Journal of Family Violence (2024) 39:397–408
https://doi.org/10.1007/s10896-023-00498-7

ORIGINAL ARTICLE

Perpetration of Intimate Partner Violence and COVID-19-Related Anxiety During the Second Lockdown in Portugal: The Mediating Role of Anxiety, Depression, and Stress

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Accepted: 18 January 2023 / Published online: 24 January 2023

Abstract

Purpose The restrictions imposed during lockdown by COVID-19 pandemic entailed increased risks for the perpetration of intimate partner violence (IPV). Widespread fear and uncertainty related to the virus and the policies adopted to contain it have been linked to a set of social, emotional, and economic stressors that can increase the risk of IPV. The present study aims to assess the association between COVID-19-related anxiety, psychological distress (depression, anxiety, and stress), and IPV perpetration in the community, as well as to assess the mediating role of psychological distress and depression, anxiety, and stress in the relationship between COVID-19-related anxiety and the perpetration of IPV.

Methods A sample of 336 participants (282 females, *M*age = 34.91, *SD* = 11.72) was recruited from the Portuguese population through an online self-report questionnaire, completed after the second lockdown (from April and July 2021).

Results High rates of IPV perpetration during the confinement, in particular psychological and physical IPV, were found. COVID-19-related anxiety and psychological distress (depression, anxiety, and stress) were related to higher levels of IPV perpetration. Psychological distress and stress mediated the relationship between COVID-19-related anxiety and total IPV perpetration and psychological distress and depression mediated the relationship between COVID-19-related anxiety and psychological IPV perpetration.

Conclusions This study highlights the mediating role of psychological distress on IPV perpetration. Practical implications for intervention policies in IPV perpetration will be discussed.

Keywords Intimate Partner Violence · Perpetration · Coronavirus anxiety · Psychological Distress · Depression · Mediation

Introduction

The advent of the COVID-19 pandemic entailed the introduction of many unprecedented actions and policies in European countries and around the world (WHO, 2020a). The first state of emergency was decreed in Portugal on March 18, 2020, and since then, other states of emergency have followed, forcing periods of confinement, impositions of social distance, and carrying out work/teaching at a distance.

The escalation of the COVID-19 pandemic has affected people's lives, invoking feelings of fear, uncertainty and anxiety (Zammitti et al., 2021), and concerns related to health, possible death of themselves and family members and friends, unemployment and the wider economic crisis emerged. The responses, sometimes ambivalent, by governments in controlling the pandemic exacerbated these concerns, constituting important stressors of people's emotional well-being (Trzebiński et al., 2020). Indeed, the significant

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impact on the quality of life and mental health of the Portuguese individuals during the first confinement has been demonstrated (Gaspar et al., 2021; Morgado et al., 2021; Paulino et al., 2021; Quintas et al., 2022). As an example, in the study developed by Paulino et al. (2021), which assessed the immediate psychological impact of the COVID-19 pandemic in its initial phase (3 weeks after the first identified cases), 49.2% of the participants rated the psychological impact of the outbreak as moderate or severe; depression, anxiety, and stress were rated as moderate to severe by 11.7%, 16.9%, and 5.6% of the participants, respectively. Another Portuguese study (Quintas et al., 2022) found high rates of perceived stress (65% on moderate level) and post-traumatic stress disorders (31.5%) during pandemic condition, particularly affecting women and young people. Another problematic result was the high percentage of participants reporting suicidal ideation (17.8%), whether sustained or initiated during the COVID-19 period.

Likewise, the impact of the measures implemented to reduce the spread of the SARS-CoV-2 virus, namely lockdown, in increasing the risk for intimate partner violence (IPV) has been demonstrated by several international studies (e.g., Peterman et al., 2020; van Gelder et al., 2020), with a considerable increase in the number of IPV cases specifically during quarantine periods (e.g., Agüero, 2021; Gama et al., 2020; Ribeiro et al., 2022). Defined by the World Health Organization (WHO, 2021) as involving any behavior that causes physical, psychological or sexual harm to an intimate partner, IPV can affect the physical and emotional well-being of victims (Ellsberg et al., 2008). IPV, as a form of domestic violence, is mostly perpetrated in the home, by male against women (Glowacz et al., 2022; Khan & David, 2021).

Before the pandemic, IPV was already considered an epidemic problem, but it has worsened greatly after the emergence of restrictions resulting from COVID-19 pandemic (Boserup et al., 2020; Oliveira et al., 2020). A study (Pérez et al., 2022) revealed that about one in ten people experienced domestic violence during the pandemic in Portugal, with about a third of the reported cases being victims for the first time. In this study, psychological violence emerged as the most predominant (13%), followed by sexual (1%) and physical violence (0.9%). The increase in requests for help during the pandemic period (comparison between the years 2019 and 2020) was also observed and documented in Portugal by the Association for Victim Support [APAV], one of the main institutions supporting victims of crime in Portugal (Ribeiro et al., 2022). Several factors have been associated with an increased risk of IPV, namely the fact that the perpetrator and the victim are forced to live together for long periods of time; the victim's social isolation inevitably leads to less informal control of the perpetrator by the community, interfering with the victim's requests for help; the increase in social stressors, for example, economic problems or job insecurity, which can more easily potentiate the perpetrator's lack of control through the use of violence; or increasing alcohol consumption by the perpetrator (Boxall et al., 2020). Also, Bradbury-Jones and Isham (2020) point to increased tension between couples as a result of physical and social isolation, disruption of daily routine, job loss, and economic uncertainty stemming from the pandemic.

