



# No buffer effect of perceived social support for people exposed to violence during the COVID-19 pandemic: a cross-sectional community study

Marianne Skogbrott Birkeland <sup>a</sup>, Siri Thoresen <sup>b</sup> and Ines Blix <sup>b</sup>

<sup>a</sup>Section for Implementation and Treatment Research, The Norwegian Centre for Violence and Traumatic Stress Studies, Norway; <sup>b</sup>Section for Trauma, Catastrophes and Forced Migration – Children and Youth, The Norwegian Centre for Violence and Traumatic Stress Studies, Norway

## ABSTRACT

**Background:** The COVID-19 pandemic has represented a burden to communities worldwide. Research indicates that this burden is not equally distributed in the community, and vulnerable groups, such as violence-exposed individuals may pay a particularly high price. Perceived social support is known to buffer against negative effects of trauma and adversity, but it is not clear whether this is the case during times of social restrictions and lockdowns. In this study, we tested if perceived social support could buffer the link between pandemic worry and psychological distress in a community sample and in the subgroup exposed to violence during the pandemic.

**Methods:** A stratified, presumed representative sample of the Norwegian population ( $N = 1,041$ , response rate = 39.9%) responded to a cross-sectional web survey in May 2020. Fifty-nine participants (5.7%) had been exposed to physical, sexual, and/or psychological violence during the last month.

**Results:** Current violence, pandemic worry, and perceived social support were independently associated with psychological distress. In the total sample, perceived social support moderated the relationship between pandemic worry and psychological distress. However, this was not found in individuals who were exposed to current violence.

**Conclusions:** Even though high levels of perceived social support can protect against psychological distress in the face of pandemic worry in the community, it seems that this resource is not as useful for individuals exposed to current violence. Outreach health and care services are warranted to support the needs of this particular vulnerable group.

## Falta de efecto de modulación del apoyo social percibido para las personas expuestas a violencia durante la pandemia de COVID-19: Un estudio comunitario transversal

**Antecedentes:** La pandemia de COVID-19 ha representado una carga para las comunidades alrededor del mundo. La investigación indica que esta carga no se distribuye equitativamente en la comunidad, y los grupos vulnerables, como los individuos expuestos a violencia pueden pagar un precio particularmente alto. Se sabe que el apoyo social percibido actúa como modulador en contra los efectos negativos del trauma y la adversidad, pero no está claro si este es el caso durante periodos de restricciones sociales y confinamientos. En este estudio, evaluamos si el apoyo social percibido podría modular la asociación entre la preocupación pandémica y el sufrimiento psicológico en una muestra de la comunidad y en el subgrupo expuesto a violencia durante la pandemia.

**Métodos:** Una muestra estratificada, que se presume representativa de la población noruega ( $N = 1,041$ , tasa de respuesta = 39,9%) respondió una encuesta web transversal en mayo de 2020. Cincuenta y nueve participantes (5.7%) habían estado expuestos a violencia física, sexual, y/o psicológica durante el último mes.

**Resultados:** La violencia actual, la preocupación pandémica y el apoyo social percibido se asociaron de forma independiente al sufrimiento psicológico. En la muestra total, el apoyo social percibido moderó la relación entre la preocupación pandémica y el sufrimiento psicológico. Sin embargo, esto no fue encontrado en individuos que estaban expuestos a violencia actual.

**Conclusiones:** Incluso aunque altos niveles de apoyo social percibido pueden proteger contra el sufrimiento psicológico de cara a la preocupación pandémica en la comunidad, parece que este recurso no es tan útil para individuos expuestos a violencia actual.

Extender el alcance de los servicios de salud y cuidado se justifica para apoyar las necesidades de este grupo vulnerable en particular.

