

Supplementary Material

The effects of the Covid-19 pandemic on family violence: A meta-analytical investigation.

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Table S1. Electronic search strategy for the meta-analysis conducted in September 2023

DatabaseS	Search terms
PubMed K=6861	("Covid"[Title/Abstract] OR "coronavirus"[Title/Abstract] OR "COVID-19"[Title/Abstract] OR "severe acute respiratory syndrome coronavirus 2"[Title/Abstract] OR "SARS-CoV-2"[Title/Abstract] OR "quarantine"[Title/Abstract] OR "isolation"[Title/Abstract] OR "self-isolation"[Title/Abstract] OR "confinement"[Title/Abstract] OR "social distancing"[Title/Abstract]) AND ("violence"[Text Word] OR "abuse"[Text Word] OR "aggression"[Text Word] OR "physical punishment"[Text Word] OR "battery"[Text Word] OR "assault"[Text Word] OR "assaults"[Text Word] OR "sexual assault"[Text Word] OR "verbal abuse"[Text Word] OR "physical abuse"[Text Word] OR "emotional abuse"[Text Word] OR "child abuse"[Text Word] OR "rape"[Text Word] OR "sexual abuse"[Text Word] OR "domestic abuse"[Text Word] OR "aggressive behavior"[Text Word] OR "violent"[Text Word] OR "aggressive"[Text Word] OR "aggressivity"[Text Word] OR "offense"[Text Word] OR "offenses"[Text Word] OR "offence"[Text Word] OR "offences"[Text Word] OR "gang-fighting"[Text Word] OR "aggravated robbery"[Text Word] OR "homicides"[Text Word] OR "homicide"[Text Word] OR "attempted murder"[Text Word] OR "acts of battery"[Text Word] OR "use of a weapon against others"[Text Word])
PsycINFO K=1918	(abstract: (Covid) OR abstract: (coronavirus) OR abstract: (Covid-19) OR abstract: (severe acute respiratory syndrome coronavirus 2) OR abstract: (SARS-CoV-2) OR abstract: (quarantine) OR abstract: (isolation) OR abstract: (self-isolation) OR abstract: (confinement) OR abstract: (social distancing) OR title: (Covid) OR title: (coronavirus) OR title: (Covid-19) OR title: (severe acute respiratory syndrome coronavirus 2) OR title: (SARS-CoV-2) OR title: (quarantine) OR title: (isolation) OR title: (self-isolation) OR title: (confinement) OR title: (social distancing)) AND (abstract: (violence) OR abstract: (abuse) OR abstract: (aggression) OR abstract: (physical punishment) OR abstract: (battery) OR abstract: (intimate partner violence) OR abstract: (assault) OR abstract: (assaults) OR abstract: (sexual assault) OR abstract: (verbal abuse) OR abstract: (physical abuse) OR abstract: (emotional abuse) OR abstract: (child abuse) OR abstract: (rape) OR abstract: (sexual abuse) OR abstract: (youth violence) OR abstract: (domestic abuse) OR abstract: (aggressive behavior) OR abstract: (violent) OR abstract: (aggressive) OR abstract: (aggressivity) OR abstract: (offenses) OR abstract: (offense) OR abstract: (offence) OR abstract: (offences) OR abstract: (gang-fighting) OR abstract: (aggravated robbery) OR abstract: (homicide) OR abstract: (homicides) OR abstract: (attempted murder) OR abstract: (acts of battery) OR abstract: (use of a weapon against others))
Web of Science K=7277	(TS=(Covid OR coronavirus OR Covid-19 OR "severe acute respiratory syndrome coronavirus 2" OR SARS-CoV-2 OR quarantine OR isolation OR self-isolation OR confinement OR "social distancing")) AND ((TI=(abuse OR "physical punishment" OR aggression OR "sexual assault" OR battery OR "verbal abuse" OR "physical abuse" OR assault OR assaults OR "emotional abuse" OR "child abuse" OR violence OR "sexual abuse" OR "gender based violence" OR rape OR "domestic abuse" OR "aggressive behavior" OR violent OR aggressive OR aggressivity OR offense OR offence OR offenses OR offences OR homicide OR homicides OR "gang-fighting" OR "aggravated robbery" OR "attempted murder" OR "acts of battery" OR "use of weapon against others")) OR (AB=(abuse OR "physical punishment" OR aggression OR "sexual assault" OR battery OR "verbal abuse" OR "physical abuse" OR assault OR assaults OR "emotional abuse" OR "child abuse" OR violence OR "sexual abuse" OR "gender based violence" OR rape OR "domestic abuse" OR "aggressive behavior" OR violent OR aggressive OR aggressivity OR offense OR offence OR offenses OR offences OR homicide OR homicides OR "gang-fighting" OR "aggravated robbery" OR "attempted murder" OR "acts of battery" OR "use of weapon against others"))))