The General Strain Theory (GST) is a theoretical framework that has been used to explain how certain stressful life events may shape crime propensity and other delinquent behaviors (Agnew, 2001), and more recently also used to establish the link between pandemics and an increase in IPV (Maduforo, 2020). This approach postulates that exposing individuals to adverse events and conditions (i.e., strains) arouses negative emotions, such as anger, frustration, depression or shame, which may lead individuals to adopt destructive behaviors, other-directed (e.g., violence, aggression) or self-destructive (e.g., substance use, suicidal behavior), to cope with these feelings (Agnew, 2006). The association between stressful experiences and the perpetration of IPV has been demonstrated through an increase in anger and depression (Steele et al., 2022). Others (Spencer et al., 2021; van Gelder et al., 2020) showed that experiencing more situational stressors related to the COVID-19 pandemic, such as economic stress, social isolation, and pandemic-related stress, has been associated with increased IPV. Considering that such stressors are shared by victims and perpetrators, they have been used to predict the increase in IPV victimization (Gresham et al., 2021) and perpetration (Glowacz et al., 2022).

Considering the effects of stress, Sharma and Borah (2020) found that high levels of stress promote 3.5 times more probability of perpetrating IPV, than when stress levels are low. Mental health problems, including depression and anxiety, have been recognized as important risk factors for physical and psychological IPV, and are associated with victimization and perpetration by women and men (Spencer et al., 2019a, 2019b). Furthermore, the potential psychopathological problems associated with IPV tend to be exacerbated in situations of greater stress, frustration and lack of control, further increasing the precipitation of violent episodes (Glowacz et al., 2022).

Present Study

Almost a year after the first lockdown, the Portuguese people were forced into a second period of confinement. Although an adaptation it was expected during the second confinement (Bendau et al., 2021; Picó-Pérez et al., 2021) as people had already faced a similar experience, and preparedness and strategies to deal with the situation are thought to be perceived as better (Jamieson et al., 2018), a study conducted during the second lockdown in Portugal revealed higher levels of

depression and stress symptoms than at the beginning of the pandemic (Costa et al., 2022). Also, it is important to note that during the second confinement the epidemiological scenario was different from first confinement: while during the first confinement there was a low number of deaths, in the second confinement Portugal was facing a significant number of deaths (Costa et al., 2022). Besides, the second lockdown happened almost after a year of significant imposed restrictions, with a significant impact on individuals' lives, which may result in exhaustion, fatigue, and feelings of defeat and powerlessness in the response to the COVID-19 pandemic. These findings reinforce the importance to focus on the study of the second confinement in Portugal. This focus is even more imperative taking into consideration the high rates of IPV during the first confinement in Portugal (e.g., Pérez et al., 2022; Ribeiro et al., 2022), and the widely-documented link between depression and stress (e.g., Spencer et al., 2019a, 2019b) and stress-enhancing situations (e.g.,Glowacz & Schmits, 2020; Glowacz et al., 2022) and the risk of IPV occurrence. For these reasons and since, as far as we know, until now no studies analyzed IPV perpetration during the second confinement, the present study seeks to assess the association between anxiety and fear of COVID-19, IPV perpetration, and psychological distress (depression, anxiety, and stress) in a community sample, during the second lockdown in Portugal. More specifically, this study aims to evaluate the mediating effect of anxiety, depression, and stress on the relationship between COVID-19-related anxiety and IPV. The main research hypothesis is that psychological distress (depression, anxiety, and stress) mediates the predictive effect of COVID-19-related anxiety on IPV perpetration.

Method

Sample

This study was a cross-sectional survey using a non-random convenience sample of 336 individuals from the community with a mean age of 35.02 ($SD = 11.67$), ranging from 18 to 68 years. All the participants were in an intimate relationship during the second confinement ($M = 132.51$ months; $SD = 116.68$ months). Most of the participants were women ($n = 280$; 83.3%), heterosexual ($n = 288$; 85.7%), and had a degree or a master's degree ($n = 224$; 72.6%). Table 1 describes the main sociodemographic characteristics of the sample.

Table 1 Sociodemographic Characteristics of the Sample

Variable	N	%
Gender		
Male	52	15.5
Female	280	83.3
Other	4	1.2
Sexual orientation		
Heterosexual	288	85.7
Gay/lesbian	18	5.4
Bisexual	18	5.4
Asexual	4	1.2
Other	8	2.4
Education		
3rd grade	4	1.2
High school	28	8.3
Degree	120	35.7
Master's degree	124	36.9
PhD	60	17.9

Procedures

This study was a web survey using Qualtrics Software, developed with authorized Portuguese versions of self-reports. To obtain a sample that includes as many participants as possible from different country regions, the survey was disseminated by e-mail (e.g., researchers' contacts, universities/institutional mailing lists) and social networks (e.g., LinkedIn, Facebook, Instagram, Twitter). Adult individuals living in Portugal during the second lockdown period (January 15 to March 15, 2022) were invited to participate in the survey. Before completing the questionnaires through the web-based survey, all participants signed an electronic informed consent. Participation in the study took between 10 to 15-min and was anonymous (i.e., no personal information was collected) and voluntary. No financial support, compensation, or other incentives were granted to the participants. Data were collected and stored on the university's server, and no IP address was recorded to maintain privacy and anonymity of the data. Data was collected between April and July 2021. The rate of missing data was 20% (n = 84), which were removed from the analyses.

