Global data suggest that there are sex differences in mortality from COVID-19.^{2,3} Biologic differences in hospitalization and mortality rates between cisgender men and women are the subject of many epidemiologic and biomedical studies.⁴⁻⁸ Beyond biologic sex, other gendered behavioral differences may alter the risk profiles of men and women; previous studies have suggested that women more effectively follow hand hygiene and mask-wearing practices.^{9,10} In light of these emerging data, some have suggested that women are less affected by the COVID-19 pandemic. This stance risks greatly underestimating

the gendered impact the pandemic has on women beyond biologic sex variation.¹¹⁻¹³

Past health crises have demonstrated that people with unprotected human rights at baseline are more likely to experience health, social, and economic consequences of a crisis.^{13,14} In the United States, the pandemic is exacerbating preexisting inequities; low-income, Black, Latinx, immigrant, and Native American communities have seen a high burden of the disease.^{15,16} Often underestimated are the roles of women in the pandemic and the exacerbation of gender inequities that leave them vulnerable.^{16,17} Understanding the impact of sex and gender on disease processes is essential for understanding the impact of health inequities and adequate public health responses; however, approximately two-thirds of the global data are not sex disaggregated, masking gendered issues surrounding COVID-19.^{2,18,19}

We review the nonbiologic impact of COVID-19 on women and highlight recommended steps to ensure that gender disparities remain at the forefront of resource allocation and policy creation during the pandemic.



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ARTICLE HIGHLIGHTS

- The COVID-19 pandemic is widening preexisting gender disparities.
- Incomplete sex-disaggregated data underestimate the gendered impact of the pandemic.
- Identified categories of impact include occupational, economic, domestic violence, gender-based violence, mental health, and sexual and reproductive health rights.
- The impacts of gender disparities are compounded by overlapping vulnerabilities of race, ethnicity, and poverty and the status of lesbian, gay, bisexual, transgender, queer, and other marginalized sexual orientations.
- We recommend that policymakers, leaders, innovators, investors, and advocacy groups implement systematic changes to mitigate widening disparities in response to COVID-19.

METHODS

We performed an initial literature search of Embase and MEDLINE databases through May 7, 2020, to find the most pertinent evidence in English-language articles relating to the COVID-19 pandemic *and sex or gender*; modifier terms included *female, women, mother, pregnancy, gynecologic disease, breast disease, breastfeeding, domestic violence, and disparities* and appropriate synonyms. All article types were included in the initial search to allow a complete view of the available evidence. Citations from reviews and perspective articles were evaluated for inclusion when appropriate. After initial literature review, we identified categories of impact for inclusion, and subsequent publications were identified and included as they became available.

Articles were chosen for inclusion on the basis of clinical judgment and interpretation of findings at the time of publication and were not evaluated systematically. Because the literature and context of COVID-19 are evolving, we specifically chose not to review the biologic mechanisms of COVID-19 during pregnancy. We chose to include articles with concepts of nonbiologic mechanisms of gender disparities and collated common mitigating recommendations from national and international societies.

WOMEN IN THE WORKFORCE: OCCUPATIONAL EXPOSURE RISKS, UNEMPLOYMENT, AND FINANCIAL IMPACT

In a multiyear analysis of US census data, women composed 52% of all “essential workers” who do not have the luxury of staying home and social distancing for safety during the pandemic.²⁰ Health care personnel and primary caregivers, whether paid or unpaid, have an increased potential for exposure to patients and infectious materials and therefore an increased risk for COVID-19. Women compose 70% of the global workers in the health care sector, with 80% of nurses and midwives identifying as women.²¹ The State Council Information Office in China reported that more than 90% of health care workers in Hubei province are women.²¹ In one analysis, 60% of health care workers in China who were hospitalized with COVID-19 were women.²² The Centers for Disease Control and Prevention also reported that US health care providers composed 11% of all COVID-19 cases, and 73% of those cases were in women.²³

Within the paid health care workforce, gender disparities exist by occupation. In most countries, male workers have most of the highest paid positions (eg, physicians, dentists, and pharmacists).²¹ In addition to the large proportion of female nurses and midwives, women have the majority of the lowest paying positions (eg, personal care workers).²¹ Within these positions, women are more likely than men to be employed by the private sector, which offers less job security, lower pay, and more barriers to full-time employment and health benefits.²¹ Importantly, the pandemic’s economic burden on women is further exacerbated in the health care sector because an 11% pay gap exists, with women earning less than men for doing similar work.²¹

Outside the health care workforce, women are heavily affected by the economic impact of the pandemic. In the United States, unemployment during the pandemic has disproportionately affected women because women make up a large proportion of

workers in the retail, dining, and entertainment sectors, where business has been significantly affected by the pandemic.²⁴ These jobs often are in the front line with few employee protections.²⁵ In April 2019, the US Bureau of Labor Statistics reported similar unemployment rates for women (3.4%) and men (3.8%) aged 16 years or older.²⁶ However, in April 2020, the unemployment rate was 16.2% for women and 13.5% for men.²⁶

Furthermore, women more frequently serve as primary caregivers within a household and are more likely to perform unpaid work not captured by these statistics.²¹ In the United States, an estimated 65% of unpaid family caregivers are women, and 80% of them provide care for at least 1 person older than 50 years.^{27,28} During outbreaks of cholera and Ebola disease, women had a 3-fold higher caregiver burden, placing them at increased risk for disease exposure and illness.^{29,30} Working women spend more time performing household tasks and caring for their children and parents compared with their male colleagues. Among heterosexual cohabitating couples where both are employed full time, women have more household and child care duties than men.³¹⁻³³ These responsibilities are further exacerbated with work-from-home situations, closures of child care facilities, and distance learning.¹⁹ In addition, compared with men, women in the United States are more than 4 times as likely to live as a single parent with fewer resources and safety nets; women who are primary breadwinners have lost jobs at some of the highest rates.¹⁹ These unrecognized factors compound the impact of the workforce burden of COVID-19 on women.

Recommendations

Recommendations for mitigating occupational and economic gender disparities include the following (Figure 1).

Create transformative policy changes that reduce workplace inequity and value unpaid work.

- Policy changes in public and private sectors should address pay inequity by ensuring

that labor rights against sexual discrimination are enforced and that women workers receive equal-value compensation.^{19,21}

- Unpaid care work must be valued as a vital contribution to the economy; policy and societal changes should aim to reverse gender norms and to redistribute unpaid work across genders equitably.^{19,34}
- Investments in creating formal work in the health sector can foster translation of unpaid work into paid positions in the formal sector.²¹
- Labor market policies should remove barriers to full-time employment for women, support career advancement, and ensure gender parity in leadership positions and create more comprehensive investments in child care support services.^{19,21}

Target women and girls in economic policy change efforts.