## ARTICLE HISTORY

Received 25 June 2021

Revised 16 August 2021

Accepted 23 September 2021

## KEYWORDS

social support; violence; worry; psychological distress; COVID-19; pandemic

## PALABRAS CLAVE

apoyo social; violencia; preocupación; sufrimiento psicológico; COVID-19; pandemia

## 关键词

社会支持; 暴力; 担忧; 心理困扰; COVID-19; 疫情

## HIGHLIGHTS

- Perceived social support seems to buffer against pandemic worry in the community, but not for victims of violence.
- It may be necessary for care and health services to follow an active outreach strategy to support this particularly vulnerable group.

## COVID-19 疫情期间遭受暴力的人的领悟社会支持没有缓冲效应:一项横断面社区研究

**背景:** COVID-19 疫情给全世界的社区带来了负担。研究表明,这种负担在社区中分布不均,如遭受暴力的个体等易感人群可能会付出很大代价。众所周知,领悟社会支持可以缓冲创伤和逆境的负面影响,但尚不清楚在社交限制和封锁时期是否如此。本研究中,我们在一个社区样本和一个疫情期间遭受暴力的亚组中考查了领悟社会支持是否可以缓冲疫情担忧与心理困扰之间的联系。

**方法:** 一个挪威人口 ( $N = 1,041$ , 响应率 = 39.9%) 的分层,假定代表性样本对一项 2020 年 5 月的横断面网络调查做出回应。59 名参与者 (5.7%) 曾在过去一个月中接触过身体,性,和/或心理方面的暴力。

**结果:** 当前暴力,疫情担忧和领悟社会支持与心理困扰独立相关。在总样本中,领悟社会支持调节了疫情担忧与心理困扰之间的关系。然而,遭受当前暴力的个体中并未发现这种情况。

**结论:** 尽管高水平的领悟社会支持可以在社区面临疫情担忧时防止心理困扰,但这种资源似乎对遭受当前暴力的个体并不那么有用。有必要拓展健康和护理服务以支持这一特定易感人群的需求。

## 1. Background

The COVID-19 pandemic and the countermeasures to reduce the spread of the disease has represented a burden to communities worldwide. Researchers have aimed to assess the mental health consequences in societies and to identify risk groups and protective factors. Whereas some of the studies conducted in an early phase of the pandemic reported an alarming increase in psychological distress in the general community (Salari et al., 2020), later research with study designs of higher quality have indicated less dramatic mental health consequences of the pandemic (Prati & Mancini, 2021; Sun et al. 2021). Some researchers have proposed that the observed increase of psychological distress in the community for the most part might be attributed to vulnerable groups (Public Health England, 2021). Therefore, recent studies have pointed to the importance of identifying groups that are particularly at risk of suffering during the pandemic, such as victims of violence (Blix, Birkeland, & Thoresen, 2021; Ertan, El-Hage, Thierrée, Javelot, & Hingray, 2020). During a pandemic, people who are exposed to violence may become even more vulnerable than before the pandemic (Bradbury-Jones & Isham, 2020).

### 1.1. Stressors during a pandemic – in the community and for the victims of violence

In the general community, pandemic worries, such as concerns about reduced access to health care, catching the virus and getting severely ill, losing a loved one, and infecting others, may be one of the driving force of psychological distress (Blix et al., 2021; El-Gabalawy & Sommer, 2021; Elmer, Mephram, Stadtfeld, & Capraro, 2020; Heeren, Hanseeuw, Cougnon, & Lits, 2021). In addition, the pandemic countermeasures involves stressors such as social restrictions and job loss, which can also influence psychological distress. For victims of violence, the countermeasures may have an even stronger negative impact. Countermeasures may limit access to protection, health services and

ways of coping, and this may lead to increased psychological distress. Violence-exposed individuals has also been found to worry more than others about the pandemic (Blix et al., 2021).

