



Review article

Systems thinking on the gendered impacts of COVID-19 in Bangladesh: A systematic review

Mou Rani Sarker^a, Md Abdur Rouf Sarkar^{b,*}, Mohammad Jahangir Alam^c,
Ismat Ara Begum^d, Humnath Bhandari^e

^a Sustainable Impact Platform, International Rice Research Institute (IRRI), Dhaka, Bangladesh

^b Agricultural Economics Division, Bangladesh Rice Research Institute (BRRRI), Gazipur, Bangladesh

^c Department of Agribusiness and Marketing, Bangladesh Agricultural University (BAU), Mymensingh, Bangladesh

^d Department of Agricultural Economics, Bangladesh Agricultural University (BAU), Mymensingh, Bangladesh

^e Impact, Policy, and Foresight Department, International Rice Research Institute (IRRI), Dhaka, Bangladesh

ARTICLE INFO

Keywords:

COVID-19

Gender

Economic outcome

Agency

Bangladesh

ABSTRACT

The COVID-19 pandemic has disproportionately affected women and threatens to overturn four decades of progress in Sustainable Development Goal (SDG) 5: Gender Equality and Women's Empowerment. To better grasp the key areas of concern that gender inequality exists, gender studies and sex-disaggregated evidence are required. Using the PRISMA technique, this review paper is the first attempt to present a comprehensive and current picture of the gendered dimensions of the COVID-19 pandemic in Bangladesh regarding economic well-being, resource endowments, and agency. This study found that women were more likely to face hardship as widows, mothers, or sole breadwinners after the loss of husbands and male household members because of the pandemic. The evidence suggests that the advancement of women during this pandemic was hampered by poor reproductive health outcomes; girls' dropping out of school; job loss; less income; a comparable wage gap; a lack of social security; unpaid work burnout; increased emotional, physical, and sexual abuse; an increase in child marriages; and less participation in leadership and decision-making. Our study found inadequate sex-disaggregated data and gender studies on COVID-19 in Bangladesh. However, our research concludes that policies must account for gender disparities and male and female vulnerability across multiple dimensions to achieve inclusive and effective pandemic prevention and recovery.

1. Introduction

Coronavirus disease continues to spread globally, with more than 523 million confirmed cases and more than 6.3 million fatalities since the first outbreak in Wuhan, China, in December 2019 [1]. Bangladesh confirmed its first COVID-19 case on March 8, 2020 [2]. The country has witnessed two waves of record-breaking daily coronavirus cases. The first wave came from June 27 to July 27, 2020, while the second wave occurred from March 20 to April 20, 2021. The COVID-19 crisis has affected people's lives and livelihoods and interrupted daily life. However, not all social groups experienced the same effects. The most vulnerable and marginalized groups (e.g., Dalit and indigenous peoples, persons with disabilities) were affected differentially, leading to gender inequities [3–6]. Therefore, the

* Corresponding author.

E-mail address: mdrouf_bau@yahoo.com (M.A. Rouf Sarkar).

<https://doi.org/10.1016/j.heliyon.2023.e13773>

Received 10 August 2022; Received in revised form 9 February 2023; Accepted 9 February 2023

Available online 16 February 2023

2405-8440/© 2023 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

country witnessed even more gender inequality and disempowerment in all four domains (health, education, social, and economic well-being) because of the pandemic than before. Women and children, in particular, have been placed in precarious positions. Many scholars have looked at these domains, at least partly, from the standpoint of gender inequality, particularly in the fields of mental health, public health, and education. However, very little research has been done in the agency/social and economic well-being domain from a gender lens. Nonetheless, not all domains undergo significant investigation. Furthermore, because of the synergistic effect of one domain on another, formulating a policy based on an incomplete study of these domains will be ineffective. Across the short, medium, and long term, generating comprehensive evidence in all areas using systems thinking approach for successful policy design would remove gender viewpoint inequity and negative externalities. As a result, we integrated four domains in our research to develop a conceptual framework that would make it simpler to spot significant areas where gender disparity exists.

The effect of COVID-19 is tied to concerns feminist economists have long studied. The pandemic caused a social, political, and economic crisis, with distinct gender outcomes. Male death rates outnumbered female death rates [7–10]. True, but women were more likely to endure hardship as widows, mothers, or sole breadwinners after the loss of male members of the household. The crisis drew attention to the low-paid frontline workers (such as nurses, midwives, and physician assistants) who risk their lives daily to provide service to others without concern of contracting a virus [11–13]. Owing to social norms and gender division of labor, the COVID-19 pandemic exacerbated women's unpaid work burden because of lockdowns and orders to stay at home [4,14–16].

The pandemic instantly affected employment and livelihoods, even though the impacts differ by employment type (formal or informal) and sector (agriculture, industry, or services) [3,5,17]. In Bangladesh, where 92% of the women work in the informal and low-productivity sector, the absence of social protection has worsened their vulnerability [18]. An increase in unemployment and underemployment has a devastating impact on household income. Using Bangladesh Household Income and Expenditure Survey (HIES) data, Mottaleb et al. [19] found that a one-day complete lockdown incurred a USD 64.2 million equivalent economic loss per day considering the wage losses of daily wage workers. Rising food prices threatened food security for women, children, and marginalized groups. Income loss increases the likelihood of poor mental health outcomes and domestic abuse [9,20–23]. This, along with other gendered, interconnected vulnerabilities, required attention to both the pandemic's immediate impacts and the longer-term consequences that are beginning to appear and might worsen over time. The realization of the Sustainable Development Goals (SDGs) is clearly jeopardized under these circumstances. To get the development agenda back on track, policy must empower and assist the people most affected by COVID-19, particularly women and girls who endure discrimination. Failing to do so risks worsening inequities and committing future generations of women and girls to poverty and poor health. Sustainable development requires navigating complicated social, political, and economic structures, especially for women and girls. With this viewpoint, we reflect on gender and COVID-19 policies in Bangladesh to identify domain-specific potential policy lessons.

In Bangladesh, gender-differentiated COVID-19 outcomes have a significant detrimental influence on economic progress. Since the coronavirus spread, many studies have been conducted countrywide, but few on evidence-based gender impact. Moreover, the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) and the World Health Organization (WHO) National Action Plan for Health Security strongly advocate collecting sex-disaggregated social, resource endowment, and agent data for effective policy formulation [24]. With this endeavour, this study aims to provide a systematic evaluation of a comprehensive and up-to-date landscape of how men and women have perceived the experience, impact, and risks of the pandemic since its beginning.

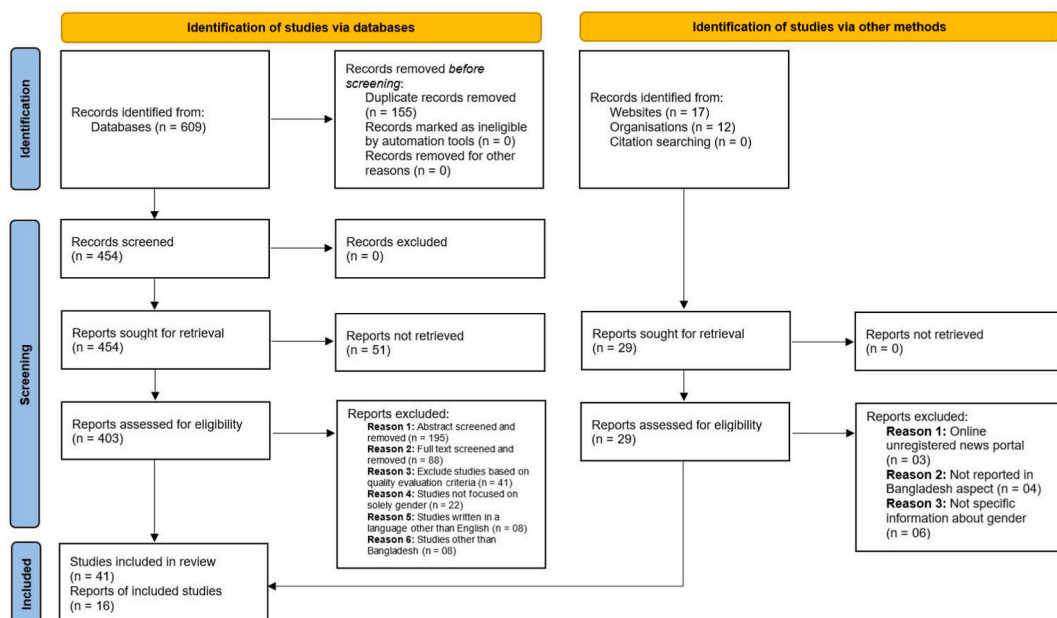


Fig. 1. The diagram illustrates the PRISMA study selection procedure for a new systematic review.

After examining the COVID-related evidence, we will identify the remaining research gaps. We anticipate that this study will help practitioners and policymakers develop gender-responsive post-COVID policies.

2. Methods

2.1. Search strategy

To conduct this systematic review, we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Fig. 1) [25]. We undertook a complete literature search to find articles using Web of Science core and Scopus databases. We subsequently used PubMed, ScienceDirect, Google Scholar, and ResearchGate to retrieve papers and preprints not indexed by the Web of Science and Scopus. Using bounded keywords, we conducted literature searches from October 2021 to March 2022. The searching keywords included four types of items: (i) exposure (e.g., “COVID-19”, “Coronavirus”, “SARS-Cov-2”, “COVID-19 pandemic”); (ii) group of interest (e.g., “women”, “female”, “male”, “men”, “marginalized group”, “gender”, “boys”, “girls”, “youth”); (iii) outcome of interest (e.g., “mortality”, “morbidity”, “fatality”, “frontline workers”, “health care”, “antenatal care”, “education”, “school dropout”, “online learning”, “job”, “workplace”, “labor market”, “income”, “occupation”, “formal work”, “informal work”, “care work”, “unpaid work”, “time burden”, “migration”, “remittance”, “domestic violence”, “intimate partner violence”, “health”, “mental health”, “depression, anxiety and stress”, “psychological impact”, “depression”, “anxiety”, “stress”, “stress disorders”, “suicide”, “child marriage”, “early pregnancy”); and (iv) country (e.g. “Bangladesh”).

2.2. Study selection criteria

We obtained a total of 609 articles from different databases; however, after deleting duplicates, there were only 454 articles. Fifty-one articles were excluded. Then, we reviewed the “Titles and Abstracts” and “Full text” of the retrieved articles, resulting in the exclusion of 283 articles for the subsequent steps. In the end, a total of 120 articles were examined using the inclusion criteria. The inclusion criteria for this review were (i) studies conducted in Bangladesh; (ii) studies conducted after the onset of the COVID-19 pandemic; (iii) observational studies, including cross-sectional, case, and cohort studies; (iv) studies reporting the outcome of gender; and (v) studies conducted in the English language. Finally, we selected only 41 articles for this review.

Few articles focused solely on gender and sex-disaggregated statistics addressing the coronavirus outbreak and its effects in Bangladesh. As a result, this study drew, tabulated, and graphically presented its data from various published works and online resources. To facilitate this, we gathered information from various media sources, blogs, research institutes, private and international organizations, policy experts, and newspapers to gain a better understanding. For the presentation of COVID-19’s early impact, this review heavily relies on UN Women materials such as UN Women rapid surveys. Despite methodological limitations, the available resources provide a unique and standard data source for assessing the gender impact of COVID-19 in Bangladesh.

A total of 57 research articles and other documents have been identified to demonstrate the outcomes of each domain in the systematic review. We identified four study domains, namely, health, education, agents, and economic well-being, with most research

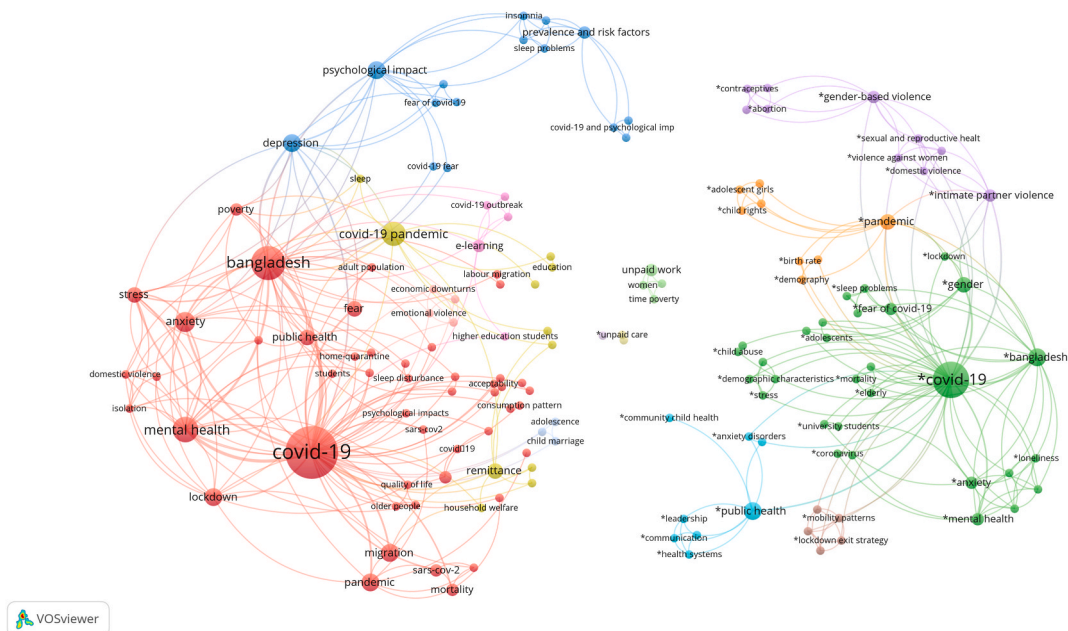


Fig. 2. Visualization of common co-occurring keywords in gender studies during the COVID-19 era.

focusing on mental and public health (Fig. 2). The work of other domains is dispersed. As with any systematic review, we cannot rule out the possibility that certain research articles were not included because of publication and other screening biases. As a result, we spent considerable time searching reputable databases and websites for relevant research papers and supporting documentation and reaching out to gender specialists via social media. We believe that our work significantly contributes to the generation of comprehensive evidence and identifies key inequity areas for formulating gender-sensitive policies.

3. Results

Pandemics affect women and men differently. We propose a conceptual framework based on systems thinking to explain the gendered outcomes of COVID-19 in Bangladesh, using all of the data retrieved (Fig. 3). The gender-specific outcomes across the four domains of health, education, economic conditions (livelihoods and income), and agency (decision making and institution) are transmitted through different sub-domains.