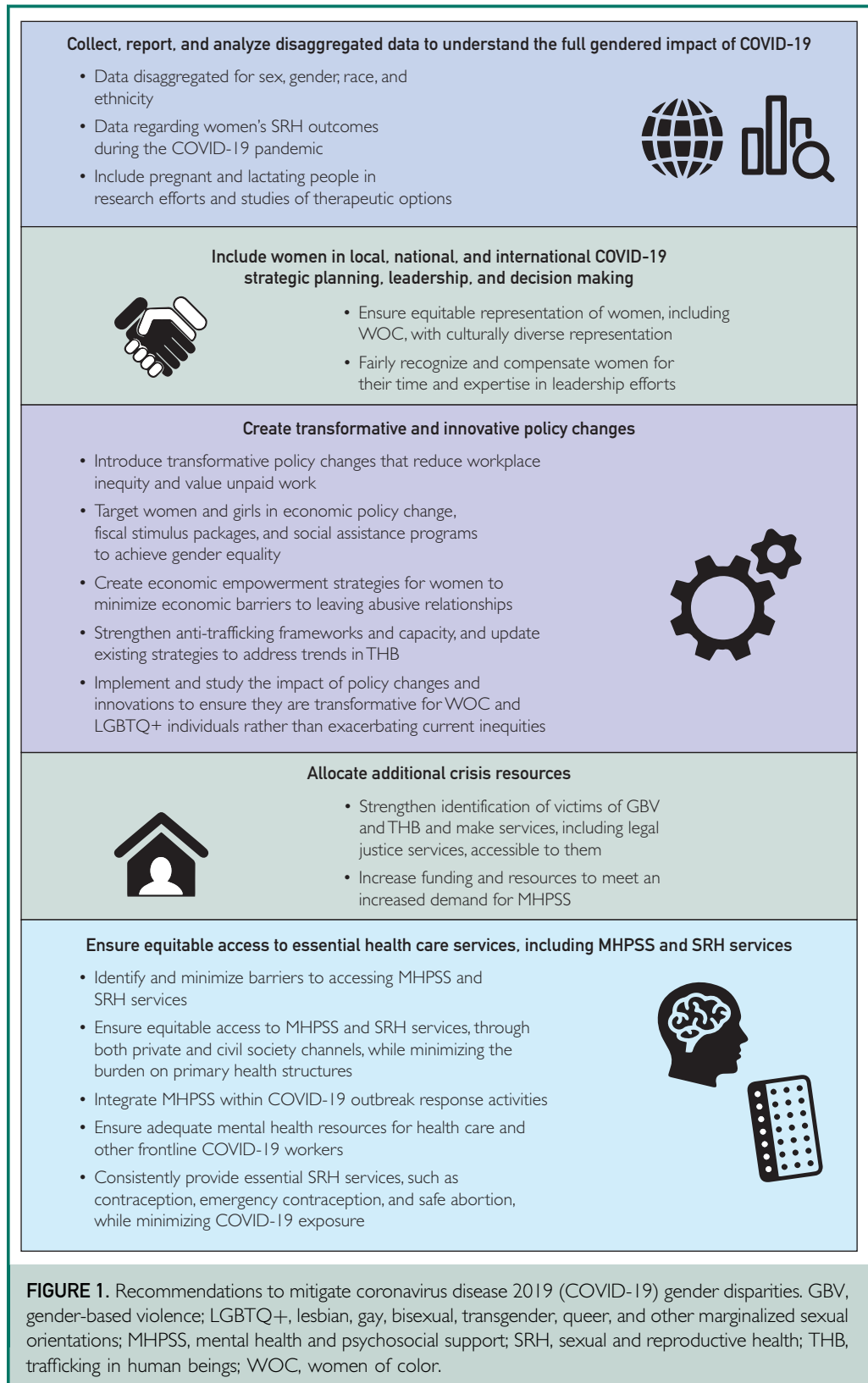
- Consistently use a gender lens to evaluate socioeconomic impacts and to assess fiscal stimulus packages and social assistance programs to achieve gender equality.^{14,19}

Include women in local, national, and international COVID-19 strategic planning, leadership, and decision-making.

- Evidence clearly shows heightened effectiveness with inclusion of women in policymaking interventions, economic planning, and emergency response processes; when women are excluded, policies may be ineffective or harmful.³⁴
- Women's leadership in their communities and their frontline interactions are largely responsible for successful implementation of response plans to prior health crises; women should be fairly recognized and compensated for their time and expertise.³⁵
- Strengthen the meaningful participation of women and girls by ensuring equitable representation of women in leadership and decision-making positions in all response planning and policy creation.^{29,34,36}

IMPACT OF GENDER-BASED VIOLENCE

Whereas the Centers for Disease Control and Prevention, World Health Organization, and



other organizations recommend that people stay home to be safe from COVID-19, home is often not safe.^{35,37} Global data suggest that 1 in 3 women have experienced physical or sexual violence by an intimate partner.^{38,39} During global health crises, women and girls are at increased risk for intimate partner and domestic violence.¹⁴ This probably results from a combination of heightened tension in the household and increased time at home isolated with an abuser during quarantine. During the 2014-2016 Ebola disease epidemic, with school closures, quarantines, and restricted community activities, reports of sexual violence increased 27%.³⁹ The global economic impact of violence against women has an estimated cost of \$1.5 trillion (approximately 2% of the global gross domestic product).³⁸

In China's Hubei province, domestic violence reports tripled in February 2020 during quarantine.³⁹ Since the outbreak of COVID-19, the United Nations reported that domestic violence intensified 25% to 33% in France, Argentina, Cyprus, and Singapore.³⁸ Increased numbers of cases of domestic violence and demand for emergency shelter have also been reported in Canada, Germany, Spain, New Zealand, Brazil, Australia, the United Kingdom, and the United States.^{38,40-42} In some of these countries, the number of domestic violence reports has increased by up to 50%.⁴⁰

Coercion, control, and social isolation are hallmarks of domestic abuse, and stay-at-home orders may have major implications for power struggles within abusive households.^{40,41} Increased time at home increases the risk of violence, and abusers often target children and pets to further their control over the household.⁴² Some reports have indicated that abusers use fear of infection with COVID-19 as an emotional abuse tactic, restrict hand washing, or forbid medical treatment.⁴² As a result, women may be less likely to seek health services.³⁹

Whereas stay-at-home or shelter-in-place orders are necessary to quell the spread of the virus, stringent restrictions on

movement close escape routes for those seeking help. Women may be less likely to report domestic violence during telehealth visits if they are home with abusers during the appointment. Known risk factors for domestic violence include economic strain, unemployment, reduced income, and limited community resources,^{39,41,42} and financial concerns decrease women's chances of leaving an abusive relationship.^{39,41} Alcohol abuse is another known risk factor for domestic violence, and in-home alcohol consumption has increased during the COVID-19 outbreak.^{38,42}

