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# The interrelationship between the COVID-19 pandemic and conflict behavior: A survey

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**Abstract**

We review the literature in economics and related fields on the relationship between the COVID-19 pandemic and conflict behavior. Our survey covers the effects of the pandemic on individual-level conflict, group-level conflict, and the impact of existing conflict on the spread of the pandemic. We found an increase in intimate partner violence and a spillover between work-family conflict and domestic violence. Additionally, there was a spike in anti-East-Asian hate crimes. While the group-level conflict counts initially dropped, those eventually returned to pre-pandemic levels. The deteriorating economy and food insecurity associated with the pandemic were major drivers of conflict in developing countries, but appropriate state stimulus reduced such conflicts. The existing history of conflict had a heterogeneous effect on the spread of the pandemic in different societies. We conclude by highlighting future research avenues.

**KEYWORDS**
conflict, COVID-19, pandemic, survey, violence

**JEL CLASSIFICATION**
D74, D91, F51, I15, Q34

## 1 | INTRODUCTION

Human beings suffer the most during times of crisis, and the COVID-19 pandemic was no different. The impact of this pandemic on various aspects of life will persist for years to come. One important aspect of the pandemic, however, is its effect on behavior in conflict. While illness, restrictions on movement, and limited resources reduce the scope of engaging in conflict, mental and economic stress, and opportunistic behavior have the opposite effect. In this paper, we review the current literature from economics and related fields such as politics, health, peace research, psychology, etc., to summarize the effects of the COVID-19 pandemic on individual and aggregate conflict, the effects of existing conflict on the spread of the pandemic, and to point out future paths of academic research in these areas. A timely, shared understanding across fields of the underlying risks of conflict is key to its prevention. Hence, this survey aims to provide a thorough exploration of the changes caused by the pandemic on the underlying causes of conflict and enable policymakers to adjust policies and programs to address these risks.

The pandemic has significantly exacerbated poverty and inequality, adding massive pressure to already overwhelmed social and health systems across the globe. From its appearance in December 2019 until July 2023, the virus has infected 692 million people, with a death toll of 6.9 million worldwide. Moreover, various evidence suggests that people worldwide have changed their behavior, with an increase in disorderly and violent conduct observed both at home and outside. The underlying cause is attributed to the stress caused by the pandemic, along with a low reward situation at work and home (Chowdhury, 2020). Prolonged isolation has weakened social ties, which, in turn, has resulted in a greater propensity to break existing social norms.

Economically, the world has faced a recession. State-imposed lockdowns and the fear of infection took a severe toll on the global economy. Fernandes (2020) forecasted a long-term GDP growth rate of up to −10% for 30 countries, predicting −15% for some. According to the World Bank, despite an unprecedented policy response, the global economy shrank by at least 5.2% in 2020 - the greatest global contraction in 80 years. COVID-19 and the economic crisis caused by the pandemic are also converging to reverse the hard-won gains in global poverty reduction and shared prosperity. In 2020, an estimated 88 million to 115 million people were pushed into extreme poverty, measured by the international poverty level of $1.90 a day. An additional increase of 23 million to 35 million in 2021 brought the total number of new poor to between 111 million and 149 million (IDA & IFC, 2020). A widespread recession results in more conflict, both at the individual and aggregate level (Barret & Chen, 2021). Within the first two years of the ongoing pandemic, many articles documented the fallout of COVID-19 on various conflicts such as territorial and cultural clashes, gender-based violence, hate crimes, and a behavioral shift towards aggression—to name a few.

Chowdhury (2020) predicted the effects of COVID-19 on conflict behavior at home, at work, and in society, whereas Polo (2020) examined the impact of the COVID-19 pandemic on patterns of armed conflict around the world. We use such predictions as benchmarks and survey the literature on the COVID-19 pandemic and conflict behavior. To specify the scope of our survey, we define "conflict" as: interpersonal physical or mental violence or potentially violent conduct that requires costly effort. We exclude criminal acts such as robbery and theft because these crimes are often opportunistic and may not be directly influenced by the pandemic. However, we do include some literature on violent crimes that may have originated due to the pandemic situation. With these qualifiers in mind, our definition intentionally excludes analyses of the effects of the pandemic on market competition, litigation, rent-seeking, petty criminal acts, and so on. Our focus is on

quantitative research in economics literature, but our survey also draws from the literature on crime, health, peace science, development, psychology, and political science.

We conduct a thorough review of the literature within the scope of economics and related disciplines, employing the following procedure. First, we run a comprehensive search of available studies published in academic journals, using keyword searches on Google Scholar and Web of Science. Second, we followed the reference list of the studies in the first step and identified and examined articles that have cited the studies identified in our initial search and the ones in the reference list. Third, although our initial focus is on economics, we cross search across disciplines with a particular emphasis on related quantitative research. Finally, we frequently updated our search as the papers have been published in journals.