3.1. Health outcome

3.1.1. Morbidities and mortalities

From March 8, 2020 to March 27, 2022, Bangladesh confirmed 1,951,282 cases of COVID-19, accounting for 0.41% of all cases globally, and 29,118 deaths, a case fatality ratio (CFR) of 1.49% [26]. However, cases of morbidity and mortality varied by gender and age group (Fig. 4A–D). Males had more confirmed (67%) and fatal (65%) cases than females (33% and 35%, respectively). Males had a higher infection rate than females (Fig. 4B) [27] due to men being more inclined to leave the house, enter crowded places, and have an irresponsible attitude toward preventive measures [8].

The gender disparity in mortality risk can be explained by men’s increased (Fig. 4D) probability of having comorbidities such as hypertension, diabetes, cardiovascular disease, and chronic lung disease; their involvement in risky behavior such as drinking alcohol and smoking; and occupational exposure and lack of proper safe health practices including handwashing and mask-wearing [27,28]. On the contrary, behavioral and social norms favor women, such as limited mobility and hygiene practices. Women typically clean around the house as part of their routine housework; also, frequent hand washing after work helps prevent infection.

Regarding age distribution, children and older adults were the least affected groups, but the death rate increased with age [7,13]. The age group 21–40 years accounts for more than half of COVID-19 cases (55%) (Fig. 4A). However, the age group over 60 years accounts for 39% of all recorded deaths, followed by the age group 51–60 years (30%) (Fig. 4C). Less infection in children and older

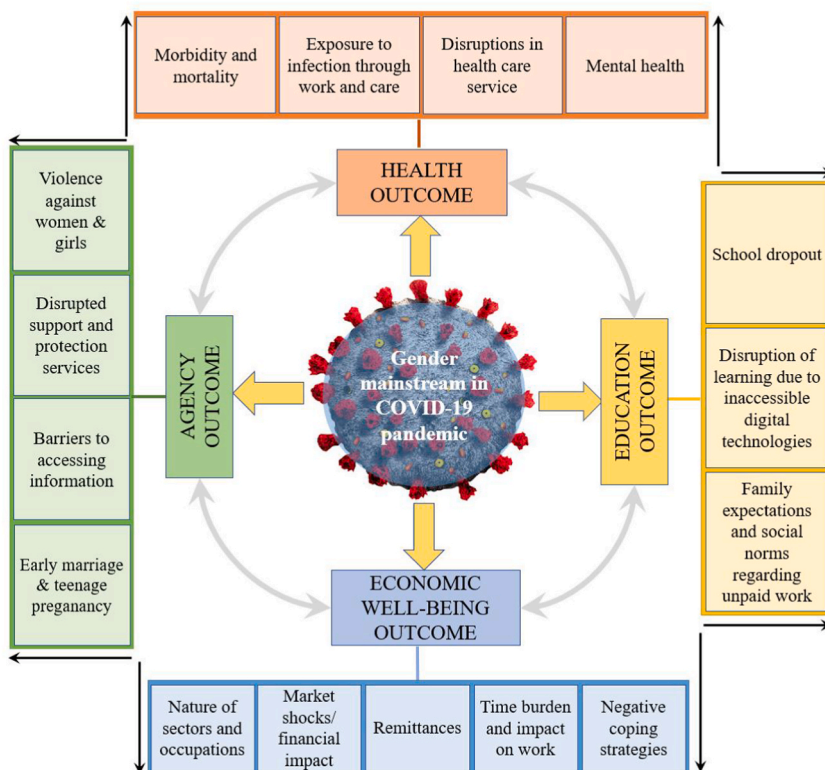


Fig. 3. Conceptual framework of gender-disaggregated impacts of COVID-19.

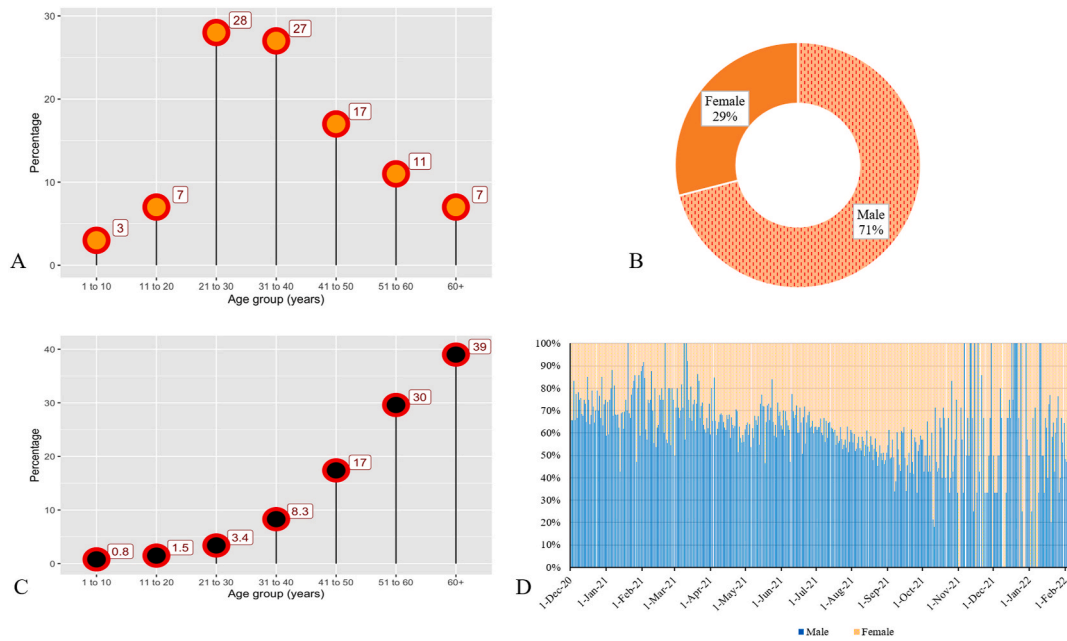


Fig. 4. Demographic distribution of COVID-19 infection cases and deaths in Bangladesh: (A) confirmed cases (% by age group); (B) cases by gender; (C) death rate (% by age group); (D) death rate by gender (Data source: Prepared by authors based on open sources data from <https://iedcr.gov.bd/>).

individuals was observed, perhaps because they remain home more. More death was reported in the older group associated with poor immunity, socioeconomic status, and inadequate and less access to health-care services [27]. However, in the second wave, the *Delta* variant infected an increasing number of young, unvaccinated adults, those over 50 years old, and pregnant women [29].

3.1.2. Exposure to infection through work and care

Male-dominated sectors such as police, armed forces, and journalists bore the brunt of COVID -19 [11,13,27]. High infection and mortality rates were observed among physicians (5.36% case fatality rate). In the case of health-care professionals, women were

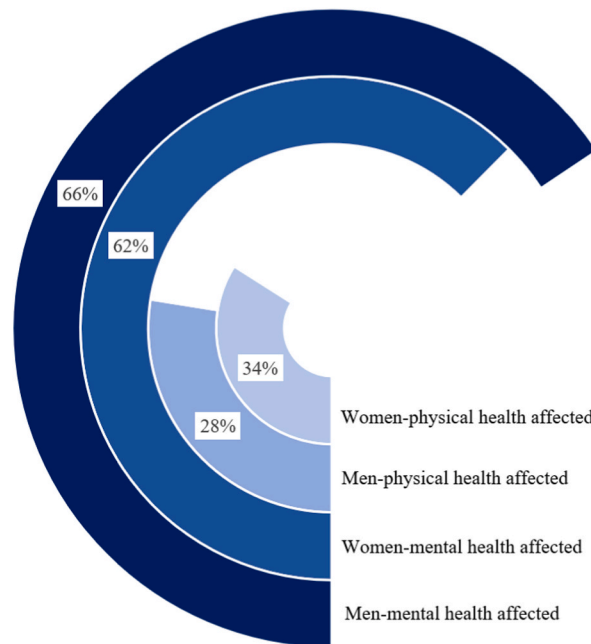


Fig. 5. Gendered impact of COVID-19 on mental and physical health (% in responses) (Data source: Prepared by authors based on open sources data from UN Women [37]).

predisposed to infection with COVID-19, as approximately 94% of nurses and 90% of community health workers in the country are females [10]. This could be due to a lack of infection control procedures, inadequate training to deal with COVID-19 patients, lack of masks and personal protective equipment, patient desire to hide information, etc. [12,30].

Many occupations remained operational throughout the pandemic, putting men and women at a disproportionate risk of exposure [9,11]. These include, but are not limited to, ready-made garment (RMG) workers, domestic workers, salespersons, care workers, and hospital cleaners for women, and daily laborers, security forces, transportation and logistics, medical stores, food processing, restaurants, housing, and construction, as well as informal waste and sanitation workers for men [10,16,31].

3.1.3. Disruptions in health-care service

As the government struggled to control the virus despite a crippled health system and inadequate logistics, uptake of maternity and other reproductive health services, including family planning, has been seriously disrupted. Out of 64 district hospitals in Bangladesh, only 33 were equipped to provide comprehensive emergency obstetric treatment [32]. During the first three months of the pandemic, the impact on prenatal, birth, and postnatal services was the most severe. In-facility births in Bangladesh declined by 15–20% in April–May 2020 compared with those in 2019 [11]. In addition, COVID-19-infected pregnant women had a higher risk of pregnancy and birth complications. Numerous women were affected by the disruption of essential services such as immunization, prenatal care, and in-hospital birth [17].

The prolonged lockdown increased the pregnancy rate due to inaccessibility to birth control services, lack of outdoor activity, and increased couple interactions. A recent report stated that, during the COVID-19 pandemic, approximately 2.4 million babies were born in Bangladesh [11]. Access to emergency health care was also limited by a lack of transportation, personal protective equipment (PPE), qualified staff, COVID-19 screening facilities, and correct protocols for admitting pregnant women to hospitals. The limited provision of prenatal care also increased the maternal morbidity and mortality rate [33].

3.1.4. Mental health

The virus has exacerbated stress and caused substantial mental health issues in all age groups, including children. Men experienced greater emotional suffering at the onset of the pandemic than women (Fig. 5). However, the circumstance has changed over time. Recent evidence indicated that depression (women 48% vs. men 31%) and anxiety (women 71% vs. men 69%) were more prevalent among women [34–36].

Fear of illness or death, sleeping disorder, emotions of helplessness, depression, anxiety, loneliness, anger, annoyance, nervousness, frustration, and social stigma were the most frequently seen psychological aspects [21,38–41]. The primary common factors contributing to poor mental health as well as stress and anxiety in Bangladesh were concerns about income loss, health risks, food unavailability, unpaid housework, care responsibilities, domestic violence, financial uncertainty, unemployment, obesity, and living alone [35,42,43]. However, mental health problems were significantly associated with severe psychological comorbidities, such as suicide ideation, particularly among women [44–47].

In a comparison of stress levels, the latest studies revealed that the elderly (60 and older), young adults, women, front-line workers (doctors and other health-care professionals), and second-line workers (public servants, police and defense, and banks and financial institutions) had experienced high psychological stress [34,41,48,49]. Work overload, inadequate supply of necessary hand hygiene tools and insufficient PPE, loneliness, depression, anxiety, self-isolation and quarantine from family, sleep disturbance, fear of infection, etc., triggered mental health problems among health-care practitioners [12,50,51].

Besides these professions, university students also experienced emotional distress regarding their future academic and professional careers because of disruptions in social support networks and typical daily routines, academic delay, fear of infection, and virtual learning [52,53].

3.2. Education

3.2.1. Dropping out of school

Bangladesh closed all educational institutions in March 2020 to prevent the spread of the virus. Given the poorly managed and under-resourced institutional infrastructure, COVID-19-related disruption exacerbated the education crisis. The unexpected countrywide suspension threatened past progress in education, including primary school enrollment and gender disparity in secondary and higher secondary education.

In September 2021, after a 17-month closure, schools and colleges in Bangladesh reopened, with a lower rate of girls returning than boys [52,54]. The prolonged shutdown of schools spiked the secondary school dropout rate by more than 45% from 36% in pre-COVID 2019 [55]. Girls and children from poor and marginalized families are more likely to drop out [54]. Globally, 11 million girls may never return to school following the pandemic, with Bangladesh being no exception [56]. In Bangladesh, after the reopening of schools, one in ten girls intended not to return. Many girls stopped going to school because of child marriage and/or early pregnancy, financial limitations, a parent's death, or illness [10,57]. Also, millions of girls whose families allow them to attend school only for free or cheap meals may be taken out of school and pushed to work.

3.2.2. Disruption of learning due to inaccessible digital technologies

School closures have affected approximately 42 million students, including university students [52,58]. After three months of educational institution closure, the government implemented alternative learning programs such as online classes, teacher follow-up, and lesson broadcasts on television and radio. However, inadequate digital resources and lack of access to assistive devices made it

difficult for students to attend distance-learning programming [14,59–61].

Gender disparities in access to digital resources or skills made remote learning hard to obtain during the pandemic. Access to distance-learning resources (e.g., internet) was more limited for girls than for boys. BBS and UNICEF [62] found that only 6% of families own a computer/tablet and only 2% of those users are female. In three rounds of COVID-19 follow-up surveys, only one-third of the girls or fewer attended televised classes [63].

COVID-19 intensified the digital divide between wealthy and poor households. Many students had cell phones, but the lack of a consistent internet connection at home hampered their studies [58].

3.2.3. Family expectations and social norms regarding unpaid work

School closures increased girls' domestic responsibilities, limiting their time available for schoolwork and educational opportunities [10,14]. According to Amin et al. [63], pre-pandemic average study time was 7–8 h per day, but this dropped to 2 h per day during COVID-19-related school closures. A BRAC survey [64] of 1938 Bangladeshi students stated that 65% of the female students were involved in domestic tasks compared with 44% of the male students. This resulted in a disruption of education and increased girl dropout rates after schools reopened.

3.3. Economic well-being in terms of income and livelihoods

3.3.1. Sectors and occupations

In Bangladesh, the COVID-19 pandemic has caused two types of job loss: “temporary” lockdown jobs and “permanent” impact jobs [22]. During the first two months of the outbreak, the closure of MSMEs (micro, small, and medium enterprises), transportation, construction, and the manufacturing sector resulted in the loss of 12–17 million temporary jobs [65]. According to a survey, more than 10 million people have been laid off from agricultural jobs, bringing the total number of temporary job losses to about 25 million [66]. Although there is no report on the actual number of jobs lost over the past two years, the World Bank has confirmed that more women than men have lost their work [9].