The vulnerability of women and girls during crises is exacerbated by lack of access to their usual social networks and by less access to health care.^{38,41} In addition to school closures, other community resources and shelters for women and children have reduced funding or capacity.³⁹ Some domestic violence shelters are being repurposed as housing shelters for patients with COVID-19 and are reaching capacity.³⁸ UN Women raised concerns that gender-based violence (GBV) and reproductive health services resources may be increasingly diverted as the pandemic progresses.^{14,38}

Challenges in identifying and mitigating domestic violence issues have also contributed to increased trafficking in human beings (THB) during the pandemic. Domestic violence, decreased access to support services and shelter, and financial stress due to job loss may push women to take risks leading to trafficking,⁴³ and closed borders and travel restrictions leave asylum seekers vulnerable to THB.⁴⁴ To compound matters, convicted traffickers are released prematurely from incarceration (without notification sent to victims), and traffickers use online recruitment techniques, offering sexual services that can be shared without consent.⁴⁴ In response to increased concerns, a global survey of victims of trafficking and frontline stakeholders was completed by the Office for Democratic Institutions and Human Rights and the UN Women. Subsequently, recommendations to governments on THB during the pandemic have been published.⁴⁵

TABLE. Global Examples of Innovations to Combat Gender-Based Violence^{38,46,47}

Category	Example (country)
Social media advocacy campaigns	#AntiDomesticViolenceDuringEpidemic (China) #EndTrafficking, #FreedomFirst and tag @UNICEFUSA (United States)
Allocation of additional financial resources	Allocation of resources for shelters and provision of alternative accommodations when shelters fill (Canada, France, Caribbean countries) Accelerated community-level service delivery for survivors of GBV (South Africa, Australia, France, United Kingdom)
Governmental and legal policy changes	Instead of GBV survivor's leaving home, abuser must leave family home (Italy) Develop virtual justice system to provide legal services and extended protection orders in case of court delays (Kazakhstan, Argentina, Colombia)
Strategic partnerships	Mobile service partnerships with telecommunication firms to provide free calls to helplines (Antigua, Barbuda) Instant messaging service with geolocation for immediate support for survivors (Spain) Secure mobile phone applications and code messaging at pharmacies for domestic violence survivors to bring in additional support without raising attention of abusers (United Kingdom, Spain) Training postal workers and delivery drivers to look for signs of abuse (United Kingdom)

GBV, gender-based violence.

Recommendations

Recommendations for mitigating GBV include the following (Table).

Allocate additional resources to combat increases in GBV.

- Governmental and private organizations should increase resource allocation to meet the increasing need for response to GBV and THB.^{19,38}
- Information should be widely available on how to access safety or immediate security.³⁵

Develop culturally sensitive, country-specific plans.

- Geographic and cultural differences should be recognized for development of country-specific strategic plans for preparedness and response.²⁹
- Local and national first responders must be trained to respond to GBV in a compassionate and nonjudgmental manner, to know about community resources, and to be prepared to refer survivors immediately.²⁹
- Health care facilities and systems should proactively build referral pathways to ensure safe relocation for survivors of GBV and THB when they present for assistance.²⁹

Develop innovative solutions to combat GBV.

- Use social media to build advocacy and awareness about increased violence against women and proactively engage with media outlets to increase visibility of resources.³⁸
- Mitigate economic impact as a barrier to leaving abusive relationships by targeting economic empowerment strategies, including providing support to women to recover or to build resilience for the future.²⁹
- Build strategic public-private partnerships to develop innovative resources for survivors of domestic violence and ensure that regional authorities are prepared to support this population of women.³⁸
- Strengthen antitrafficking frameworks and capacity and update existing strategies to address trends in THB and consequences of the COVID-19 pandemic.⁴⁵

MENTAL HEALTH IMPACT

Fear, stress, and anxiety have increased considerably in the general population as COVID-19 has spread. Quarantine has increased loneliness and isolation, potentially exacerbating mental illness, substance abuse, and self-harm or suicidal behaviors.³⁵ Depressive disorders are twice as common in women as in men, and depression and

anxiety are interconnected to gender-based roles, stressors, and life experiences.⁴⁸

Multiple studies have shown that in the general population, women are more likely than men to experience symptoms of anxiety and posttraumatic stress during the COVID-19 pandemic.⁴⁹⁻⁵¹ A large population study from Iran reported that women experience higher levels of anxiety than men, whether or not they live in a high-prevalence area.⁵⁰ In a study from China, the odds of experiencing anxiety symptoms as a female were 3.01 times that of males during the initial months of the COVID-19 pandemic.⁵¹ Women are experiencing considerably greater posttraumatic stress symptoms than men and are more likely than men to develop symptoms of reexperiencing, avoidance, poor sleep, and negative cognition or mood and arousal symptoms.⁴⁹ According to an analysis in the United States, depressive symptoms during the pandemic have increased 3 times from baseline, although having more resources was associated with less depression.⁵² This suggests that there may be a compounding effect of the increased financial, work, and domestic burdens of COVID-19 on women's mental health.

In addition, multiple studies have shown that the mental health of workers in health care may be affected more than that of other workers, and women are overrepresented in the health care field.^{21,49,53,54} A study from China, which assessed multiple mental health variables in medical and nonmedical workers, found that medical workers had a higher prevalence of insomnia, anxiety, depression, somatization symptoms, and obsessive-compulsive symptoms compared with nonmedical workers, and being female was an independent risk factor for anxiety (odds ratio [OR], 1.8) and depression (OR, 1.85).⁵⁵ Another survey of frontline health care workers in Wuhan, China, reported higher rates of depression, anxiety, insomnia, and distress in women compared with men; after confounding variables were controlled, women were almost twice as likely as men to experience severe depression (OR, 1.94), and mean Generalized

Anxiety Disorder 7-item scale scores were twice those of men (4.0 vs 2.0).⁵⁴

Recommendations

Recommendations for mitigating mental health impacts include the following.

Integrate interventions for mental health and psychosocial support (MHPSS) services within COVID-19 outbreak response activities.

- Identify barriers that female patients and caregivers face in accessing MHPSS services and ensure that responses to disease outbreaks are adaptable to the changing needs of women during outbreaks.³⁵
- Incorporate women's voices and knowledge in prevention activities and ensure that women are represented in making national and local COVID-19 policies.^{19,29,35}
- Address stigma and discrimination, which are based on lack of knowledge and misinformation and further the spread of fear and anxiety. Provide examples of positive community activities during the outbreak.³⁵
- Map existing MHPSS expertise and structures to mobilize and to coordinate resources across all emergency response sectors. Strengthen current local care structures when possible, share tools and resources between agencies, and identify where MHPSS services are absent.³⁵

Ensure adequate mental health resources for health care and other frontline COVID-19 workers.