### 1.2. Perceived social support

One of the most potent protective factors in the face of violence and other stressful events is perceived social support (Brewin, MacCarthy, & Furnham, 1989; Cohen & Wills, 1985; Feeney & Collins, 2015; Thoits, 2011). Perceived social support can be defined as the subjective feeling of being supported by one's social relationships (Thoits, 2011). A prominent theoretical perspective of the significance of social support is the buffer hypothesis of social support (Cohen & Wills, 1985; Feeney & Collins, 2015). According to this hypothesis, social support exerts at least some of its effect on psychological distress through responsiveness to the needs elicited by stressful events. It has been suggested that the most important functions include instrumental, cognitive, and emotional support (Santini, Koyanagi, Tyrovolas, Mason, & Haro, 2015). Interaction with other people can facilitate problem solving, provide new thoughts and perspectives, and contribute to emotion regulation. Hence, perceived social support may also have a protecting function against psychological distress associated with pandemic worry and exposure to violence.

So far, a few studies have described perceived social support as a health-promoting factor for the general community during the pandemic (Cao et al., 2020; Fitzpatrick, Harris, & Drawve, 2020; Van der Velden, Contino, Das, Van Loon, & Bosmans, 2020; Yu et al., 2020). However, the potential buffer effect of perceived social support has not yet been investigated. Thus, it is unclear whether perceived social support mitigates the negative effects of pandemic worrying even under conditions of restricted social interaction. Furthermore, a pertinent question is whether perceived social support in a pandemic can buffer against psychological distress

in vulnerable groups such as individuals exposed to violence.

### **1.3. Perceived social support in victims of violence**

Studies in ordinary (non-pandemic) settings indicate that perceived social support seems to reduce the negative effects of violence (Coker et al., 2002; Schumm, Briggs-Phillips, & Hobfoll, 2006; Tirone et al., 2021). The protective effect of perceived social support may be particularly strong for individuals who experience a high level of strain during the pandemic, such as those exposed to current violence. As they need social support more, they may also benefit more from it.

Unfortunately, exposure to violence is related to lower levels of perceived social support (Dias et al., 2019; McCaw, Golding, Farley, & Minkoff, 2007). We might speculate that people exposed to violence might have weaker social networks and fewer social relationships that are less available or usable under pandemic-induced social restrictions. For example, it might be more difficult to maintain weaker social bonds via digital communication (particularly for individuals living with a partner who uses violence) when the frequency of physical contact is reduced. Previous research has shown that trauma-exposed individuals may suffer from social exclusion (Kaniasty & Norris, 2008). When social restrictions allow individuals to have only a few physical contacts, victims of violence may not be selected as preferred companions. In line with this proposal, qualitative studies indicate that access to otherwise available sources of perceived social support was reduced during the pandemic (Fawole, Okedare, & Reed, 2021; Mahapatro, Prasad, & Singh, 2021). Therefore, it is also possible that the buffer effect of perceived social support might be weaker for those exposed to current violence, who are less protected against the negative effects of both the current violence and pandemic worry. It is unclear whether the buffer effect of perceived social support during a pandemic with social restrictions is stronger or weaker for individuals exposed to violence.

### **1.4. The present study**

In this study, we aim to 1) determine whether perceived social support moderated the association between pandemic worry and psychological distress in a presumed representative community sample; 2) explore whether perceived social support moderated the association between exposure to current violence and psychological distress; and 3) investigate whether the potential moderator effect of perceived social support differed across individuals exposed to current violence and those not exposed to current violence. Based on the previous

literature on the general buffer effect of social support, we hypothesize that perceived social support will be associated with a weaker relationship between pandemic worry and psychological distress. However, the literature did not provide us with sufficient background to pose strong hypotheses about the buffer effects of perceived social support in individuals exposed to current violence, so for this part, we have a more explorative approach.

## **2. Methods**

### **2.1. Participants and procedure**

We conducted a cross-sectional web survey in Norway between 19 and 26 May 2020. At the time, the COVID-19 situation was described as ‘under control’ in Norwegian society, and the government had recently started easing the countermeasures after approximately two months of lockdown. Norway is a high-income country with a well-functioning welfare system and low pre-pandemic rates of unemployment. The hospitals have so far not been overloaded with patients during the COVID-19 pandemic. Vaccines were not yet provided. This lockdown included restrictions on physical social contacts (maximum five outside one’s household, and given a physical distance of two metres), but there were no restrictions on social contact between romantic partners who did not live together. Other countermeasures were school closure, closed or limited health care services, closed restaurants/bars, and people were encouraged to work from home if possible. Shelters were open, but reported reductions in the number of requests during the lockdown (Bergman, Bjørnholt, & Helseth, 2021). Family service clinics were closed the first few weeks before allowing phone consultations. In April 2020, approximately 11% of the Norwegian work force were unemployed, an increase from approximately 2% in February 2020.