This survey contributes to the ongoing research on the intersection of conflict and COVID-19 by providing a concise summary of the pandemic's effects on conflict behavior at both the individual and aggregate levels. The survey is divided into several sections. In the second section, we examine the impact of the pandemic on conflicts at the individual level, including conflicts within households and workplaces. In the third section, we focus on group-level conflicts, including those between different social groups (such as racial conflicts) and intrastate conflicts (such as civil wars and domestic terrorism). While ideally this section would also cover interstate conflicts (such as wars between states) and extra-state conflicts between states and external non-state actors (such as international terrorism), we were unable to find literature that documented the pandemic's impact on conflicts that involve multiple states and external non-state actors at this time.

In the next two sections, we focus on how the pandemic is associated with violent crime, and how ongoing conflicts shaped the nature of and the response to the COVID-19 pandemic. We conclude in the final section with a discussion on the consequences of the pandemic on already existing social fault lines created by disparities in access to programs and policies and highlight possible areas requiring further research.

The findings related to the effects of the COVID-19 pandemic on conflict behavior at the household level suggest that forced cohabitation due to lockdown has been a significant cause of concern, particularly in developed countries. This has led to a rise in cases of emotional violence, such as verbal abuse and mental harassment, which are often neglected in traditional policy responses to domestic violence. While the rise is more pronounced in the initial days of the lockdown, the overall trend remains concerning. In developing countries, the fallout of the pandemic on intimate partner violence is starker, with a rise as high as 40%, compared to the average increase of about 10% in developed countries. Additionally, mandatory work-from-home policies have led to work conflicts spilling over into aggressive behavior at the household level.

For group-level conflicts, there has been an increase in violence against East Asians in different parts of the Western world. Other than such hate-related conflicts, there was a drop in reported cases of conflict in the immediate aftermath of the World Health Organization's (WHO) announcement regarding the pandemic. However, a quick recovery followed the initial shock. Nationwide shutdowns negatively impacted instances of conflict-ridden activities involving politics or religion, whereas there was a rise in COVID-related conflicts. These conflicts were frequent in economically weaker areas lacking sufficient government support to overcome the pandemic-induced resource crunch. As time passed, the pandemic became less of a shock, and recorded instances of all forms of conflict increased.

Regarding the effects of conflict on the spread of the pandemic, we notice two main issues. First, diverting scarce resources to fight the pandemic deteriorated the existing fragile health system in conflict-ridden areas where malnutrition and other issues are common. Second, the existing

conflict resulted in a lack of governance, which impeded the implementation of policies. As a result, the SARS-CoV-2 virus spread heavily in such areas. Furthermore, the effect is heterogeneous because existing conflict affected the spread of the virus depending on the country and the related norms of society.

It is important to emphasize the inherent challenge in estimating the causal effects of the COVID-19 pandemic on most socio-economic outcomes of interest. This is because of three main reasons. First, many of these effects are secondary through the impact of declining economies or changes in government policies, each of which can have multidimensional effects themselves. Second, as we discuss, the pandemic and conflict often affected each other, resulting in causation in both ways. Third, the available data does not necessarily provide identification of a causal effect: the COVID-19 pandemic influenced everyone on earth in some way or another, and there is no observable comparison group of people that can plausibly approximate a counterfactual outcome. Given this identification challenge, we often frame the results as an "association" rather than "causation" of the COVID-19 pandemic.

## 2 | COVID-19 PANDEMIC AND INDIVIDUAL-LEVEL CONFLICT

This section summarizes the research on how the pandemic has been associated with conflicts in human relationships within households and society. The behavioral changes at the individual level may also impact the broader society, but that is covered in the next section. Here, we focus on the consequences of the COVID-19 pandemic on individual-level conflicts related to households, workplaces, and relationships. A prominent common trait that stands out is that it is often not possible to isolate the impact of the pandemic on individual conflict behavior in any setting, such as households, work, or identity. There are substantial spillovers from one to another, leading to changes in behavior concerning conflicts in each of these aspects.

The most alarming social ramification of the COVID-19 pandemic has been the exponential rise worldwide in reported Intimate Partner Violence (IPV) cases, forcing the United Nations to declare it a "shadow pandemic" (UN Women, 2020). The COVID-19 pandemic led many governments across the globe to adopt a typical non-pharmaceutical response in the form of nationwide or local lockdowns. Such lockdowns resulted in significant economic stress by shutting down day-to-day economic activities for a prolonged period. Lockdowns themselves and the resulting economic distress are the two main mechanisms through which the pandemic is believed to have affected IPV rates. More commonly referred to as domestic violence, IPV can be divided into three broad categories: physical, verbal, and emotional. The surveyed literature shows a comparatively higher increase in verbal and emotional violence in developed countries. While the literature is sparse, developing countries show a higher rate of physical IPV. A vast majority of these cases were caused by the unequal sharing of the workload at home during the pandemic-induced lockdowns and related problems stemming from work-from-home policies.

Arenas-Arroyo et al. (2021) attempted to isolate the impact of lockdowns and economic stress on domestic violence in Spain and found that lockdowns, independent of economic stress, were a greater contributor to the increase in reported cases of domestic violence against women. They conducted an online survey targeting women aged 18 to 60 who lived with a male partner during confinement, collecting unique data on both reported and unreported cases of intimate partner violence. Using a probit model, they discovered that forced cohabitation significantly increased psychological violence, which is also the least likely form of violence to be reported to the police.