Note: A search in Google Scholar and hand searches of bibliographies of included articles contributed to finding k=3.

Table S2. PRISMA Checklist.

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	1-3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	3
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	3-4
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	3-4
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Table S1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	3-4
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	3-4
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	3-4
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	3-4
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	3-4
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	3-4
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	3-4
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	3-4
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	3-4

Section and Topic	Item #	Checklist item	Location where item is reported
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	3-4
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	3-4
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	3-4
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	3-4
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	3-4
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	4-5
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	4-5
Study characteristics	17	Cite each included study and present its characteristics.	4-5 and Table S4
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	4-5
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	4-5
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	4-5
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	4-5 and supplementary material
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	4-5
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	4-5
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	4-5
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	4-5
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	6-8
	23b	Discuss any limitations of the evidence included in the review.	6-8
	23c	Discuss any limitations of the review processes used.	6-8
	23d	Discuss implications of the results for practice, policy, and future research.	6-8

Section and Topic	Item #	Checklist item	Location where item is reported
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	NA
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	NA
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	9
Competing interests	26	Declare any competing interests of review authors.	9
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	9

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

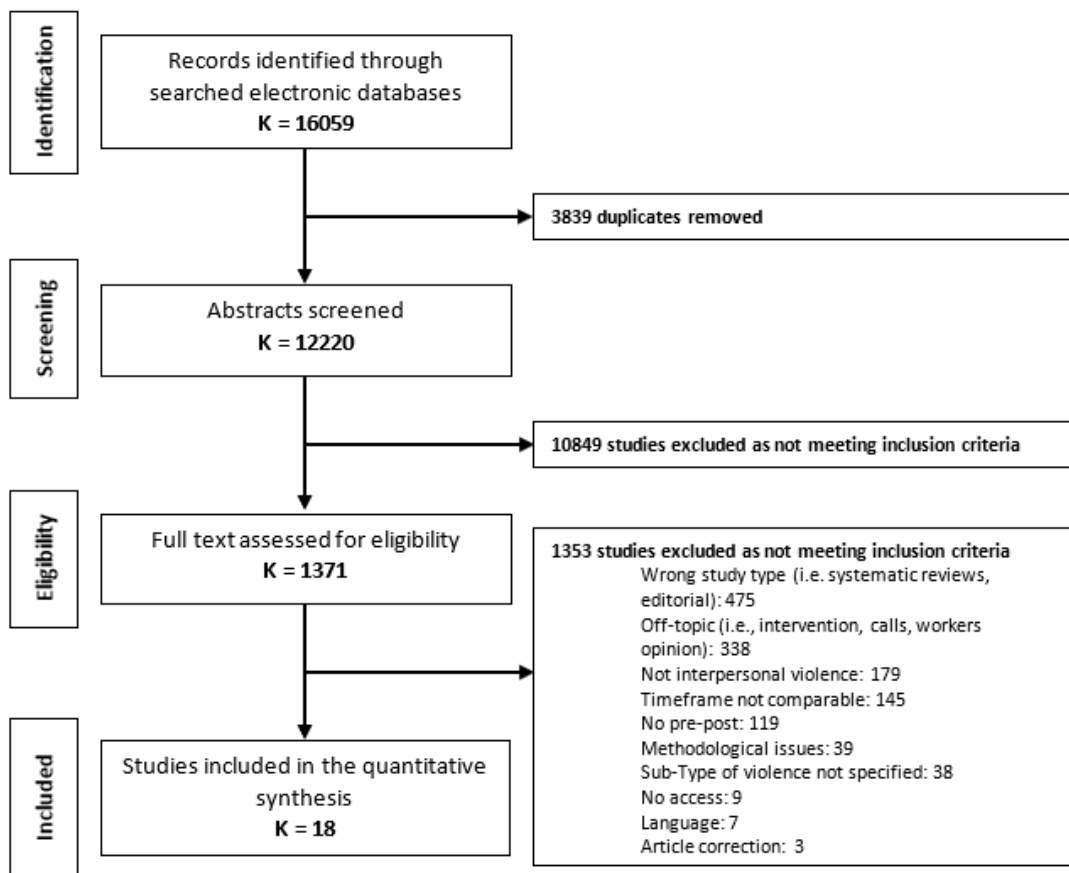


Figure S1. PRISMA flow chart.

Table S3. Details of the retrieved studies included (k=18).

Author, date	Country	Study design	Sample size	Type of family violence and their operational definition (when available)	Timeline
C. Ebert and J. I. Steinert, 2021	Germany	Cross-sectional	3818 women 1474 children	DV (i) Direct elicitation of women about less severe forms of violence, namely verbal and physical conflict with a partner; direct elicitation about corporal punishment of children (ii) Indirect elicitation through double list experiments to measure sexual violence and more severe forms of physical violence on women and children.	Pre-lockdown VS Lockdown: 22 April 2020 - 8 May 2020
Puri MC, Maharjan DC, Dahal M, Raifman S, Diamond-Smith N. 2023	Nepal	Longitudinal (retrospective)	Round 3 = 191 women Round 5 = 188 women	IPV (i) Physical violence (being pushed, slapped, twisted, punched, kicked, choked, or threatened with a weapon). (2) sexual violence (being forced to have sex against your will, forced to perform sex acts, or being offered food, clothing or other resources in exchange for sex).	Pre-COVID VS COVID: Jan 23 2020 - July 24 2020
M. L. Kang, W. W. Lim, D. J. K. Lee and J. T. T. Goo, 2021	Singapore	Cross-sectional	630 men and women	Physical and sexual interpersonal violence that occurred in the household, resulting in hospitalization with a trauma case.	Pre-lockdown: 7 Feb 2019 - 1 June 2019 VS Lockdown: 7 Feb 2020 - 1 June 2020
M. Loiseau, J. Cottenet, S. Bechraoui-Quantin, S. Gilard-Pioc, Y. Mikaeloff, F. Jollant, et al. 2021	France	Cross-sectional	241 981 children aged 0 (from birth) to 5 years	Physical abuse, resulting in hospitalization.	Pre-lockdown: March-April 2017, March-April 2018, March-April 2019 VS Lockdown: March-April 2020
J. Olding, S. Zisman, C. Olding and K. Fan, 2021	England	Cross-sectional	76 men and women	Physical DV, resulting in hospitalization with traumatic penetrating injuries.	Pre-lockdown: March-April 2018, March-April 2019 VS Lockdown: 23 March 2020 - 29 April 2020

Table S3. Details of the retrieved studies included (k=18).