Job losses were a major concern for women who are trapped in informal sectors [16,67]. The UN Women survey [17] found that 83% of the women in formal jobs and 49% in informal jobs experienced job losses and decreased hours. However, COVID-19 affected both women (17%) and men (25%) with formal jobs, with women experiencing fewer job losses but greater wage reductions (38%). As a result of the pandemic-related market closures, women's income from agricultural production, food processing (e.g., puffed rice, flattened rice), and other sorts of informal employment declined drastically.

COVID-19-related restrictions shut down factories, suspended transportation, closed offices, and banned gatherings, thus disrupting domestic labor markets. In the economy's three most prominent sectors, the lockdown resulted in significant job losses, decreases in working hours, and income shocks (Fig. 6).

Women in the garment industry, MSMEs, daily laborers, cleaners, domestic workers, and seasonal workers, among others, lost more jobs, which increased their economic insecurity [16,19,22,37,67]. For example, during the March–May 2020 period, RMG workers lost an estimated USD 502 million in wages, representing a drop of nearly 35% in total workers, including single mothers, pregnant women, lactating mothers, and elderly women, who were terminated or laid off without pay [69].

COVID-19 affects female-led businesses severely. Women-owned MSMEs such as textiles, food processing, and diversified production either operated limited operations from their homes or closed them down totally [70,71]. Sectors with a larger percentage of female employees, such as education and health, as well as sectors with a higher percentage of male employees, such as hotels/restaurants and tourism, were particularly hard hit [9,67]. The government announced a stimulus package to minimize COVID-19's negative impacts. The administration and distribution of this package remained questionable [72]. It may not have reached the unemployed and vulnerable women, in contrast to business owners [73].

The outbreak gave a boost to Bangladeshi start-ups leveraging social media such as Facebook. Young people, especially women and girls, started new home-based businesses such as catering, online apparel, cosmetics, food, arts, and crafts [71]. With 22% of the



Fig. 6. Estimated employment, working hours, and income loss in 2020 vis-à-vis 2019 (Data source: Prepared by authors based on open sources data from media report [68]).

population on Facebook, the network provided a solid platform for reaching clients on a much larger and diverse scale [74] during the lockdown. Many MSMEs have moved to Facebook commerce (F-commerce). The pandemic has also fueled a freelance boom among the younger generation in digital domains such as software development and technology, creative media and multimedia, and writing and translation. The country saw a 27% increase in gig workers in 2021 [75].

3.3.2. Other market shocks/financial impact

Gender disparities in job losses, along with preexisting gender inequalities in access to productive resources and social security coverage, exacerbated women’s economic vulnerability [28]. Although estimating gender and other intra-household disparities in income and consumption is conceptually challenging, women’s income declined more than men’s (Fig. 7). Since the pandemic began, women have seen the greatest drop in income from paid work, whether from formal or informal sources (65% of women and 51% of men). Job and income losses have already polarized labor markets and are anticipated to increase gaps. Women’s income from family businesses, farming or fishing, and remittances encounters the highest declines (ranging from 69% to 78%). Additionally, only women reported declining income from properties, investments, or savings. This proves that women were forced to sell assets to purchase food and other supplies in times of crisis.

3.3.3. Remittances

Remittances were one source of income that might have affected men and women differently depending on whether women tended to migrate or not. COVID-19 affected 13 million migrant workers from Bangladesh and 30 million of their dependents [76,77]. These included limited remittances, decreased savings, and the emergence of socio-economic crises [78]. A large number of female migrants laboring as domestic workers in the Middle East and Asia (i.e., Singapore and Malaysia) lost their income and livelihood in the pandemic [79]. Lockdowns, travel restrictions, border shutdowns, and disruptions to public transportation all contributed to declines in both international and domestic remittances [80]. Many migrant laborers suffered physical and mental health problems such as mortality, abuse, overwhelming stress, and unlivable conditions [78]. However, the situation has improved and many migrant workers, mostly men, are returning to work abroad after border relaxation and COVID-19 vaccination.

3.3.4. Time use, care, and impacts on work

Since the spread of COVID-19, women have seen a more significant increase in unpaid work than men (Fig. 8A–B). During the pandemic, women worked more than 6 h daily for unpaid work [15]. The nationwide lockdown and stay-at-home policy exacerbated the time poverty of women and girls. The increase in demand for unpaid care work as a result of school closures, urban and international migration, jobless husbands, home quarantine, overwhelmed health systems, and care responsibilities for old and sick members was also presumed to severely affect the economic outcomes of women [3,4,16,17,81].

Working women who had a double load of paid jobs and family responsibilities found it more difficult to achieve a work-family balance [70,81]. COVID-19 has also increased the unpaid burden on men (Fig. 8A). About 44% of the respondents reported an increase in domestic work, while 56% reported a rise in care work. However, men began to share some of the responsibilities with women, such as child education, childcare, and other less time-consuming household tasks such as grocery shopping and repair work. However, although the pandemic has resulted in some redistribution of unpaid household work, the burden of women’s unpaid work has not necessarily decreased. Regarding working intensity (Fig. 8B), almost comparable percentages of men and women engage in single-task activities, either domestic or care work. The gender gap is prominent when the workload is multiplied (three or more domestic or care activities). In homes with children, single parents (widowed or divorced) have seen the most significant increase in unpaid domestic and care work. Increased work intensity had a detrimental effect on women’s focus and concentration on work.

Bangladesh lifted the formal lockdown, but the pandemic’s economic impact is still being felt. Women who lost jobs early in the pandemic were more engaged in in-home duties than men and less likely to actively seek work.

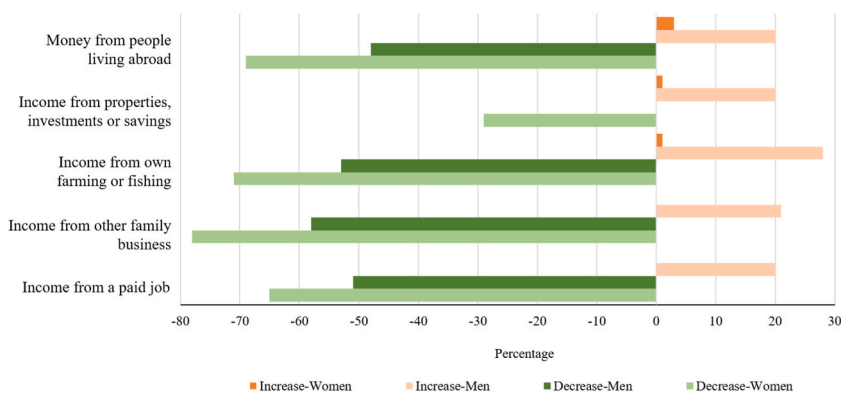


Fig. 7. The proportion of people by gender whose income increases/decreases from different sources since the transmission of COVID-19 started (Data source: Prepared by authors based on open sources data from UN Women [17]).

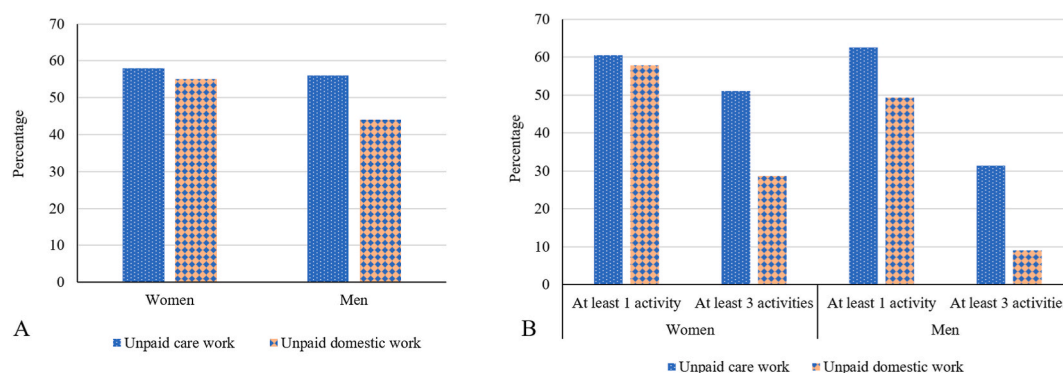


Fig. 8. (A) Increased share of time spent on unpaid care and household work, and (B) increased work intensity by gender since the pandemic started (Data source: Prepared by authors based on open sources data from UN Women [17,37]).

3.3.5. Negative coping strategies

There was a significant evidence gap in access to social protection and government support, which affects coping mechanisms. As per the UN Women [10,17] report, people have received assistance from non-government organizations (NGOs) and the government since the pandemic started, yet women continue to face discrimination. Internal migrants (domestic helpers, garment workers, sex workers, and so on) who were not registered voters in their current location were not eligible for local relief. Indigenous ethnic minorities, women-led households, and single parents faced significant obstacles in accessing assistance.

During the COVID-19 outbreak, food insecurity severely affected female smallholder farmers. Decreased income and purchasing power, along with price hikes, disproportionately affected women and girls in vulnerable households. According to Termeer et al. [82], rural households in Bangladesh curtailed 20% of their food expenditure during the pandemic. In this situation, women and girls were more likely to skip meals or eat less food [83]. Food insecurity was more prominent among female-headed households because of a lack of resources, income losses, and less access to gender-focused safety nets [79].

3.4. Agency: decision making

3.4.1. Increased gender-based violence

Gender-based violence was prevalent in Bangladesh prior to the pandemic but has become worse during the pandemic [84,85]. Domestic violence, rape, attempted rape, sexual harassment, and murder have increased significantly [21,85–89]. According to the Bangladesh Peace Observatory, March to May 2020 saw, a 10% upsurge in dowry and domestic violence [90]. Violence is rising because of crowded living conditions, quarantines and social isolation, unemployment, dwindling resources, and the incapability to flee from violent spouses [10,20,23,84].

Rural women and girls are more likely than urban women and girls to experience domestic violence or intimate partner violence [21]. Certain subgroups of women, such as health-care workers, community health workers, domestic workers, transgender workers, and *Rohingya* refugees, may be disproportionately vulnerable to violence against women, including sexual harassment, unwanted sexual advances, assault, financial exploitation, and among other forms of violence.

3.4.2. Disrupted protection and support services

At the outbreak's start, the increased burden on the health system and social isolation caused breakdowns in support and care for women victims of gender-based violence [28]. For a while, services throughout the country were suspended owing to logistical, resource, and/or health issues. Less access to legal and protective services increased the vulnerability of survivors. From March 26 to May 8, 2019, the courts suspended all court proceedings and closed most legal support offices. On May 9, 2020, the President of Bangladesh signed a law launching virtual courts, followed by an online court for minors [32]. However, most victims faced barriers to accessing the virtual court system because of limited access to the internet or a phone.

As health-care facilities and police departments were overburdened, victims experienced numerous resource constraints. These types of services necessitated face-to-face contact. Victims have also needed to self-isolate or present medical paperwork, which added another barrier for women to overcome given the outbreak's resource constraints and limit on activities.

3.4.3. Barriers to information access and decision-making

Women perform better in times of crisis because of their emotional maturity; they are also more responsive, compassionate, and modest [9,10]. Nevertheless, gender disparities in knowledge and access to information disadvantage women in Bangladesh. Inaccessibility to critical information often limits women's decision-making capacity in pandemic situations. Early Rapid Assessment Surveys [10] found that 29% of the women and 15% of the men have obtained no information on the pandemic. In comparison, 13% of the women and 16% of the men were unaware of the information they received. As primary caregivers for household hygiene, many women were largely excluded from COVID-19 information due to persistent gender disparities in access to social media, smartphone

ownership, and other work burdens.

3.4.4. Child marriage and early pregnancy

In Bangladesh, child marriage has historically served as a coping mechanism during periods of economic vulnerability and insecurity, including food crises and natural catastrophes, and the COVID-19 pandemic was not an exception. Numerous factors forced early marriage. Socio-cultural norms, the loss of parental income, and school closures were the primary reasons for the increase in child marriages during the pandemic [10,91–93]. In the past 25 years, Bangladesh has witnessed the highest rate of child marriages (13%) in the COVID-19 pandemic [94].

Teenage pregnancy has also surged significantly because of sexual assault, child marriage, or girls' poor coping methods. However, data on trends in teen pregnancies are limited.

4. Discussion

4.1. Evidence of gendered impact in Bangladesh in comparison to other continents during COVID-19

Our study found that the number of confirmed COVID-19 cases and the death rate were high for men. The global trend also revealed that men had a higher fatality rate than women [95–98]. Like this study, evidence from Asian, African, Central and East European, South American, and North American countries found that older adults and children were less susceptible to infection than other age groups [27,96]. The referred study estimated that fatalities increased with age; more than 40% of the fatal cases occurred in the over-60 age group. Men were susceptible or exposed to the virus in many, but not all, contexts, particularly frontline workers, who are primarily women in Bangladesh. Similarly, in both developed and developing countries (e.g., the United States, the United Kingdom, Saudi Arabia, Italy, Spain, India, Pakistan, the Philippines, Indonesia, and Vietnam), women working in the health-care sector have been highly exposed to the infection and its consequences [9,99–101]. Adams [95] reported, based on global health 50-50 data, that women in countries with high female labor force participation are more susceptible to viral infection than women in countries with low female labor force participation, which corresponds with the findings for Bangladesh.

During the COVID-19 pandemic and lockdowns, we observed a substantial disruption in maternal and reproductive health services. A study of 118 low- and middle-income countries estimated a decrease in prenatal care of at least 18% and possibly as high as 51.9% [102]. Outpatient clinic closures [103], financial limitations [9], lack of transportation, self-quarantine, and fear of the virus [104] restricted women from receiving health care, from prenatal care to abortion. Midwives in Kenya, Uganda, and Tanzania reported decreased clinic visits and more women arriving late without prenatal care [105], findings that are consistent with our study. Most hospitals that remained operational were overcrowded. Further, pregnant women in many countries, particularly India, were denied access to hospitals or ambulances and forced to experience childbirth on the street or at home [106].