A data collection agency (Kantar/Gallup) collected data from a probability-sampled panel. Participants are not self-recruited, but have been invited by Kantar/Gallup, in order to construct a nationally representative sample. The panel of approximately 46,000 participants is considered representative of Norwegians with access to the internet, which constitutes about 97% of the total Norwegian population. Individuals were invited until the pre-specified sample size (1,000) had been achieved. This sample size was chosen to obtain a high level of congruence between the distribution of the demographics in the sample and the population (in terms of age, gender, and living area) and was recommended by the COSMO study (Betsch, Wieler, & Habersaat, 2020). Sampling and weighting were performed based on official statistics from Statistics Norway.

The data collection agency approached 2,612 individuals stratified on gender, age, education, and area

of residence. In total, 39.9% ( $N = 1,041$ ) completed the survey, 55.8% ( $N = 1,457$ ) did not respond, 2.7% ( $N = 71$ ) started the survey but did not complete it, 1.6% ( $N = 41$ ) clicked on the link to participate but did not confirm agreement with the terms of the study, and 0.1% ( $N = 2$ ) withdrew from the study. The study participants did not differ from non-responders in gender, education or living situation (living alone vs with someone), but the sample was highly skewed towards older individuals, with a mean age of 54.1 in responders and 43.3 in non-responders (Blix et al., 2021). This means that caution should be taken when interpreting results for the youngest age group. The Norwegian Regional Committee for Medical and Health Research Ethics approved the study (registration number 133,226/2020).

## 2.2. Measures

Current violence was measured by a set of questions asking whether participants, during the last month, had been exposed to interpersonal violence according to WHO's definition, which includes physical, sexual, psychological violence as well as deprivation/neglect (WHO, 2002). As this study included adult participants, we measured psychological, physical, and sexual violence.

Psychological violence was measured by a slightly adapted single question from the Stressful Life Events Screening Questionnaire (Goodman, Corcoran, Turner, Yuan, & Green, 1998): 'Have you, during the last month, been repeatedly ridiculed, put down, ignored, or told that they were no good?' Mild and severe physical violence was measured by two single questions, each collapsing four and six questions, respectively, we have previously used in our national study on rape and violence in Norway (Thoresen, Myhre, Wentzel-Larsen, Aakvaag, & Hjemdal, 2015): 'Have you, during the last month, been slapped, pinched, pulled, or shook violently?' and 'Have you, during the last month, been hit with a fist or hard object, kicked, strangled, beat, threatened with a weapon, or physically attacked in other ways?'. These were derived and culturally adapted from national studies in the United States (Kilpatrick, Edmunds, & Seymour, 1992; Kilpatrick, Resnick, Baber, Guille, & Gros, 2011; Kilpatrick et al., 2003). Sexual violence was measured with one single catch-all question: "Have you, during the last month, been exposed to any form of sexual assault or violation. We created a dichotomous variable where an answer of 'yes' to any of these questions would qualify the individual as 'exposed to current violence.'