Arenas-Arroyo et al. (2021, table 2) also showed that both males and females suffered from economic stress and being locked in together. Overall, because of the pandemic, Spain reported a 23.4% increase in reported cases of IPV in the first three months of the lockdown. These findings are supported in the United States (US) by Graham et al. (2021), who ran an online survey of 658 US adults. They found that nationwide lockdowns and work-from-home mandates disrupted the balance between work and home life, putting more pressure on women with children, who reported experiencing more significant pain and discomfort compared to men and women without children.

Similar results were also found in Singapore by Neo et al. (2022). Using a sample of 754 married, working mothers in Singapore, the authors conducted a factor analysis of Work-Family Conflict (WFC) and a hierarchical linear regression for the negative impacts of COVID-19 on Work interfering with Family and Family interfering with Work. They found that for each unit increase in negative impacts of COVID-19, WFC increased by 0.20 and 0.21 units for Work interfering with Family and Family interfering with Work, respectively. Further analysis revealed that in Singapore, the COVID-19 pandemic resulted in higher Work-Family Conflict for women.

In addition, the continuous conflict between the domains of work and home has impacted spousal relationships, resulting in rising hostility (Kulik & Ramon, 2021). Champeaux and Marchetta (2021) highlighted the need for equality in housework sharing. In their study, 49% of French couples reported intra-household conflicts due to unequal housework distribution during the lockdown. The authors conducted an online survey with partnered female respondents, which showed gender gaps in hours spent on household chores, especially childcare. However, there was a limited increase in male participation in household chores such as shopping for day-to-day needs during the lockdown. Like Singapore, 28% of respondents with children and 22% without children reported increased conflict in the household. Using a fixed-effects model, the authors found that when the woman is at home during the lockdown, doing more than three-quarters of the housework, the lockdown effects on household conflict become significant and positive. One-third of the women who reported IPV in this survey suffered from verbal abuse. Police interventions for family disputes increased by 44% and the number of calls to helplines for domestic violence almost doubled.

Leslie and Wilson (2020) found that the first three months of the lockdown, from March to May 2020, saw an increase of 7.5% in calls reporting domestic violence in 14 large US cities. They used a difference-in-difference methodology to compare calls reporting domestic violence before and after social distancing began, relative to the same period in 2019. The effects were the largest in the first five weeks when calls related to domestic violence increased by nearly 10%. Such a rise in IPV could only be compared to the effects of a home team upset loss or a hot day (Card & Dahl, 2011) in a non-pandemic situation. Interestingly, while no specific demographic group drove the rise, it appears to be driven by households without a prior history of domestic violence.

Similar to France, the US also saw a sharp increase in verbal and emotional abuse during the lockdown, among the various types of IPVs mentioned above (Luetke et al., 2020). Miller et al. (2020) analyzed IPV on three measures from Police data (911 calls, crime incidents, and arrests) and two non-police data (the county domestic violence hotline, and hospital records) in Los Angeles. They found an increase in calls to police and to helplines, but a decrease in arrests due to the IPV. They conclude that the lockdown resulted in a higher occurrence but lower intensity of the IPV. These findings indicate a persistent pattern in the developed world, with countries such as Singapore, Spain, France, and the US reporting increased verbal and emotional abuse. These two types are often overlooked when policy decisions involving IPV are made.

Peterman et al. (2020) reviewed previous studies and evidence from previous pandemics to argue that social and economic disruptions caused by pandemics can increase the incidence of violence against women and children. These disruptions can lead to increased stress, financial strain, and social isolation, which can exacerbate existing patterns of violence and create new ones. The authors also identified potential protective factors, such as social support networks and access to resources, that can mitigate the risk of violence during pandemics. They argued that policymakers and service providers should prioritize these protective factors in their responses to pandemics to prevent or mitigate the negative impacts on women and children.

If we aim to focus outside of developed countries, globally about 264 million women live in fragile, conflict-ridden developing countries, where they face multiple challenges of poverty, gender-based violence, and discrimination, compounded by inadequate legal protection. These factors were only heightened by the COVID-19 pandemic (IDA & IFC, 2020). Kumar and Anupama (2022), in a descriptive study, for example, noted a steady 14% to 30% increase in violence against women in India during the pandemic. Pal et al. (2021) conducted an online within-subject survey before and during the pandemic-induced lockdown among 271 respondents and found an increase in the short-form composite abuse scale, signaling a possible surge in IPV.

Systematic quantitative investigations on the rising instances of IPV due to the pandemic in the developing world are sparse, with an exception being the study from Peru by Agüero (2021). Peru imposed a strict nationwide lockdown starting in mid-March 2020. Using a Poisson counts model to analyze administrative data on phone calls to the helpline for IPV (known as Línea 100), the author showed that the incidence rate increased by 48% between April and July 2020 compared to pre-lockdown figures, with effects increasing over time. This result is important because nearly 60% of women had already experienced IPV before the pandemic in Peru. Moreover, most IPV cases reported in Peru are physical violence instead of verbal or emotional violence. Hence, such a massive increase in IPV during the pandemic demands immediate attention.