We noticed a gender gap in mental and psychosomatic disorders in Bangladesh. Likewise, in many Asian and European countries, women have higher levels of anxiety, stress, and depression than men [17,107–115]. Contrary to these observations, men were found to experience higher psychological suffering than women in a few countries such as India, China, the United States, Pakistan, and Ireland [116–120]. Two studies, conducted in Italy and Nigeria reported no gender disparities in mental health indicators, indicating that men and women experienced comparable mental breakdowns throughout the pandemic [121,122].

In Bangladesh, the move from conventional to virtual classrooms significantly disrupted the education and future of many pupils, particularly girls. Our findings suggested that poor networks and limited digital resources made online learning challenging, particularly in rural areas. In Central Europe, Eastern Europe, Central Asia, Southeast Asia, East Asia, and Oceania, men and boys were more likely to have access to online learning, whereas the opposite was true in South Asia [123]. Our analysis found a lower rate of girls returning to school due to geographic, social, economic and demographic factors; similar findings were observed in Africa and Asia [124–127]. For instance, in Kenya, adolescent girls' risk of unwanted sexual encounters and pregnancy quadrupled during the 6-month school hiatus, while in Nigeria, where child marriage is common, girls' enrolment was more affected than boys' by the pandemic [128]. Global data show that girls dropped out of school 1.2 times as often as boys during the pandemic [123]. The highest gender gap in school dropouts was observed in Central Europe, Eastern Europe, Central Asia, and South Asia [123]. This is because in the ideology of "Manbox" societies, boys' education is prioritized over girls', along with the greater burden of household chores, as domestic work is viewed as the realm of women and girls [17,37,129]. When girls are not in school and are socially isolated, they are particularly vulnerable to sexual and gender-based violence [37,103,130] and early marriage [131,132], which are exacerbated by intersectional inequities and norms connected to sexuality and masculinity. Furthermore, the potential decline in economic productivity and lifetime income for girls is attributed in part to their lower level of schooling [133,134]. Therefore, to encourage girls to return to school, governments might employ conditional cash transfer programs for families to promote girls' education and guarantee that pregnant girls have access to educational programs [135].

In terms of economic well-being, we confirmed that the pandemic has severely affected women's employment and livelihood more than men's. Women's income loss has exacerbated the gender gap of decision-making power over household resource allocation and worsened gender biases in household food distribution [136,137]. Studies in low- and middle-income countries found that the informal sector, migrant workers, essential workers, and small entrepreneurs were exposed to the negative effects of lockdown measures [5,138]. For example, domestic workers in Peru and India not only lose their means of subsistence but also have a steeper loss in income [139,140]. Similar findings have been reported in Kenya, Mexico, China, Singapore, South Korea, Japan, Australia, the United Kingdom, Italy, Paraguay, Argentina, and the United States, where women have faced disproportionate job losses in the labor market [141–146], decreased work hours [147–149] and decreases in income more than men [150,151]. In Turkey, women had less

employment disruption than men due to their lower labor force participation before the pandemic [152]. However, men and women were similarly affected by job loss or furloughing in a German study [153].

Since the spread of the virus, both men and women have reported an increase in unpaid work, with women bearing the majority of the added household responsibilities. Quantitative and qualitative studies from India, Japan, the United States, Turkey, the United Kingdom, Australia, and Argentina found an increase in time poverty among women [5,142,143,153–156]. Two studies of diverse professionals linked with remote working in 76 countries saw participants reporting increased household tasks [157], blurred lines between home and work, and lengthy workdays [158]. A few other research studies conducted in Italy, Mexico, Turkey, and Austria addressed a redistribution of intra-household responsibilities; higher father engagement in childcare and homeschooling [151,152,157,159,160]. In line with the extent of women's work burden, statistics from the Asia-Pacific area revealed that the increase for men was primarily limited to one or two activities, whereas, for women, it encompassed three or more tasks [161]. So, to lessen the pandemic's disproportionate and long-term economic impacts on women, the government should set up direct cash transfer programs, extend unemployment benefits to the informal and feminized sector, invest in programs to help women get back to work, give loans and other incentives to women who want to start their own businesses, and make sure that women have access to information and productive resources.

COVID-19 weakened the agency and voice of women in Bangladesh. Evidence shows that there was a gender gap in knowledge and access to COVID-19 information to mitigate the crisis in the Asia-Pacific region [17]. Restricted access to vital protection and support services intensified women's vulnerability inside and outside the home [9]. Although home confinement allowed families to stay together, this study showed increased gender-based violence during the lockdown. Using police statistics or helplines in the United States, scholars have observed an increase in domestic violence and service calls after the beginning of social distancing [162–164]. With a similar perspective as in Bangladesh, women and girls have been disproportionately victimized by emotional abuse, physical violence, and sexual assault in North America [165–167], Europe [168–171], Africa [114,172–174], Asia-Pacific [23,123,175–177], and the Middle East and North African (MENA) [178–183] regions. In Bangladesh, the prevalence of child marriage and early maternal age has increased due to rising sexual and gender-based violence along with economic hardship. This is consistent with the findings in Indonesia, where a dramatic rise in child marriages followed the COVID-19 crisis due to school shutdown, increased family chores, increased stress and boredom, customary law, and economic concerns [184].

4.2. Glimpse of the setback in gender progress

The virus itself does not generate socioeconomic consequences on gender, but rather the mechanisms to decrease disease transmission, which has disproportionately affected women, girls, and marginalized groups. The pandemic has disproportionately affected women and threatens to reverse four decades of hard-won progress in the fight against gender inequality. In the post-pandemic era, according to these reviews, eight of the nine targets under Goal 5 of the SDGs have experienced downturns. Women in Bangladesh have experienced an increase in discrimination, violence, and marriage (including child marriage, early marriage, and forced marriage); a decrease in access to sexual and reproductive health; an increase in unpaid work; a decrease in participation in leadership and decision-making; unequal rights to economic resources; and restricted access to information and communication technology. According to the 'Global Gender Gap 2020' report, Bangladesh was ranked 50th in terms of closing the gender gap and was the top-ranked country in South Asia. However, the pandemic has taken away many of the achievements, and the country is now ranked 65th in the 'Global Gender Gap 2021' report [185]. This downgrade was mostly the result of rising fertility rates, maternal mortality rates, and girls' school dropout rates after the COVID-19 pandemic. Thus, the ripple effects are devastating and offset decades of progress in gender equality and women's empowerment.

In Bangladeshi society, existing intersectionality, masculinity, and 'Manbox' ideology aggravated gender-based discrimination against women. The greatest paradox in the gender equality and social inclusion rhetoric is that inequality continues despite the design and implementation of many virtuous gender policies and programs by the government of Bangladesh. The explanation may be the absence of a uniform umbrella policy. All policies were highly context-dependent and fragmented, with each an attempt to resolve the situation independently. The convergence of these policy drawbacks and operational strategies has behaved as a setback to the anticipated progress of gender equality and social inclusion. Accordingly, the devastating impact of COVID-19 on women and girls has exacerbated preexisting and underlying gender inequalities [9]. Consequently, recovery from the multiple negative social, economic, health, and agency outcomes of COVID-19 posed a significant challenge for Bangladesh. The same scenario is portrayed in low- and middle-income countries as supported by COVID-19 evidence (details in the above section 4.1). In parallel, if gender-based inequalities persist, these vulnerable nations will struggle to implement SDG 5 (Gender Equality).

5. Conclusions and evidence gaps

Our study provides an overview of the gender impact of COVID-19 in Bangladesh. The pandemic has widened global socioeconomic inequality. Bangladeshi women have gone far since independence 50 years ago, but still face oppressive gender norms. In tandem with these norms, the pandemic has made women's lives more difficult, which harms women's empowerment in Bangladesh. Despite the large number of studies, we found insufficient evidence in sex-disaggregated data to extract the authentic landscape of gender impact in Bangladesh. So, the quality and depth of the information offered in this area of research are limited because of data constraints. No quality appraisal was undertaken, which might limit this review. The strength of the study is that its findings are reflective of all regions in Bangladesh. The other strength of our research is that it is the first to explore the impact on women in many sectors in Bangladesh during and after the pandemic.

Gender-disaggregated data for a variety of aspects of health, education, and economic well-being are still not publicly available, which demands more future research. Grossly, significant opportunities exist to address these concerns through qualitative and quantitative methodologies based on real-time surveys. The largest research gaps were identified for sexual and reproductive health care, disruptions in schooling, labor market, time burden, migration, livelihood, income, support services, child marriage, and safety. Non-reporting of COVID-19 cases is subject to future study. Although the evidence showed significant infections and death rates among men, it is still uncertain whether all COVID-19 cases in the country were registered, especially among women, because of *Purdah* and other cultural conventions. It is of utmost importance to dig deeper into the socioeconomic vulnerability of women after the death of a spouse or other family breadwinner. Female health-care workers and pregnant women are typically constrained by caring responsibilities, making them susceptible to anxiety and stress that have not been thoroughly studied. More research is needed on the socioeconomic challenges during and after COVID-19 regarding accurate and accessible family planning education, contraception, and health-care services.

National data on COVID-19's impact on education, specifically girls' dropout rate following school reopening, are unknown but vital to accomplish the SDGs. Some significant parameters, such as how social and cultural dimensions affect enrolment patterns in the current crisis, have not yet been analyzed. The area of economic prosperity remains mostly untapped. Since the spread of the coronavirus, specific research needs have been identified in the areas of sectoral occupation loss, impact of income shocks, and their associated gender-based characteristics. A further vacuum exists about the intersectional dimensions of the crisis, including losses to livelihood by race, class, mobility, region, disability, life course, and other indicators of disadvantage. In addition, the unpaid work burden of women, such as the issues of intra-household gender division of labor, work-life balance, and unemployment, needs special attention. During COVID-19, gender-based violence gained attention. Reliable data on safety and violence are difficult to acquire via typical data methods, thus requiring more consideration. This health, economic, and humanistic challenge has always needed better proof and more resources, but today this is even more urgent.

History shows that adversity breeds innovation. This ongoing crisis offers an opportunity to rethink our approach to future growth, economic strategy, and plan of action. By merely repeating existing policies nationally or internationally, we exacerbate the crisis's vulnerability. To achieve an inclusive pandemic recovery, policies must consider gender disparities, putting women and girls at the center, and include the higher vulnerability of males and females across various dimensions.

Author contribution statement

All authors listed have significantly contributed to the development and the writing of this article.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of interest's statement

The authors declare no conflict of interest.

Acknowledgments

The authors wish to express their appreciation to the anonymous reviewers for their insightful comments.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.heliyon.2023.e13773>.

References

- [1] Worldometer, COVID Live Update: 173,332,025 Cases and 3,727,759 Deaths from the Coronavirus, 2022. <https://www.worldometers.info/coronavirus/>.
- [2] M.T. Islam, A.K. Talukder, M.N. Siddiqui, T. Islam, Tackling the COVID-19 pandemic: the Bangladesh perspective, *J. Public Health Res.* 9 (2020) 389–397, <https://doi.org/10.4081/JPHR.2020.1794>.
- [3] B. Agarwal, Imperatives of recognising the complexities: gendered impacts and responses to COVID-19 in India, *Econ. Polit. Times* 39 (2022) 31, <https://doi.org/10.1007/S40888-021-00242-8>.
- [4] P. Chauhan, Gendering COVID-19: impact of the pandemic on women's burden of unpaid work in India, *Gend. Issues* 38 (2021) 395–419, <https://doi.org/10.1007/s12147-020-09269-w>.