All the ethical principles outlined in the Declaration of Helsinki (World Medical Association, 2013) were followed. The protocol was approved by the Lusófona University Ethics Commitee.

Instruments

A sociodemographic questionnaire was used to collect data on age, gender, education, sexual orientation, and relationship status.

The Revised Conflict Tactics Scale (CTS2; Straus et al., 1996) is a 78-item self-report instrument to assess how couples solve their conflicts. It contains five scales (negotiation,

psychological aggression, sexual coercion, physical assault, and injury), assessing both victimization and perpetration. All subscales except negotiation can be further subdivided into minor and severe subscales using criteria outlined by the instrument's authors. Responses are answered on an eight-point scale separately for victimization and perpetration (1—Once in the past year; 2—Twice in the past year; 3—three to five times in the past year; 4—six to 10 times in the past year; 5—11 to 20 times in the past year; 6—More than 20 times in the past year; 7—Not in the past year, but it did happen before; 0—This has never happened). For the present study, only perpetration and victimization scores were analyzed. IPV perpetration and victimization were measured concerning the lockdown period; thus, participants were instructed to answer by reference to the period of confinement rather than the last year according to the following options: 1 – 1 time; 2 = 2 times; 3 – 3 to 5 times; 4 – 6 to 10 times; 5—11 to 20 times; 6—More than 20 times; 7—Not in the confinement period, but it did happen before; 0—This has never happened. Both the original (Straus et al., 1996) and the Portuguese version of CTS2 (Paiva & Figueiredo, 2006) demonstrated good reliability. Internal consistency for the current sample ranged between were 0.71 (total IPV victimization) and 0.96 (total IPV perpetration).

The Depression, Anxiety and Stress Scale—21 (DASS-21; Henry & Crawford, 2005) is a 21-item self-report questionnaire to assess symptoms of depression, anxiety, and stress. Items are answered on a 4-point Likert scale (0—Did not apply to me at all; 1—Applied to me to some degree, or some of the time; 2—Applied to me to a considerable degree or a good part of time; 3—Applied to me very much or most of the time), and the total score and subscales scores were obtained by summing the items. Higher scores reveal greater levels of symptoms. In the present study, participants had report to the symptoms experienced during the second confinement. Both the original version (Henry & Crawford, 2005) and the Portuguese version (Pais-Ribeiro et al., 2004) have good to excellent psychometric properties. The internal consistency for the present study was 0.94.

The Coronavirus Anxiety Scale (CAS; Lee, 2020) is a five-item self-report scale assessing physiological responses to COVID-19 anxiety on a 5-point Likert scale (1—Not at all; 2—Rare, Less than a day or two; 3—Several days; 4—More than seven days; 5—Nearly every day over the last two weeks). The total score results from the sum of the items, with higher scores revealing greater levels of COVID-19 anxiety. In this study, participants had report to the symptoms experienced during the second confinement. The original version (Lee, 2020) and the Portuguese version (Magano et al., 2021) revealed good to excellent psychometric properties. In the current study, the internal consistency was 0.79.

The Fear of COVID-19 Scale (FCV-19S; Ahorsu et al., 2020) is a seven-item self-report measure assessing fears related to COVID-19, scored on a 5-point Likert scale (1—Strongly disagree; 2—Disagree; 3—Neither agree nor disagree; 4—Agree; 5—Strongly agree). The total score was obtained by summing up the items, with higher scores revealing greater levels of fear of COVID-19. Participants had report to the symptoms experienced during the confinement period. The original version (Ahorsu et al., 2020) and the Portuguese version (Magano et al., 2021) showed good to excellent psychometric properties. The internal consistency for the current study was 0.79.

Data Analysis

IBM SPSS version 27.0 software was used for statistical data analyses and statistical procedures. Descriptive statistical analyses were conducted for sample characterization and main variables description. Pearson's correlation coefficients were also performed for analyzing the correlation between all variables in study (i.e., COVID-19 fear, Coronavirus anxiety, DASS, and IPV perpetration). For the mediation analyses, firstly statistical assumptions were tested. Then, the mediational model was tested with Model 4 from PROCESS macro 4.1 for IBM SPSS software (Hayes, 2022), using Bootstrapping Confidence Intervals. The indirect effects were calculated with 5000 bootstrap samples and 95% Bias-Corrected Bootstrap Confidence Intervals (95% BCBCI; Preacher & Hayes, 2008). A mediation effect size was also calculated, and interpretation criteria was previously established (small—0.01; medium—0.09; and large—0.25; Preacher & Kelley, 2011). Finally, the percentage of total effect was calculated (Shrout & Bolger, 2002).

Results

Intimate Partner Violence Perpetration and Victimization Prevalence

118 (35.1%) individuals assumed to perpetrate some type of violence against their intimate partner during the lockdown. The type of violence most perpetrated was psychological aggression ($n = 100$; 29.8%), followed by sexual coercion ($n = 30$; 8.9%), and physical assault ($n = 22$; 6.5%). The most part of the psychological violence perpetrated was less severe ($n = 90$; 26.8%), as well as the physical assault ($n = 18$; 5.4%).