- Employers should recognize the disproportionate effect on women and provide gender-sensitive solutions for more vulnerable staff.
- Health care leaders and employers should try to ensure that workers have adequate time off between shifts, that workers are rotated between higher stress and lower stress functions, that scheduling is flexible, that buddy system support mechanisms are developed, and that workers have knowledge of adequate access to MHPSS.⁵⁶
- Individuals should take time for themselves, when possible, and use coping

strategies such as rest, healthy eating, physical activity, and social connectedness between work shifts.⁵⁶

SEXUAL AND REPRODUCTIVE HEALTH IMPACT

As illustrated during previous infectious outbreaks, including outbreaks of Ebola and Zika viruses, women's sexual and reproductive health (SRH) rights are frequently limited during times of difficulty.^{29,57} The COVID-19 outbreak strains the health system and further limits the system that provides SRH services, especially in resource-limited, low-income, and middle-income countries.^{57,58} Disruptions in normal clinic operations may cause interruptions in usual SRH services, including contraception, safe abortion, and care for human immunodeficiency virus infections and sexually transmitted infections.⁵⁹ Prior crises have shown that reduced access to SRH care increases rates of unintended pregnancies, unsafe abortions, sexually transmitted infections, pregnancy complications, mental health complications, and maternal and infant mortality.^{14,60,61}

The American College of Obstetricians and Gynecologists and the American Medical Association have published guidelines and statements ensuring access to safe abortion care during the COVID-19 pandemic to the full extent the law allows.^{62,63} Despite this, multiple US state governors have supported cessation or delay of medical or surgical abortions during the pandemic, citing them as elective or nonessential.^{12,19,63} Delaying these procedures and denying timely access increase the rates of unsafe abortions.^{62,64}

An analysis of global supply chains raised concerns about access to contraceptives (many of which are manufactured in Asia) during the outbreak.⁶⁵ Shortages of contraceptives have been reported in Myanmar and Mozambique, and India's government stopped exporting progesterone for contraception; supply chain concerns for packaging materials were also included in analyses that predicted these potential shortages and delays for contraceptives.⁶⁶

Pregnant and lactating people are frequently excluded from clinical trials with the explanation that the safety of a treatment in pregnancy is unknown.⁶⁷⁻⁶⁹ This protection-by-exclusion fallacy, however, leaves cisgender women at risk. For pregnant and lactating people, though, exposure to the virus is similar to that for the general population, so pregnancy and lactation alone should not exclude participation in studies. Under the Common Rule, pregnancy is no longer classified as a vulnerability, so that pregnant people no longer need special protection for inclusion in research; with safety regulations, individuals should be able to determine their eligibility and entry into research studies on the basis of informed consent.⁶⁷ Despite this change, a search of 588 active studies evaluating COVID-19 found that only 4 were designed for pregnant people and were not designed to evaluate therapeutics.⁶⁷ Of the 376 trials evaluating therapeutic interventions, none were designed for pregnant or lactating people, and more than two-thirds specifically listed pregnancy as an exclusion criterion.⁶⁷ It is essential to consider the safety of treatment in pregnancy and lactation; however, the risk of inadequate treatment or treatment with incomplete data is of equal concern.

Whereas there are many reports of difficult access to SRH services and poor outcomes after prior pandemics, little has been published about the effect of COVID-19 on SRH. The full impacts of this pandemic on SRH remain to be seen. Multinational cooperation and scientific study of SRH outcomes in response to COVID-19 should be a public health priority.⁵⁸ Medical and humanitarian organizations worldwide agree that contraception, family planning, abortion, prenatal and postpartum care, and breastfeeding support services are core components of essential health services, and access to this fundamental human right should not be disrupted because of COVID-19.^{19,63,70,71}

Recommendations

Recommendations for mitigating SRH impacts include the following.

Health care providers and organizations should prioritize innovative solutions to ensure equitable access to essential SRH services through both private and civil society channels.^{19,29,71}

- Recognize that SRH services are essential and must remain available at all times, particularly during times of crisis.^{14,19,34,58,59,70,71}
- Provide counseling and information about fertility awareness and correct condom use in case of disruption of other contraceptive supplies.⁷⁰

Minimize barriers to accessing SRH services for current contraceptive users.^{29,71}

- Women already using combined hormonal contraceptives and progesterone-only pills should continue for an additional 6 to 12 months without the need for office visits or monitoring during the pandemic.⁶³ Prescribers should provide and dispense refills for multiple months to minimize patients' trips to the pharmacy. Health insurance plans and medical office policies should waive timeline limitations on refills.⁷⁰
- Depot medroxyprogesterone acetate users can switch to available progesterone-only pills, or patients can be trained on self-injectable contraception to avoid face-to-face contact and to minimize office visits.^{63,70}
- Long-acting reversible contraceptive users should extend use to avoid face-to-face contact during the pandemic, as evidence suggests efficacy for 2 years beyond the US Food & Drug Administration–approved timeline.⁶³

Minimize barriers for women seeking initial SRH services while relieving the burden on primary health care structures^{29,71}

- Use telemedicine with remote assessment for new contraceptive users to provide prescriptions for combined hormonal contraceptives, progesterone-only pills, or self-injectable contraception for 6 to 12 months.^{63,70}

