Gendered Disparities during the COVID-19 Crisis in Sierra Leone

Levine, Madison; Meriggi, Niccolò; Mobarak, Ahmed M.; Ramakrishna, Vasudha; Voors, Maarten et al

Gendered Disparities during the COVID-19 Crisis in Sierra Leone[†]

By Madison Levine, Niccolò F. Meriggi, Ahmed Mushfiq Mobarak, Vasudha Ramakrishna, Maarten Voors, and Uday Wadehra*

The COVID-19 pandemic exacerbated existing economic, health, and educational inequalities between men and women globally (Alon et al. 2020; Adams-Prassl et al. 2020). Women living in lower-income countries are often even more vulnerable and face additional challenges. We use survey data to report on how the COVID-19 pandemic experience differed between female- and male-headed households in rural Sierra Leone.

Approximately one-third of households in rural Sierra Leone are headed by women. This is often because the woman's spouse is absent due to, for example, divorce, death, or long-distance migration. Sierra Leone ranks very low on the gender inequality index, implying some of the world's highest levels of inequality, and it records high rates of maternal mortality and violence against women. During the Ebola crisis, an overwhelmed health-care system could not provide adequate support to pregnant women, resulting in many excess maternal deaths (Jones et al. 2016). Using data collected across all rural districts of Sierra Leone both before and during the pandemic, we are able to track the challenges faced by female-headed households.

Our data indicate that even before the pandemic, these households were more vulnerable. Further, they faced additional challenges as the pandemic unfolded. In the early months of the crisis, households that were headed by women were less likely to have accurate information about the disease. They faced higher levels of food insecurity compared to households headed by men. These differences get even more pronounced among the poorest families.

I. Gendered COVID-19 Experiences in LMICs

Before the pandemic, gender disparities in lower-income countries were already stark (Jayachandran 2015). There are reasons to believe that the pandemic disproportionately affected women. For example, most health-care, social, and domestic workers are women. These jobs tend to have limited protections and placed workers at a greater risk of infection (International Labour Organization 2020). Women were also more likely than men to reduce their paid working hours or leave their jobs to manage the new burdens imposed by school closures and lockdowns: caring for children and the elderly. In low- and middle-income countries, women are typically responsible for these care tasks.

The share of women doing unpaid home tasks is as high as 80 to 90 percent in South Asia, the Middle East, and North Africa (Madgavkar et al. 2020). During the pandemic, school closures and movement restrictions increased the number of hours needed for domestic work, and generally decreased the amount of time women had available for paid work. Finally, a large share of women in developing countries are self-employed. When crisis strikes, women often must direct money and resources away from their enterprises to support their families.

Increased health risks added to these woes. Owing to increased attention to COVID-19, access to maternal health care became more restricted in Sierra Leone. Analogous trends prevailed during Ebola epidemic of 2014–2016, where access to family planning and maternal health services declined considerably when the health-care system was overburdened. Women's

*Levine: University of Illinois (email: ml124@illinois. edu); Meriggi: International Growth Centre and Wageningen University (email: niccolo.meriggi@theigc.org); Mobarak: Yale University (email: ahmed.mobarak@yale.edu); Ramakrishna: Boston University (email: vasudhar@bu.edu); Voors: Wageningen University (email: maarten.voors@wur. nl); Wadehra: Wageningen University (email: ukwadehra@ gmail.com).

TABLE 1—PRE-COVID ECONOMIC OUTCOMES

	Asset count (1)	Upland rice farm (acres) (2)	Livestock owned (3)	Reduced meals for household members (4)
Household head is female	−0.818	−0.290	−1.254	0.036
	(0.064)	(0.043)	(0.226)	(0.014)
Number of respondents	7,047	7,020	5,916	6,878
Number of villages	195	195	195	195
Mean response	3.996	0.893	7.896	0.372

Notes: Pre-COVID economic indicators for 2019 are presented. Gender of household head is the independent variable for all regressions. All regressions include district fixed effects. Standard errors are clustered at the village level.

role as caregivers makes them more vulnerable (Menendez et al. 2015).

Bandiera et al. (2018) investigate the effects of school closures during the Ebola crisis. It became harder to reenroll after schools reopened. Adolescent girls ended up spending more time with men, resulting in higher likelihood of pregnancies, especially out of wedlock. Disruptions to the health-care system during the Ebola crisis increased the dangers to these young women.

Lock-down and quarantine measures may increase the incidence of domestic violence (Taub 2020; Peterman et al. 2020). Mittal and Singh (2020) found that the increased economic dependence of women and their reduced access to external support during the pandemic was a cause of a surge in domestic violence across many countries. The Kenya COVID Tracker, using self-reported data, found that threats of violence and fights between household members initially increased during the lock-down but that actual violence by partners did not increase.