Comparing the findings in developed countries with those in India or Peru, it appears that the rise in physical IPV is more pronounced in developing countries, where women have fewer resources available to protect themselves. This inference underscores the importance of immediate policy responses in developing countries and highlights the need for detailed research on the impact of the pandemic on IPV prevalence. Without such studies, it is difficult to determine whether the lockdown, unequal distribution of household chores, economic stress caused by the lockdown, or spillover between work and home caused the sharp rise in IPV. Conducting research on the drivers of the rise in IPV in developing countries will enable better policy responses in the future.

It has been recorded in research on identity and conflict that identity-centered conflict becomes more frequent during times of crisis (see, e.g., the survey by Chowdhury, 2021). An important feature of such identity regarding IPV is the sexual orientation of the individuals involved. This is vital because LGBTQ individuals are likely to experience greater stress due to their minority status, persistent systematic inequality, higher poverty levels, and the absence of tailored public assistance programs (Gruberg, 2020). While most studies have focused on females in heterosexual relationships, Li and Samp (2021) studied the impact of the pandemic on conflict among same-sex couples. They found that the perceived threat of COVID-19 was positively associated with greater relationship termination intentions, anxiety, depression, and substance use, while being a person of color amplified such associations. This study has highlighted the need for more focused research beyond heterosexual households to develop targeted policies in response to the pandemic.

## 3 | COVID-19 PANDEMIC AND GROUP-LEVEL CONFLICT

A pandemic can be observed as a non-armed crisis with substantial social and economic implications. Drawing on literature from diverse research areas, this section summarizes how the COVID-19 pandemic has caused changes to group-level conflicts in different directions and the responses to such conflicts. We focus on the fallout of the COVID-19 pandemic on the tension between groups with different social identities, as well as the intra- and inter-country level (armed and non-armed) conflicts that occur within a single state. Additionally, we list out how the ongoing pandemic has affected existing conflicts and has led to the creation of new ones. Although inter-country conflict, which involves violence between two or more states, could also have been affected by the pandemic, there is no existing study that covers such conflicts.

Sen (2007) famously coined the idea that everybody has multi-dimensional identities. However, the salience of a particular dimension of such a "real" identity, such as race, religion, or ethnicity, can initiate and escalate conflict. This theory was later supported by experimental data from Chowdhury et al. (2016). Since a crisis often makes social identities salient, the COVID-19 pandemic also risks deepening societal tensions concerning the dimension of such social identities. Such tensions have been reported in the news media and other sources. For example, in Cameroon, a breakdown of inter-community trust increased attacks on citizens suspected of carrying the COVID-19 virus. There was a disinformation campaign against Muslims in India (Banaji & Bhat, 2020). The Islamic State launched attacks in Afghanistan and Niger after publicizing its intention to take advantage of the situation (IDA & IFC, 2020).

Since the SARS-CoV-2 virus arguably originated from China, a salient identity associated with COVID-19-related conflict is the identity of being Chinese or East Asian. Documentation of such racial conflict is still evolving. While research from other fields (e.g., Gover et al., 2020) focuses on hate crimes against East Asians in the US, no such research has been done in economics. Instead, the three studies documenting conflict targeted towards East Asians are from Europe. Dipoppa et al. (2023) used a novel dataset from Italy and showed that hate crimes against East Asians increased during the pandemic. However, such an increase was influenced more by the perception of unemployment than health issues. Political rhetoric from ultra-right-wing groups also fueled such crimes. Gray and Hansen (2021) focused solely on London, using data from the London Metropolitan police. They used a difference-in-difference method to analyze the change in reported hate crimes against people of Chinese origin for the last quarter of 2019 and the first quarter of 2020 compared to various other crimes and found an increase in hate crimes against people of Chinese origin. However, they did not identify the mechanism behind such acts. Carr et al. (2022) expanded the scope to racial hate crimes against East Asians in England and Wales for 2020. They used data from various sources, including UK police forces, and found a 50% increase in such hate crimes. Like other conflict cases, such hate crimes were less likely during the lockdown, but the numbers went up after the lockdown ended. In contrast to Dipoppa et al. (2023), Carr et al. (2022) also found that such hate crimes correlated with perceived health threats and the government's announcement of the perceived health threat due to the spread in China.

Following the declaration of the pandemic by the WHO in March 2020, the threat of the SARS-CoV-2 infection and related policy responses, such as lockdowns, drove a notable reduction in recorded aggregate-level conflicts. However, as the Armed Conflict Location and Event Data (ACLED) has shown, by late summer 2020, daily inter-group conflict counts returned to their pre-March 2020 levels (Bloem & Salemi, 2021).

Berman et al. (2022) discovered significant heterogeneity when comparing the impact of lockdown on recorded conflict levels. COVID-related mobility restrictions resulted in a short-term drop in protests and riots involving the general public, but they did not affect conflict events involving armed groups. While there was a reduction in other types of conflict, there was a sustained increase in COVID-related conflicts in the initial months after the pandemic's announcement. Moreover, the population in wealthier nations recorded less conflict, whereas poorer countries recorded no change in reported conflict numbers. Instead, there is a trend of reinforcement of existing fractionalization on ethnic and religious lines, with the COVID-19 pandemic being used as a catalyst to fan existing out-group hate. This observation matches the UK study on racial hate crimes aimed at East Asians (Carr et al., 2022).