Psychological distress in the last two weeks was measured by the abbreviated 5-item version of the Hopkins Symptom Checklist-25 (HSCL-25; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The five items measure the most common symptoms of depression and anxiety: 'Feeling hopeless about the future'; 'feeling blue';

'worrying too much about things'; 'feeling fearful'; and 'feeling tense or worked up'. Participants responded on a scale from 0 (not bothered) to 3 (bothered a great deal). This abbreviated version has shown good psychometric properties and has previously been found to correlate highly ( $r = 0.92$ ) with the HSCL-25 in a general population sample (Tambs & Moum, 1993). The item scores were averaged. We used a cut-off value of  $>2$ , which a previous study has shown to have the best combination of specificity, sensitivity, and predictive values (Strand, Dalgard, Tambs, & Rognerud, 2003). In the present study, the Cronbach's alpha value for the 5-item HSCL was .91. In another study based on the same data set, we found that individuals exposed to current violence reported significantly higher levels of psychological distress compared to individuals not exposed to current violence (Blix et al., 2021).

Perceived social support was measured by four items from the Crisis Support Scale (Joseph, Andrews, Williams, & Yule, 1992). The Crisis Support Scale (Joseph, Williams, & Yule, 1992) was designed to measure post-disaster perceived social support. The original scale comprise seven questions: Four questions on perceived social support, one question about negative social support ('feeling let-down'), one question about contact with other disaster survivors, and one question about overall satisfaction with support. The authors recommend analysing the negative support item separately, as negative support (or negative responses) is conceived as a separate phenomenon. The question about contact with other disaster survivors and the overall satisfaction questions were omitted from this study, as they do not point to specific ingredients of perceived social support. Hence, we used the four items tapping into perceived social support: ('someone willing to listen,' 'able to talk about thoughts and feelings,' 'sympathy and support from others,' and 'practical help'). Previous research supports the psychometric properties and the validity of the scale (Elklit, Pedersen, & Jind, 2001). Participants responded on a scale from 1 (never) to 7 (always), and the item scores were averaged. The Cronbach's alpha in the present study was .85.

Pandemic worry was measured with six questions related to the COVID-19 pandemic, indicating whether the participants worried about 'losing someone they loved,' 'becoming seriously ill from the virus,' 'infecting others,' 'the health system being overloaded,' 'not being able to visit people who depended on them,' and 'a new outbreak of COVID-19.' The questions were translated and adapted to the Norwegian context from the COSMO study (Betsch et al., 2020), and participants responded on a scale from 1 (not worried) to 7 (very worried). Cronbach's alpha was .85. In another study based on the same data set, we found that individuals exposed to current violence reported significantly higher levels of pandemic worry compared to individuals not exposed to current violence (Blix et al., 2021).

### 2.3. Analyses

Of the 1,041 participants, 882 responded to all the items used in the study (15% of the participants did not respond to at least one item). Average scores were computed if the participant had responded to at least half of the items of the scale (according to the 'half-item rule'). As a result, 1,027 of the 1,041 participants were included in the analyses.

We performed an ANOVA to compare levels of perceived social support across participants exposed to current violence and participants not exposed to current violence. We conducted linear regression analyses with psychological distress as the outcome and exposure to current violence, pandemic worry, perceived social support, the two-way and three-way interaction terms, and background factors (gender, age, and level of education) as predictors. All predictors were centred before the regression analyses were conducted. We tested the significance of the simple slopes of the interactions following the recommendations of Dawson and Richter (2006). To adjust for potential sources of bias, we also performed analyses weighted by age, education, and area of residence. All data analyses were performed with IBM SPSS Statistics version 26.

### 3. Results

Of the 1,041 participants, 49.0% ( $n = 510$ ) were females. The age range was 18–89 years, with a mean of 54.1 ( $SD = 15.9$ ), and 35.9% ( $n = 374$ ) had college/university education. The majority of the sample was living together with someone – 67% lived with their spouse with or without children ( $n = 694$ ), 4% lived only with their children ( $n = 45$ ), 3% lived with their parents ( $n = 32$ ), and 4% ( $n = 39$ ) lived in collectives or in other arrangement. A minority of 22% ( $n = 231$ ) reported living alone. Fifty-nine participants (5.7%) had been exposed to violence during the last month. Of these, 44 had been exposed to psychological violence, 23 had been exposed to physical violence, and 17 had been exposed to sexual violence. While 43 had been exposed to one type of violence, nine had been exposed to two types of violence, and seven had been exposed to all three types of violence during the last month. People in all types of living

situations were represented among those who reported violence. Participants exposed to current violence had lower levels of perceived social support ( $M = 3.06$ ,  $SD = 0.93$ ) than participants not exposed to current violence ( $M = 3.70$ ,  $SD = 0.78$ ),  $F(1) = 37.79$ ,  $p < .001$ .