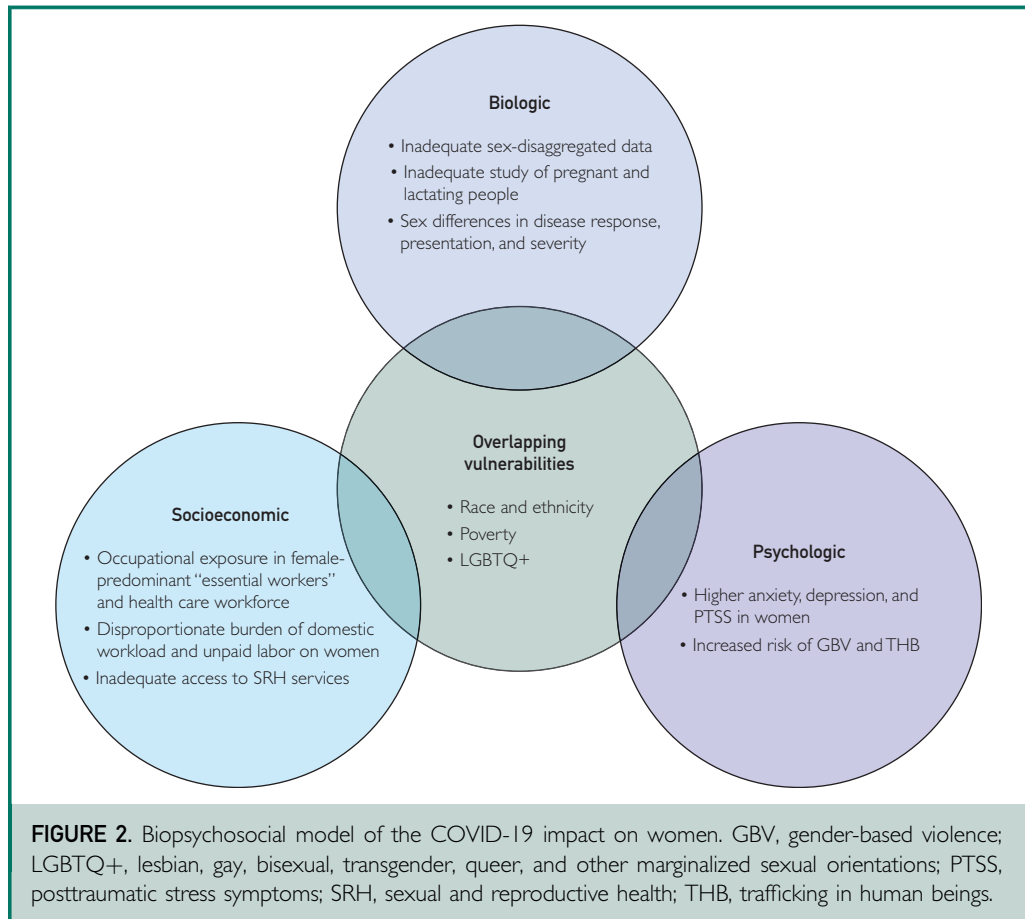
- Continue to offer appropriate use and provision of long-acting reversible contraceptives with initial remote assessment, minimal face-to-face contact, and adequate safety protocols.^{63,70}
- Postpartum counseling about contraception provided before hospital discharge should include long-acting reversible contraceptives (immediately post partum), permanent contraception (at delivery), and the lactational amenorrhea method.^{29,70}

Continue to provide access to emergency contraception and safe abortion services while minimizing exposure risk to COVID-19.^{19,63,70}

- Provide education on available over-the-counter and prescription emergency contraceptive options.⁷⁰ Use remote assessment to determine choice of emergency contraceptives and provide appropriate emergency contraceptives with minimal face-to-face contact.^{63,70}
- All practice recommendations and position papers recommend continuing to provide safe abortion services without requiring face-to-face contact after remote assessment. Ensure that no-touch/no-test early medication protocols are in place to minimize risk of COVID-19 exposure while providing essential services.⁶³

Collect, analyze, and report data regarding women's SRH outcomes during COVID-19 to understand the full impact and to target future mitigation strategies.

- Generate timely research and surveillance of key clinical, epidemiologic, and psychosocial links between COVID-19 and SRH to assess the immediate, midterm, and long-term impacts on women and girls.⁵⁹ These data will allow strengthening of health system capabilities and community engagement to sustain accessibility and quality of SRH services for vulnerable populations during future health emergencies⁵⁸
- Study the efficacy of innovative solutions and barriers to access to develop data-based evidence regarding best practice standards



and to ensure that innovations do not further marginalize those at greatest risk.⁷¹

- Include pregnant and lactating people in research efforts. As private companies and governments rapidly attempt to develop treatment and prevention therapeutics, they must commit to studying therapeutic options for pregnant and lactating individuals. There should be open exchange of information and data from maternity hospitals globally to ensure the best possible management of infected pregnant and lactating people.⁶⁸

IMPACT OF OVERLAPPING VULNERABILITIES IN WOMEN OF COLOR AND IN LESBIAN, GAY, BISEXUAL, TRANSGENDER, QUEER, AND OTHER INDIVIDUALS

Just as inadequate sex-disaggregated data mask complete understanding of the

pandemic, so do inadequate ethnicity- and race-disaggregated data. However, the available data show that the categories previously described are disproportionately affecting Black and indigenous women and women of color.^{3,16,17,19} Gender inequality, structural racism, and poverty are interconnected, and convergence of these challenges exacerbates system weaknesses that put these marginalized groups at increased risk¹⁹ (Figure 2).

Women of color are overrepresented as frontline workers. Many of them have incomes that are less than the federal poverty level, so they cannot afford to lose any income and they are less likely to have employee protections such as sick days.^{25,72} In the United States, 76% of health care jobs are held by women, nearly half of whom are women of color, so they have increased exposure to COVID-19.⁷² Women

of color are overrepresented in low-paying jobs, and pay inequality for women further exacerbates the economic impact of COVID-19.^{24,34} Whereas 20% of families in the United States identify as single-parent families, 66% of these identify as Black and 41% as Latina, exacerbating the household and financial burdens.¹⁹ Women who are primary breadwinners have lost jobs at higher rates than married women, and women of color are overrepresented in this group.¹⁹

Assessment of increased GBV in the United States requires recognition that rates of societal violence against women of color are higher than the national average.¹⁹ On some American Indian reservations, nearly 50% of women have reported experiencing sexual violence.¹⁹ Women of color also face systemic racism and barriers to accessing SRH services (leading to poorer reproductive health outcomes) compared with white women.^{38,73} Native American women have some of the highest suicide rates in the United States, and Black women experience the highest levels of anxiety.¹⁹ As mental health concerns increase during the pandemic, women of color are particularly vulnerable.

The terms *sex* and *gender* are routinely conflated in medical research, with COVID-19 studies thus far focused on cisgender women. Most studies do not specifically discuss the gendered impact on transgender women or the risk based on sexual orientation, although the lesbian, gay, bisexual, transgender, queer, and other marginalized sexual orientations (LGBTQ+) population has frequently been marginalized and has a high risk for disparities. The pandemic has exacerbated barriers to health care in the LGBTQ+ community. Higher rates of cancer, human immunodeficiency virus infection, smoking, and health care discrimination place these individuals at higher risk for the effects of COVID-19.⁷⁴ The worsening shortage of specialized health care professionals, postponed gender-affirming procedures, and decreased access to hormone therapy are associated with heightened anxiety and depression in the transgender population.^{75,76} In addition, transgender

women may face other physical and mental health needs related to receiving gender-affirming care, such as vaginoplasty.⁷⁷ Transgender people of color have significantly lower life expectancy because of discrimination and underlying disparities in economic opportunities, GBV, affordable housing, and mental health.^{19,30} In addition, LGBTQ+ youth are more likely to experience homelessness, violence, food insecurity, and suicide.¹⁹

The United Nations has recognized the international health concerns and unprecedented difficulties with mental, physical, and social well-being and health care access among LGBTQ+ individuals and has called for “states and other stakeholders to urgently take into account the impact of COVID-19 on [LGBTQ+] persons when designing, implementing and evaluating the measures to combat the pandemic,” which may disproportionately affect LGBTQ+ communities around the world.⁷⁸ Sex-disaggregated data do not identify the specific gendered impact on gender-diverse individuals, and gender-disaggregated data (and data on sexual orientation) are essentially nonexistent. Collection of gender and sexual orientation data is critical for identifying and mitigating the wider impacts of COVID-19 on these marginalized populations.