Perhaps more important than the immediate effect, the consequences of the pandemic are very likely to accelerate violent conflict in the medium to long term. According to Fielder et al. (2021), this is firstly because the pandemic exacerbates structural weaknesses, including the sharpening of societal divisions, severe disruptions in the education sector, and deteriorating socio-economic circumstances. Secondly, the pandemic has curtailed actors and institutions that might be able to reduce the risk of violent escalation. Trust in the state and security institutions has suffered in many countries due to dissatisfaction with handling the pandemic. Moreover, the postponement of elections and increasing levels of government repression hampered democratic processes.

While we discuss these in the subsequent paragraphs, we also note a recorded rise in instances where the majority blame the pandemic on the minority population. Governments are found to be supporting the vilification of groups and blaming the pandemic on them to ensure there is limited focus on overall governmental mishandling of the pandemic. Such findings are consistent with the observations from the studies on social identities above, as well as the theories of scapegoating during epidemics and pandemics (Jedwab et al., 2021).

Mid-term intra-country conflict during the pandemic in developing countries is closely related to food security and the rising food price index. The lockdowns disrupted traditional supply chains, causing extreme volatility in food accessibility. Moreover, the inability to benefit from government support schemes triggered incidents of conflict. Tabe-Ojong et al. (2023) conducted a literature review on food (in)security at the time of the pandemic. In a survey conducted in Nigeria by Adebayo and Oluwamayowa (2021), the majority of households reported a lack of resources to purchase food, and a high number of them supported violence as a means of attaining food.

Using the ACLED dataset, Gutierrez-Romero (2022) found that longer local lockdowns increased the likelihood of riots, violence against civilians, and food-related conflicts in 24 low-income African countries. By constructing a monthly local index of prices at the market level, she estimated that a 10% rise in this price index is linked to a 0.7% increase in violence against civilians. Notably, the impact of rising food prices was dampened in countries such as Burkina Faso, Malawi, and Namibia due to welfare and labor interventions. These were quantified by constructing a welfare/labor COVID-19 policy index. The author showed that a 0.1-unit increase in such a policy index reduced the likelihood of conflicts by nearly 0.2%. This result may seem in contrast with that of Berman et al. (2022), who found an initial drop in the riots and protests as an immediate effect of the pandemic. However, Berman et al. (2022) also found an increase in pandemic related riot, and an increase in conflict in the poorer countries—this correlates with the food related crisis in the low-income African countries that Gutierrez-Romero (2022) analyzed.

Rudin-Rush et al. (2022) identified several factors that contribute to food insecurity during the pandemic, such as loss of employment, reduced access to markets and transportation, and restrictions on movement and social gatherings. They also highlighted the disproportionate impact of food insecurity on vulnerable populations, such as women and children. This calls for increased

support for food assistance programs and policies that address the underlying causes of food insecurity, such as poverty and inequality. This study also stresses the importance of data collection and monitoring to understand the evolving impact of the pandemic on food security and to inform policy responses—showing the relevance in possible conflict resolution.

Beyond Africa, using cross-country data for more than 100 countries, Farzanegan and Gholipour (2023) showed that with sufficiently high levels of government stimulus support, the positive impact of COVID-19 on intra-country conflict may be significantly dampened or even removed. Only in countries lacking resource allocation to support such programs, with allocation restricted to below 5% or 6% of the GDP, did they find a significant risk of internal conflict. This conflict resulted from greater COVID-19 associated deaths and consequent public anger.

The findings by Gutierrez-Romero (2022) and Farzanegan and Gholipour (2023) highlight the need for anti-poverty measures in combination with medical measures when tackling the pandemic in countries where the population is more likely to face food shortages and the society is already highly fractionalized, creating a fertile ground for civil discord. Government policies that ensure social security for the worst-affected population play a central role in preventing conflict. Perceptions of exclusion from the government during times of recession also play a strong role in social conflict. Group inequality, rather than individual inequality, has a more significant impact, as shown by Stewart et al. (2002). This impact was further demonstrated by Menton et al. (2021) for the indigenous population in Brazil, who already had limited access to the public healthcare system. The authors showed that the government had attempted to appropriate indigenous land when the media and the masses were more concerned with the pandemic. Such appropriation has greatly increased resource conflicts and indigenous resistance.

While one may expect that the COVID-19 crisis and the related acute stress would result in more pro-social behavior (Von Dawans et al., 2012) and incentivize opposing groups to unify and support ceasefires and peace initiatives, that was not the case in the field. Rather, the COVID-19 crisis exacerbated existing conflict fault lines and threats to peace processes. The pandemic-related lack of national peace processes and conflict oversight has also provided an opportunity for armed campaigns and increased local violence in developing countries such as the Democratic Republic of Congo, Kenya, Libya, South Sudan, and Yemen (Bell et al., 2020). Ide (2021) focused on 9 countries across the world that had "experienced significant levels of armed conflict when the pandemic began to unfold in March 2020." Using ACLED data, the author found that an escalation of armed conflict (instead of reduction) was more likely due to the conflict. Grievances due to the pandemic may theoretically result in an increase (due to social preference or loss aversion Chowdhury et al., 2018) in conflict. But the author found only limited effect of the same. Moreover, health diplomacy had only a limited effect on the existing conflict (as predicted by Polo, 2020) as well.