II. Data

As part of a study on electrification, in 2019—a few months before the pandemic—we conducted interviews among a representative sample of over 7,047 households across 195 villages in rural Sierra Leone. At the onset of the pandemic in April–May 2020, we started collecting data through phone surveys using the phone numbers provided by 65 percent of the respondents surveyed in 2019.[1] We use these data to track the impact of COVID-19 and to

compare differences in food security and in the knowledge of and responses to the pandemic between households headed by men and households headed by women. We present results based on five high-frequency phone survey rounds collected between April 30, 2020, and November 13, 2020. We started administering questions about attitudes toward a hypothetical COVID-19 vaccine in July–August 2020.

III. Food Security

Data collected before the pandemic showed that households headed by women own significantly less land and fewer assets and livestock. In Table 1, we see that women-headed households have on average one asset and livestock fewer than male-headed households.

Women-headed households spend $1 less than male-headed households on food in an average week. After the onset of COVID, we find that they are significantly more likely to reduce meals for household members than male-headed households. In Table 2, panel A, we show that post-COVID, women-headed households are significantly more likely to buy cassava tubers than male-headed households, particularly among the poorest households owning one or no asset of any kind. Cassava is often a substitution for preferred foods.

The poorest women-headed households are significantly more likely to report fewer days in a week when children were able to eat all meals, as compared to the poorest male-headed households.

IV. COVID Knowledge

We find that early in the pandemic, households headed by women were less informed

[1] https://www.science.org/doi/10.1126/sciadv.abe0997 provides a detailed explanation of the limitations of these phone survey data.

TABLE 2—POST-COVID GENDER DIFFERENCES

	(1)	(2)	(3)	(4)
Panel A. Food consumption	All households		Poorest households	
Date survey first administered	Cassava tubers bought	Days past week children had all meals	Cassava tubers bought	Days past week children had all meals
Female-headed household, Apr 2020	0.122	−0.048	0.817	−0.178
	(0.231)	(0.104)	(0.461)	(0.195)
Number of respondents	1,065	2,367	276	594
Mean response	4.226	5.432	3.935	5.269
Female-headed household, May 2020	0.703	−0.178	0.816	−0.503
	(0.176)	(0.132)	(0.326)	(0.218)
Number of respondents	1,510	2,170	372	535
Mean response	3.814	5.047	3.892	4.999
Female-headed household, Jul 2020	0.769	−0.115	0.931	−0.450
	(0.266)	(0.126)	(0.425)	(0.254)
Number of respondents	1,005	1,254	241	304
Mean response	4.139	5.594	3.593	5.332
Female-headed household, Aug 2020	0.798	0.025	1.372	−0.198
	(0.203)	(0.135)	(0.316)	(0.250)
Number of respondents	1,597	1,676	415	425
Mean response	3.676	5.317	3.294	5.191
Female-headed household, Oct 2020	0.749	−0.244	0.608	−0.100
	(0.183)	(0.096)	(0.343)	(0.185)
Number of respondents	1,518	1,709	379	428
Mean response	3.228	5.528	3.198	5.551
Panel B. COVID knowledge				
Date survey first administered	Knows fever is a symptom	Knows at least two symptoms	Owns a face mask (cloth or medical)	Maintains distance of at least 1 meter
Female-headed household, Apr 2020	−0.056	−0.080	−0.043	−0.032
	(0.020)	(0.022)	(0.022)	(0.019)
Number of respondents	2,402	2,402	2,385	2,402
Mean response	0.719	0.658	0.550	0.734
Female-headed household, May 2020	−0.008	−0.021	−0.032	−0.038
	(0.019)	(0.022)	(0.017)	(0.020)
Number of respondents	2,185	2,185	2,184	2,185
Mean response	0.844	0.778	0.832	0.774
Female-headed household, Jul 2020	0.010	−0.024	−0.002	0.034
	(0.014)	(0.022)	(0.009)	(0.025)
Number of respondents	1,270	1,270	1,269	1270
Mean response	0.941	0.851	0.979	0.794
Female-headed household, Aug 2020			−0.002	−0.044
			(0.004)	(0.022)
Number of respondents			1,789	1,789
Mean response			0.993	0.769
Female-headed household, Oct 2020	−0.023	−0.021	−0.001	−0.045
	(0.014)	(0.019)	(0.004)	(0.025)
Number of respondents	1,769	1,769	1,768	1,769
Mean response	0.925	0.858	0.997	0.724
Panel C. COVID vaccine	Willing to take vaccine	Knows about COVID from		
Date survey first administered		Family/friends	Elected officials/MoH	Local authority
Female-headed household, Aug 2020	−0.043	0.021	−0.042	0.070
	(0.019)	(0.051)	(0.036)	(0.060)
Number of respondents	1,789	296	296	296
Mean response	0.845	0.274	0.189	0.379
Female-headed household, Oct 2020	−0.012	0.044	−0.006	0.014
	(0.015)	(0.020)	(0.015)	(0.023)
Number of respondents	1,768	1,768	1,768	1,768
Mean response	0.886	0.260	0.219	0.371

Notes: Gender of household head is the independent variable for all regressions. Panel A shows gender differences in food consumption. Columns 1 and 2 display results for all households, while columns 3 and 4 show results for the poorest households, with one or no asset owned. Panel B shows gender differences in COVID knowledge. Measurement error prevents us from reporting August 2020 values in panel B, columns 1 and 2. Panel C shows gender differences in vaccine acceptance (column 1) and sources of COVID-related information (columns 2–4). All regressions include district fixed effects. Standard errors are clustered at the village level.

about COVID-19 compared to male-headed households. We asked respondents open-ended questions about COVID symptoms, and women were less likely to be able to identify common COVID-19 symptoms such as coughing, fever, difficulty breathing, and loss of smell. Data from the first round, collected in April–May 2020, reveal that female-headed households were significantly less likely to identify at least two symptoms of COVID-19 (see Table 1, panel B). The magnitude of gender differences reduces over time. Women were also less likely to own a mask and less likely to engage in social distancing.