A linear regression analysis (Table 1; Model 1) showed that when mutually adjusted and adjusted for background variables, current violence, pandemic worry, and perceived social support were independently associated with psychological distress. The total model explained a significant proportion of the variance in psychological distress,  $R^2 = .34$ ,  $F(3, 1,008) = 128.56$ ,  $p < .001$ . The significant two-way interaction effect between pandemic worry and perceived social support on psychological distress (Table 1; Model 2) indicates that the association between pandemic worry and psychological distress was weaker for participants with high levels of perceived social support than for participants with low levels of perceived social support. Thus, we found evidence of a general buffer effect of perceived social support during the pandemic.

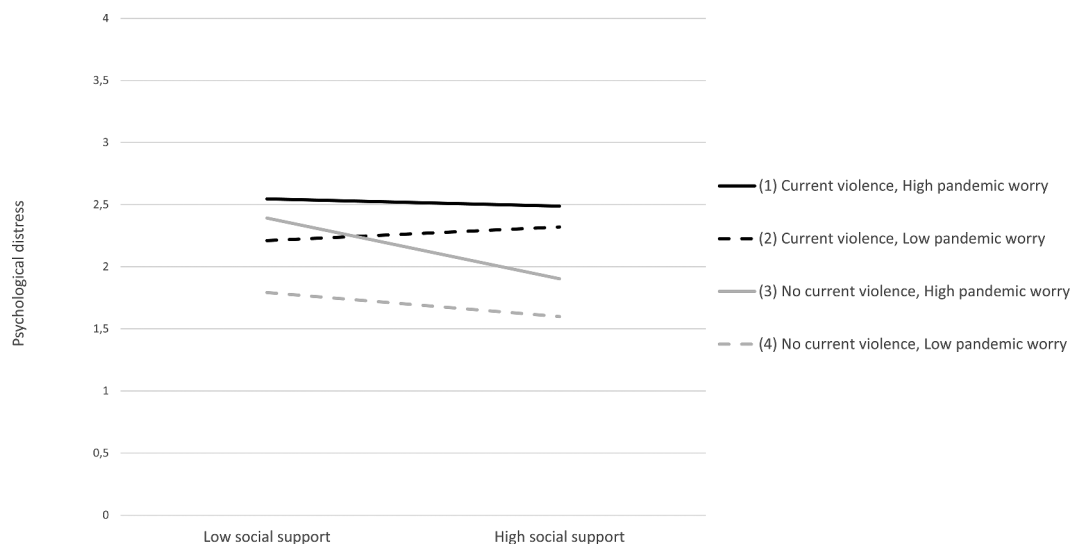
We also identified a significant two-way interaction between exposure to current violence and perceived social support. For participants with high levels of perceived social support, the relationship between exposure to current violence and psychological distress was stronger than for participants with low levels of perceived social support. This means that we did not find evidence of a buffer effect of perceived social support on the potential negative effects of current violence. On the contrary, the findings indicate a potentiating effect – that in individuals with high levels of perceived social support, exposure to current violence was more strongly associated with psychological distress than in individuals with low levels of perceived social support. No interaction effect between exposure to current violence and pandemic worry on psychological distress was found. Adding the three two-way interaction terms to the model contributed significantly to explaining the variance in psychological distress,  $R^2$  change = .018,  $F(1, 1,005) = 9.58$ ,  $p < .001$ .

The three-way interaction effect between violence, pandemic worry, and perceived social support on psychological distress was significant (Table 1; Model 3). Adding the three-way interaction term to

**Table 1.** Associations between exposure to violence (Viol), pandemic worry (worr), perceived social support (soc), interaction terms, and psychological distress ( $n = 1041$ ).

