Family Violence is Not Causally Associated with COVID-19 Stay-at-Home Orders: A Commentary

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Abstract

COVID-19 has caused a wave of research findings to be published in academic and pre-print outlets which have resulted in several high-profile retractions. Given the need to publish policy- and practice-relevant research swiftly, the peer review process may issue fewer checks and balances compared to those present in non-COVID related scholarly works. This urgency to publish has led to publication of manuscripts with major methodological challenges falling through the cracks. In this perspective, we discuss this issue in light of a recent manuscript by Piquero et al. (2020). In the study, the association between stay-at-home orders and family violence was not statistically significant; however, a 12.5% increase in family violence offenses was widely disseminated by media outlets. The inaccurate dissemination of research findings can have important implications for policy and the virus mitigation efforts, which might urge policymakers to terminate stay-at-home orders in an effort to reduce family violence and other social risk factors. Changes may ultimately result in more COVID-related deaths as stay-at-home orders are prematurely and inappropriately lifted to prevent purported injuries in the home. Therefore, the widespread propagation of these claims in the absence of scientific evidence of an increase has great potential to cause harm.

Trends in Family Violence Are Not Causally Associated with COVID-19 Stay-at-Home Orders: A Commentary

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Abstract

COVID-19 has caused a wave of research findings to be published in academic and pre-print outlets which have resulted in several high-profile retractions. Given the need to publish policy- and practice-relevant research swiftly, the peer review process may issue fewer checks and balances compared to those present in non-COVID related scholarly works. This urgency to publish has led to publication of manuscripts with major methodological challenges falling through the cracks. In this perspective, we discuss this issue in light of a recent manuscript by Piquero et al. (2020). In the study, the association between stay-at-home orders and family violence was not statistically significant; however, a 12.5% increase in family violence offenses was widely disseminated by media outlets. The inaccurate dissemination of research findings can have important implications for policy and the virus mitigation efforts, which might urge policymakers to terminate stay-at-home orders in an effort to reduce family violence and other social risk factors. Changes may ultimately result in more COVID-related deaths as stay-at-home orders are prematurely and inappropriately lifted to prevent purported injuries in the home. Therefore, the widespread propagation of these claims in the absence of scientific evidence of an increase has great potential to cause harm.

Key words: Dating violence; family violence; policy; COVID-19

Trends in Family Violence Are Not Causally Associated with COVID-19 Stay-at-Home Orders: A Commentary

The unprecedented nature of the COVID-19 pandemic has tasked researchers with describing COVID-19 spread, preventing transmission, finding treatment courses, and evaluating the impact on society and public behavior. Due to the rapid influx of scholarly articles processed by journals and a surge in pre-print articles, research on COVID-19 has swiftly been disseminated. In fewer than five months, Scopus has already indexed more than 12,000 publications (Haghani & Bliemer, 2020), with many journals still currently overwhelmed with submissions (Brainard, 2020). While the flood of information has provided scientists and the public with necessary information, concerns have been raised about robustness of the rushed review process. Consequently, a wave of retractions in major journals has begun to appear (Retraction Watch, 2020).

One potential social impact of COVID-19 that quickly garnered worldwide attention is family violence rates (Mlambo-Ngcuka, 2020).[1]1We refer to 'family violence' throughout this commentary. Our operational definition for this construct includes child abuse, intimate partner and domestic violence. There is reason to hypothesize that family violence offenses would increase with policy interventions designed to mitigate COVID-19 transmission, such as stay-at-home orders. Stress, and the response to stressful situations, are risk

factors for family violence, including child abuse, domestic violence and intimate partner violence (Capaldi et al., 2012). For example, with the high unemployment rates occurring as a result of the pandemic, financial strain is a common stressor in many households. There are many theoretical reasons to suspect why this might occur, including unemployment and associated financial strain (Komarovsky, 1940; Schneider et al., 2016), as well as increased rates of substance use (Alexander & Ward, 2018; Reingle, Jennings, Connell, Businelle & Chartier, 2014).