Regarding victimization, 110 (32.7%) individuals reported suffering some violence from their intimate partner during the second lockdown. Psychological aggression was the type of violence most suffered ($n = 90$; 26.8%), followed by physical assault ($n = 68$; 20.2%), and sexual coercion ($n = 44$; 13.1%).

Table 2 Mean, Standard-Deviations, and Range in the Main Variables

Variable	M (SD)	Min–Max
Total IPV perpetration	6.81 (18.72)	0–175
Physical IPV	1.18 (7.71)	0–83
Psychological IPV	3.35 (10.06)	0–77
Sexual coercion	2.28 (6.83)	0–25
Injury	0.06 (0.44)	0-4
Total IPV victimization	9.51 (28.09)	0–236
Physical IPV	4.90 (14.48)	0–94
Psychological IPV	1.49 (10.26)	0–110
Sexual coercion	3.12 (8.72)	0–50
Fear Covid-19	16.34 (4.58)	7–31
Coronavirus anxiety	6.06 (2.14)	5–17
Psychological distress	12.86 (10.74)	0–51
Depression	3.79 (3.80)	0–18
Anxiety	2.81 (3.98)	0–17
Stress	6.29 (4.53)	0–19

M Mean; *SD* Standard-deviation

Intimate Partner Violence Perpetration, COVID-19-Related Anxiety, and Psychological Distress

Table 2 describes mean, standard-deviations, and range of the responses of IPV perpetration and victimization (total, psychological aggression, physical assault, and sexual coercion), COVID-19 fear, COVID-19-related anxiety, and psychological distress (depression, anxiety, and stress).

Correlation analyses between the variables are presented in Table 3.. Statistically significant correlations were found between total IPV perpetration and psychological aggression perpetration and total IPV victimization, COVID-19-related anxiety, psychological distress (DASS-21), depression, anxiety, and stress. Fear of COVID-19 was not correlated with IPV perpetration (total, psychological, physical, or sexual perpetration). Mediating analyses with the intercorrelated variables were then performed.

Mediational Model of Psychological Distress in the Relationship between COVID-19-Related Anxiety and Total Intimate Partner Violence Perpetration

The mediation model with psychological distress explained 40.0% of the variance of total IPV perpetration, which was significant, $R^2 = 0.400$, $F(3,242) = 53.78$, $p < 0.001$, after controlling for IPV victimization, $\beta = 0.52$, $SE = 0.03$, $t = 9.93$, $p < 0.001$; 95% BCBCI 0.24 – 0.36. The regression of COVID-19-related anxiety on total IPV perpetration was statistically significant, $\beta = 0.24$, $SE = 0.27$, $t = 4.72$, $p < 0.001$; 95% BCBCI

Table 3. Pearson Coefficient Correlations Between all Variables in Study (n = 338)

	1	2	3	4	5	6	7	8	9	10	11
1.Total IPV perpetration	1										
2.Physical IPV perpetration	.848***	1									
3.Psychological IPV perpetration	.863***	.679***	1								
4.Sexual coercion IPV perpetration	.514***	.198**	.127*	1							
5.Injury perpetration	.208**	.054	.379***	-.049	1						
6. Total IPV victimization	.822***	.745***	.730***	.318***	.373***	1					
7. FCV-19	.075	.050	.115	-.019	-.046	.008	1				
8. CAS	.294***	.035	.402***	.016	-.031	.099	.462***	1			
9. DASS-21	.428***	.310***	.523***	.054	.361***	.401***	.395***	.449***	1		
10. DASS-21 Depression	.436***	.310***	.525***	.076	.413***	.443***	.258***	.355***	.833***	1	
11. DASS-21 Anxiety	.407***	.354***	.476***	.020	.306***	.395***	.407***	.438***	.869***	.552***	1
12. DASS-21 Stress	.322***	.174**	.397***	.016	.250***	.202**	.322***	.392***	.92***	.657***	.733***

CAS Coronavirus Anxiety Scale; *FCV-19* Fear of COVID-19 Scale; *DASS-21* Depression, Anxiety and Stress Scale—21; ** $p < .001$; *** $p < .001$

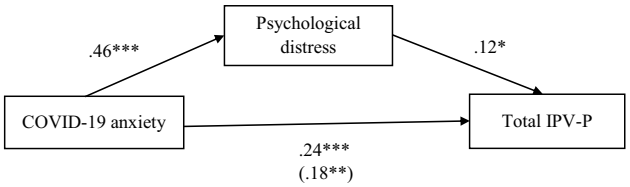

Fig. 1 Mediation model of psychological distress in the relationship between COVID-19-related anxiety and total IPV perpetration, controlling for IPV victimization (n = 338). *** $p < .001$; ** $p < .01$; * $p < .05$

0.74 – 1.81. The regression of COVID-19-related anxiety on psychological distress (mediator) was statistically significant, $\beta = 0.46$, $SE = 0.27$, $t = 8.55$, $p < 0.001$; 95% BCBCI 1.79 – 2.86. The regression of psychological distress (mediator) on total IPV perpetration was statistically significant, $\beta = 0.12$, $SE = 0.06$, $t = 2.05$, $p = 0.042$; 95% BCBCI 0.00 – 0.25. Finally, the regression of COVID-19-related anxiety on total IPV perpetration after controlling for psychological distress (mediator) was also significant, $\beta = 0.18$; $SE = 0.31$, $t = 3.18$, $p = 0.002$; 95% BCBCI 0.37 – 1.58 (Fig. 1). The mediation effect size was 0.06, 95% BCBCI 0.04—0.14. Regarding percentage of mediation, 23% of the total effect of COVID-19-related anxiety on total IPV perpetration was mediated by psychological distress, after controlling for IPV victimization.