Author, date	Country	Study design	Sample size	Type of family violence and their operational definition (when available)	Timeline
H. X. Rhodes, K. Petersen, L. Lunsford and S. Biswas, 2020	USA	Cross-sectional	9908 men and women	Physical DV, resulting in medical admission at a level one trauma center with an associated diagnostic code for assault.	Pre-lockdown: March 16 2019 - April 30 2019 VS Lockdown: March 16 2020 - April 30 2020
U. Sethuraman, N. Kannikeswaran, A. Singer, C. B. Krouse, D. Cloutier, A. Farooqi, et al., 2021	USA	Cross-sectional	3130 children (≤ 21 years old)	Physical violence, resulting in emergency department injury-related visits.	Pre-COVID: March-June 2019 VS COVID: March 16 2020 - June 3 2020
M. Amick, K. Bentivegna, A. A. Hunter, J. M. Leventhal, N. Livingston, K. Bechtel, et al., 2022	USA	Cross-sectional	140 281 children (< 18 years old)	Maltreatment-related physical and sexual abuse, resulting in emergency department visits.	Pre-COVID: 1 Jan 2019 - 15 March 2020 VS COVID: 16 March 2020 - 31 Aug 2020
F. S. Dogan and T. C. Ozturk, 2022	Turkey	Cross-sectional	4296 men and women	Physical DV, resulting in emergency department visits with an associated forensic case code.	Pre-pandemic: March 11 2019 - June 1 2019 VS Pandemic: March 11 2020 - June 1 2020
A. Sun and D. Johnson, 2022	USA	Cross-sectional	524 253 men, women and children	Physical violence, resulting in medical admission with documentation of both injury pattern and mechanism of injury.	Pre-COVID: April-June 2019 VS COVID: April-June 2020
K. E. Tipirneni, A. Gemmiti, M. A. Arnold and A. Suryadevara, 2022	USA	Cross-sectional	148 men and women	Domestic physical assault, resulting in medical admission at a level one trauma center with facial trauma.	Pre-COVID: March 1 - May 15 2018, March 1 - May 15 2019 VS COVID: March 1 - May 15 2020
T. Salisbury, N. Qurashi and Q.	England	Cross-sectional	101 children (< 18 years old)	Abusive head trauma, resulting in medical admission at a level one trauma center in the ophthalmology department.	Pre-COVID: March-June 2019 VS

Table S3. Details of the retrieved studies included (k=18).

Author, date	Country	Study design	Sample size	Type of family violence and their operational definition (when available)	Timeline
Mansoor, 2022					COVID: March-June 2020
J. D. Hamadani, M. I. Hasan, A. J. Baldi, S. J. Hossain, S. Shiraji, M. S. A. Bhuiyan, et al., 2020	Bangladesh	Longitudinal (retrospective)	2174 women	Physical and sexual IPV measured using the World Health Organization Multi-Country survey tool.	Lockdown VS pre-lockdown
K. K. Jetelina, G. Knell and R. J. Molsberry, 2021	USA	Longitudinal (retrospective)	1730 men and women	Physical and sexual IPV measured using the validated 5-item Extended Hurt, Insulted, Threatened and Scream (E-HITS) construct.	Lockdown VS pre-lockdown
P. Sharma and A. Khokhar, 2021	India	Longitudinal (retrospective)	94 men and women	DV measured by a questionnaire on Google Form. (i) Physical violence (shoving, slapping, kicking, choking, or other). (ii) Sexual violence (sexual assault, harassment, not allowed to use contraception, unwelcome touch, or other).	Lockdown April 2020 VS past 1 year
A. R. Walsh, S. Sullivan and R. Stephenson, 2021	USA	Longitudinal (retrospective)	214 men	Physical and sexual IPV measured using the Gay and Bisexual Men Intimate Partner Violence scale, adapted by Stephenson for use in GBMSM populations from the Conflict Tactics scale (CTS).	Pre-lockdown 2017-2018 VS Lockdown: July-Sept 2020
A. P. Miller, S. Mugamba, R. M. Bulamba, E. Kyasanku, J. Nkale, F. Nalugoda, et al., 2022	Uganda	Longitudinal (retrospective)	379 women	Physical and sexual IPV measured using 10 questions adapted from the Conflict Tactics Scales (CTS).	Lockdown: June-Aug 2020 VS 6 months prior
Côté-Corriveau G, Luu TM, Lewin A, Brousseau É, Ayoub A, Blaser C, et al., 2023	Canada	Cross-sectional	Population rate: 100 000 Children aged 0 (from birth) to 4 years	Physical maltreatment or unintentional injuries, resulting in hospital admission.	Pre-lockdown: 13 March - 23 June 2019, 24 June - 14 Dec 2019, 15 Dec 2019 - 20 March 2020 VS Lockdown: 13 March - 23 June 2020, 24 June - 14