	Model 1				Model 2				Model 3			
	B	95% CI	<i>p</i>	$\beta$	B	95% CI	<i>p</i>	$\beta$	B	95% CI	<i>p</i>	$\beta$
Violence	.44	.24 to .63	<.001	.16	.45	.16 to .70	<.001	.16	.47	.19 to .74	<.001	.16
Worry	.22	.19 to .26	<.001	.35	.22	.19 to .26	<.001	.34	.22	.18 to .25	<.001	.33
Social support	-.21	-.27 to -.15	<.001	-.25	-.20	-.26 to -.15	<.001	-.24	-.20	-.25 to -.14	<.001	-.23
Viol X worr					.03	-.14 to .21	.682	.02	-.10	-.21 to .18	.890	-.10
Viol X soc					.19	-.11 to .54	.033	.07	.23	-.07 to .60	.011	.08
Worr X soc					-.10	-.15 to -.06	<.001	-.14	-.09	-.13 to -.05	<.001	-.12
Viol X worr X soc									.04	.002 to .12	.018	.07
Adj. $R^2$	.34				.36				.37			

All models adjusted for background variables (sex, age, and university/college education).



**Figure 1.** Three-way interaction plot for associations between exposure to current violence, perceived social support, and pandemic worry on psychological distress. High/low perceived social support and pandemic worry represent one standard deviation over and under the mean.

the model contributed significantly to explaining the variance in psychological distress,  $R^2$  change = .004,  $F(1, 1,004) = 5.62$ ,  $p = .018$ . Figure 1 depicts the simple slopes for all the variables. Among the participants not exposed to current violence, we found a negative association between perceived social support and psychological distress. This was particularly salient for participants with high levels of pandemic worry (simple slope =  $-.31$ ,  $t = -9.70$ ,  $p < .001$ ) but was also evident in participants with low levels of pandemic worry (simple slope =  $-.12$ ,  $t = -3.76$ ,  $p < .001$ ).

In contrast, for participants exposed to current violence, we found no significant associations between perceived social support and psychological distress, neither in participants with high levels of pandemic worry (simple slope =  $-.04$ ,  $t = -.40$ ,  $p = .691$ ) nor low levels of pandemic worry (simple slope =  $.07$ ,  $t = 0.76$ ,  $p = .446$ ). We performed the same analyses weighted by gender, age, education, and area of residence. These yielded highly similar results (not displayed).

#### 4. Discussion

In this study, we aimed to determine whether perceived social support can have a protective function during a pandemic, both for the population and for individuals exposed to current violence. Our results showed that 1) in general, perceived social support seemed to protect against psychological distress for individuals who worried about the pandemic; 2) we found no evidence indicating that perceived social support protected against the psychological distress associated with exposure to current violence during the pandemic; and 3)) we found no evidence indicating that perceived social support

protected against the psychological distress associated with pandemic worry, for individuals exposed to current violence.

That perceived social support was negatively associated with psychological distress is in line with previous studies conducted during the COVID-19 pandemic (Cao et al., 2020; Fitzpatrick et al., 2020; Van der Velden et al., 2020; Yu et al., 2020). However, these studies could not provide evidence that the psychological distress observed was connected to the pandemic. Our findings indicate that perceived social support may act as a buffer against the negative impact of pandemic-related worries. This suggests that perceived social support is particularly beneficial for people who worry excessively. In line with this, our results suggest that during stressors such as pandemics, perceived social support can help manage worry. Similar results have been found for ruminative thoughts (Birkeland, Blix, & Thoresen, 2020; Marroquín & Nolen-Hoeksema, 2015) and negative appraisals (Khoury, Atkinson, Bennett, Jack, & Gonzalez, 2021). Thus, access to social support may play a role in coping with maladaptive thoughts, such as excessive worry about the future.