Mediational Model of Depression, Anxiety, and Stress in the Relationship between COVID-19-Related Anxiety and Total Intimate Partner Violence Perpetration

The mediation model explained 41.2% of the variance of total IPV perpetration, which was significant, $R^2 = 0.41$, $F(5,233) = 32.63$, $p < 0.001$, after controlling for IPV victimization, $\beta = 0.51$, $SE = 0.03$, $t = 9.19$, $p < 0.001$; 95% BCBCI 0.23 – 0.35. The regression of COVID-19-related anxiety on total IPV perpetration was statistically significant, $\beta = 0.25$, $SE = 0.27$, $t = 4.79$, $p < 0.001$; 95% BCBCI 0.77 – 1.84. The regression of COVID-19-related anxiety on depression, $\beta = 0.39$, $SE = 0.10$, $t = 7.08$, $p < 0.001$; 95% BCBCI 0.51 – 0.90, anxiety, $\beta = 0.42$, $SE = 0.30$, $t = 7.54$, $p < 0.001$; 95% BCBCI 0.56 – 0.97, and stress, $\beta = 0.43$, $SE = 0.12$, $t = 7.49$, $p < 0.001$; 95% BCBCI 0.68 – 1.16, was statistically significant. The regression of stress, $\beta = 0.19$, $SE = 0.21$, $t = 2.18$, $p = 0.030$; 95% BCBCI 0.04 – 0.88, on total IPV perpetration was statistically significant, while the regression of depression ($p = 0.200$), and anxiety ($p = 0.051$) on total IPV perpetration was non-significant. Finally, the regression of COVID-19-related anxiety on total IPV perpetration after controlling for depression, anxiety, and stress (mediators) was significant, $\beta = 0.19$; $SE = 0.31$ $t = 3.31$, $p = 0.001$; 95% BCBCI 0.41 – 1.63 (Fig. 2). The mediation effect size of stress was 0.08, 95% BCBCI 0.02—0.18. Regarding percentage of mediation, 19.9% of the total effect of COVID-19-related anxiety on total IPV perpetration was mediated by stress symptoms, after controlling for IPV victimization.

Mediational Model of Psychological Distress in the Relationship between COVID-19-Related Anxiety and Psychological Intimate Partner Violence Perpetration

The mediation model with psychological distress (DASS-21 total score) explained 39.8% of the variance of psychological IPV perpetration, which was significant, $R^2 = 398$, $F(3,242) = 53.28$, $p < 0.001$, after controlling for IPV victimization, $\beta = 0.38$, $SE = 0.02$, $t = 7.29$, $p < 0.001$; 95% BCBCI 0.11 – 0.19. The regression of COVID-19-related anxiety on psychological IPV perpetration was statistically significant, $\beta = 0.36$, $SE = 19$, $t = 6.91$, $p < 0.001$; 95% BCBCI 0.94 – 1.70. The regression of COVID-19-related anxiety on psychological distress (mediator) was statistically significant, $\beta = 0.46$, $SE = 0.27$, $t = 8.55$, $p < 0.001$; 95% BCBCI 1.79 – 2.86. The regression of psychological distress (mediator) on psychological IPV perpetration was statistically significant, $\beta = 0.24$, $SE = 0.04$, $t = 3.96$, $p < 0.001$; 95% BCBCI 0.09 – 0.26. Finally, the regression of COVID-19-related anxiety on psychological IPV perpetration after controlling for psychological distress (mediator) was also significant, $\beta = 0.25$; $SE = 0.21$, $t = 4.34$, $p < 0.001$; 95% BCBCI 0.50 – 1.33 (Fig. 3). The mediation effect size was 0.11, 95% BCBCI 0.01—0.23. Regarding percentage of mediation, 30.6% of the total effect of COVID-19-related anxiety on psychological IPV perpetration was mediated by psychological distress.

Mediational Model of Depression, Anxiety, and Stress in the Relationship between COVID-19-Related Anxiety and Psychological Intimate Partner Violence Perpetration

The mediation model explained 41.3% of the variance of psychological IPV perpetration, which was significant,

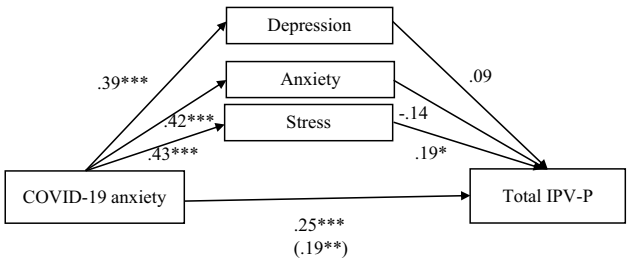

Fig. 2 Mediation model of depression, anxiety, and stress in the relationship between COVID-19-related anxiety and total IPV perpetration, controlling for IPV victimization (n = 338). *** $p < .001$; ** $p < .01$; * $p < .05$