Table S3. Details of the retrieved studies included (k=18).

Author, date	Country	Study design	Sample size	Type of family violence and their operational definition (when available)	Timeline
					Dec 2020, 15 Dec 2020 - 20 March 2021

USA: United States of America; DV: domestic violence; IPV: intimate partner violence; NR: not reported

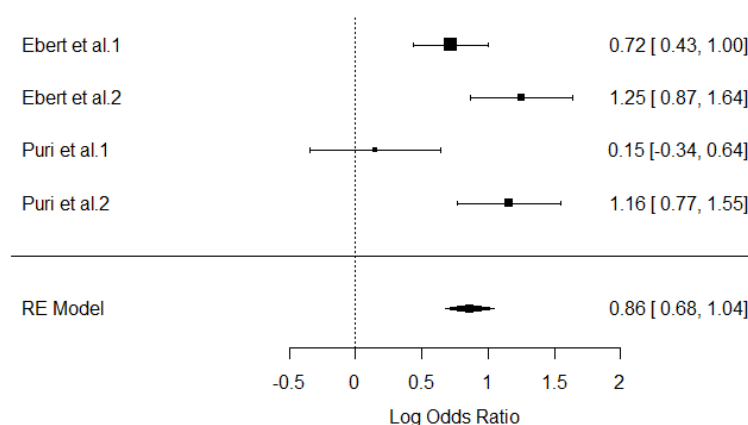


Figure S2. Forest plot of the meta-analysis of prevalence of various types of violence.

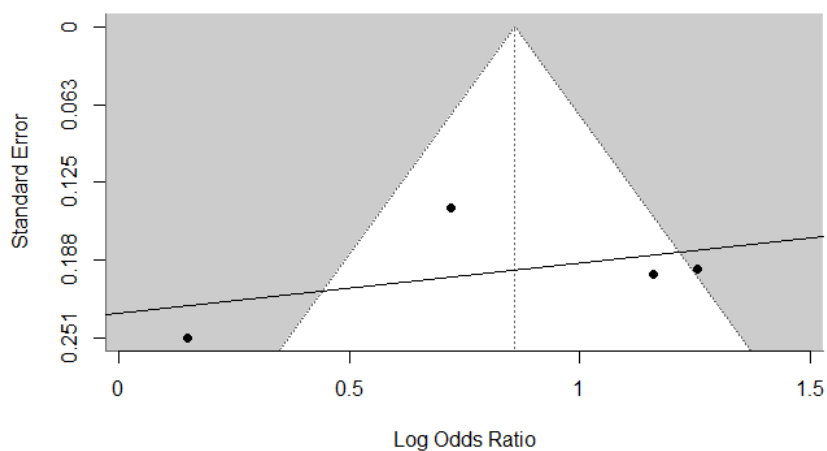


Figure S3. Funnel plot of the meta-analysis of prevalence of various types of violence.