Recommendations

Recommendations for mitigating the impact of overlapping vulnerabilities include the following.

The compounding risks of gender, race, and sexual orientation on vulnerabilities from COVID-19 must be specifically acknowledged.

Policy changes during the COVID-19 pandemic need to be transformative for women of color and LGBTQ+ individuals rather than exacerbating current inequalities.³⁴

All mitigating measures must ensure not only gender representation but also racial and cultural representation.¹⁹

LIMITATIONS

Although we attempted to perform asynchronous identification of pertinent data

for inclusion, the available data are constantly evolving. This review is not comprehensive and does not include all important areas of impact or all mitigation strategies. The terms *sex* and *gender* were identified by the individual study designs but primarily focused on cisgender women; gender-diverse individuals are underrepresented in the available data. Categorization of data by anatomic sex and not by gender is an inherent limitation to the existing data; these populations are likely to be underrepresented in our analysis. We attempted to use gender-inclusive language when possible, but for accuracy, we used gendered terms of individual studies when referencing specific data.

FUTURE DIRECTION

The incomplete sex- and race-disaggregated data currently limit our understanding of the impact of the pandemic.^{2,19} Governmental and private organizations must commit to collecting, reporting, and analyzing complete sex-, gender-, sexual orientation-, race-, and ethnicity-disaggregated data to best understand the impact of the pandemic on diverse women and to prioritize areas of impact for study and intervention.^{2,19}

CONCLUSION

Whereas data suggest that men are more likely to have severe COVID-19 infections, women are affected by the pandemic in multiple ways that are not recognized in the traditional data sets. Worldwide, women have experienced an increased burden in the areas of occupation, economics, domestic violence, GBV, mental health, and SRH. Furthermore, vulnerabilities related to poverty, race, ethnicity, and LGBTQ+ status combine to exacerbate the impact on vulnerable populations.^{13,17,19,34}

Multiple national and international societies have recommended strategies for mitigating widening disparities for women during the COVID-19 pandemic. We recommend that policymakers, leaders, innovators, investors, and advocacy groups consider these categories of impact and mitigation

strategies when implementing programs and policies in response to COVID-19.

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Abbreviations and Acronyms: COVID-19 = coronavirus disease 2019; GBV = gender-based violence; LGBTQ+ = lesbian, gay, bisexual, transgender, queer, and other marginalized sexual orientations; MHPSS = mental health and psychosocial support; OR = odds ratio; SRH = sexual and reproductive health; THB = trafficking in human beings

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REFERENCES

1. World Health Organization. WHO coronavirus disease (COVID-19) dashboard. <https://covid19.who.int/>. Accessed February 25, 2021.
2. Global Health 5050. International Center for Research on Women, and African Population and Health Research Center. The sex, gender and COVID-19 project. <http://globalhealth5050.org/covid19/>. Accessed July 7, 2020.
3. Centers for Disease Control and Prevention. COVID data tracker. https://covid.cdc.gov/covid-data-tracker/?utm_source=morning_brew#demographics. Accessed September 3, 2020.
4. Bi Q, Wu Y, Mei S, et al. Epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China: a retrospective cohort study [erratum appears in *Lancet Infect Dis*. 2020;20(7):e148]. *Lancet Infect Dis*. 2020;20(8):911-919.
5. Channappanavar R, Fett C, Mack M, Ten Eyck PP, Meyerholz DK, Perlman S. Sex-based differences in susceptibility to severe acute respiratory syndrome coronavirus infection. *J Immunol*. 2017;198(10):4046-4053.
6. La Vignera S, Cannarella R, Condorelli RA, Torre F, Aversa A, Calogero AE. Sex-specific SARS-CoV-2 mortality: among hormone-modulated ACE2 expression, risk of venous thromboembolism and hypovitaminosis D. *Int J Mol Sci*. 2020;21(8):2948.
7. Meng Y, Lu W, Liu K, et al. Sex-specific clinical characteristics and prognosis of coronavirus disease-19 infection in Wuhan, China: a retrospective study of 168 severe patients. *PLoS Pathog*. 2020;16(4):e1008520.
8. Sharma G, Volgman AS, Michos ED. Sex differences in mortality from COVID-19 pandemic: are men vulnerable and women protected? *JACC Case Rep*. 2020;2(9):1407-1410.
9. Johnson HD, Sholcosky D, Gabello K, Ragni R, Ogonosky N. Sex differences in public restroom handwashing behavior