Another common stressor in the home is lack of social support. During the COVID-19 pandemic, there was a notable breakdown in social support networks and many states initiated mandatory stay-at-home (also called shelter-in-place) executive orders, thus lengthening the time spent at home for families (SafeGraph, 2020). Childcare facilities and schools were almost universally closed, employees were laid off because of declining business, and other employees were asked to work from home in an attempt to contain the spread of the virus. Coupled with the financial strain described above, it is conceivable that this increased time at home with competing priorities (i.e., home schooling or babysitting a child while working and maintaining other routine household activities) could increase the likelihood of family violence (Herman, 1992).

There has been an urgency to publish on the effect that such stay-at-home measures have had on family violence to inform and better adapt community-based responses to victimization. However, one major negative implication of this is the inaccurate dissemination of results to the lay audience. One such study, which was published in the *American Journal of Criminal Justice* on June 14, 2020 (Piquero, Riddell, Bishopp, Narvey, Reid & Piquero, 2020), studied the impact of stay-at-home orders on family violence offenses in Dallas, Texas. This study was widely featured on multiple news outlets months prior to scientific publication or even acceptance in a peer-reviewed journal (TCR Staff, 2020; Jam. . .). This study compared family violence rates during the *83 days* before the stay at home order was enacted (Jenkins, 2020) to rates for just more than one month (n=35 days) after the stay-at-home order using secondary data from the Dallas Police Department (DPD). News outlets quoted the study in question as reporting a 12.5% increase in family violence incidents as a result of the stay-at-home orders in Dallas County (an effect size that was not presented in the study).

However, after closer inspection of the manuscript, there was no statistically significant effect size of the stay at home order on family violence. The effect size for the time before the stay-at-home order was 1.4%, and the *decline thereafter* was 12%–neither effect size was significant in the interrupted time series analysis (beta coefficients were .36 and -2.49, respectively). The authors conclude that "the implementation of the stay-at-home order is not associated with a statistically significant increase in domestic violence incidents, and there is not enough evidence to suggest an upward trend in domestic violence incidents throughout the month after the stay-at-home order went into effect" (Piquero et al. 2020, p. 11). This is directly contradictory with the news coverage of the manuscript ten days *prior to the manuscript's acceptance* (Jaramillo, 2020).

In the same manuscript, the authors note that "some of that short-term spike seems to be associated with what appears to be an upward trend of domestic violence crimes *that was already occurring prior to the stay-at-home order* [emphasis added by authors of this commentary]." Contrary to this statement, an author of the manuscript was quoted in a news article making a contrary point, "I think [the increase in family violence is] strongly associated with the stay at home order" (Fink, 2020). Given the data presented in the manuscript, these contradictory claims are scientifically unjustified.

Another common negative implication of a rush to publish is methodological limitations, calling into question the validity of the study's findings (despite their non-significance). Epidemiological research suggests that even the most robust statistical analyses used to assess the outcomes of public policy changes are insufficiently powered to detect effect sizes of -/+15% (Hawley et al., 2019). According to Hawley and colleagues (2019), thousands of time points would be necessary to detect an effect size of 15%, indicating that the effect sizes in this study were unlikely to ever be statistically significant. The study also ignored seasonal trends in family violence by failing to account for non-linear or seasonal effects, which are well established in the scientific literature on violence, including family violence (Anderson et al, 2000; Koutaniemi & Einiö, 2019). Using a secondary data source from DPD, seasonal trends can easily be analyzed if robust data cleaning techniques and appropriate statistical analyses are conducted. It remains unclear why the authors of this study did not

account for these effects given the prescient seasonal effects in family violence (and violence generally) that are well documented in the literature.

Finally, inaccurate dissemination and methodology, when widely distributed to news outlets, have the potential to impact stay-at-home policies and potentially, cause harm. Stay-at-home orders have been associated with a 60% reduction in COVID-19 cases three weeks after their implementation, with rates increasing each week following their enactment (Fowler, Hill, Obradovich, & Levin, 2020). The widespread dissemination of inaccurate research findings described above have important implications for policy and the virus mitigation efforts, which might urge policymakers to terminate stay-at-home orders in an effort to reduce family violence and other social risk factors. Changes may ultimately result in more COVID-related deaths as stay-at-home orders are prematurely and inappropriately lifted to prevent purported injuries in the home. Therefore, the widespread propagation of these claims in the absence of scientific evidence of an increase has great potential to cause harm.