- [5] N. Kabeer, S. Razavi, Y. van der Meulen Rodgers, Feminist economic perspectives on the COVID-19 pandemic, *Fem, Econ. Times* 27 (2021) 1–29, <https://doi.org/10.1080/13545701.2021.1876906>.
- [6] S. Gautam, S. Setu, M.G.Q. Khan, M.B. Khan, Analysis of the health, economic and environmental impacts of COVID-19: the Bangladesh perspective, *Geosystems and Geoenvironment* 1 (2022), 100011, <https://doi.org/10.1016/J.GEOGEO.2021.100011>.
- [7] M.A.A. Al-Bari, S. Hossain, M.K.-E. Zahan, Exploration of sex-specific and age-dependent COVID-19 fatality rate in Bangladesh population, *World J. Radiol.* 13 (2021) 1, <https://doi.org/10.4329/WJR.V13.I1.1>.
- [8] G.M. Bwire, Coronavirus. Why men are more vulnerable to COVID-19 than women?, *SN Compr. Clin. Med.* 2 (2020) 874–876, <https://doi.org/10.1007/S42399-020-00341-W>.
- [9] C. De Paz Nieves, I. Gaddis, M. Muller, Gender and COVID-19: what Have We Learnt, One Year Later? World Bank, Washington, DC, 2021 <https://doi.org/10.1596/1813-9450-9709>.
- [10] UN Women, COVID-19 Bangladesh: Rapid Gender Analysis, 2020. https://reliefweb.int/sites/reliefweb.int/files/resources/RGABangladesh.Final_May2020.pdf.
- [11] S. Akhter, F.A. Kumkum, F. Bashar, A. Rahman, Exploring the lived experiences of pregnant women and community health care providers during the pandemic of COVID-19 in Bangladesh through a phenomenological analysis, *BMC Pregnancy Childbirth* 21 (2021) 1–11, <https://doi.org/10.1186/S12884-021-04284-5>.
- [12] M.A.U. Repon, S.A. Pakhe, S. Quaiyum, R. Das, S. Daria, M.R. Islam, Effect of COVID-19 pandemic on mental health among Bangladeshi healthcare professionals: a cross-sectional study, *Sci. Prog.* 104 (2021) 1–18, <https://doi.org/10.1177/00368504211026409>.
- [13] M.H.B. Siam, M.M. Hasan, M.E. Raheem, H.R. Khan, M.H. Siddiquee, M.S. Hossain, Insights into the first wave of the COVID-19 pandemic in Bangladesh: lessons learned from a high-risk country, *medRxiv* (2020), <https://doi.org/10.1101/2020.08.05.20168674>.
- [14] N. Jones, I. Sanchez Tapia, S. Baird, S. Guglielmi, E. Oakley, W.A. Yadete, M. Sultan, K. Pincock, Intersecting barriers to adolescents' educational access during COVID-19: exploring the role of gender, disability and poverty, *Int. J. Educ. Dev.* 85 (2021), 102428, <https://doi.org/10.1016/J.IJEDUDEV.2021.102428>.
- [15] S. Neelormi, Rapid Analysis of Care Work during COVID Pandemic in Bangladesh, 2021. <http://www.manusherjonno.org/wp-content/uploads/2021/04/Final-Care-Work-Rapid-Assessment-Pandemic-BD-SN-National-sharing-24.04.2021.pdf>.
- [16] M.R. Sarker, Labor market and unpaid works implications of COVID-19 for Bangladeshi women, *Gend. Work. Organ.* 28 (2021) 597, <https://doi.org/10.1111/GWAO.12587>.
- [17] UN Women, Surveys Show that COVID-19 Has Gendered Effects in Asia and the Pacific, UN Women Data Hub, 2020. <https://data.unwomen.org/resources/surveys-show-covid-19-has-gendered-effects-asia-and-pacific>.
- [18] BBS, Labor Force Survey Bangladesh 2016-17, Dhaka, Bangladesh, 2018. http://203.112.218.65:8008/WebTestApplication/userfiles/Image/LatestReports/LFS_2016-17.pdf.
- [19] K.A. Mottaleb, M. Mainuddin, T. Sonobe, COVID-19 induced economic loss and ensuring food security for vulnerable groups: policy implications from Bangladesh, *PLoS One* 15 (2020), e0240709, <https://doi.org/10.1371/JOURNAL.PONE.0240709>.
- [20] A. Jahid, Unsafe at home: the increased trend of domestic violence during the COVID-19 pandemic in Bangladesh, *J. Adult Protect.* 24 (2022) 15–21, <https://doi.org/10.1108/JAP-08-2021-0027>.
- [21] J.D. Hamadani, M.I. Hasan, A.J. Baldi, S.J. Hossain, S. Shiraji, M.S.A. Bhuiyan, S.F. Mehrin, J. Fisher, F. Tofail, S.M.M.U. Tipu, S. Grantham-McGregor, B. A. Biggs, S. Braat, S.R. Pasricha, Immediate impact of stay-at-home orders to control COVID-19 transmission on socioeconomic conditions, food insecurity, mental health, and intimate partner violence in Bangladeshi women and their families: an interrupted time series, *Lancet Global Health* 8 (2020), e1380, [https://doi.org/10.1016/S2214-109X\(20\)30366-1](https://doi.org/10.1016/S2214-109X(20)30366-1).
- [22] M.I. Hossain, COVID-19 impacts on employment and livelihood of marginal people in Bangladesh: lessons learned and way forward, *S. Asian Surv.* 28 (2021) 57–71, <https://doi.org/10.1177/0971523121995072>.
- [23] M. Nagashima-Hayashi, A. Durrance-Bagale, M. Marzouk, M. Ung, S.T. Lam, P. Neo, N. Howard, Gender-Based violence in the Asia-Pacific region during COVID-19: a hidden pandemic behind closed doors, *Int. J. Environ. Res. Publ. Health* 19 (2022), <https://doi.org/10.3390/IJERPH19042239>.
- [24] H. Feng, C.C.R. Gan, D. Leiva, B.L. Zhang, S.E. Davies, COVID-19, sex, and gender in China: a scoping review, *Glob. Health* 18 (2022) 1–12, <https://doi.org/10.1186/S12992-022-00804-W>.
- [25] D. Moher, A. Liberati, J. Tetzlaff, D.G. Altman, Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement, *Ann. Intern. Med.* 151 (2009) 264–269, <https://doi.org/10.7326/0003-4819-151-4-200908180-00135>.
- [26] MMWU, WHO Bangladesh COVID-19 Morbidity and Mortality Weekly Update, 2022. https://cdn.who.int/media/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situation-reports/who_ban_sitrep_109_20220328.pdf?sfvrsn=b310f5bb_5.
- [27] S.S. Tazerji, F. Shahabinejad, M. Tokasi, M.A. Rad, M.S. Khan, M. Safdar, K.J. Filipiak, L. Szarpak, T. Dzieciatkowski, J. Jurgiel, P.M. Duarte, M.T. Rahman, M. A. Sobur, M.S. Islam, A. Ahmed, M.N.F. Shaheen, A.A. Shehata, R. Gharieb, M. Fawzy, Y.S. Malik, N. Jaganathasamy, V.O. Rajendran, K. Subbaram, P.S.S. Ali, S. Ali, S.U. Rehman, M. Ozaslan, G. Khan, M. Saeed, U. Younas, S. Imran, Y. Junejo, P. Arabkarami, U. Hogan, A.J. Rodriguez-Morales, Global data analysis and risk factors associated with morbidity and mortality of COVID-19, *Gene Reports* 26 (2022), 101505, <https://doi.org/10.1016/J.GENREP.2022.101505>.
- [28] C. de Paz, M. Muller, A.M.M. Boudet, I. Gaddis, Gender Dimensions of the COVID-19 Pandemic, World Bank, Washington, DC, 2020. <https://openknowledge.worldbank.org/bitstream/handle/10986/33622/Gender-Dimensions-of-the-COVID-19-Pandemic.pdf?sequence=1>.
- [29] N. Merrifield, Pregnant Women More Likely to Be Hospitalised with Delta Covid Variant, *The Pulse*, 2021. <https://www.pulsetoday.co.uk/news/coronavirus/rising-covid-admissions-among-pregnant-women-as-study-reveals-severity/>.
- [30] M. Sayeed Al-Zaman, Healthcare crisis in Bangladesh during the COVID-19 pandemic, *Am. J. Trop. Med. Hyg.* 103 (2020) 1357, <https://doi.org/10.4269/AJTMH.20-0826>.
- [31] M.R. Sarker, M.A.R. Sarker, Households' waste scenario during COVID-19 pandemic: an outlook from Bangladesh, *Asian J. Environ. Ecol.* 16 (2021) 1–7, <https://doi.org/10.9734/AJEE/2021/V16I330247>.
- [32] I.A. Chowdhury, Bangladesh, Virtual Courts Ease COVID-19 Risk, UNICEF, 2020. <https://www.unicef.org/coronavirus/bangladesh-virtual-courts-ease-covid-19-risk>.
- [33] M.A. Ullah, A.T. Moin, Y. Araf, A.R. Bhuiyan, M.D. Griffiths, D. Gozal, Potential effects of the COVID-19 pandemic on future birth rate, *Front. Public Health* 8 (2020) 893, <https://doi.org/10.3389/FPUBH.2020.578438>.
- [34] T. Abir, N.A. Kalimullah, U.L. Osuagwu, D.M.N. Yazdani, T. Husain, P.C. Goson, P. Basak, M.A. Rahman, A. Al Mamun, P.Y. Permarupan, M.Y.H. Khan, A. H. Milton, K.E. Agho, Prevalence and factors associated with mental health impact of covid-19 pandemic in Bangladesh: a survey-based cross-sectional study, *Ann. Glob. Heal.* 87 (2021) 43–44, <https://doi.org/10.5334/AOGH.3269>.
- [35] R. Das, M.R. Hasan, S. Daria, M.R. Islam, Impact of COVID-19 pandemic on mental health among general Bangladeshi population: a cross-sectional study, *BMJ Open* 11 (2021), e045727, <https://doi.org/10.1136/BMJOPEN-2020-045727>.
- [36] M. Hasan, Z. Maliha, A. Rahman, M.A. Mamun, Insomnia in Bangladeshi young adults during the COVID-19 pandemic: the role of behavioral factors, COVID-19 risk and fear, and mental health issues, *Sleep Vigil* 5 (2021) 315–322, <https://doi.org/10.1007/S41782-021-00161-5>.
- [37] U. Women, Unlocking the Lockdown: the Gendered Effects of COVID-19 on Achieving the SDGS in Asia and the Pacific, 2020. https://data.unwomen.org/sites/default/files/documents/COVID19/Unlocking_the_lockdown_UNWomen_2020.pdf.
- [38] A. Al Zubayer, M.E. Rahman, M.B. Islam, S.Z.D. Babu, Q.M. Rahman, M.R.A.M. Bhuiyan, M.K.A. Khan, M.A.U. Chowdhury, L. Hossain, R. Bin Habib, Psychological states of Bangladeshi people four months after the COVID-19 pandemic: an online survey, *Heliyon* 6 (2020), <https://doi.org/10.1016/J.HELIYON.2020.E05057>.
- [39] T. Ara, M.M. Rahman, M.A. Hossain, A. Ahmed, Identifying the associated risk factors of sleep disturbance during the COVID-19 lockdown in Bangladesh: a web-based survey, *Front. Psychiatr.* 11 (2020), 580268, <https://doi.org/10.3389/FPST.2020.580268>.
- [40] M.R. Islam, M.S. Sultana, A.H. Khan, S. Hossain, M.T. Sikder, M.T. Hasan, Z. Li, Fear and depressive symptoms amid COVID-19: a cross-sectional pilot study among adult population in Bangladesh, *Heliyon* 7 (2021), <https://doi.org/10.1016/J.HELIYON.2021.E07395>.