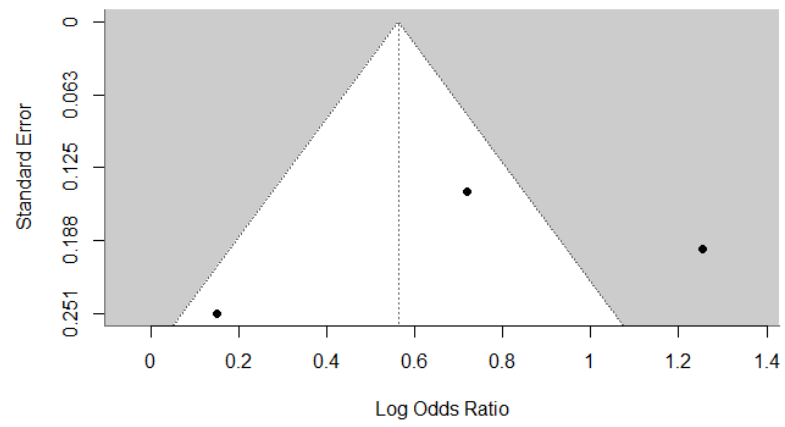


Figure S4. Funnel plot of the meta-analysis of prevalence of physical violence.

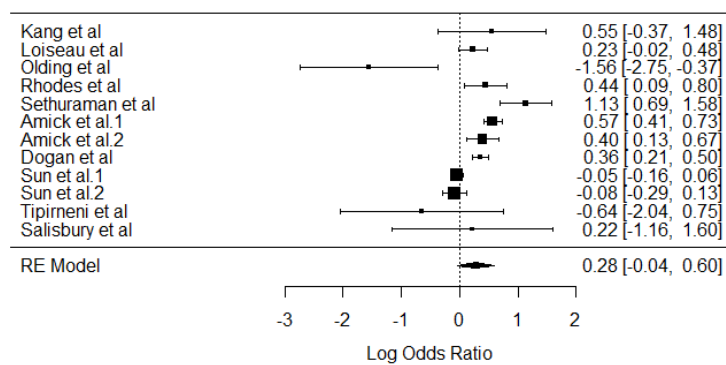


Figure S5. Forest plot of various types of abuse leading to hospitalization.

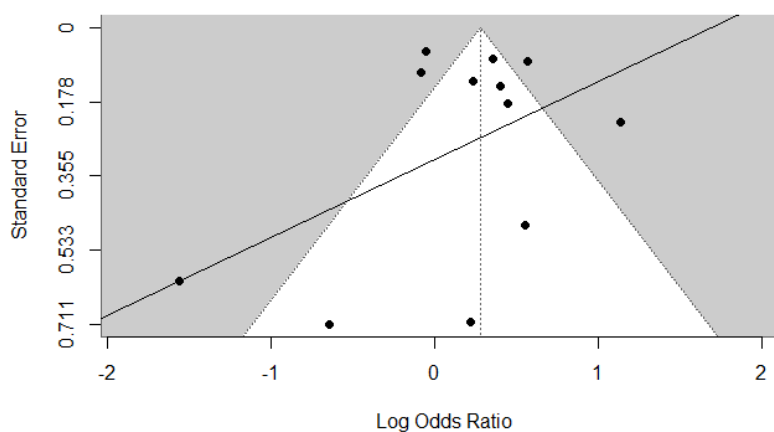


Figure S6. Funnel plot of the meta-analysis of prevalence of types of abuse leading to hospitalization.

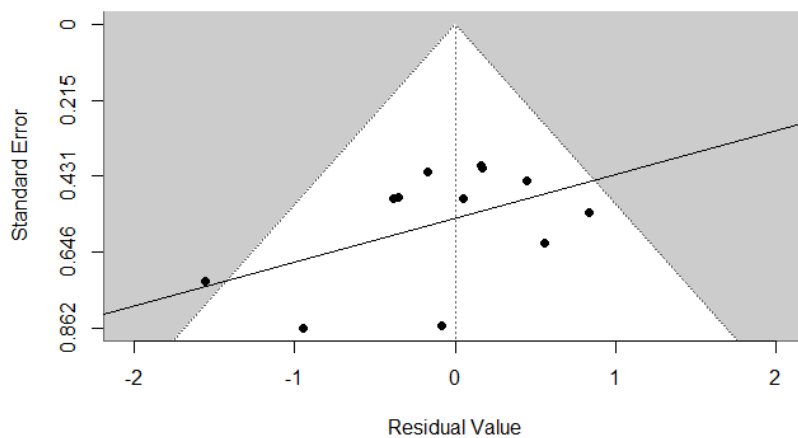


Figure S7. Funnel plot of the meta-analysis of prevalence by various types of violence and victim type.