We believe that there is no clear link between family violence offenses and stay at home orders. To demonstrate this, we present descriptive data from the same police department studied in Piquero et al. (2020), which provided us with the daily number of family violence incidents (including child and elder abuse) from January 1-May 12, 2020, which we aggregated weekly for presentation purposes. We also present three full years of family violence incident data from DPD in an attempt to visualize the effects of the stay at home order in light of prior year cyclical trends in family violence.

The Figure below displays the average number of weekly family violence incidents from week 1 (January 1-7) of each year to week 52 (December 24-31 of each year). These data suggest that 2020 trends were largely similar to those observed in 2019 and 2018, with slightly fewer incidents reported in January 2020 compared to prior years. Clear seasonal trends are evident, and 2020 trends appear to mirror the trends that were documented in prior years. An increase in family violence incidents was observed between April 1-15 (weeks 14-16) each year.

Insert Figure about here

The time between April 1 and April 15 does not coincide with the implementation of the stay at home executive order (March 23). Our findings of clear seasonal effects are consistent with the scientific literature on aggression generally and family violence specifically (Anderson et al, 2000; Koutaniemi & Einiö, 2019). This is particularly true given the lower rates of family violence observed in January 2020, as any increase in the incidence rate could reflect an increase in family violence severity and therefore, reporting, rather than an increase in family violence incidence. On a surface level, our descriptive data demonstrated that the effects of family violence noted to occur in a temporally proximal manner with Dallas County's stay-at-home order were seasonal trends that occurred at roughly the same time each year. These seasonal trends have been reported in prior research on assaults generally and family violence specifically (Rotton & Cohn, 2000; Rotton & Cohn, 2001); therefore, any future attempts to suggest that stay-at-home orders cause an increase in family violence should use multiple years of data and model seasonal trends (Leslie & Wilson, 2020).

It is possible that elevated rates of family violence will occur, although they may be delayed. Informed by the Centers for Disease Control and Prevention's continuum of pandemic phases models, as well as SAMHSA's research on coping after traumatic events (Centers for Disease Control and Prevention, 2018; Substance Abuse and Mental Health Services Administration, 2015), projections conducted by the Washington University Department of Health predicted that behaviors indicative of "acting out" (e.g., illicit behavior) are likely to occur between three and six months after the initial outbreak (Mauseth et al., 2020). This could be partially responsible for the violence and looting that occurred during protests in response to police violence in June of 2020. We might also expect to see elevations in family violence as the year progresses. The Washington State report also noted that a second wave of illness is expected to generate "large-scale social and economic disruption" {Mauseth et al., p.5}. This indicates the need to prepare for a widespread surge in family violence if an elevation in family violence rates 3- to 6-months after the initial outbreak are detected.

The goal of this commentary was to prompt a conversation about the implications of widely disseminating

findings from behavioral science publications related to COVID-19. As a case study, we discussed an article by Piquero and colleagues, which omitted seasonal trends in family violence, which are well established (Anderson et al, 2000; Koutaniemi & Einiö, 2019) and identifiable with visual inspection of the data from DPD (a multi-year version of the dataset used in Piquero et al., 2020; Figure).