- [41] M. Tabassum, M.I. Parvej, F. Ahmed, F. Zafreen, S. Sultana, Effect of COVID-19 on perceived stress among Bangladeshi people, *Ment. Health Rev.* 26 (2021) 143–151, <https://doi.org/10.1108/MHRJ-07-2020-0042>.
- [42] M.H. Al Banna, A. Sayeed, S. Kundu, E. Christopher, M.T. Hasan, M.R. Begum, T. Kormoker, S.T.I. Dola, M.M. Hassan, S. Chowdhury, M.S.I. Khan, The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: a nationwide cross-sectional study, *Int. J. Environ. Health Res.* 32 (2022) 850–861, <https://doi.org/10.1080/09603123.2020.1802409>.
- [43] S.M.D.U. Islam, M. Bodrud-Doza, R.M. Khan, M.A. Haque, M.A. Mamun, Exploring COVID-19 stress and its factors in Bangladesh: a perception-based study, *Heliyon* 6 (2020), e04399, <https://doi.org/10.1016/J.HELIYON.2020.E04399>.
- [44] A.K.M.I. Bhuiyan, N. Sakib, A.H. Pakpour, M.D. Griffiths, M.A. Mamun, COVID-19 related suicides in Bangladesh due to lockdown and economic factors: case study evidence from media reports, *Int. J. Ment. Health Addiction* 19 (2021) 2110–2115, <https://doi.org/10.1007/S11469-020-00307-Y>.
- [45] S.N. Boshra, M. Mohiminul Islam, M.D. Griffiths, M.M. Islam, The demography and apparent risk factors of COVID-19-related suicides in Bangladesh in a seven-month period of the pandemic, *medRxiv* (2020), <https://doi.org/10.1101/2020.08.11.20171272>.
- [46] M.A. Mamun, R.M. Chandrima, M.D. Griffiths, Mother and son suicide pact due to COVID-19 related online learning issues in Bangladesh: an unusual case report, *Int. J. Ment. Health Addiction* (2020) 1–4, <https://doi.org/10.1007/S11469-020-00362-5>.
- [47] M.A. Mamun, F. Al Mamun, I. Hosen, M. Hasan, A. Rahman, A.M. Jubayar, Z. Maliha, A.H. Abdullah, M.A. Sarker, H. Kabir, A.S. Jyoti, M.M. Kaggwa, M. T. Sikder, Suicidality in Bangladeshi young adults during the COVID-19 pandemic: the role of behavioral factors, COVID-19 risk and fear, and mental health problems, *Risk Manag. Healthc. Policy* 14 (2021) 4051–4061, <https://doi.org/10.2147/RMHP.S330282>.
- [48] R.R. Marzo, A. Singh, R.F. Mukti, A survey of psychological distress among Bangladeshi people during the COVID-19 pandemic, *Clin. Epidemiol. Glob. Heal.* 10 (2021), 100693, <https://doi.org/10.1016/J.CEGH.2020.100693>.
- [49] S.K. Sagar, F. Nusrat, M.U. Rashid, P. Ghosh, M. Sultana, A. Ahsan, S.D. Pinky, R.N. Mahboob, S.R. Nayon, S.M. Shariful Islam, M.D. Hossain Hawlader, Mental health status of married women during COVID-19 pandemic in Bangladesh: a cross-sectional study, *Heliyon* 8 (2022), e08785, <https://doi.org/10.1016/J.HELIYON.2022.E08785>.
- [50] A. Rahman, F. Deeba, S. Akhter, F. Bashar, D. Nomani, J. Koot, K.N. Koly, F. Bin Salah, K. Haverlag, I. Anwar, Mental health condition of physicians working frontline with COVID-19 patients in Bangladesh, *BMC Psychiatr.* 21 (2021) 1–11, <https://doi.org/10.1186/S12888-021-03629-W>.
- [51] R. Tasnim, M.S.H. Sujan, M.S. Islam, A.H. Ritu, M.A. Bin Siddique, T.Y. Toma, R. Nowshin, A. Hasan, S. Hossain, S. Nahar, S. Islam, M.S. Islam, M.N. Potenza, J. van Os, Prevalence and correlates of anxiety and depression in frontline healthcare workers treating people with COVID-19 in Bangladesh, *BMC Psychiatr.* 21 (2021) 271, <https://doi.org/10.1186/S12888-021-03243-W>.
- [52] M.N. Hoque, A. Hannan, S. Imran, M.A. Alam, B. Matubber, S.M. Saha, Anxiety and its determinants among undergraduate students during e-learning in Bangladesh amid COVID-19, *J. Affect. Disord. Reports.* 6 (2021), 100241, <https://doi.org/10.1016/J.JADR.2021.100241>.
- [53] R. Muzaffar, K.N. Koly, S. Choudhury, M.A.A.J. Biswas, S.B. Kader, R. Abdullah, U. Kawser, M.T. Hasan, D. Williams, A.B. Chowdhury, H.U. Ahmed, Generalized anxiety disorder among Bangladeshi university students during COVID-19 pandemic: gender specific findings from a cross-sectional study, *Discov. Ment. Heal.* 2 (2022) 1–4, <https://doi.org/10.1007/S44192-022-00005-2>.
- [54] UNICEF, After 18 Months of School Closures, Children in Bangladesh Thrilled to Be Back in Class, 2021. <https://www.unicef.org/bangladesh/en/stories/after-18-months-school-closures-children-bangladesh-thrilled-be-back-class>.
- [55] M. Ohidujjaman, Education Crisis in Covid-19: Addressing School Closure, Child Labour & the Threat of Massive Dropout, *Financ. Express*, 2021. <https://thefinancialexpress.com.bd/views/education-crisis-in-covid-19-addressing-school-closure-child-labour-the-threat-of-massive-dropout-1628433748>.
- [56] UNICEF, 11 Million Girls May Not Return to School, *UNICEF Glob. Dev. Commons*, 2020. <https://gdc.unicef.org/resource/11-million-girls-may-not-return-school>.
- [57] UNESCO, UNESCO COVID-19 Education Response: How Many Students Are at Risk of Not Returning to School? UNESCO Advocacy Pap, 2020. <https://unesco.unesco.org/ark:/48223/pf0000373992>.
- [58] I.A. Chowdhury, Bangladeshi Children Share Experiences of Remote Learning and the Challenges They Face, UNICEF, 2020. <https://www.unicef.org/bangladesh/en/stories/bangladeshi-children-share-experiences-remote-learning-and-challenges-they-face>.
- [59] H. Akhter, A.A. Abdul Rahman, N. Jafrin, A.N. Mohammad Saif, B.H. Esha, R. Mostafa, Investigating the barriers that intensify undergraduates' unwillingness to online learning during COVID-19: a study on public universities in a developing country, *Cogent Educ* 9 (2022), 2028342, <https://doi.org/10.1080/2331186X.2022.2028342>.
- [60] S. Dutta, M.K. Smita, S. Dutta, M.K. Smita, The impact of COVID-19 pandemic on tertiary education in Bangladesh: students' perspectives, *Open J. Soc. Sci.* 8 (2020) 53–68, <https://doi.org/10.4236/JSS.2020.89004>.
- [61] H. Kabir, S.M. Nasrullah, M.K. Hasan, S. Ahmed, M.D.H. Hawlader, D.K. Mitra, Perceived e-learning stress as an independent predictor of e-learning readiness: results from a nationwide survey in Bangladesh, *PLoS One* 16 (2021), e0259281, <https://doi.org/10.1371/JOURNAL.PONE.0259281>.
- [62] BBS, UNICEF Bangladesh, Progotir Pathey, Bangladesh Multiple Indicator Cluster Survey 2019, Survey Findings Report, 2019. Dhaka, Bangladesh, [https://www.unicef.org/bangladesh/media/3281/file/Bangladesh 2019MICS Report English.pdf](https://www.unicef.org/bangladesh/media/3281/file/Bangladesh%2019MICS%20Report%20English.pdf).
- [63] S. Amin, U. Rob, S. Ainul, M.I. Hossain, F.R. Noor, Bangladesh: COVID-19 Knowledge, Attitudes, Practices & Needs—Responses from Three Rounds of Data Collection Among Adolescent Girls in Districts with High Rates of Child Marriage, 2020. Dhaka, Bangladesh, https://knowledgecommons.popcouncil.org/cgi/viewcontent.cgi?article=2212&context=departments_sbsr-pgy.
- [64] A. BRAC, Rapid Assessment Impact of COVID-19 on Education in Bangladesh, 2020. Dhaka, Bangladesh, <http://www.brac.net/program/wp-content/uploads/2020/07/Rapid-assessment-impact-of-COVID-19-education-in-Bangladesh.pdf>.
- [65] I. Ahmed, S.M. Kamal, Bangladesh at Work in the Era of COVID-19: Job Creation and Inclusive Growth, *Bdnews24.Com*, 2020. <https://bdnews24.com/opinion/features-analysis/bangladesh-at-work-job-creation-and-inclusive-growth-in-the-era-of-covid-19>.
- [66] LightCastle, Impact of Coronavirus on Livelihoods: Rural and Low-Income Population of Bangladesh, 2020. Dhaka, Bangladesh, <https://www.lightcastlebd.com/wp-content/uploads/2020/05/Impact-of-Coronavirus-on-Livelihoods-Rural-and-Low-Income-Population-of-Bangladesh.pdf>.
- [67] N.R. Swarna, I. Anjum, N.N. Hamid, G.A. Rabbi, T. Islam, E.T. Evana, N. Islam, M.I. Rayhan, K.A.M. Morshed, A.S.M. Juel Miah, Understanding the impact of COVID-19 on the informal sector workers in Bangladesh, *PLoS One* 17 (2022), e0266014, <https://doi.org/10.1371/JOURNAL.PONE.0266014>.
- [68] M.S. Al Mamun, R. Ahmed, M.E. Islam, Labour Market Dynamics in Bangladesh and Impact of Covid-19, *Financ. Express*, 2021. <https://thefinancialexpress.com.bd/views/labour-market-dynamics-in-bangladesh-and-impact-of-covid-19-1628699234>.
- [69] Z. Bin, Liaquat, Report: RMG Workers Lost \$500m in Wages during the Pandemic, *Dhaka Trib.*, 2021. <https://archive.dhakatribune.com/business/2021/04/29/report-rmg-workers-had-35-pay-cut-deprived-of-502m-in-wages-during-the-pandemic>.
- [70] S.M.A. Ehsan, F. Jahan, Analysing the impact of COVID-19 on the mothers of Bangladesh: hearing the unheard, *J. Public Health* (2021), <https://doi.org/10.1007/S10389-021-01501-5>.
- [71] J. Jaim, Exist or exit? Women business-owners in Bangladesh during COVID-19, *Gender, Work Organ* 28 (2021) 209–226, <https://doi.org/10.1111/GWAO.12546>.
- [72] M.R. Sarwar, Redesigning Social Safety Net Programmes to Mitigate Covid-19 Impacts, *Financ. Express*, 2021. <https://thefinancialexpress.com.bd/views/redesigning-social-safety-net-programmes-to-mitigate-covid-19-impacts-1628610585>.
- [73] S.A. Sultana, Women Entrepreneurs in Bangladesh: Barely Staying Afloat, *Asia Found.*, 2021. <https://asiafoundation.org/2021/05/26/women-entrepreneurs-in-bangladesh-barely-staying-afloat/>.
- [74] E.R. Prince, Gig Economy: the Rise of Self-Employed Workers, *Theindependentbd.Com*, 2021. <https://m.theindependentbd.com/post/267012>.
- [75] F. Chowdhury, Towards a Self-Employed Economy: Understanding the Gig Economy of Bangladesh, *BBF Digit.*, 2021. <https://bbf.digital/towards-a-self-employed-economy-understanding-the-gig-economy-of-bangladesh>.
- [76] M.B. Chowdhury, M. Chakraborty, The impact of COVID-19 on the migrant workers and remittances flow to Bangladesh, *S. Asian Surv.* 28 (2021) 38–56, <https://doi.org/10.1177/0971523121995365>.

- [77] M.R. Karim, M.T. Islam, B. Talukder, COVID-19's impacts on migrant workers from Bangladesh: in search of policy intervention, *World Dev.* 136 (2020), 105123, <https://doi.org/10.1016/J.WORLDDEV.2020.105123>.
- [78] R. Jamil, U. Dutta, Centering the margins: the precarity of Bangladeshi low-income migrant workers during the time of COVID-19, *Am. Behav. Sci.* 65 (2021) 1384–1405, <https://doi.org/10.1177/00027642211000397>.
- [79] M.A. Malek, H.T. Truong, T. Sonobe, Changes in the Rural Economy in Bangladesh under COVID-19 Lockdown Measures: Evidence from a Phone Survey of Mahabb Hossain Sample Households, 2021. <https://www.adb.org/sites/default/files/publication/689246/adbi-wp1235.pdf>.
- [80] A. Ansar, Bangladeshi women migrants amidst the COVID-19 pandemic: revisiting globalization, dependency and gendered precarity in South–South labour migration, *Global Network* (2022), <https://doi.org/10.1111/GLOB.12368>.
- [81] M. Uddin, Addressing work-life balance challenges of working women during COVID-19 in Bangladesh, *Int. Soc. Sci. J.* 71 (2021) 7–20, <https://doi.org/10.1111/ISSJ.12267>.
- [82] E. Termeer, I. Brouwer, W. de Boef, Rapid Country Assessment: Bangladesh. The Impact of COVID-19 on the Food System, Wageningen: Global Alliance for Improved Nutrition and CGIAR Research Program on Agriculture for Nutrition and Health, Wageningen University & Research, 2020. https://www.wur.nl/upload_mm/7/1/7/bb57172c-f9df-4e05-b01e-28dd240deb90_COVID-19_Food_SystemRapid_Country_Assessment-Bangladesh_%28JulyV2%29.pdf.
- [83] R. Puskur, M.R. Sarker, On Climate Change's Fury Road: Equipping Women to Steer towards Resilient Agricultural Systems and Livelihoods, *Int. Rice Res. Inst.*, 2020 <https://www.irri.org/news-and-events/news/climate-change-s-fury-road-equipping-women-steer-towards-resilient-agricultural>.
- [84] T.R. Soron, M.A.R. Ashiq, M. Al-Hakeem, Z.F. Chowdhury, H.U. Ahmed, C.A. Chowdhury, Domestic violence and mental health during the COVID-19 pandemic in Bangladesh, *JMIR Form, Res.* 5 (2021), e24624, <https://doi.org/10.2196/24624>.
- [85] I. Rayhan, K. Akter, Prevalence and associated factors of intimate partner violence (IPV) against women in Bangladesh amid COVID-19 pandemic, *Heliyon* 7 (2021), e06619, <https://doi.org/10.1016/J.HELIYON.2021.E06619>.
- [86] F. al Mamun, I. Hosen, M.A. Mamun, Sexual violence and rapes' increment during the COVID-19 pandemic in Bangladesh, *EclinicalMedicine* 34 (2021), 100817, <https://doi.org/10.1016/J.ECLINM.2021.100817>.
- [87] M.M. Hossain, M. Asadullah, A. Rahaman, M.S. Miah, M.Z. Hasan, T. Paul, M.A. Hossain, Prediction on domestic violence in Bangladesh during the COVID-19 outbreak using machine learning methods, *Appl. Syst. Innov.* 4 (2021) 77, <https://doi.org/10.3390/ASI4040077>.
- [88] N. Mahmood, M. Kamruzzaman, A. Rahman, D.D. Reidpath, S. Akhter, Impact of the COVID-19 lockdown on intimate partner violence: issues of non-reporting in Bangladesh, *Wom. Health* 18 (2022), <https://doi.org/10.1177/17455057221087888>.
- [89] R.I. Sifat, Impact of the COVID-19 pandemic on domestic violence in Bangladesh, *Asian J. Psychiatr.* 53 (2020), 102393, <https://doi.org/10.1016/J.AJP.2020.102393>.
- [90] UNDP, Covid-19, A Step Back for Women's Empowerment in Bangladesh? United Nations Dev. Program, 2020 <https://www.undp.org/bangladesh/news/covid-19-step-back-women-s-empowerment-bangladesh>.
- [91] S. Baird, M. Murphy, J. Seager, N. Jones, A. Malhotra, S. Alheiwidi, G. Emirie, S. Rashid, M. Sultan, Intersecting disadvantages for married adolescents: life after marriage pre- and post-COVID-19 in contexts of displacement, *J. Adolesc. Health* 70 (2022) S86–S96, <https://doi.org/10.1016/J.JADOHEALTH.2021.12.001>.
- [92] M.J. Hossain, M.A. Soma, M.S. Bari, T. Bin Emran, M.R. Islam, COVID-19 and child marriage in Bangladesh: emergency call to action, *BMJ Paediatr. Open.* 5 (2021), <https://doi.org/10.1136/BMJPO-2021-001328>.
- [93] J. Yukich, M. Worges, A.J. Gage, D.R. Hotchkiss, A. Preaux, C. Murray, C. Cappa, Projecting the impact of the COVID-19 pandemic on child marriage, *J. Adolesc. Health* 69 (2021) S23–S30, <https://doi.org/10.1016/J.JADOHEALTH.2021.07.037>.
- [94] Dhaka Tribune, Child Marriage up 13% during Covid-19 Pandemic in Bangladesh, Dhaka Trib, 2021. <https://archive.dhakatribune.com/bangladesh/law-rights/2021/03/28/child-marriage-up-13-during-covid-19-pandemic-in-bangladesh>.
- [95] R.B. Adams, Gender equality in work and covid-19 deaths, *Covid Econ* 16 (2020) 23–60. <https://bfi.uchicago.edu/wp-content/uploads/Adams-SSRN-2020-05-15.pdf>.
- [96] J. Dalal, I. Triulzi, A. James, B. Nguimbis, G.G. Dri, A. Venkatasubramanian, L. Noubi Tchoupopnou Royd, S. Botero Mesa, C. Somerville, G. Turchetti, B. Stoll, J.L. Abbate, F. Mboussou, B. Impouma, O. Keiser, F.C. Coelho, COVID-19 mortality in women and men in sub-Saharan Africa: a cross-sectional study, *BMJ Glob. Heal.* 6 (2021), <https://doi.org/10.1136/BMJGH-2021-007225>.
- [97] E. Livingston, K. Bucher, Coronavirus disease 2019 (COVID-19) in Italy, *JAMA* 323 (2020) 1335, <https://doi.org/10.1001/JAMA.2020.4344>.
- [98] K. Mizumoto, K. Kagaya, A. Zarebski, G. Chowell, Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, *Euro Surveill.* 25 (2020), <https://doi.org/10.2807/1560-7917.ES.2020.25.10.2000180>.
- [99] E. Pasay-an, Exploring the vulnerability of frontline nurses to COVID-19 and its impact on perceived stress, *J. Taibah Univ. Med. Sci.* 15 (2020) 404, <https://doi.org/10.1016/J.JTUMED.2020.07.003>.
- [100] V. Sharma, J. Scott, J. Kelly, M.J. Vanrooyen, Prioritizing vulnerable populations and women on the frontlines: COVID-19 in humanitarian contexts, *Int. J. Equity Health* 19 (2020) 1–3, <https://doi.org/10.1186/S12939-020-01186-4>.
- [101] L.H. Nguyen, D.A. Drew, M.S. Graham, A.D. Joshi, C.G. Guo, W. Ma, R.S. Mehta, E.T. Warner, D.R. Sikavi, C.H. Lo, S. Kwon, M. Song, L.A. Mucci, M. J. Stampfer, W.C. Willett, A.H. Eliassen, J.E. Hart, J.E. Chavarro, J.W. Rich-Edwards, R. Davies, J. Capdevila, K.A. Lee, M.N. Lochlainn, T. Varsavsky, C. H. Sudre, M.J. Cardoso, J. Wolf, T.D. Spector, S. Ourselin, C.J. Steves, A.T. Chan, C.M. Albert, G. Andreotti, B. Bala, B.A. Balasubramanian, L.E. Beane-Freeman, J.S. Brownstein, F.J. Bruinsma, J. Coresh, R. Costa, A.N. Cowan, A. Deka, S.L. Deming-Halverson, M. Elena Martinez, M.E. Ernst, J.C. Figueiredo, P. Fortuna, P.W. Franks, L.B. Freeman, C.D. Gardner, I.M. Ghobrial, C.A. Haiman, J.E. Hall, J.H. Kang, B. Kirpach, K.C. Koenen, L.D. Kubzansky, J.V. Lacey, L. Le Marchand, X. Lin, P. Lutsey, C.R. Marinac, M.E. Martinez, R.L. Milne, A.M. Murray, D. Nash, J.R. Palmer, A.V. Patel, E. Pierce, M.M. Robertson, L. Rosenberg, D.P. Sandler, S.H. Schurman, K. Sewalk, S.V. Sharma, C.J. Sidey-Gibbons, L. Slevin, J.W. Smoller, M.I. Tiirikainen, S.T. Weiss, L.R. Wilkens, F. Zhang, Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study, *Lancet Public Health* 5 (2020) e475–e483, [https://doi.org/10.1016/S2468-2667\(20\)30164-X](https://doi.org/10.1016/S2468-2667(20)30164-X).
- [102] T. Robertson, E.D. Carter, V.B. Chou, A.R. Stegmuller, B.D. Jackson, Y. Tam, T. Sawadogo-Lewis, N. Walker, Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study, *Lancet Global Health* 8 (2020) e901–e908, [https://doi.org/10.1016/S2214-109X\(20\)30229-1](https://doi.org/10.1016/S2214-109X(20)30229-1).
- [103] B. Kotlar, E. Gerson, S. Pettilo, A. Langer, H. Tiemeier, The impact of the COVID-19 pandemic on maternal and perinatal health: a scoping review, *Reprod. Health* 18 (2021) 1–39, <https://doi.org/10.1186/S12978-021-01070-6>.
- [104] S. Aryal, D. Shrestha, Motherhood in Nepal during COVID-19 pandemic: are we heading from safe to unsafe? *J. Lumbini Med. Coll.* 8 (2020) 128–129, <https://doi.org/10.22502/JLMC.V8I1.351>.
- [105] E. Pallangyo, M.G. Nakate, R. Maina, V. Fleming, The impact of covid-19 on midwives' practice in Kenya, Uganda and Tanzania: a reflective account, *Midwifery* 89 (2020), 102775, <https://doi.org/10.1016/J.MIDW.2020.102775>.
- [106] V. Kumari, K. Mehta, R. Choudhary, COVID-19 outbreak and decreased hospitalisation of pregnant women in labour, *Lancet Global Health* 8 (2020) e1116–e1117, [https://doi.org/10.1016/S2214-109X\(20\)30319-3](https://doi.org/10.1016/S2214-109X(20)30319-3).
- [107] M. Al Ammari, K. Sultana, A. Thomas, L. Al Swaidan, N. Al Harthi, Mental health outcomes amongst health care workers during COVID 19 pandemic in Saudi Arabia, *Front. Psychiatr.* 11 (2021) 1550, <https://doi.org/10.3389/FPSY.2020.619540>.
- [108] R.S. Basutkar, S. Sagadevan, O. Sri Hari, M.J. Sirajudeen, G. Ramalingam, P. Gobinath, N. Rajesh, P. Sivasankaran, A study on the assessment of impact of COVID-19 pandemic on depression: an observational study among the pregnant women, *J. Obstet. Gynaecol. India* 71 (2021) 28–35, <https://doi.org/10.1007/S13224-021-01544-4>.
- [109] N. Bau, G. Khanna, C. Low, M. Shah, S. Sharmin, A. Voena, Women's well-being during a pandemic and its containment, *J. Dev. Econ.* 156 (2022), 102839, <https://doi.org/10.1016/J.JDEVCO.2022.102839>.
- [110] R.Y. Elbay, A. Kurtulmuş, S. Arpacioğlu, E. Karadere, Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics, *Psychiatr. Res.* 290 (2020), <https://doi.org/10.1016/J.PSYCHRES.2020.113130>.