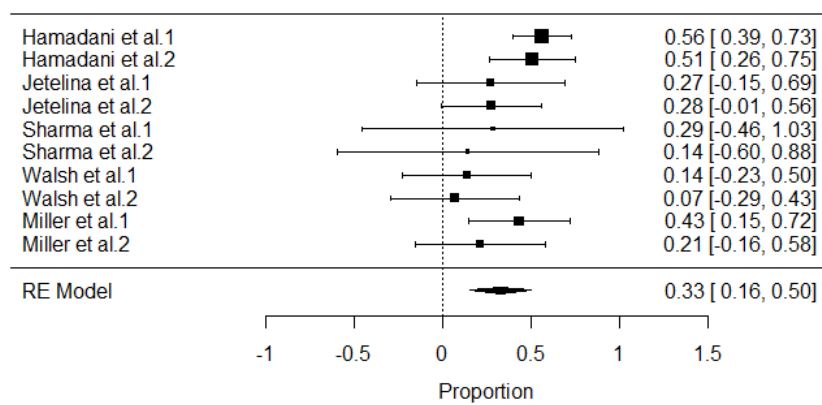


Figure S8. Forest plot on the percentage of victim with perception of increased violence during pandemic lockdown.

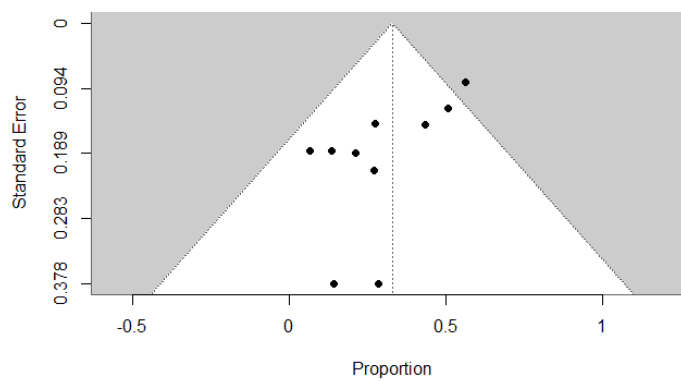


Figure S9. Funnel plot for the percentage of victim with perception of increased violence during pandemic lockdown.

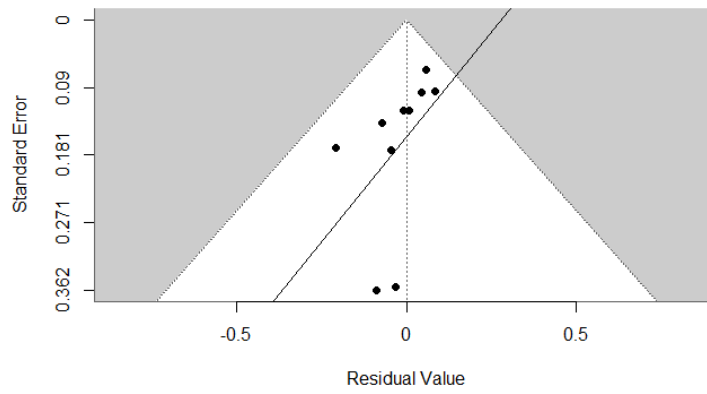


Figure S10. Funnel plot of victim with perception of increased violence during the pandemic by type of violence and sex of victim.