- associated with visual behavior prompts. *Percept Mot Skills*. 2003;97(3, pt 1):805-810.
10. Chen X, Ran L, Liu Q, Hu Q, Du X, Tan X. Hand hygiene, mask-wearing behaviors and its associated factors during the COVID-19 epidemic: a cross-sectional study among primary school students in Wuhan, China. *Int J Environ Res Public Health*. 2020;17(8):2893.
 11. The Lancet. The gendered dimensions of COVID-19. *Lancet*. 2020;395(10231):1168.
 12. Gausman J, Langer A. Sex and gender disparities in the COVID-19 pandemic. *J Womens Health (Larchmt)*. 2020;29(4):465-466.
 13. Wenham C, Smith J, Morgan R. COVID-19: the gendered impacts of the outbreak. *Lancet*. 2020;395(10227):846-848.
 14. United Nations Population Fund. COVID-19: a gender lens. Protecting sexual and reproductive health and rights, and promoting gender equality. <https://www.unfpa.org/resources/covid-19-gender-lens>. Accessed May 15, 2020.
 15. Canova V, Lederer Schläpfer H, Piso RJ, et al. Transmission risk of SARS-CoV-2 to healthcare workers—observational results of a primary care hospital contact tracing. *Swiss Med Wkly*. 2020;150:w20257.
 16. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and racial/ethnic disparities. *JAMA*. 2020;323(24):2466-2467.
 17. Dom AV, Cooney RE, Sabin ML. COVID-19 exacerbating inequalities in the US. *Lancet*. 2020;395(10232):1243-1244.
 18. Purdie A, Hawkes S, Buse K, et al. Sex, gender and COVID-19: disaggregated data and health disparities. *BMJ Global Health Blog*. <https://blogs.bmj.com/bmjgh/2020/03/24/sex-gender-and-covid-19-disaggregated-data-and-health-disparities/>. Accessed March 13, 2020.
 19. Kalyanpur A, Thomas D, Wu D, Tashjian L, Sifuentes M, Hall R. Rapid gender analysis: COVID-19 in the United States. <https://www.care.org/wp-content/uploads/2020/07/7.8.2020-USA-RG-A.pdf>. Published July 13, 2020. Accessed February 25, 2021.
 20. Robertson C, Gebloff R. How millions of women became the most essential workers in America: one in three jobs held by women has been designated as essential. *New York Times*. April 18, 2020. <https://www.nytimes.com/2020/04/18/us/coronavirus-women-essential-workers.html>. Accessed February 25, 2021.
 21. Boniol M, Mclsaac M, Xu L, Wulji T, Diallo K, Campbell J. Gender equity in the health workforce: analysis of 104 countries. In: *Healthforce Working Paper 1*. Geneva: World Health Organization Health Workforce; 2019. WHO/HIS/HWF/Gender/WPI/2019.1.
 22. Zhao J, Lu Y, Wang X, et al. Clinical characteristics of 80 hospitalized frontline medical workers infected with COVID-19 in Wuhan, China. *J Hosp Infect*. 2020;105(3):399-403.
 23. CDC Covid-19 Response Team. Characteristics of health care personnel with COVID-19—United States, February 12–April 9, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(15):477-481.
 24. Tucker J, Vogtman J. When hard work is not enough: women in low-paid jobs. National Women's Law Center. https://nwl.org/wp-content/uploads/2020/04/Women-in-Low-Paid-Jobs-report_pp04-FINAL-4.2.pdf. Published April 2020. Accessed February 25, 2021.
 25. Frye J. On the frontlines at work and at home: the disproportionate economic effects of the coronavirus pandemic on women of color. Center for American Progress. <https://www.americanprogress.org/issues/women/reports/2020/04/23/483846/frontlines-work-home/>. Published April 23, 2020. Accessed February 25, 2021.
 26. US Bureau of Labor Statistics. Overview of BLS statistics on women workers. <https://www.bls.gov/bls/cpswomendata.htm>. Accessed May 15, 2020.
 27. Langer A, Meleis A, Knaul FM, et al. Women and health: the key for sustainable development. *Lancet*. 2015;386(9999):1165-1210.
 28. Feinberg L, Reinhardt S, Houser A, Choula R. Valuing the invaluable: 2011 update. The growing contributions and costs of family caregiving. AARP Public Policy Institute. <https://assets.aarp.org/rgcenter/ppi/ltr/151-caregiving.pdf>. Accessed May 15, 2020.
 29. Gender in Humanitarian Action. The COVID-19 outbreak and gender: key advocacy points from Asia and the Pacific. <https://www2.unwomen.org/-/media/field%20office%20eseasia/docs/publications/2020/03/ap-giha-wg-advocacy.pdf?la=en&vs=2145>. Accessed May 19, 2020.
 30. CARE International Rescue Committee. Gender implications of COVID-19 outbreaks in development and humanitarian settings. https://insights.careinternational.org.uk/media/k2/attachments/CARE_Gender-implications-of-COVID-19-Full-Report_March-2020.pdf. Published March 2020. Accessed February 25, 2021.
 31. Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jaggi R. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Ann Intern Med*. 2014;160(5):344-353.
 32. Staniscuasi F, Reichert F, Wernick FP, et al. Impact of COVID-19 on academic mothers. *Science*. 2020;368(6492):724.
 33. Bianchi SM, Sayer LC, Milkie MA, Robinson JP. Housework: who did, does or will do it, and how much does it matter? *Social Forces*. 2012;91(1):55-63.
 34. United Nations. Policy Brief: the impact of COVID-19 on women. https://www.un.org/sites/un2.un.org/files/policy_brief_on_covid_impact_on_women_9_apr_2020_updated.pdf. Published April 9, 2020. Accessed June 1, 2020.
 35. Addressing mental health and psychosocial aspects of COVID-19 outbreak. IASC Briefing Note Version 1.5. https://interagencystandingcommittee.org/system/files/2020-11/IASC%20Interim%20Briefing%20Note%20on%20COVID-19%20Outbreak%20Readiness%20and%20Response%20Operations%20-%20MHPSS_3.pdf. Published March 17, 2020. Accessed May 15, 2020.
 36. Mantovani A, Dalbeni A, Beatrice G. Coronavirus disease 2019 (COVID-19): we don't leave women alone. *Int J Public Health*. 2020;65(3):235-236.
 37. World Health Organization. COVID-19 strategy update. https://www.who.int/docs/default-source/coronaviruse/covid-strategy-update-14april2020.pdf?sfvrsn=29da3ba0_19. Published April 14, 2020. Accessed May 15, 2020.
 38. UN Women. COVID-19 and ending violence against women and girls. <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/issue-brief-covid-19-and-ending-violence-against-women-and-girls-en.pdf?la=en&vs=5006>. Accessed May 19, 2020.
 39. John N, Casey S, Carino G, McGovern T. Lessons never learned: crisis and gender-based violence. *Dev World Bioeth*. 2020;20(2):65-68.
 40. Bradbury-Jones C, Isham L. The pandemic paradox: the consequences of COVID-19 on domestic violence. *J Clin Nurs*. 2020;29(13-14):2047-2049.
 41. Usher K, Bhullar N, Durkin J, Gyamfi N, Jackson D. Family violence and COVID-19: increased vulnerability and reduced options for support. *Int J Ment Health Nurs*. 2020;29(4):549-552.
 42. Campbell AM. An increasing risk of family violence during the Covid-19 pandemic: strengthening community collaborations to save lives. *Forensic Sci Int Rep*. 2020;2:100089.
 43. National Network to End Domestic Violence. The intersections of domestic violence and human trafficking. https://nndv.org/latest_update/intersections-domestic-violence-human-trafficking/. Published November 10, 2017. Accessed October 26, 2020.
 44. United Nations Human Rights, Office of the High Commissioner. Draft general recommendation on trafficking in women and girls in the context of global migration. <https://www.ohchr.org/EN/HRBodies/CEDAW/Pages/CallTraffickingGlobalMigration.aspx>. Accessed June 2020.