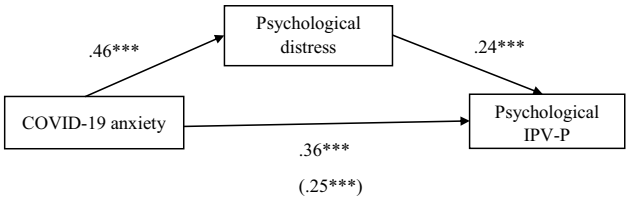

Fig. 3 Mediation model of psychological distress in the relationship between COVID-19-related anxiety and psychological IPV perpetration, controlling for IPV victimization (n = 338). *** $p < .001$

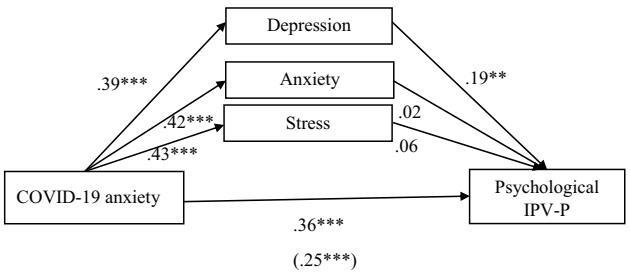

Fig. 4 Mediation model of depression, anxiety, and stress in the relationship between COVID-19-related anxiety and psychological IPV perpetration, controlling for IPV victimization (n = 338). *** $p < .001$; ** $p < .01$

$R^2 = 0.413$, $F(5,233) = 32.78$, $p < 0.001$, after controlling for IPV victimization, $\beta = 0.37$, $SE = 0.02$, $t = 6.74$, $p < 0.001$; 95% BCBCI 0.10 – 0.19. The regression of COVID-19-related anxiety on psychological IPV perpetration was statistically significant, $\beta = 0.36$, $SE = 0.19$, $t = 6.96$, $p < 0.001$; 95% BCBCI 0.96 – 1.71. The regression of COVID-19-related anxiety on depression, $\beta = 0.39$, $SE = 0.10$, $t = 7.08$, $p < 0.001$; 95% BCBCI 0.51 – 0.90, anxiety, $\beta = 0.42$, $SE = 0.10$, $t = 7.30$, $p < 0.001$; 95% BCBCI 0.56 – 0.97, and stress, $\beta = 0.43$, $SE = 0.12$, $t = 7.49$, $p < 0.001$; 95% BCBCI 0.68 – 1.16, was statistically significant. The regression of depression, $\beta = 0.19$, $SE = 0.14$, $t = 2.66$, $p = 0.008$; 95% BCBCI 0.10 – 0.69, on psychological IPV perpetration was statistically significant, while the regression of anxiety ($p = 0.747$), and stress ($p = 494$) on psychological IPV perpetration was non-significant. Finally, the regression of COVID-19-related anxiety on psychological IPV perpetration after controlling for depression, anxiety, and stress (mediators) was significant, $\beta = 0.25$; $SE = 0.22$, $t = 4.32$, $p < 0.001$; 95% BCBCI 0.51 – 1.66 (Fig. 4). The mediation effect size of depression was 0.07, 95% BCBCI 0.03—0.13. Regarding percentage of mediation, 20.6% of the total effect of COVID-19-related anxiety on psychological IPV perpetration was mediated by depression symptoms, after controlling for IPV victimization.

Discussion

Although during the second confinement in Portugal an adaptation was expected (Bendau et al., 2021; Picó-Pérez et al., 2021), the levels of depression and stress symptoms were higher than those found at the beginning of the pandemic (Costa et al., 2022). Besides, although literature has been reported a link between depression and stress (e.g., Spencer et al., 2019a, 2019b) and stress-enhancing situations (e.g., Glowacz & Schmits, 2020; Glowacz et al., 2022) and IPV perpetration, there are no previous studies evaluating the relationship between COVID-19 related anxiety, mental health and IPV perpetration during the second lockdown. Thus, the current research aimed to assess the mediating effect of psychological distress, and more specifically the role of anxiety, depression, and stress on the relationship between COVID-19-related anxiety and IPV, during the second confinement in Portugal. This study highlights the importance of examining IPV perpetration during lockdown periods, and specifically the stressors related to COVID-19 pandemic that can increase partner violence.

An important result of this study is related to the high rates of IPV during the second lockdown in Portugal, corroborating previous results on the experience of DV during the COVID-19 pandemic (Pérez et al., 2022). More specifically, in the present study, 35.1% of the participants admitted committing at least one act of psychological, physical, or sexual violence against their intimate partner during the second confinement. Moreover, 32.7% reported suffering at least one act of violence during the same period. Psychological and physical abuse were the most prevalent forms of violence, perpetrated and suffered, which is in line with the study developed by Pérez et al. (2022), during the first confinement, in which 13% of participants reported having suffered psychological violence, 1% sexual violence, and 0.9% physical violence. Few data are available on Portugal for the period before the COVID-19 pandemic; however, according to the European Union Agency for Fundamental Rights (FRA, 2014) in Portugal, 19% of women experienced physical and/or sexual violence by a current and/or previous partner since the age of 15. Although the rates of IPV were considerable high in Portugal after, and specially, during the COVID-19 pandemic (e.g., Gama et al., 2020), the rates during the second lockdown were even higher (according to results of the present study).

Another result found is that COVID-19-related anxiety is significantly related to psychological distress, more specifically with anxiety, depression, and stress symptoms. These results followed prior studies conducted both on COVID-19 and other previous global disease outbreaks (Gaspar et al., 2021; Paulino et al., 2021; Quintas et al., 2022; Wheaton et al., 2012; Wu et al., 2009; WHO, 2020a; Yip et al., 2010),

demonstrating a clear link between pandemic-related anxiety, namely distressing bodily symptoms (e.g., dizziness, sleep disturbances, tonic immobility, appetite loss, abdominal distress), and elevated symptoms of stress, anxiety, depression, and suicidality. Social isolation as a result of prolonged periods of quarantine confinement (WHO, 2020b), lifestyle changes (Spencer et al., 2021), and increased media exposure to COVID-19 (Bendau et al., 2020) are some of factors that, in addition to the unpredictability, concerns and fears regarding virus contamination, might increase depression, anxiety, and stress symptoms.

COVID-19-related anxiety was also associated with greater IPV perpetration, both total IPV and psychological IPV perpetration, during the second confinement. These findings are in line with prior studies linking social isolation and mental health with IPV perpetration (e.g., Peterman et al., 2020; Spencer et al., 2021; van Gelder et al., 2020; WHO, 2020b). In addition, psychological distress act as a mediator variable for the predictive value of COVID-19-related anxiety in total IPV perpetration and psychological IPV perpetration, accounting for 40% and 39.8% of the effect of COVID-19-related anxiety on total IPV perpetration and psychological IPV perpetration, respectively. Considering the highly prevalence of bidirectional violence (e.g., Capinha et al., 2022; Langhinrichsen-Rohling et al., 2012), mediational models included IPV victimization as a covariable. These results corroborate the highly prevalence of bidirectional violence, considering the greater predictive value of IPV victimization on IPV perpetration. When depression, anxiety, and stress were included in the models, only stress explained the effect of COVID-19-related anxiety on total IPV perpetration, and only depression explained the effect of COVID-19-related anxiety on psychological IPV perpetration, explaining 41.2% and 41.3% of the total effect, respectively, after controlling for IPV victimization. These findings highlight and reinforce the role of psychological distress, stress, and depression on the perpetration of both total IPV and psychological IPV, as previous studies also found (e.g., Spencer et al., 2019a, 2019b; Spencer et al., 2021; Steele et al., 2022). Furthermore, the results of this study are consistent with the General Strain Theory. Effectively, exposure to adverse events and conditions, such as measures to contain the spread of disease (e.g., confinement, social isolation, contamination concerns, and health-related anxiety), produces negative emotions (e.g., anger, fear, frustration, depression), that can lead individuals to adopt destructive and other-directed behaviors (e.g., violence, aggression) to deal with these feelings (Agnew, 2006). The association between stressful experiences and the perpetration of IPV, through increased anger and depression, has been documented by other studies (Steele et al., 2022). Similarly, experiencing situational stressors related to the COVID-19 pandemic, such as economic stress, social isolation, and pandemic-related stress, was similarly associated with increased IPV (van Gelder et al., 2020). Other authors (e.g., Peterman et al., 2020; van Gelder et al., 2020; WHO, 2020a) argue that stay-at-home orders, restrictions on movement, and social isolation can cause increased conflict between couples, which in turn can increase cases of IPV.

This study corroborates the psychological impact of containment and COVID-19 pandemic crisis on the mental health of the population, as other previous studies have found (Costa et al., 2022; Gaspar et al., 2021; Paulino et al., 2021; Quintas et al., 2022). In fact, feelings of loneliness and anxiety, resulting from social isolation or stay-at-home orders, may lead to an increase in depressive symptoms (Spencer et al., 2021). Indeed, previous research has found a particular increase in depressive and stress symptomatology during the pandemic crisis (Canet-Juric et al., 2020; Costa et al., 2022), and an impairment in self-regulation abilities (Hawkley & Cacioppo, 2010) and poor coping styles (Morgado et al., 2022), which can lead to dysfunctional behavioral patterns, such as violent behavior, and IPV perpetration (Jung et al., 2020; Thiel et al., 2022). Although negative mental health symptoms may or may not be a COVID-19-related outcome, the potential psychopathological problems associated with IPV tend to be exacerbated in situations of greater stress, frustration and lack of control, further increasing the precipitation of violent episodes (Glowacz et al., 2022).

Despite the considerable amount of effect explained by psychological distress and specifically stress symptoms on total IPV perpetration and depressive symptoms on psychological aggression perpetration, other variables and factors might mediate the relationship between COVID-19-related anxiety and IPV perpetration, such as personality features, lifestyle changes, financial impacts, feelings of loneliness, substance use, among others (Glowacz et al., 2022; Spencer et al., 2021; van Gelder et al., 2020). In fact, IPV is a complex and multidetermined phenomenon that is responsive to the characteristics and behaviors of each partner, contextual factors, and relationship influences and processes (Capaldi et al., 2012). Thus, future studies might explore the mediation effect of other variables to better understand the relationship between COVID-19-related anxiety and IPV perpetration.

Interestingly, and contrarily to expectations and prior literature (e.g., Spencer et al., 2021), COVID-19 fear was not related with IPV perpetration (physical, psychological, or sexual coercion). A possible explanation for this result is the fact that this study was conducted during the second confinement, almost a year after the announcement of the pandemic crises, after the beginning of quarantines and lockdowns in Europe and Portugal, when the vaccine was already a reality, and the vaccination process was underway. Perhaps, all these elements reduced the levels of fear regarding to contracting the infection and regarding the uncertainty

and unpredictability associated with the disease during this second confinement, and other factors than COVID-19 fear lead to IPV perpetration.

The results highlight the importance of paying attention to IPV perpetrators' mental health, especially during periods of confinement. In fact, it should be noted that when individuals suffer from psychological distress, stress, and depression, they are at higher risk of perpetrate IPV (Spencer et al., 2019a, 2019b; Spencer et al., 2021). Such findings are important for helping professionals, since these factors should be included in IPV risk assessments, and interventions efforts in combating IPV perpetration. Public policies during confinement periods should not only focus the victim of IPV, but also the perpetrator, requiring a combination of social, medical, and legal responses as mental health seems to play a key role on IPV increase. Community-based initiatives and public media should be used to raise awareness of the increased risk of IPV during the pandemic, as well as to alert the public to additional stressors and communicate about coping strategies (Glowacz et al., 2022). Health professionals need to pay particular attention to the mental health of their patients, reducing the exacerbation of comorbid psychiatric disorders, or the development of psychological symptoms during confinement periods and, therefore, reduce the risk of IPV perpetration, special more subtle forms of violence, such as psychological violence. A proactive approach focusing on well-being promotion and psychological distress symptoms reduction can be useful during the COVID-19 pandemic and confinement periods (Glowacz et al., 2022), and might help to reduce IPV perpetration.

Despite the contributions of this study, some limitations should be mentioned. First, this online study was conducted within the community. An online study of a non-clinical sample tended to identify especially minor IPV, situational and bidirectional violence. Thus, perpetrators of intimate terrorism-type violence, and more severe violence seem to be less likely to respond to these online surveys. In fact, in the present study only a small number of individuals reported to perpetrate severe IPV which limits the generalization of the findings. Future studies should use clinical and forensic samples. Second, the sample size was modest and mainly composed of women. Third, the study was cross-sectional, and data were collected after the confinement period, reporting to the confinement period. Thus, causal inferences cannot be made, the temporal link between the outcome and the exposure cannot be determined and a recall bias effect could be exhibited. These issues might impact the results that should be interpreted cautiously. To overcome these limitations, a longitudinal study should be preferred. Fourth, it was unfeasible to examine if and how the perpetrators' health condition was already present before the pandemic, or aggravated by it, or if it changed during the confinement. In addition, there is no information about the existence of violence before the confinement. So, it was not possible to know if the confinement exacerbated prior violence or triggered episodes of violence without previous violence. Further studies should be conducted during the confinement periods, with larger and more diverse samples, and longitudinally to understand if there are changes in the perpetrators' health condition during the confinement period, as previous studies have reported some changes over time (Costa et al., 2022), and if there are changes in the type, frequency, and severity of violence during the confinement or an escalation pattern of violence as the exposure to stressors might trigger more frequent and severe forms of violence. Fifth, the self-report nature of the measures used to assess the different variables cannot exclude the possibility that respondents provided responses affected by social desirability. Sixth, although largely used, CTS2 has been criticized for the focus solely on the presence of an act, ignoring the context in which the act took place (e.g., retaliation or self-defense), the consequences, the motivations, and intentions behind the partner violence (Dobash & Dobash, 2004). Other criticism regarding CTS2 is that when it is used, it often finds gender symmetry in the perpetration of IPV (e.g., Hamby, 2016). And seventh, convenience sampling limits the generalizability of the findings of this study.

Several studies have been demonstrated the increase in IPV perpetration (and victimization) during COVID-19 pandemic and lockdown periods. However, as far as we know, this is the first study who aimed to understand the role of psychological distress, and in specific depression, anxiety, and stress, in the relationship between COVID-19-related anxiety, and IPV perpetration in Portugal. The present study has made it possible to recognize the mediating role of psychological impairment in total IPV perpetration and psychological IPV perpetration. The findings reinforce the assertion that crisis response systems should recognize IPV as a potential result of stressful conditions and psychological distress and prioritize prevention and intervention efforts within response plans that, along with the victim, also consider the perpetrator, adopting policies and measures to provide psychological support to them (Gresham et al., 2021).

Funding This work was conducted at HEI-Lab: Digital Human–Environment Interaction Lab, Lusófona University, and supported by the Foundation for Science and Technology – FCT (Portuguese Ministry of Science, Technology and Higher Education), under the grant UIDB/05380/2020.

Data Availability The datasets generated during and/or analyzed during the current study are not publicly available due to confidentiality of the data but are available from the corresponding author on reasonable request.

Declarations

Ethical Statement All procedures performed were in accordance with the ethical standards of the institutional ethics committee and with the 1964 Helsinki declaration and its later amendments. The current study is part of a research project approved by the Lusófona University Ethics Committee.

Informed Consent Online informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

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