In conclusion, the authors of this commentary respectfully request that scientists publishing policy-relevant findings engage in ethical media engagement practices as well. Specifically, we would suggest that authors of any scientific publication delay media engagement until the peer review process is complete, and this includes dissemination of pre-print manuscripts which have widely increased during COVID-19 (Brainard, 2020). We would also suggest that journalists comply with media ethics guidelines (Society of Professional Journalists, 2014), including to "verify information before releasing it", "provide access to source information" (the manuscript by Piquero et al., 2020 was not linked in any news article because it had not yet been accepted for publication), and "avoid undercover or surreptitious methods of collecting information". In this case, there was a clear failure of multiple reporters to verify the claims stated by Piquero et al. (2020), which is a notable failure to maintain journalistic ethical standards. The authors of this commentary urge the scientific community to engage in a discussion related to the responsible dissemination of research findings, especially those topics that have life and death policy implications.
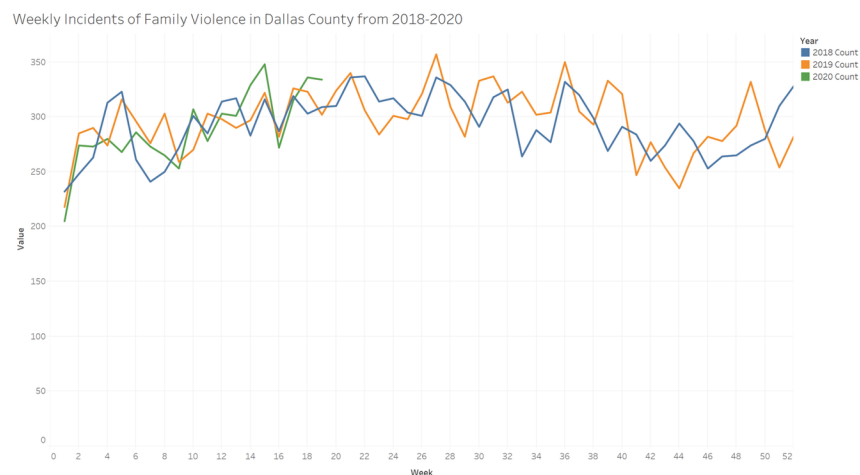

Figure. Weekly Incidents of Family Violence in Dallas County, 2018-2020.

References

418.108 CODE SECTION 418.108 (2020). https://www.dallascounty.org/covid-19/march-past-orders.php

Alexander, A. C., & Ward, K. D. (2018). Understanding Postdisaster Substance Use and Psychological Distress Using Concepts from the Self-Medication Hypothesis and Social Cognitive Theory. *Journal of psychoactive drugs* , *50* (2), 177–186. https://doi.org/10.1080/02791072.2017.1397304

Anderson, C.A., Anderson, K.B., Dorr, N., DeNeve, K.M., & Flanagan, M. (2000). Temperature and aggression. Chapter in *Advances in Experimental Social Psychology, 32* , 63-133.

Brainard, J. (2020, May 13). Scientists are drowning in COVID-19 papers. Can new tools keep them afloat? *Science Magazine*.doi:10.1126/science.abc7839

Capaldi DM, Knoble NB, Shortt JW, & Kim HK. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse* ,*3* (2):231. doi: 10.1891/1946-6560.3.2.231.

Centers for Disease Control and Prevention. (2018, December 6). The continuum of pandemic phases. *CDC* . https://www.cdc.gov/flu/pandemic-resources/planning-preparedness/global-planning-508.html

Fink, Jack. (2020, May 19). Crime In Quarantine: Dallas Police Department Sees Spike In Domestic Violence Amid Shutdown. *CBS DFW* . https://dfw.cbslocal.com/2020/05/19/crime-in-quarantine-dallas-police-department-sees-spike-in-domestic-violence-amid-shutdown/

Fowler, J.H., Hill, S.J., Obradovich, N., & Levin, R. (2020, May 12). The Effect of Stay-at-Home Orders on COVID-19 Cases and Fatalities in the United States. https://www.medrxiv.org/content/10.1101/2020.04.13.20063628v3

Hawley, S., Ali, M. S., Berencsi, K., Judge, A., & Prieto-Alhambra, D. (2019). Sample size and power considerations for ordinary least squares interrupted time series analysis: A simulation study. *Clinical Epidemiology* , *11* , 197–205. PubMed. https://doi.org/10.2147/CLEP.S176723

Haghani, M., & Bliemer M. (2020, May 31). Covid-19 pandemic and the unprecedented mobilisation of scholarly efforts prompted by a health crisis: Scientometric comparisons across SARS, MERS and 2019-nCov literature. *bioRxiv* (pre-print) 126813; https://doi.org/10.1101/2020.05.31.126813

Herman, J.L. (1992). Complex PTSD: A Syndrome in Survivors of Prolonged and Repeated Trauma. *Journal of Traumatic Stress, 5* (3), 377-91.