While acknowledging regional variation and analyzing real-time data on battle events and COVID-19, Mehrl and Thurner (2021) confirmed that the net effect of the pandemic on the global conflict level is insignificant. This analysis was done by aggregating observations to the country-week level, as reporting quality is likely to differ between weekdays and weekends. Due to numerous confounding factors in such an analysis, the authors formally examined the effect of COVID-19 on armed conflict. They used a difference-in-difference framework by leveraging differences in when countries were affected by—and responded to—COVID-19. The identification strategy exploits the fact that the pandemic spread to different countries at different times. The final results again suggested that the spread of coronavirus did not affect global levels of armed conflict.

The overall summary from these studies shows an immediate negative change that was brought about by the pandemic on intra-country conflict, but the scale of the effect was heterogeneous across societies and countries. The mid-term effect of the pandemic is also more heterogeneous than the immediate effect. On the one hand, pandemic-related recession, food (in)security issues, and fractionalization increased conflict. However, on the other hand, government measures in medical support and economic stimulus reduced conflict. Hence, it is important from a policymaker's point of view to tease out each of these effects. The highly varied impacts also explain the perceived null effect of the spread of COVID-19 and lockdown policies on global conflict at a broad level.

Overall, we observe mixed results across countries, time, and the scale of conflict. However, while summarizing the effects of the COVID-19 pandemic on aggregate level conflicts, the fact that the pandemic changed conflict behavior is well documented. Moreover, country or society-specific results can help policymakers in that context make intelligent and efficient policies to tackle the impact of COVID-19 and its effects on conflict behavior.

## 4 | COVID-19 PANDEMIC AND VIOLENT CRIME

Similar to group-level conflicts, the COVID-19 pandemic is associated with a heterogeneous impact on crime rates. While a decline has been noted in certain criminal categories, including property crime and drug offenses, an upsurge has been observed in certain violent crimes. Pandemic-induced measures, such as lockdowns and social distancing, have ostensibly limited opportunities for criminal activities, leading to the reduction of certain criminal behaviors. However, the pandemic has also induced economic hardship and heightened stress levels, which may have triggered a surge in certain criminal activities, particularly violent crimes related to monetary gains. The relationship between the pandemic and crime is intricate and multidimensional and warrants further investigation to grasp its nuanced implications.

Abrams (2021) investigated the impact of the COVID-19 pandemic on crime rates in 25 major U.S. cities. The findings indicated an immediate and widespread decline in criminal incidents and arrests, with the most significant drop observed in drug-related crimes, theft, residential burglaries, and most violent crimes. Interestingly, this decrease predates the implementation of stay-at-home orders, and there was no significant reduction in homicides and shootings. However, there was an increase in non-residential burglary and car theft in most cities, suggesting that criminal activities may have shifted to less populated areas. Notably, Pittsburgh, New York City, San Francisco, Philadelphia, Washington DC, and Chicago had seen a decrease in crime rates by at least 35%. Based on evidence from police-initiated reports and geographic variations, the author proposed that the observed changes in crime rates are not attributable to changes in crime reporting.

Kim and Philips (2021) analyzed the impact of the COVID-19 pandemic on gun violence in Buffalo, NY using weekly data categorized into four groups based on death and injury. The study also estimated the impact of the pandemic on gang and non-gang related shootings, using both ARIMA and Poisson models. The study found that the pandemic's impact on gun violence varied depending on the type of violence and intervention models used. Fatal shootings increased temporarily, while all other types of non-fatal shootings and gang-related shootings increased in the long-term due to the pandemic. The pandemic may have caused changes in gun violence by increasing strain and changing routine activities. Hence, criminal justice agencies should focus

on combating pandemic-related strain and fear that contributes to gun violence for public health and safety.

Drake et al. (2022) also chose Buffalo, NY to analyze the impact of COVID-19 and the subsequent stay-at-home order on the spatial distribution of shootings. This study aims to determine whether shooting locations intensified in violence or shifted to new areas following the pandemic and reveals that there is no statistical difference in shooting areas between pre- and post-COVID stay-at-home orders. The increase in shootings observed in the sample is proportionally consistent across the city, rather than localized to specific micro-grid cells. This finding supports the notion of the stickiness of crime and place and suggests that spatial patterns are relatively stable, even in the face of social upheaval caused by COVID-19.

## 5 | THE IMPACT OF CONFLICT ON COVID-19 OUTBREAK AND RECOVERY

Conflicts, especially armed conflicts, have always had significant effects and grave consequences related to the transmission of diseases that are difficult to deal with. Historically, wars have disrupted the human-microbe balance, resulting in devastating outbreaks of microbial diseases worldwide with high morbidity and mortality rates. Conflicts and wars can exacerbate the spread of pandemics or impede their recovery due to the displacement of populations, weakened healthcare infrastructure, and inadequate access to healthcare services. Hence, it is important to also focus on the mirror view effects of existing conflicts on the SARS-CoV-2 outbreak. In this section, we scrutinize how ongoing conflict situations have affected the spread of the COVID-19 pandemic and distinguish between the characteristics of the pandemic in conflict and non-conflict zones.