- [111] M. Hossain, COVID-19 and gender differences in mental health in low- and middle-income countries: young working women are more vulnerable, *SSM. Ment. Heal.* 1 (2021), 100039, <https://doi.org/10.1016/J.SSMMH.2021.100039>.
- [112] S.J. Kim, S. Lee, H. Han, J. Jung, S.J. Yang, Y. Shin, Parental mental health and children's behaviors and media usage during COVID-19-related school closures, *J. Kor. Med. Sci.* 36 (2021) 1–12, <https://doi.org/10.3346/JKMS.2021.36.E184>.
- [113] M. Kowal, T. Coll-Martín, G. Ikizer, J. Rasmussen, K. Eichel, A. Studzińska, K. Koszałkowska, M. Karwowski, A. Najmussaib, D. Pankowski, A. Lieberoth, O. Ahmed, Who is the most stressed during the COVID-19 pandemic? Data from 26 countries and areas, *Appl. Psychol. Health Well. Being.* 12 (2020) 946, <https://doi.org/10.1111/APHW.12234>.
- [114] A. Teshome, W. Gudu, D. Bekele, M. Asfaw, R. Enyew, S.D. Compton, Intimate partner violence among prenatal care attendees amidst the COVID-19 crisis: the incidence in Ethiopia, *Int. J. Gynaecol. Obstet.* 153 (2021) 45–50, <https://doi.org/10.1002/IJGO.13566>.
- [115] K. Tekkas Kerman, S. Albayrak, G. Arkan, S. Ozabrahmyan, A. Beser, The effect of the COVID-19 social distancing measures on Turkish women's mental well-being and burnout levels: a cross-sectional study, *Int. J. Ment. Health Nurs.* 31 (2022) 985–1001, <https://doi.org/10.1111/INM.13009>.
- [116] F. Balkhi, A. Nasir, A. Zehra, R. Riaz, Psychological and behavioral response to the coronavirus (COVID-19) pandemic, *Cureus* 12 (2020), <https://doi.org/10.7759/CUREUS.7923>.
- [117] K.M. Fitzpatrick, C. Harris, G. Drawwe, Fear of COVID-19 and the mental health consequences in America, *Psychol. Trauma.* 12 (2020), <https://doi.org/10.1037/TRA0000924>. S17–S21.
- [118] T. Karatzias, M. Shevlin, J. Murphy, O. McBride, M. Ben-Ezra, R.P. Bentall, F. Vallières, P. Hyland, Posttraumatic stress symptoms and associated comorbidity during the COVID-19 pandemic in Ireland: a population-based study, *J. Trauma Stress* 33 (2020) 365, <https://doi.org/10.1002/JTS.22565>.
- [119] S. Verma, A. Mishra, Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19, *Int. J. Soc. Psychiatr.* 66 (2020) 756–762, <https://doi.org/10.1177/0020764020934508>.
- [120] K. Zhuo, K. Zhuo, C. Gao, C. Gao, X. Wang, X. Wang, C. Zhang, C. Zhang, Z. Wang, Z. Wang, Stress and sleep: a survey based on wearable sleep trackers among medical and nursing staff in Wuhan during the COVID-19 pandemic, *Gen. Psychiatry* 33 (2020), 100260, <https://doi.org/10.1136/GPSYCH-2020-100260>.
- [121] A.M. Lawal, E.O. Alhassan, H.O. Mogaji, I.M. Odoh, E.A. Essien, Differential effect of gender, marital status, religion, ethnicity, education and employment status on mental health during COVID-19 lockdown in Nigeria, *Psychol. Health Med.* 27 (2022) 1–12, <https://doi.org/10.1080/13548506.2020.1865548>.
- [122] G. Vanni, M. Materazzo, M. Pellicciaro, S. Ingallinella, M. Rho, F. Santori, M. Costeta, J. Caspi, A. Makarova, C.A. Pistolesse, O.C. Buonomo, Breast cancer and COVID-19: the effect of fear on patients' decision-making process, *Vivo (Brooklyn)* 34 (2020) 1651–1659, <https://doi.org/10.21873/INVIVO.11957>.
- [123] L.S. Flor, J. Friedman, C.N. Spencer, J. Cagney, A. Arrieta, M.E. Herbert, C. Stein, E.C. Mullany, J. Hon, V. Patwardhan, R.M. Barber, J.K. Collins, S.I. Hay, S. S. Lim, R. Lozano, A.H. Mokdad, C.J.L. Murray, R.C. Reiner, R.J.D. Sorensen, A. Haakenstad, D.M. Pigott, E. Gakidou, Quantifying the effects of the COVID-19 pandemic on gender equality on health, social, and economic indicators: a comprehensive review of data from March, 2020, to September, 2021, *Lancet* 399 (2022) 2381–2397, [https://doi.org/10.1016/S0140-6736\(22\)00008-3](https://doi.org/10.1016/S0140-6736(22)00008-3).
- [124] S. Dessy, H. Gninafon, L. Tiberti, M. Tiberti, S. Dessy, H. Gninafon, L. Tiberti, COVID-19 and Children's School Resilience: Evidence from Nigeria, Essen: Global Labor Organization (GLO), Global Labor Organization (GLO), Essen, 2021. <https://www.econstor.eu/handle/10419/243100>.
- [125] R. Kidman, E. Breton, J. Behrman, H.P. Kohler, Returning to school after COVID-19 closures: who is missing in Malawi? *Int. J. Educ. Dev.* 93 (2022) <https://doi.org/10.1016/J.IJEDUDEV.2022.102645>.
- [126] G. Lichand, C.A. Doria, O. Leal-Neto, J.P.C. Fernandes, The impacts of remote learning in secondary education during the pandemic in Brazil, *Nat. Human Behav.* 6 (2022) 1079–1086, <https://doi.org/10.1038/S41562-022-01350-6>.
- [127] G. Zulaika, M. Bulbarelli, E. Nyothach, A. Van Eijk, L. Mason, E. Fwaya, D. Obor, D. Kwaro, D. Wang, S.D. Mehta, P.A. Phillips-Howard, Impact of COVID-19 lockdowns on adolescent pregnancy and school dropout among secondary schoolgirls in Kenya, *BMJ Glob. Heal.* 7 (2022), <https://doi.org/10.1136/BMJGH-2021-007666>.
- [128] L. Moscoviz, D.K. Evans, Learning Loss and Student Dropouts during the COVID-19 Pandemic: A Review of the Evidence Two Years after Schools Shut Down, Center for Global Development, Washington, DC, 2022. <https://www.cgdev.org/sites/default/files/learning-loss-and-student-dropouts-during-covid-19-pandemic-review-evidence-two-years.pdf>.
- [129] R. Prakash, T. Beattie, P. Javalkar, P. Bhattacharjee, S. Ramanai, R. Thalinja, S. Murthy, C. Davey, J. Blanchard, C. Watts, M. Collumbien, S. Moses, L. Hesie, S. Isac, Correlates of school dropout and absenteeism among adolescent girls from marginalized community in north Karnataka, south India, *J. Adolesc.* 61 (2017) 64–76, <https://doi.org/10.1016/J.ADOLESCENCE.2017.09.007>.
- [130] M. Bramhankar, R.S. Reshmi, Spousal violence against women and its consequences on pregnancy outcomes and reproductive health of women in India, *BMC Wom. Health* 21 (2021) 1–9, <https://doi.org/10.1186/S12905-021-01515-X>.
- [131] S. Psaki, Addressing child marriage and adolescent pregnancy as barriers to gender parity and equality in education, *Prospects* 46 (2016) 109–129, <https://doi.org/10.1007/S11125-016-9379-0>.
- [132] UNICEF, COVID-19, A Threat to Progress against Child Marriage, 2021. https://reliefweb.int/report/world/covid-19-threat-progress-against-child-marriage?gclid=Cj0KCQjwyt-ZBhCNARIsAKH1176iKULm1a6_cT03muiTezuQJqHE05d0NiGIhF0kWeH85Qj-R40jsAQaAnxOEA1w_wcB.
- [133] R. Armitage, L.B. Nellums, Impacts of school closures on children in developing countries: can we learn something from the past? *C. Br.* 5 (2020) e644, [https://doi.org/10.1016/S2214-109X\(20\)30116-9](https://doi.org/10.1016/S2214-109X(20)30116-9).
- [134] J.P. Azevedo, A. Hasan, D. Goldemberg, K. Geven, S.A. Iqbal, Simulating the potential impacts of COVID-19 school closures on schooling and learning outcomes: a set of global estimates, *World Bank Res. Obs.* 36 (2021), <https://doi.org/10.1093/WBRO/LKAB003>.
- [135] A. Kalbarczyk, N.-L. Aberman, B.S.M. van Asperen, R. Morgan, Z. Bhutta, R. Heidkamp, S. Osendarp, N. Kumar, A. Lartey, H. Malapit, A. Quisumbing, C. Fabrizio, COVID-19, nutrition, and gender: an evidence-based approach to gender-responsive policies and programs, *Soc. Sci. Med.* (2022), 115364, <https://doi.org/10.1016/J.SOCSCIMED.2022.115364>.
- [136] F. Siddiqui, R.A. Salam, Z.S. Lassi, J.K. Das, The intertwined relationship between malnutrition and poverty, *Front. Public Health* 8 (2020) 453, <https://doi.org/10.3389/FPUH.2020.00453>.
- [137] H. Ekbrand, B. Halleröd, The more gender equity, the less child poverty? A multilevel analysis of malnutrition and health deprivation in 49 low- and middle-income countries, *World Dev.* 108 (2018) 221–230, <https://doi.org/10.1016/J.WORLDDEV.2018.01.028>.
- [138] D.J. Chackalackal, A.A. Al-Aghbari, S.Y. Jang, T.R. Ramirez, J. Vincent, A. Joshi, M.R. Banjara, P. Asaga, R.C. Sanchez, M.A. Carrillo, J.M. Villa, S.D. Monsalve, A. Kroeger, The Covid-19 pandemic in low- and middle-income countries, who carries the burden? Review of mass media and publications from six countries, *Pathog. Glob. Health* 115 (2021) 178–187, <https://doi.org/10.1080/20477724.2021.1878446>.
- [139] L.M. Pérez, A. Gandolfi, Vulnerable women in a pandemic: paid domestic workers and COVID-19 in Peru, *Bull. Lat. Am. Res.* 39 (2020) 79–83, <https://doi.org/10.1111/BLAR.13212>.
- [140] B.S. Sumalatha, L.D. Bhat, K.P. Chitra, Impact of covid-19 on informal sector: a study of women domestic workers in India, *Indian Econ. J.* 69 (2021) 441–461, <https://doi.org/10.1177/00194662211023845>.
- [141] R. Abraham, A. Basole, S. Kesar, Down and out? The gendered impact of the Covid-19 pandemic on India's labour market, *Econ. Polit.* 39 (2022) 101–128, <https://doi.org/10.1007/S40888-021-00234-8>.
- [142] V. Costoya, L. Echeverría, M. Edo, A. Rocha, A. Thailinger, Gender gaps within couples: evidence of time Re-allocations during COVID-19 in Argentina, *J. Fam. Econ. Issues* 43 (2022) 213–226, <https://doi.org/10.1007/S10834-021-09770-8>.
- [143] L. Craig, B. Churchill, Working and caring at home: gender differences in the effects of covid-19 on paid and unpaid labor in Australia, *fem. Econ. Times* 27 (2020) 310–326, <https://doi.org/10.1080/13545701.2020.1831039>.
- [144] J. Kithiia, I. Wanyonyi, J. Maina, T. Jefwa, M. Gamoyo, The socio-economic impacts of Covid-19 restrictions: data from the coastal city of Mombasa, Kenya, *Data Brief* 33 (2020), <https://doi.org/10.1016/J.DIB.2020.106317>.
- [145] J. Pinchoff, K. Austrian, N. Rajshekhhar, T. Abuaya, B. Kangwana, R. Ochako, J.B. Tidwell, D. Mwanga, E. Muluve, F. Mbushi, M. Nzioki, T.D. Ngo, Gendered economic, social and health effects of the COVID-19 pandemic and mitigation policies in Kenya: evidence from a prospective cohort survey in Nairobi informal settlements, *BMJ Open* 11 (2021), <https://doi.org/10.1136/BMJOPEN-2020-042749>.