Jaramillo, C. (2020, May 19). Family violence rose 12.5% during shelter-at-home orders, UT-Dallas study finds. *Dallas Morning News* . https://www.dallasnews.com/news/crime/2020/05/19/ut-dallas-study-finds-family-violence-increased-125-during-shelter-at-home-orders/

Jaramillo, C. [@cassandrajar]. (2020, May 19). Exclusive: The data underscores similar experiences of Dallas-area domestic violence and children's advocacy groups that also saw an increased demand before calls declined following the orders enacted March 23 [Twitter moment]. https://twitter.com/cassandrajar/status/1262757308225908739

Komarovsky M. (1940). *The unemployed man and his family.* Dryden Press.

Koutaniemi, E. M., & Einiö, E. (2019). Seasonal variation in seeking help for domestic violence based on Google search data and Finnish police calls in 2017. *Scandinavian journal of public health* , 1403494819834098. Advance online publication. https://doi.org/10.1177/1403494819834098

Leslie, Emily and Wilson, Riley. (2020, May 19). Sheltering in place and domestic violence: Evidence from calls for service during COVID-19. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3600646.

Mlambo-Ngcuka P. (2020, April 6). Violence against women and girls: The shadow pandemic. *UN Women.*https://www.unwomen.org/en/news/stories/2020/4/statement-ed-phumzile-violence-against-women-during-pandemic

Piquero, A.R., Riddell, J.R., Bishopp, S.A. *et al.* (2020). Staying Home, Staying Safe? A Short-Term Analysis of COVID-19 on Dallas Domestic Violence. *American Journal of Criminal Justice* . https://doi.org/10.1007/s12103-020-09531-7

Reingle, J. M., Jennings, W. G., Connell, N. M., Businelle, M. S., & Chartier, K. (2014). On the pervasiveness of event-specific alcohol use, general substance use, and mental health problems as risk factors for intimate partner violence. *Journal of interpersonal violence* , *29* (16), 2951–2970.

Retraction Watch. (2020). Retracted coronavirus (COVID-19) papers. https://retractionwatch.com/retracted-coronavirus-covid-19-papers/

Rotton, J., & Cohn, E. G. (2000). Violence is a curvilinear function of temperature in Dallas: a replication. *Journal of Personality and Social Psychology, 78* (6), 1074–1081. https://doi.org/10.1037//0022-3514.78.6.1074

Rotton, J., & Cohn, E. G. (2001). Temperature, routine activities, and domestic violence: a reanalysis. *Violence and victims, 16* (2), 203–215.

SafeGraph. (2020). U.S. Geographic Responses to Shelter in Place Orders. https://www.safegraph.com/dashboard/covid19-shelter-in-place?s=US&d=02-24-2020&t=counties&m=index

Society of Professional Journalists. (September 6, 2014). SPJ Code of Ethics. https://www.spj.org/ethicscode.asp

Substance Abuse and Mental Health Services Administration. (2015, August). Supplemental research bulletin - Issue 5: Traumatic stress and suicide after disasters. *SAMHSA* . https://www.samhsa.gov/sites/default/files/dtac/srb_sept2015.pdf

Schneider, D., Harknett, K., & McLanahan, S. (2016). Intimate partner violence in the great recession. *Demography* , 53, 471-505

TCR Staffm. (2020, May 20). Texas Researchers Find 'Short-Term Spike' in Domestic Abuse Following Lockdown. *The Crime Report* . https://thecrimereport.org/2020/05/20/947635/

Washington State Department of Health. (2020). Statewide High-Level Analysis of Forecasted Behavioral Health Impacts from COVID-19 (p. 8) [Summary Report]. *Washington State Department of Health.* https://stateofreform.com/wp-content/uploads/2020/06/DOH-BH.pdf