The displacement of populations due to conflicts and wars may have affected the pandemic in two ways. First, the displaced population may be forced to travel long distances, which can increase the risk of transmission. The most notorious pandemic of all time in the past—the Plague—was caused by the spread of Yersinia Pestis aggravated by refugees fleeing war zones (Kaniewski & Marriner, 2020). However, there is no existing study that has documented such an effect for the COVID-19 pandemic. Second, the displaced populations can also lead to overcrowding in refugee camps or other makeshift shelters, which can create conditions that facilitate the spread of COVID-19, as pointed out by Vonen et al. (2021).

Conflicts and wars can damage existing healthcare infrastructure and disrupt the supply chain of medical equipment and supplies, hampering the ability of healthcare workers to respond effectively to the pandemic. In Yemen, for example, only half of the health facilities were functioning at the time of the pandemic, and only 15% could be repurposed for COVID-19, while the number of functioning facilities was 64% in Syria (USGLC, 2022). Moreover, many healthcare workers were forced to flee the conflict zones, leaving the affected areas with limited medical staff. USGLC (2022) further reported that 70% of health workers in Syria have fled the country, and there were only 10 health workers per 10,000 people in Yemen. Finally, in areas affected by conflicts and wars, access to healthcare services may also be limited due to factors such as curfews, checkpoints, and roadblocks. These make it difficult for individuals to seek medical care, get tested for COVID-19, or receive vaccinations, resulting in damage to the recovery of public health from the pandemic.

In addition, conflicts and wars can create political instability and undermine public trust in government institutions, making it difficult to implement and enforce public health measures.

This can lead to confusion, misinformation, and noncompliance with public health guidelines, further facilitating the spread of COVID-19 (Daw, 2021).

Overall, conflict-ridden areas have produced two broad outcomes that are relevant to the developing world. Firstly, diverting scarce resources to fight the pandemic has worsened the already overburdened health systems that were dealing with malnutrition and other endemics. Prior to COVID-19, it was forecasted that real per-capita income in conflict-ridden economies would increase by 1.4% in 2020. However, it is now expected to fall by 6.5% (IDA & IFC, 2020). Secondly, policy paralysis resulting from the lack of governance in these areas has allowed the virus to spread heavily, with little to no information available about the actual numbers on the ground for both infections and deaths. This lack of information has hindered efforts to tackle the virus and prevent the pandemic.

In Somalia, the official COVID-19 numbers have remained very low, but authorities have implemented drastic restrictive measures in response. While quantitative studies are still needed, a qualitative study conducted by Braam et al. (2021) with respondents in Mogadishu and Baidoa revealed that the COVID-19 response severely reduced income. As a result, the secondary economic impact of the pandemic, rather than the infection itself, was more significant. In contrast, analyzing official data from Libya, Syria, and Yemen, Daw (2021) showed that the ongoing armed conflict helped spread the COVID-19 pandemic and resulted in a gross undercounting of infections and deaths. Conflict zones caused armies to come into close contact with each other and led to the displacement of people. They also resulted in breakdowns in public health infrastructures and overcrowding and unsanitary conditions in refugee camps, which further facilitated the spread of infectious diseases (Banerjee, 2019).

There are two additional ways in which an individual's perspective shaped by conflict can impact the response to the COVID-19 pandemic. The first is that existing conflict can raise the threshold of acceptability for the number of deaths caused by the virus. The second is that individuals' experiences of dealing with conflict crises in adverse situations and adopting new measures can influence their behavior and response to the pandemic. The first mechanism can have a negative impact on pandemic control, while the latter can have a positive one. In countries where people are accustomed to conflict, the pandemic did not result in significant policy changes if the death toll was not excessively high. For instance, Iran initially refused to impose a national lockdown despite numerous deaths, and even the subsequent lockdowns were relaxed (Venkatesan, 2020). This was because the government recognized that the population would be unlikely to respond to a pandemic, and keeping the economy running in a state already burdened by multiple sanctions outweighed the cost of civilian deaths.

On the other hand, in line with the second mechanism, Ekzayez et al. (2020) showed that conflict-ridden Northern Syria tackled COVID-19 surprisingly well, given the scarcity of available resources. They showed that chronically occurring conflict led the population to create an 'Early Warning and Response Network' for other diseases earlier, which helped in tackling the COVID-19 pandemic. Furthermore, using district-level data from India, Mitra and Mukherji (2021) showed that higher levels of existing Hindu-Muslim conflict are associated with a lower number of COVID-19 infections, deaths, and active cases. They conclude that existing conflict increases cooperation within a religious community, helping them combat the pandemic better.

Hence, the literature provides mixed results on the effects of conflict on the spread of the pandemic. Depending on the nature of the existing conflict, the history associated with it, and the norm in society, an existing conflict facilitated the spreading of the pandemic in some countries. In contrast, it facilitated the tackling of the pandemic in some other countries. Further research is needed in this area, especially outside the Middle Eastern or North African (MENA) regions.