V. COVID Vaccine Acceptance

Arce et al. (2021) show that COVID-19 vaccine acceptance is generally lower among female respondents across many developing countries. In Table 2, we present results for vaccine acceptance from two survey waves—August 2020 and October 2020. We observe that in August 2020, female-headed households were showing higher levels of vaccine hesitancy. By October 2020, we find no evidence of gendered differences. Averages reported show that in a span of two months, we observe an increase in overall vaccine acceptance.

Households headed by women have access to different sources of information and engage with different social networks. Female heads of households in Sierra Leone tend to rely more on family and friends for information and less on information from the state (elected officials and the Ministry of Health (MoH)) (see Table 2, panel C). This is reflected in the fact that their social networks are primarily composed of family members or local authorities (e.g., mammy queen, youth leaders, or town chief). This can have repercussions on health outcomes, especially when access to the information needed to adopt effective preventative measures against an infectious disease is delayed.

VI. Conclusion

Policies to address inequalities and improve the health, economic, and social conditions of women, particularly in low- and middle-income countries, must take account of the local circumstances. For example, while lock-down measures were critical for curtailing the spread

of the virus, without sufficient protection measures, women and children may find themselves trapped with perpetrators of domestic violence.

Social protection programs designed to target the most vulnerable should pay attention to the different way in which female-headed households experienced the crisis. They could have been prioritized for relief, but our data suggest that those households did not receive any extra attention from government. Female-headed households appear to have fewer social connections, so they may be more reliant on government for both information and relief.

REFERENCES

Adams-Prassl, Abi, Teodora Boneva, Marta Golin, and Christopher Rauh. 2020. "Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys." *Journal of Public Economics* 189: 104245.

Alon, Titan, Matthias Doepke, Jane Olmstead-Rumsey, and Michèle Tertilt. 2020. "The Impact of COVID-19 on Gender Equality." NBER Working Paper 26947.

Bandiera, Oriana, Niklas Buehren, Markus Goldstein, Imran Rasul, and Andrea Smurra. 2018. "The Economic Lives of Young Women in the Time of Ebola: Lessons from an Empowerment Program." World Bank Policy Research Working Paper 8760.

International Labour Organization. 2020. "COVID-19 and the World of Work." *ILO Monitor.* https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767028.pdf.

Jayachandran, Seema. 2015. "The Roots of Gender Inequality in Developing Countries." *Annual Review of Economics* 7: 63–88.

Jones, Susan A., Somasundari Gopalakrishnan, Charles A. Ameh, Sarah White, and Nynke R. van den Broek. 2016. "'Women and Babies Are Dying but Not of Ebola': The Effect of the Ebola Virus Epidemic on the Availability, Uptake and Outcomes of Maternal and Newborn Health Services in Sierra Leone." *BMJ Global Health* 1 (3): e000065.

Madgavkar, Anu, Olivia White, Mekala Krishnan, Deepa Mahajan, and Xavier Azcue. 2022. "Covid-19 and Gender Equality: Countering the Regressive Effects." *McKinsey & Company*, April 13. https://www.mckinsey.com/featured-

insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects.

Menéndez, Clara, Anna Lucas, Khátia Munguambe, and Ana Langer. 2015. "Ebola Crisis: The Unequal Impact on Women and Children's Health." *Lancet Global Health* 3 (3): e130.

Mittal, Shalini, and Tushar Singh. 2020. "Gender-Based Violence during COVID-19 Pandemic: A Mini-review." *Frontiers in Global Women's Health* 1 (4).

Peterman, Amber, Alina Potts, Megan O'Donnell, Kelly Thompson, Niyati Shah, Sabine Oertelt-Prigione, and Nicole Van Gelder. 2020. "Pandemics and Violence Against Women and Children." Center for Global Development Working Paper 528.

Solís Arce, Julio S., Shana S. Warren, Niccolò F. Meriggi, Alexandra Scacco, Nina McMurry, Maarten Voors, Georgiy Syunyaev, et al. 2021. "COVID-19 Vaccine Acceptance and Hesitancy in Low- and Middle-Income Countries." *Nature Medicine* 27 (8): 1385–94.

Taub, Amanda. 2020. "A New COVID-19 Crisis: Domestic Abuse Rises Worldwide." *New York Times*, April 6. https://www.nytimes.com/2020/04/06/world/coronavirus-domestic-violence.html.