45. UN Women. Addressing emerging human trafficking trends and consequences of the COVID-19 pandemic. <https://www.unwomen.org/en/digital-library/publications/2020/07/guidance-addressing-emerging-human-trafficking-trends-and-consequences-of-the-covid-19-pandemic>. Accessed June 2020.
46. UNICEF USA. How to help stop child trafficking. <https://www.unicefusa.org/mission/protect/trafficking/end>. Accessed October 8, 2020.
47. US Department of State. 20 Ways you can help fight human trafficking in 2020. <https://www.state.gov/20-ways-you-can-help-fight-human-trafficking/>. Accessed October 8, 2020.
48. World Health Organization, Department of Mental Health and Substance Dependence. Gender disparities and mental health. https://www.who.int/mental_health/media/en/242.pdf?ua=1. Accessed May 15, 2020.
49. Liu N, Zhang F, Wei C, et al. Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: gender differences matter. *Psychiatry Res*. 2020;287:112921.
50. Moghanibashi-Mansourieh A. Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian J Psychiatry*. 2020;51:102076.
51. Wang Y, Di Y, Ye J, Wei W. Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. *Psychol Health Med*. 2020;26(1):13-22.
52. Ettman CK, Abdalla SM, Cohen GH, Sampson L, Vivier PM, Galea S. Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. *JAMA Netw Open*. 2020;3(9):e2019686.
53. Chew NWS, Lee GKH, Tan BYQ, et al. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav Immun*. 2020;88:559-565.
54. Lai J, Ma S, Wang Y, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 2020;3(3):e203976.
55. Zhang WR, Wang K, Yin L, et al. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychother Psychosom*. 2020;89(4):242-250.
56. World Health Organization. Mental health and psychosocial considerations during the COVID-19 outbreak. WHO/2019-nCoV/MentalHealth/2020.1. https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf?sfvrsn=6d3578af_2. Published March 18, 2020. Accessed July 7, 2020.
57. Chattu VK, Yaya S. Emerging infectious diseases and outbreaks: implications for women's reproductive health and rights in resource-poor settings. *Reprod Health*. 2020;17(1):43.
58. Ahonsi B. A research agenda on the sexual and reproductive health dimensions of the COVID-19 pandemic in Africa. *Afr J Reprod Health*. 2020;24(1):22-25.
59. Tang K, Gaoshan J, Ahonsi B. Sexual and reproductive health (SRH): a key issue in the emergency response to the coronavirus disease (COVID-19) outbreak. *Reprod Health*. 2020;17(1):59.
60. Rasmussen SA, Smulian JC, Lednický JA, Wen TS, Jamieson DJ. Coronavirus disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. *Am J Obstet Gynecol*. 2020;222(5):415-426.
61. Hall KS, Samari G, Garbers S, et al. Centring sexual and reproductive health and justice in the global COVID-19 response. *Lancet*. 2020;395(10231):1175-1177.
62. Bayefsky MJ, Bartz D, Watson KL. Abortion during the Covid-19 pandemic—ensuring access to an essential health service. *N Engl J Med*. 2020;382(19):e47.
63. Tolu LB, Feyissa GT, Jeldu WG. Guidelines and best practice recommendations on contraception and safe abortion care service provision amid COVID-19 pandemic: scoping review. *BMC Public Health*. 2021;21(1):276.
64. Todd-Gher J, Shah PK. Abortion in the context of COVID-19: a human rights imperative. *Sex Reprod Health Matters*. 2020;28(1):1758394.
65. United Nations Population Fund. Sexual and reproductive health rights: modern contraceptives and other medical supply needs, including for COVID-19 prevention, protection, and response. https://www.unfpa.org/sites/default/files/resource-pdf/COVID-19_Preparedness_and_Response_-_UNFPA_Interim_Technical_Briefs_Contraceptives_and_Medical_Supplies_23_March.pdf. Published March 23, 2020. Accessed May 19, 2020.
66. Purdy C. Opinion: how will COVID-19 affect global access to contraceptives—and what can we do about it?. <https://www.devex.com/news/opinion-how-will-covid-19-affect-global-access-to-contraceptives-and-what-can-we-do-about-it-96745/>. Published March 11, 2020. Accessed May 2020.
67. Costantine MM, Landon MB, Saade GR. Protection by exclusion: another missed opportunity to include pregnant women in research during the coronavirus disease 2019 (COVID-19) pandemic. *Obstet Gynecol*. 2020;163(1):26-28.
68. Faure-Bardon V, Salomon LJ, Lerez-Ville M, Ville Y. How should we treat pregnant women infected with SARS-CoV-2? *BJOG*. 2020;127(9):1050-1052.
69. LaCourse SM, John-Stewart G, Adams Waldorf KM. Importance of inclusion of pregnant and breastfeeding women in COVID-19 therapeutic trials. *Clin Infect Dis*. 2020;71(15):879-881.
70. Nanda K, Lebetkin E, Steiner MJ, Yacobson I, Dorflinger LJ. Contraception in the era of COVID-19. *Glob Health Sci Pract*. 2020;8(2):166-168.
71. Townsend JW, Ten Hoop-Bender P, Sheffield J. Figo Contraception and Family Planning Committee. In the response to COVID-19, we can't forget health system commitments to contraception and family planning. *Int J Gynaecol Obstet*. 2020;150(3):273-274.
72. Rho HJ, Brown H, Fremstad S. A basic demographic profile of workers in frontline industries. Center for Economic and Policy Research. <https://cepr.net/wp-content/uploads/2020/04/2020-04-Frontline-Workers.pdf>. Published April 2020. Accessed February 25, 2021.
73. Allsbrook J. The coronavirus crisis confirms that the U.S. health care system fails women. Center for American Progress. <https://www.americanprogress.org/issues/women/reports/2020/04/23/483828/coronavirus-crisis-confirms-u-s-health-care-system-fails-women/>. Published April 23, 2020. Accessed February 25, 2021.
74. Eadens S. LGBTQ community may be 'particularly vulnerable' to coronavirus pandemic. Here's why. *USA Today*. March 18, 2020. <https://www.usatoday.com/story/news/nation/2020/03/18/lgbtq-coronavirus-community-vulnerable-covid-19-pandemic/2863813001/>. Accessed April 13, 2020.
75. Zhu X, Gao Y, Gillespie A, et al. Health care and mental well-being in the transgender and gender-diverse Chinese population [erratum appears in *Lancet Diabetes Endocrinol*. 2019;7(6):e18]. *Lancet Diabetes Endocrinol*. 2019;7(5):339-341.
76. The Lancet Diabetes Endocrinology. Transgender health: access to care under threat. *Lancet Diabetes Endocrinol*. 2018;6(6):427.
77. Ferrando CA. Vaginoplasty complications. *Clin Plast Surg*. 2018;45(3):361-368.
78. United Nations Human Rights, Office of the High Commissioner. COVID-19: the suffering and resilience of LGBT persons must be visible and inform the actions of states: statement by human rights experts on the International Day Against Homophobia, Transphobia and Biphobia. <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25884&LangID=E>. Published May 17, 2020. Accessed June 2020.