## 6 | DISCUSSION

This survey covers contemporary literature from economics, health, peace research, development, etc., and examines the inter-relationship between the COVID-19 pandemic and conflict behavior. We first investigate the literature on the association of the COVID-19 pandemic with conflict behavior at an individual level. Next, we focus on the association of the pandemic with conflict behavior at the aggregate level, and finally, we cover the literature on the possible effects of ongoing conflict on the severity of the pandemic. This study also highlights how the COVID-19 pandemic has harmed the social fabric. While the current survey is selective, it provides a much-needed comprehensive review of the existing literature to better understand the situation at hand and make informed decisions. Informed policymaking is the best preventative measure against conflicts at the individual, national, and global levels, and this survey aims to aid future research and improve how governments and institutions design policies in response to the pandemic in the coming years.

We find that domestic violence and work-life conflict increased because of the pandemic and the lockdown. Although the incidences of aggregate-level conflict decreased at the beginning of the pandemic, they eventually returned to pre-pandemic levels. The effects of conflict on containing the pandemic have been mixed and society specific. This survey also highlights the need for further research in various areas, and below we briefly discuss those.

Specific to individual-level conflicts, we point out the need for further research on intimate partner violence (IPV) in developing countries. While the effects of the pandemic on IPV in developed countries are better recorded, data is scarce in the developing world. Moreover, a standard measure of IPV across countries is lacking. Considering the discussion on increased household conflicts, Behar-Zusman et al. (2020) introduced a COVID-19 Family Environment Scale (CHES) to measure the impact of social distancing due to COVID-19 on household conflict and cohesion. It modifies existing measures by considering a specific confinement scenario where family members under lockdown share a life-threatening situation. The scale is developed using data from an online survey with 3,965 respondents from 81 countries and provides a tool to measure the impact of a pandemic on familial resilience. It would be useful to apply such measures in developing countries.

The summarized results also shed light on the importance of policy measures in combating the pandemic and conflict. Hate crimes against people of East Asian ethnicity increased during and after the pandemic. More importantly, such an increase correlates with economic conditions and the rhetoric used against such a community by far-right groups or the government. Policy measures around these may help restrict such conflicts in the future.

In addition, a country's propensity for violent conflict can be predicted through the relative status of women, particularly their vulnerability to violence. Countries with 10% of women in the labor force are nearly thirty times more likely to experience conflict than countries with 40% of women in the labor force (World Bank & United Nations, 2018). As the COVID-19 pandemic has decreased female labor force participation and increased violence against women across the globe, new policies to combat such increases in IPV and other conflicts are much needed.

At the group level, research on the effects of COVID-19 opportunistic authoritarian moves by governments (e.g., in Brazil, India, or Belarus) on internal conflicts is scarce. Moreover, while there are news reports and anecdotal evidence regarding the effects of the pandemic on inter-state conflicts, research in this area is sparse. Various authorities used the pandemic to strengthen their control and agenda, increasing inter-state conflict. Taiwan has accused China of employing the

pandemic to practice cognitive warfare (spreading misinformation about the COVID-19 outbreak in Taiwan). The government utilized the pandemic to fuel ongoing conflicts with the European Union and strengthened its authoritarian hold over Belarusian institutions. Most notably, Russia exploited the unstable situation to annex greater parts of Ukraine and leverage pandemic-related needs of Ukraine, among other issues, to force an agreement. Thorough empirical research on each of these topics is warranted.

The possible effects of conflict on the spread of the pandemic have only been studied in the MENA countries. However, Russia, Ukraine, and neighboring Poland, which have allowed around 2.5 million Ukrainian refugees to cross their borders, also recorded unprecedented COVID-19 infections in the second quarter of 2022 when globally, the number of COVID-19 infections was slowly going down. Analyses of data from these countries and comparing the results with the MENA countries will provide further insights.

As pointed out in the introduction, the association between the pandemic and conflict is often a correlation, and empirical identification for causation remains missing due to data unavailability. Re-engaging with the above questions with richer data and an appropriate identification strategy to establish causation between the relevant variables is necessary. This will not only strengthen the existing results but also bring further confidence in deriving policy tools.

The ultimate effects of the pandemic on conflict in the medium and longer term are still unfolding. Rohner (2020) predicted a heightened level of conflict in the medium or longer term due to the following reasons: spiking poverty, education under stress, potential for repression, and reduced inter-dependence. Indeed, Basedau and Deitch (2021) considered the conflict in sub-Saharan Africa and concluded that the heightened conflict may be far from over. Further investigations on the longer-term effects across different regions would enrich the literature.

Finally, although there is ample empirical research on the interrelationship between the COVID-19 pandemic and conflict behavior, currently, there is no theoretical or experimental research. There is a great need for theoretical modeling of the changing behavioral patterns witnessed at home and work following the pandemic for investigations on individual-level conflict. Issues such as the effects of resource availability on conflict intensity can be studied theoretically and, in the laboratory (see, e.g., Baik et al., 2020). As empirical models often provide overall results, teasing out different effects (e.g., the effect of the pandemic, related mental anxiety, and economic stress on IPV) is often not possible from field data. Running laboratory or lab-in-the-field experiments will complement such gaps in research. We hope these avenues of future research outlined in this survey will help researchers and policymakers alike.

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## DATA AVAILABILITY STATEMENT

There is no data availability statement.

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