- [146] J. Smith, S.E. Davies, H. Feng, C.C.R. Gan, K.A. Grépin, S. Harman, A. Herten-Crabb, R. Morgan, N. Vandan, C. Wenham, More than a public health crisis: a feminist political economic analysis of COVID-19, *Global Publ. Health* 16 (2021) 1364–1380, <https://doi.org/10.1080/17441692.2021.1896765>.
- [147] C.S. Czymara, A. Langenkamp, T. Cano, Cause for concerns: gender inequality in experiencing the COVID-19 lockdown in Germany, *Eur. Soc.* 23 (2021) S68–S81, <https://doi.org/10.1080/14616696.2020.1808692>.
- [148] M. Reichelt, K. Makovi, A. Sargsyan, The impact of COVID-19 on gender inequality in the labor market and gender-role attitudes, *Eur. Soc.* 23 (2021) S228–S245, <https://doi.org/10.1080/14616696.2020.1823010>.
- [149] M.A. Yerkes, S.C.H. André, J.W. Besamusca, P.M. Kruijen, C.L.H.S. Remery, R. van der Zwan, D.G.J. Beckers, S.A.E. Geurts, ‘Intelligent’ lockdown, intelligent effects? Results from a survey on gender (in)equality in paid work, the division of childcare and household work, and quality of life among parents in The Netherlands during the Covid-19 lockdown, *PLoS One* 15 (2020), e0242249, <https://doi.org/10.1371/JOURNAL.PONE.0242249>.
- [150] H.A.H. Dang, C. Viet Nguyen, Gender inequality during the COVID-19 pandemic: income, expenditure, savings, and job loss, *World Dev.* 140 (2021), 105296, <https://doi.org/10.1016/J.WORLDDEV.2020.105296>.
- [151] L. Hoehn-Velasco, A. Silverio-Murillo, J.R. Balmori de la Miyar, J. Penglase, The impact of the COVID-19 recession on Mexican households: evidence from employment and time use for men, women, and children, *Rev. Econ. Househ.* 20 (2022) 763–797, <https://doi.org/10.1007/S11150-022-09600-2>.
- [152] İ. İlkkaracan, E. Memiş, Transformations in the gender gaps in paid and unpaid work during the COVID-19 pandemic: findings from Turkey, *fem, Econ. Times* 27 (2021) 288–309, <https://doi.org/10.1080/13545701.2020.1849764>.
- [153] T. Hupkau, B. Petrongolo, Work, care and gender during the COVID-19 crisis, *Fisc. Stud.* 41 (2020) 623–651, <https://doi.org/10.1111/1475-5890.12245>.
- [154] M.W. Cummins Grace, E. Brannon, G.E. Brannon, Mothering in a pandemic: navigating care work, intensive motherhood, and COVID-19, *gend, Issues* 39 (2022) 123–141, <https://doi.org/10.1007/S12147-022-09295-W>.
- [155] T. Sakuragi, R. Tanaka, M. Tsuji, S. Tateishi, A. Hino, A. Ogami, M. Nagata, S. Matsuda, Y. Fujino, Gender differences in housework and childcare among Japanese workers during the COVID-19 pandemic, *J. Occup. Health* 64 (2022), e12339, <https://doi.org/10.1002/1348-9585.12339>.
- [156] B. Xue, A. McMunn, Gender differences in unpaid care work and psychological distress in the UK Covid-19 lockdown, *PLoS One* 16 (2021), e0247959, <https://doi.org/10.1371/JOURNAL.PONE.0247959>.
- [157] M. Frize, L. Lhotska, L.G. Marcu, M. Stoeva, G. Barabino, F. Ibrahim, S. Lim, E. Kaldoudi, A.M. Marques da Silva, P.H. Tan, V. Tsapaki, E. Bezak, The impact of COVID-19 pandemic on gender-related work from home in STEM fields-Report of the WiMPBME Task Group, *Gen. Work. Organ.* 28 (2021) 378–396, <https://doi.org/10.1111/GWAO.12690>.
- [158] E. Bezak, K.V. Carson-Chahhoud, L.G. Marcu, M. Stoeva, L. Lhotska, G.A. Barabino, F. Ibrahim, E. Kaldoudi, S. Lim, A.M.M. da Silva, P.H. Tan, V. Tsapaki, M. Frize, The biggest challenges resulting from the COVID-19 pandemic on gender-related work from home in biomedical fields-world-wide qualitative survey analysis, *Int. J. Environ. Res. Publ. Health* 19 (2022), <https://doi.org/10.3390/IJERPH19053109>.
- [159] J. Derndorfer, F. Disslbacher, V. Lechinger, K. Mader, E. Six, Home, sweet home? The impact of working from home on the division of unpaid work during the COVID-19 lockdown, *PLoS One* 16 (2021), e0259580, <https://doi.org/10.1371/JOURNAL.PONE.0259580>.
- [160] L. Mangiavacchi, L. Piccoli, L. Pieroni, Fathers matter: intrahousehold responsibilities and children’s wellbeing during the COVID-19 lockdown in Italy, *Econ, Hum. Biol.* 42 (2021), 101016, <https://doi.org/10.1016/J.EHB.2021.101016>.
- [161] P.A. Seck, J.O. Encarnacion, C. Tinonin, S. Duerto-Valero, Gendered impacts of COVID-19 in Asia and the Pacific: early evidence on deepening socioeconomic inequalities in paid and unpaid work, *fem, Econ. Times* 27 (2021) 117–132, <https://doi.org/10.1080/13545701.2021.1876905>.
- [162] E. Leslie, R. Wilson, Sheltering in place and domestic violence: evidence from calls for service during COVID-19, *J. Publ. Econ.* 189 (2020), 104241, <https://doi.org/10.1016/J.JPUBECO.2020.104241>.
- [163] M.M. McLay, When “shelter-in-place” isn’t shelter that’s safe: a rapid analysis of domestic violence case differences during the COVID-19 pandemic and stay-at-home orders, *J. Fam. Violence* 37 (2022) 861–870, <https://doi.org/10.1007/S10896-020-00225-6>.
- [164] J. McCrary, S. Sanga, The impact of the coronavirus lockdown on domestic violence, *Am. Law Econ. Rev.* 23 (2021) 137–163, <https://doi.org/10.1093/ALER/AHAB003>.
- [165] K.K. Jetelina, G. Knell, R.J. Molsberry, Changes in intimate partner violence during the early stages of the COVID-19 pandemic in the USA, *Inj. Prev.* 27 (2021) 93–97, <https://doi.org/10.1136/injuryprev-2020-043831>.
- [166] P.A. Valencia Londoño, M.E. Nateras González, C. Bruno Solera, P.S. Paz, The exacerbation of violence against women as a form of discrimination in the period of the COVID-19 pandemic, *Heliyon* 7 (2021), <https://doi.org/10.1016/J.HELIYON.2021.E06491>.
- [167] A.R. Piquero, J.R. Riddell, S.A. Bishopp, C. Narvey, J.A. Reid, N.L. Piquero, Staying home, staying safe? A short-term analysis of COVID-19 on Dallas domestic violence, *Am. J. Crim. Justice* 45 (2020) 601, <https://doi.org/10.1007/S12103-020-09531-7>.
- [168] M. Brühlhart, R. Lalive, Daily suffering: helpline calls during the covid-19 crisis, *Covid Econ* 19 (2020) 143–158, <https://people.unil.ch/mariusbruhart/2020/06/daily-suffering-helpline-calls-during-the-covid-19-crisis/>.
- [169] C. Ebert, J.I. Steinert, Prevalence and risk factors of violence against women and children during COVID-19, Germany, *Bull. World Health Organ.* 99 (2021) 429, <https://doi.org/10.2471/BLT.20.270983>.
- [170] A. Gama, A.R. Pedro, M.J.L. De Carvalho, A.E. Guerreiro, V. Duarte, J. Quintas, A. Matias, I. Keyngaert, S. Dias, Domestic violence during the COVID-19 pandemic in Portugal, *Port. J. Public Heal.* 38 (2020) 32–40, <https://doi.org/10.1159/000514341>.
- [171] W. Peraud, B. Quintard, A. Constant, Factors associated with violence against women following the COVID-19 lockdown in France: results from a prospective online survey, *PLoS One* 16 (2021), e0257193, <https://doi.org/10.1371/JOURNAL.PONE.0257193>.
- [172] O.I. Fawole, O.O. Okedare, E. Reed, Home was not a safe haven: women’s experiences of intimate partner violence during the COVID-19 lockdown in Nigeria, *BMC Wom. Health* 21 (2021) 1–7, <https://doi.org/10.1186/S12905-021-01177-9>.
- [173] S. Rockowitz, L.M. Stevens, J.C. Rockey, L.L. Smith, J. Ritchie, M.F. Colloff, W. Kanja, J. Cotton, D. Njoroge, C. Kamau, H.D. Flowe, Patterns of sexual violence against adults and children during the COVID-19 pandemic in Kenya: a prospective cross-sectional study, *BMJ Open* 11 (2021), <https://doi.org/10.1136/BMJOPEN-2021-048636>.
- [174] A. Zsilavec, H. Wain, J.L. Bruce, M.T.D. Smith, W. Bekker, G.L. Laing, E. Lutge, D.L. Clarke, Trauma patterns during the COVID-19 lockdown in South Africa expose vulnerability of women, *S. Afr. Med. J.* 110 (2020) 1105–1109, <https://doi.org/10.7196/SAMJ.2020.V110I11.15124>.
- [175] S. Maji, S. Bansod, T. Singh, Domestic violence during COVID-19 pandemic: the case for Indian women, *J. Community Appl. Soc. Psychol.* 32 (2022) 374, <https://doi.org/10.1002/CASP.2501>.
- [176] P. Sharma, A. Khokhar, Domestic violence and coping strategies among married adults during lockdown due to coronavirus disease (COVID-19) pandemic in India: a cross-sectional study, *Disaster Med. Public Health Prep.* (2021) 1–29, <https://doi.org/10.1017/DMP.2021.59>.
- [177] X.M. Xie, Y.J. Zhao, F.R. An, Q.E. Zhang, H.Y. Yu, Z. Yuan, T. Cheung, C.H. Ng, Y.T. Xiang, Workplace violence and its association with quality of life among mental health professionals in China during the COVID-19 pandemic, *J. Psychiatr. Res.* 135 (2021) 289, <https://doi.org/10.1016/J.JPSYCHIRES.2021.01.023>.
- [178] A.M. Moawad, E.D. El Desouky, M.R. Salem, A.S. Elhawary, S.M. Hussein, F.M. Hassan, Violence and sociodemographic related factors among a sample of Egyptian women during the COVID-19 pandemic, *Egypt, J. Forensic Sci.* 11 (2021), <https://doi.org/10.1186/S41935-021-00243-5>.
- [179] S. Sediri, Y. Zgueb, S. Ouanes, U. Ouali, S. Bourgou, R. Jomli, F. Nacef, Women’s mental health: acute impact of COVID-19 pandemic on domestic violence, *Arch. Womens. Ment. Health.* 23 (2020) 749, <https://doi.org/10.1007/S00737-020-01082-4>.
- [180] A. Yari, H. Zahednezhad, R.G. Gheslagh, A. Kurdi, Frequency and determinants of domestic violence against Iranian women during the COVID-19 pandemic: a national cross-sectional survey, *BMC Publ. Health* 21 (2021) 1–10, <https://doi.org/10.1186/S12889-021-11791-9>.
- [181] D. Adibelli, A. Stümen, G. Teskereci, Domestic violence against women during the Covid-19 pandemic: Turkey sample, *Health Care Women Int.* 42 (2021) 335–350, <https://doi.org/10.1080/07399332.2021.1885408>.
- [182] M. Akel, J. Berro, C. Rahme, C. Haddad, S. Obeid, S. Hallit, Violence against women during COVID-19 pandemic, *J. Interpers Violence* 37 (2022), <https://doi.org/10.1177/0886260521997953>. NP12284–NP12309.

- [183] N.A. El-Nimr, H.M. Mamdouh, A. Ramadan, H.M. El Saeh, Z.N. Shata, Intimate partner violence among Arab women before and during the COVID-19 lockdown, *J. Egypt. Publ. Health Assoc.* 96 (2021) 1–8, <https://doi.org/10.1186/S42506-021-00077-Y>.
- [184] M.D.H. Rahiem, COVID-19 and the Surge of Child Marriages: A Phenomenon in Nusa Tenggara Barat, Indonesia, *Child Abuse Negl.*, 2021, <https://doi.org/10.1016/J.CHIABU.2021.105168>.
- [185] WEF, Global Gender Gap Report 2021, World Economic Forum, 2021. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf.