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Research Article

Psychological Distress Among Lebanese Women During the COVID-19 Confinement: Any Mediating Effect of Violence?

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Abstract:

Background: Violence among women is associated with poor psychological health and increased internalizing symptoms, such as depression, stress, and anxiety. The primary objective was to evaluate the association of marital conflict, pregnancy status, socioeconomic status, and stressful life events with violence, depression, anxiety, and stress. The secondary objective was to evaluate the mediating effect of violence on psychological distress.

Methods: A cross-sectional study was conducted among 369 women between June 8 and August 1, 2020. The questionnaire was developed on Google Forms and distributed online, using the snowball technique.

Results: higher marital conflicts (Beta=0.199), financial difficulties (Beta=2.046), an abuse by a family member (Beta=2.292) and a history of child abuse (Beta=2.209) were significantly associated with higher depression scores. Higher marital conflicts (Beta=0.367) and financial difficulties (Beta=4.001) were significantly associated with higher anxiety scores. Higher marital conflicts (Beta=0.074) and financial difficulties (Beta=1.422) were significantly associated with higher perceived stress scores. Composite abuse scale partially mediated the association between pregnancy status, financial difficulties, history of child abuse by a family member and anxiety and depression. No mediation effect of the CASR-SF was found between the independent variables and perceived stress.

Conclusion: Our main findings suggest that violence mediated the association between pregnancy status, marital conflicts, financial difficulties, and depression and anxiety but did not mediate between these factors and stress.

Further studies are needed to understand better the factors that mediate the relations between domestic violence and mental well-being among Lebanese women.

Introduction

Depression, anxiety, and stress are now the leading mental health disorders causing disability, and having a high burden on the health care budget (Organization, 2003; Organization et al., 2004). Severe mental health problems are associated with emotional, cognitive, and social abilities that can lead to the vast majority of detrimental consequences (McLachlan et al., 2013; Slade et al., 2009). Depression is much more common in women than in men due to biological, environmental, and social factors (Kazi et al., 2006; Fu and Parahoo, 2009; Patel et al., 2008). Previous literature supported that other risk factors increased the propensity of depression among married women, such as marital conflicts, lack of social support, and marital dissatisfaction (Lorant et al., 2007; Berenson et al., 2003; Zuraida Zainal, 2008). In addition to the influence of the social environment, other potential risk factors also increased the risk of depression, including a low level of education and financial difficulties (Ting and Leong, 2014; Cheah et al., 2020). Women of low socioeconomic status continually fear that they will not be able to meet their daily needs and worry about the future, which limits their recreational activities (Watson et al., 2012). Hence, poverty, combined with a lack of social support, induce a higher risk of anxiety and depressive disorders in women. Married women with low income are more likely to encounter financial difficulties, relationship problems, unstable health, and unemployment, which can contribute to the onset of depression (Ali et al., 2010). A poor relationship with the partner causes intimate partner violence and stress in the marital life. Also, husbands who are busy with their professions or having extramarital affairs increase the risk for depression in women (Nisar et al., 2004; Chowdhary and Patel, 2008; Niaz, 2004; Fu and Parahoo, 2009). On the other hand, enhanced marital satisfaction has been associated with a lower propensity to develop depressive symptoms (Manaf et al., 2016). Married women undergoing domestic violence, work stress, traumatic experiences, and abused conditions had a higher risk of depression (Ferrari et al., 2016). Stress, another mental health disorder, is a highly prevalent condition in women, particularly during pregnancy (Shishehgar et al., 2014). Pregnant women are highly prone to stress due to the feeling of imbalance when they cannot cope with demands and worries (Ruiz and Fullerton, 1999). Other influential factors of increased risk of stress among women include low socioeconomic status, exposure to violence, stressful life events, lack of social support, and conflicts (McCormick et al., 1990; Lu and Chen, 2004; Marquis and Butler, 2001). Previous literature supports the fact that violence among women is related to several factors, including low socioeconomic level, previous violence in the family, pregnancy status, and social isolation (Ceballo et al., 2004). Furthermore, women exposed to violence had poor psychological health and increased internalizing symptoms, such as depression, stress, and anxiety (Fridh et al., 2014; Evans et al., 2008). Previous studies reported various mediating factors for violence. However, only a few examined the mediating effect of violence on psychological distress in women (Adams et al., 2012; Lelaurain et al., 2018). Our research uses a conceptual model based on a study done by Ceballo et al. (Figure 1) (Ceballo et al., 2004).
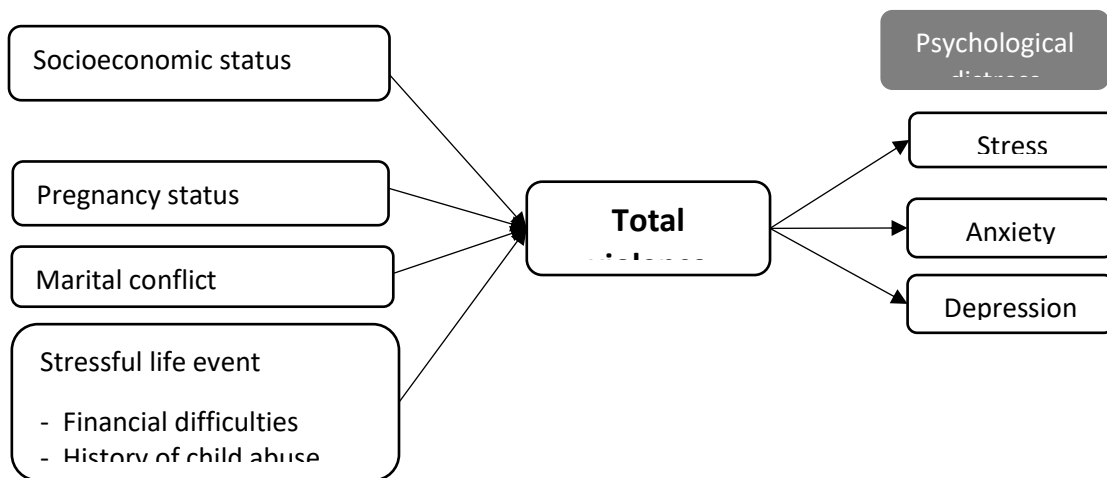

Figure 1. Conceptual model of risk factors associated with violence and the psychological effects among women

However, relatively little is known about how an epidemic outbreak impacts emotional well-being and even less is known about the factors that may worsen or protect emotional well-being during an outbreak (Lu et al., 2020; Zhang et al., 2020). It has been highlighted that during COVID-19 pandemic, disruptions of daily routines for individuals and families, compounded by the anxiety of the pandemic, lack of physical activity, absence of outside social outlets, lack of access to non-essential clinical care, and reduced physical contact may all contribute to increase in depression, anxiety, and other negative mental health outcomes among females (Luetke et al., 2020; Rosenberg et al., 2020; Lu et al., 2020). Furthermore, current unemployment, especially amongst those who are daily wage workers, increased responsibilities because of children being at home due to school closures and increased stress in the family, may make women more vulnerable for depression and anxiety (Joseph et al., 2020). Thus, identifying these factors is critically important, as they inform policies and interventions aimed at protecting people's psychological well-being in the age of pandemics. In Lebanon, there are no studies that evaluated the magnitude of depression, anxiety, and stress among Lebanese women in COVID-19. Therefore, our primary objective was to assess the association of marital conflict, pregnancy status, socioeconomic status, and stressful life events with violence, depression, anxiety, and stress. Our secondary objective was to evaluate the mediating effect of violence on psychological distress.

Methods:

Study design and sampling: A cross-sectional online study conducted between June 8 and August 1, 2020, enrolled a total of 369 women. The

questionnaire used was developed on Google Forms and distributed on social media and WhatsApp groups, using the snowball technique; it required 40 minutes to complete. Eligibility criteria were the following: married women aged between 18 and 51, currently living with their partner, and with internet access. Single, widowed, or divorced women, and those with a fertility problem, were excluded. The inclusion criteria were stated in the consent form at the beginning of the survey. Participation in this study was anonymous and voluntary, and participants received no compensation in return.

Sample size calculation:

The Epi info software (Centers for Disease Control and Prevention, Epi Info™) calculated a minimum sample of 233 participants, a prevalence of 10.9% women with depression, according to a previous study (El Asmar et al., 2014), a confidence level of 95%, and adding a 4% margin of error. A sample of 500 women was targeted to allow for missing values. The final sample size consisted of 369 participants.

Translation procedure:

A forward and backward translation was conducted for all the items of the questionnaire. One translator did the translation from English into Arabic, and a second one performed the back translation. Discrepancies between the two English versions were resolved by consensus.

Questionnaire:

The online questionnaire consisted of two sections, including closed-ended questions available in English and Arabic. The first one assessed the sociodemographic details of participants (age, educational level, the region of residence, religion, working status, monthly income, smoking and alcohol status, and physical activity). The monthly income was divided into four levels: no income, low <1,000 USD, intermediate 1,000-2,000 USD, and high income >2,000 USD.

The second section consisted of the following measures:

Household crowding index: The household crowding index was calculated by dividing the number of persons living in the household by the number of rooms, excluding bathrooms and kitchen, to assess socioeconomic status (Melki et al., 2004).

Stressful life events: Negative life events were assessed using three dichotomous questions (Yes/No) about financial difficulties, history of child abuse, and history of family member abuse.

Marital conflict: The Relationship Dynamics Scale was utilized to measure the frequency of conflicts in relationships (Forthofer et al., 1996). The scale consists of eight items scored on a 5-point Likert scale, (1 = Never or almost never to 5 = Always) (Forthofer et al., 1996). A higher score indicates a higher conflict between partners. In this study, Cronbach's alpha value was 0.915.

Pregnancy status: The current pregnancy status was assessed using binary questions (Yes/No). The current pregnancy status reflects the ability of women to choose to reproduce or be coerced into an unwanted pregnancy.

Partner violence: Violence was assessed using the Composite Abuse Scale (Revised) – Short Form (CASR-SF). This 15-item scale evaluates the existence, extent, and severity of physical, sexual, or psychological abuse (Ford-Gilboe et al., 2016). The total score is calculated by summing the 15 responses. Items are graded on a Likert scale from 1 to 6, where a higher score indicates a higher intensity/occurrence of abuse. The total score was dichotomized as follows: presence of violence (scores of 1 or more) vs no violence (scores of 0). The author of the questionnaire, Professor Marilyn Ford-Gilboe, granted permission to use the scale. Cronbach's alpha value was 0.902 for the full scale.

Psychological distress: Stress, anxiety, and depression were measured using three scales, reflecting psychological distress among women. The Perceived Stress Scale-4 (PSS-4) evaluated the occurrence and intensity of stress. It consists of four questions graded on a Likert scale from 1 to 5. The total score was calculated by summing the four items, ranging from 0 to 16, with higher scores indicating a higher intensity/occurrence of perceived stress (Cohen et al., 1983). In this study, Cronbach's alpha value was 0.484. The Lebanese anxiety scale (LAS; developed and validated in Lebanon) is a 10-item tool graded on a Likert scale from 1 to 5. It assessed the occurrence and intensity of anxiety. The total score was obtained by summing all the responses, with higher scores indicating higher anxiety (Hallit et al., 2020). In this study, Cronbach's alpha value was 0.890. The PHQ-9, validated in Lebanon (Sawaya et al., 2016), assesses the level of depression. It consists of 9 items graded on a Likert scale from 1 to 4. The PHQ-9 score can range from 0 to 27, with higher scores indicating a more severe depression (Kroenke and Spitzer, 2002). In this study, Cronbach's alpha value was 0.893.

Statistical analysis:

Data were analyzed on SPSS software version 25 (SPSS Inc., Chicago, IL, USA). A descriptive analysis was performed, using the absolute frequency and percentages for categorical variables and mean and standard deviation for quantitative measures. Student t-test and ANOVA F tests were used to assess the association of continuous variables with two or more levels, and Pearson correlation was used for linear correlation between continuous variables. In the multivariable analysis, four linear regressions were performed, taking stress, anxiety, depression, and violence as the dependent variables, meeting all the assumptions for normality and homoscedasticity. Regressions took into account the variables of interest selected based on the conceptual mode: household crowding index, marital conflict, pregnancy status, history of child abuse, history of family member abuse and financial difficulties and total violence score. Also, a multivariate General Linear Model was conducted, comparing mental health variables between presence and absence of violence among women, after adjusting for the following variables: woman's age, pregnancy status, marital conflict, financial difficulties, abuse by a family member, history of child abuse and household crowding index.

The PROCESS SPSS Macro version 3.4 model four was used to evaluate the mediation of violence using the CASR-SF through three steps. Step 1 determined the regression coefficient for the effect of marital conflict, household crowding index, pregnancy status, financial difficulties, history of child abuse, and abuse by a family member. Step 2 examined the association between violence and psychological distress (stress, anxiety, and depression), and Step 3 estimated the direct effect of each of the marital conflict, household crowding index, pregnancy status, financial difficulties, history of child abuse, and abuse by a family member on psychological distress. Each independent variable was entered in a separate model since the variables were not highly correlated. The macro generated bias-corrected bootstrapped 95% confidence intervals (CI) to test the significance of the indirect effect (Yzerbyt et al., 2018; MacKinnon et al., 2007). Mediation was considered significant when the CI around the indirect effect did not include zero (MacKinnon et al., 2007). The mediation effect was calculated by dividing the indirect effect of X by the direct effect of Y. The covariates included in the mediation model were those that showed significant associations with psychological distress in the bivariate analysis. Statistical significance was set at a value of P <0.05.

Results:

Sample description

The mean age of women was 32.5 ± 6.4 years. The majority (83.9%) had a university level of education, 59.9% were employed, 23.3% had no income, and 42.5% practiced physical activities. Only 31.2% of them were smokers, and 10.8% consumed alcohol. The mean duration of confinement was 71.0 ± 42.8 days, and the mean fear of poverty was 5.8 ± 3.2 (Table 1).

Table 1: Sociodemographic and other characteristics of the studied sample (N=369)	
	Frequency (%)
Education level	
Primary	3 (0.8%)
Complementary	11 (3.0%)
Secondary	32 (8.7%)
University	323 (87.5%)
Religion	
Christian	115 (31.2%)
Muslim	155 (42.0%)
Druze	81 (22.0%)
Atheist	2 (0.5%)
Refused to answer	16 (4.3%)
Working status	
Employed	221 (59.9%)
Unemployed	148 (40.1%)
Monthly income	
No income	102 (27.6%)
Low	94 (25.5%)
Intermediate	112 (30.4%)
High	61 (16.5%)
Smoking status	
Non smoker	254 (68.8%)
Smoker	115 (31.2%)
Alcohol consumption	
Yes	40 (10.8%)
No	329 (89.2%)
Physical activity	
Yes	157 (42.5%)
No	212 (57.5%)
	Mean ± SD
Age in years	32.5 ± 6.4
Duration of confinement (days)	71.0 ± 42.8
Fear of poverty	5.8 ± 3.2

Bivariate analysis: correlates of psychological scales: A significantly higher mean violence score was found in non-pregnant as compared to pregnant women, those with a history of family member abuse or a history of child abuse. A significantly higher mean depression score was found in non-employed as compared to employed women, those with financial difficulties, history of child abuse, or history of family member abuse. A significantly higher mean anxiety score was found in non-pregnant as compared to pregnant women, those unemployed, with financial difficulties, history of child abuse, or abuse by a family member. A significantly higher mean stress score was found in those with financial difficulties (Table 2).

Table 2: Bivariate analysis taking the psychological scales as the dependent variables				
	Total violence score	**Depression score**	**Anxiety score**	**Stress score**
	Mean ± SD	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**
Pregnancy status				
Yes	0.39 ± 1.20	6.07 ± 6.03	12.12 ± 6.47	6.83±2.41
No	2.18 ± 6.14	7.15 ± 5.36	14.73 ± 7.45	7.42±2.65
P-value	**0.025**	0.050	**0.034**	0.233
Financial difficulties				
Yes	2.91±7.53	8.74±5.75	17.22±7.54	8.20±2.42
No	1.23±3.84	5.66±4.76	12.22±6.46	6.68±2.58
P-value	0.311	**<0.001**	**<0.001**	**<0.001**
Working status				
Yes	1.45±4.44	6.41±4.91	13.39±6.59	7.20±2.53
No	2.76±7.39	7.95±6.05	16.01±8.21	7.58±2.75
P-value	0.320	**0.031**	**0.004**	0.292
Monthly income				
No income	2.04±5.19	7.53±5.69	16.58±8.06	7.73±2.45

Low	2.28±6.13	7.49±5.30	14.17±6.58	7.29±2.52
Intermediate	1.33±4.13	6.28±4.92	13.06±6.78	6.94±2.76
High	2.61±8.50	6.87±6.07	13.84±7.82	7.61±2.75
P-value	0.885	0.171	**0.007**	0.261
History of child abuse				
Yes	4.89±7.51	10.74±6.09	17.95±7.04	7.54±2.51
No	1.45±5.32	6.35±5.04	13.80±7.27	7.32±2.65
P-value	**<0.001**	**<0.001**	**<0.001**	0.480
History of family member abuse				
Yes	8.15±11.74	12.54±6.81	19.19±8.61	7.85±2.69
No	1.51±4.84	6.61±5.10	14.08±7.17	7.32±2.62
P-value	**<0.001**	**<0.001**	**0.003**	0.331

The correlation analysis showed that older age, longer duration of marriage, higher marital conflict, stress, depression, and anxiety were significantly associated with higher violence. Additionally, higher marital conflict, higher stress, anxiety, and violence were significantly associated with higher depression. Moreover, higher marital conflict, stress, depression, and violence were significantly associated with higher anxiety. Also, higher marital conflict, depression, anxiety and violence were significantly associated with higher stress (Table 3).

Table 3: Pearson correlation between quantitative variables and the psychological scales				
	Total violence score	**Depression score**	**Anxiety score**	**Stress score**
	Correlation coefficient	**Correlation coefficient**	**Correlation coefficient**	**Correlation coefficient**
Age	0.149	-0.066	-0.038	-0.037
P-value	**0.004**	0.209	0.466	0.473
Household crowding index	-0.063	0.014	0.018	0.030
P-value	0.231	0.791	0.733	0.560
Marital conflict	0.510	0.353	0.338	0.211
P-value	**<0.001**	**<0.001**	**<0.001**	**<0.001**
Duration of marriage	0.127	-0.068	-0.046	-0.017
P-value	**0.014**	0.192	0.380	0.741
Duration of confinement (days)	-0.064	0.033	-0.008	-0.009
P-value	0.217	0.526	0.877	0.860
Number of pregnancies	0.074	-0.051	-0.023	-0.011
P-value	0.158	0.332	0.666	0.831
Number of children	0.080	0.002	0.027	0.036
P-value	0.163	0.978	0.637	0.529
Stress	0.123	0.447	0.503	-
P-value	**0.018**	**<0.001**	**<0.001**	
Depression	0.259	-	0.785	0.447
P-value	**<0.001**		**<0.001**	**<0.001**
Anxiety	0.141	0.785	-	0.503
P-value	**0.007**	**<0.001**		**<0.001**
Total violence score	-	0.259	0.141	0.123
P-value		**<0.001**	**<0.001**	**0.018**
*Values marked in bold are significant				

Multivariable analysis: The first linear regression taking the violence score as the dependent variable showed that higher marital conflicts (Beta= 0.500) and higher household crowding index (Beta=3.598) were significantly associated with a higher violence score (Table 4, Model 1). A second linear regression taking the depression score as the dependent variable showed that higher marital conflicts (Beta=0.199), financial difficulties (Beta=2.046), an abuse by a family member (Beta=2.292) and a history of child abuse (Beta=2.209) were significantly associated with a higher depression score (Table 4, Model 2).

A third linear regression taking the anxiety score as the dependent variable showed that higher marital conflicts (Beta=0.367) and financial difficulties (Beta=4.001) were significantly associated with higher anxiety scores (Table 4, Model 3).

A fourth linear regression taking the stress score as the dependent variable showed that higher marital conflicts (Beta=0.074) and financial difficulties (Beta=1.422) were significantly associated with higher perceived stress scores (Table 4, Model 4).

Table 4: Multivariable analysis

Model 1: Linear regression model taking the *total violence score* as the dependent variable

Variable	Unstandardized Beta	Standardized Beta	*P*	95% Confidence Interval	
Pregnancy status	-.206	-.011	.796	-1.773	1.361
Marital conflict	.500	.526	**<.001**	.416	.583
Financial difficulties	.307	.026	.548	-.697	1.311
Abuse by a family member	.352	.022	.649	-1.166	1.870
History of child abuse	-.973	-.075	.081	-2.068	.122
Household crowding index	3.598	.158	**.001**	1.463	5.734
Duration of confinement (days)	.352	.022	.649	-1.166	1.870

Model 2: Linear regression model taking the *depression scale* as the dependent variable and the total violence score as the independent variable

Variable	Unstandardized Beta	Standardized Beta	*P*	95% Confidence Interval	
Pregnancy status	-.025	-.001	.976	-1.631	1.582
Marital conflict	.199	.224	**<.001**	.098	.299
Financial difficulties	2.046	.187	**<.001**	1.017	3.076
Abuse by a family member	2.292	.108	**.043**	.070	4.514
History of child abuse	2.209	.147	**.006**	.652	3.765
Household crowding index	.083	.007	.885	-1.044	1.211
Duration of confinement (days)	.002	.016	.730	-.010	.014
Total violence score	0.072	0.077	0.186	-0.035	0.178

Model 3: Linear regression model taking the *anxiety scale* as the dependent variable and the *total violence score* as the independent variable

Variable	Unstandardized Beta	Standardized Beta	*P*	95% Confidence Interval	
Pregnancy status	-1.188	-.051	.284	-3.363	.988
Marital conflict	.367	.305	**<.001**	.230	.503
Financial difficulties	4.001	.269	**<.001**	2.606	5.395
Abuse by a family member	.798	.028	.602	-2.211	3.807
History of child abuse	1.653	.081	.124	-.455	3.761
Household crowding index	.574	.035	.460	-.952	2.101
Duration of confinement (days)	-.006	-.033	.483	-.022	.010
Total violence score	-.014	-.011	.850	-.158	.130

Model 4: Linear regression model taking the *stress scale* as the dependent variable and the *total violence score* as the independent variable

Variable	Unstandardized Beta	Standardized Beta	*P*	95% Confidence Interval	
Pregnancy status	-.427	-.051	.313	-1.258	.404
Marital conflict	.074	.173	**.006**	.022	.126
Financial difficulties	1.422	.270	**<.001**	.889	1.954
Abuse by a family member	-.095	-.009	.871	-1.244	1.054
History of child abuse	-.333	-.046	.416	-1.138	.472
Household crowding index	-.028	-.005	.925	-.611	.555
Duration of confinement (days)	-.002	-.025	.626	-.008	.005
Total violence score	-.013	-.029	.645	-.068	.042

Variables entered in all models: Pregnancy status, marital conflict, financial difficulties, abuse by a family member, history of child abuse, household crowding index, duration of confinement and total violence score

Note: Values marked in bold are significant

Figure 2: displays the association of psychological variables with violence among women, adjusted for woman's age, pregnancy status, marital conflict, financial difficulties, abuse by a family member, history of child abuse and household crowding index. The results showed no association between women being exposed or not to violence and psychological distress (p> 0.05 for all).
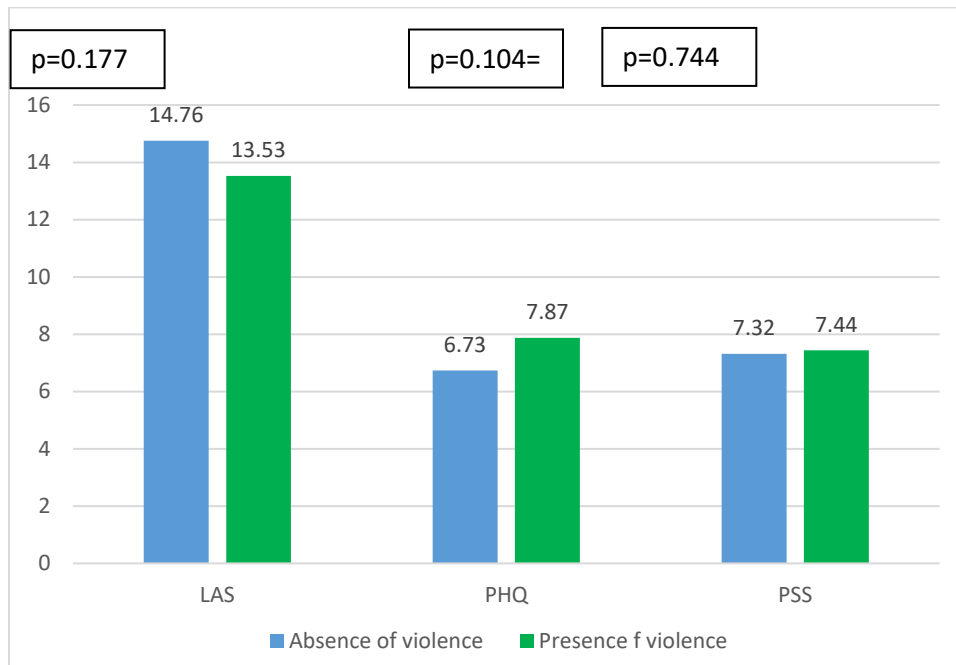

Figure 2. Adjusted means of psychological variables according to the presence/absence of violence

LAS=Lebanese Anxiety Scale; PHQ=Patient Health Questionnaire for depression measurement; PSS-4=Perceived Stress Scale

Mediation analysis: Table 5 presents the mediation analysis conducted anxiety and depression. The CASR-SF partially mediated the association between pregnancy status, financial difficulties, history of child abuse abuse by a family member and anxiety and depression. No mediation effect of the CASR-SF was found between the independent variables and perceived stress.

Table 5. Mediation analyses							
Model 1: Taking the anxiety scale as a dependent variable and the composite abuse scale as a mediation factor							
	Direct effect			Indirect effect			Mediating effect of composite abuse scale
Independent variables	Beta	SE	*p*	Beta	Boot SE	Boot CI	
Household crowding index	1.37	0.82	0.09	-0.18	0.16	-0.52; 0.11	-
marital conflict	0.43	0.06	<0.001	0.009	0.04	-0.08; 0.09	-
pregnancy status	-2.31	1.17	0.04	-0.49	0.17	-0.87; -0.18*	21.21%
history of child abuse	3.01	1.03	0.003	0.80	0.30	0.22; 1.42*	26.57%
history of family member abuse	2.99	1.50	0.04	1.56	0.80	0.37; 3.49*	52.17%
financial difficulties	4.21	0.73	<0.001	0.36	0.17	0.05; 0.73*	8.55%
Model 2: Taking the depression scale as a dependent variable and the composite abuse scale as a mediation factor							
	Direct effect			Indirect effect			Mediating effect of composite abuse scale
Independent variables	Beta	SE	*p*	Beta	Boot SE	Boot CI	
Household crowding index	0.35	0.60	0.55	-0.15	0.14	-0.46; 0.12	-
marital conflict	0.24	0.05	<0.001	0.06	0.03	-0.003; 0.12	-
pregnancy status	-0.68	0.86	0.43	-0.49	0.14	-0.78; -0.23*	72.05%
history of child abuse	3.53	0.74	<0.001	0.73	0.24	0.27; 1.22*	20.67%
history of family member abuse	4.34	1.08	0.001	1.35	0.56	0.41; 2.64*	31.10%
financial difficulties	2.59	0.54	<0.001	0.35	0.14	0.05; 0.64*	13.51%
* Indicates significant mediation.							

Discussion

To our knowledge, this study is the first to assess the factors related to psychological distress among Lebanese women during the COVID-19 confinement. The results showed that marital conflicts and financial difficulties were associated with high stress, anxiety, and depression, while higher violence was related to higher depression among women. Also, violence was a mediating factor between pregnancy status and anxiety and between marital conflict and depression. In this study, marital conflicts were related to higher depression, anxiety, and stress among women. Consistently, previous findings have also associated high levels of psychological distress with marital dissatisfaction (Perrin, 2008; Trudel and Goldfarb, 2010; Choi and Marks, 2008; Goldfarb et al., 2007). A recent study conducted in China during the COVID-19 pandemic showed that emotional well-being in married people was lower than in unmarried people (Yang and Ma, 2020). Evidence suggests that stressful or life-threatening events, such as natural disasters, can lead to a decline in the quality of relationships due to stress and conflict or, instead, improve the quality of relationships and intimacy (Cohan and Cole, 2002; Fredman et al., 2010; Marshall and Kuijer, 2017). Also, during the COVID-19 confinement, several factors can lead to increased tension between romantic partners confined together, such as disturbed everyday activities, the fear of the pandemic, loss of physical activity, loss of outside social networks, lack of access to non-essential health services, and reduced physical interaction in overcrowded households (Luetke et al., 2020). Previous studies have shown that the persistence of tense verbal or non-verbal exchanges between partners can lead to physiological and psychological changes, eventually progressing to disease states (Robles and Kiecolt-Glaser, 2003; McEwen, 1998). Once health conditions develop or intensify, they can be experienced as a traumatic life occurrence or persistent stress, resulting in adverse mental health consequences, such as depression and anxiety (Williamson et al., 2000). Our results also showed that marital conflicts were associated with higher violence, consistent with those of previous studies (Park et al., 2017; Burlaka et al., 2017; Garrison and Curtis, 2019). The severity of marital conflicts ranges from minor disagreements to disputes that partners cannot overcome, which harms their relationship and could lead to violence (Fincham, 2003).

This study showed that violence was associated with higher depression among women, in agreement with previous studies showing that women subject to behavioral, physical, and sexual violence by an intimate partner were more likely to exhibit signs of depression (Pico-Alfonso et al., 2006; Beydoun et al., 2012; Devries et al., 2013). The core mechanisms that explain why violence can cause subsequent depression in women are traumatic and psychological stress reactions (Organization, 2013). Sustained psychological stress due to social threats or rejection can affect women's cognition, mood, and behavior, leading to symptoms of depression (Slavich and Irwin, 2014). Also, domestic environments have become a suitable place for intimate partner abuse because of lockdown restrictions (Joseph et al., 2020). Abusive individuals may use the confinement to exert power over the vulnerable ones, especially women (Joseph et al., 2020). Lockdown restrictions can contribute to increased stress and further lead to exacerbation of anxiety, depressive symptoms, and violence (Telles et al., 2020). Thus, the perpetrator disturbed psychological health could adversely affect that of abused individuals (Telles et al., 2020). The persistent exposure of vulnerable persons to abusive individuals constrains the victim to cope with the situation, which further aggravates depressive symptoms (Mechanic et al., 2008). Our findings revealed that financial difficulties were associated with higher depression, stress, and anxiety, consistent with those of a recent study showing a correlation between financial hardship and emotional impact due to the pandemic (Skapinakis et al., 2020). Other studies have also reported that financial difficulties due to the lockdown might impair mental health and increase the incidence of psychological stress (Hamadani et al., 2020; Dsouza et al., 2020; Bhuiyan et al., 2020). During times of crisis and confinement, women face plenty of problems, including high risks of economic poverty. Also, they are over-represented in health services,

continue to do most unpaid household care jobs, and face increased risks of violence, assault, or harassment (Home). Additionally, their employment, businesses incomes, and living conditions could be more vulnerable than men to the predicted systemic economic effects of the pandemic, placing them at greater risk of financial instability. All these issues have a considerable impact on the health and psychological well-being of women (Home). Psychological difficulties expected by financial pressures include higher psychological distress and intensified issues and relations with family members, friends, and in the workplace (Kahn and Pearlin, 2006). Our results showed that a higher number of pregnancies and abuse by a family member were related to higher violence against women. Similarly, other studies found that a large family is a risk factor for frequent domestic violence, empowered by lower socioeconomic status, deprivation of maternal care, neglect of children, lack of family planning, and parenteral conflict (Guler, 2010; Malta et al., 2012; Das et al., 2013; Kouyoumdjian et al., 2013). Furthermore, a history of child abuse was related to higher depression among women, consistently with other findings (Ouellet-Morin et al., 2015; Howard et al., 2013; Fonseca-Machado et al., 2014; SAHİN et al.). Hence, the loss of attachment and the absence of a secure life were the main features for women to experience depression (Kwako et al., 2010; Whiffen and MacIntosh, 2005). Moreover, women victims of childhood abuse are more likely to endure violence later in their life (Zeglin et al., 2015; Till-Tentschert, 2017; Antoniou and Iatrakis, 2019). Identifying women with a history of childhood abuse and assaults would provide efficient maternal care and increase awareness against domestic violence. Our results showed that violence mediated the association between pregnancy status, marital conflicts, financial difficulties, and depression and anxiety but did not mediate between these factors and stress. Contrary to our findings, a recent study conducted in Lebanon during the COVID-19 lockdown among 502 adults found that female gender and physical violence at home were associated with higher stress during the pandemic (Salameh et al., 2020). It also showed that a previous higher socioeconomic status was associated with higher stress, while current financial wellness was correlated with lower stress (Salameh et al., 2020). However, a previous study among 215 mothers found that stressful life events were directly linked to psychological distress, particularly depression through domestic violence, while marital and pregnancy statuses were not related to the presence of domestic violence (Ceballo et al., 2004). Several other studies found that dissatisfied married women would present a high risk of mental distress (Brock and Lawrence, 2011; Røsand et al., 2014; Lorenz et al., 1993). The sudden disruption of routine due to the COVID-19 outbreak has affected the populations globally, leading to exacerbation of stress in the majority of people. However, the Lebanese people exhibited psychological resilience during the confinement, as they had faced and continue to endure political instabilities, a decline of essential services, in addition to several types of violence (International Crisis Group, 2015); they adapt to abuse and work through it more than they oppose it (International Crisis Group, 2015). Regarding gender equality in Lebanese society, women continue to face discrimination at numerous levels, such as decision-making structures, socio-cultural values, and security issues. Men are raised in a manner that gives them a sense of authority over women and makes them expect women to recognize their superiority. Thus, unhappy marriages, marital conflicts, and economic insecurity make women more vulnerable to mental problems (Goldfarb et al., 2007; Fincham, 2003; Howard et al., 2013). Future studies are necessary to determine the psychological distress faced by Lebanese married women, particularly during confinement.

Limitation: This study has several limitations. Its findings could not be generalized to the entire Lebanese female population due to the small sample size. Also, its cross-sectional design makes it difficult to find causal relations. The study relies on self-report data, which may be biased by memory recall and social desirability effects. The fact that the data was collected online via a self-reported questionnaire may have resulted in an information bias. We utilized odd-numbered answer categories with a neutral choice to eliminate this sort of bias, allowing participants to opt-out and

provide an indifferent response, resulting in a non-differential measurement error rather than a differential information bias. A selection bias is also likely because the sample was not randomly chosen but rather obtained using the snowball sampling method. Residual confounding bias is also possible since there could be variables linked to psychological distress that were not measured. The violence scale was not validated in Arabic among women prior to our investigation.

Conclusion

Our main findings suggest that violence mediated the association between pregnancy status, marital conflicts, financial difficulties, and depression and anxiety but did not mediate between these factors and stress. During the COVID-19 pandemic, reducing the effect of stress in relationships and attempting to solve existing conflicts are essential steps to assist partners and families to adapt to new and challenging conditions. Further studies are needed to understand better the factors that mediate the relations between domestic violence and mental well-being among Lebanese women.

List of abbreviations: COVID-19: Coronavirus disease of 2019, USD: United States dollar, CASR-SF: The Composite Abuse Scale Revised – Short Form, PSS-4: Perceived stress scale short version, LAS: Lebanese Anxiety Scale, PHQ-9: Patient Health Questionnaire, SPSS: Statistical Package for Social Sciences, CI: Confidence Interval, SD: Standard deviation.

Declarations

Ethics approval and consent to participate

The Psychiatric Hospital of the Cross-ethics committee approved the study protocol (HPC-018-2020). Online Informed consent was obtained from each participant involved in this study on the first page of the questionnaire.

Consent for publication

Not applicable.

Availability of data and materials

Data can be made available under reasonable request form the corresponding author.

Competing interests

The authors have nothing to disclose.

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Authors' contribution:

CH designed the study; CH, DM, SBM, JA drafted the manuscript; CH and PS carried out the analysis and interpreted the results; PS, HS, DK, NL, JA assisted in drafting and reviewing the manuscript; CH, DM, DK, NL, JA, and SBM were responsible for data collection; HS edited the paper for English language, PS supervised the course of the article. All authors reviewed and approved the final version of the manuscript.

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