Importantly, perceived social support seems not to have a similar buffering function for victims of current violence. This result is in contrast to previous reviews of (non-pandemic) studies that have shown that perceived social support mitigates the negative consequences of violence (Coker et al., 2002; Tirone et al., 2021). During a pandemic in which social restrictions are in place, people are more isolated at home, and those exposed to violence may be isolated together with the perpetrator of the violent acts. In addition, their need for help may go unnoticed.

Previous studies suggest that exposure to violence is associated with lower perceived social support (Dias

et al., 2019; McCaw et al., 2007), and that perceived social support may deteriorate over time in people exposed to trauma (Thoresen, Birkeland, Arnberg, Wentzel-Larsen, & Blix, 2019). If the social support network is low on resources, or the individual perceives these resources to be limited, barriers to seeking support may arise, such as a reluctance to overburden friends and family due to the feeling that they have enough to cope with already or that they would not understand. Such social support barriers have been found to have strong associations with psychological distress in previous trauma samples (Smith, Felix, Benight, & Jones, 2017; Thoresen, Jensen, Wentzel-Larsen, & Dyb, 2014). A weak existing social network may be difficult to maintain and access digitally and may not be able to provide a buffering function during the pandemic.

A few recent qualitative studies have shed light on interpersonal processes in victims of violence during the COVID-19 pandemic. For example, despite some reports that violence intensified during this period (Lyons & Brewer, 2021), it may be more difficult for the victim to access the support of others when the perpetrator is present in the household, or others may not be able to help them due to social restrictions (Fawole et al., 2021; Mahapatro et al., 2021). In line with this, other (non-pandemic) studies indicate that at high levels of victimization, the protective function of perceived social support seems to break down (Beeble, Bybee, Sullivan, & Adams, 2009; Scarpa, Haden, & Hurley, 2006). Some problems, such as living in an unsafe environment with exposure to current violence during a lockdown, may require more support than the available social network can provide. Such situations need to be solved in more tangible ways (e.g. by moving the victim to a safe place), and institutional support from, for example, shelters and health services may be necessary.

This study has some strengths and limitations. We used stratified probability sampling, which means that every individual in the population had a chance of being selected for the study and that subgroups in terms of gender, age, education, and area of residence were properly represented among those we approached. Self-selection to this particular study may have influenced our results. We were able to assess representativeness by comparing the demographic characteristics of those who were approached and those who responded. Analyses weighted by demographic characteristics provided similar results to those of the main analysis, but it is uncertain whether our results are valid for young adults. Among the limitations is that this is a cross-sectional study based on self-report. Our sample size was too small to investigate relations within each type of violence, and results should be confirmed in studies with greater sample size and in other contexts. We did not have information on relationship status or details on types of violence, which mean that we could not examine associations between these and perceived social support.

The cross-sectional study represents a snapshot of the situation in a specific phase of the pandemic and in a specific country, and we were not able to study the trajectories of countermeasures and psychological distress. Norway is a country with a strong economy and a well-functioning and accessible healthcare system. The context may influence levels of pandemic-related worry, current violence, perceived social support, and the relationships between these factors. Physical violence, psychological violence, and sexual abuse occur in many variants, and in this study, we were not able to include extensive exploration of these phenomena. Regarding physical violence, we used behaviourally specific questions, but collapsed different forms of physical violence into one question about mild physical violence and one question about more severe physical violence. Sexual abuse was measured with one simple catch-all question. It may have made it difficult for the respondent to decide if an event they had experienced would fall into this category or not (Thoresen & Øverlien, 2009). In addition, the one item measuring psychological violence, derived from the Stressful Life Event Screening Questionnaire (Goodman et al., 1998) and, is perhaps more subjective in nature, compared to the more behaviourally specific questions about physical abuse.

In conclusion, our results indicate that perceived social support during the pandemic moderated the association between excessive pandemic worry and psychological distress. However, for individuals exposed to current violence, perceived social support did not seem to act as a buffer against either the violence or pandemic worry. Our study is the first to indicate that perceived social support has a protective function also during pandemic countermeasures, but that this does not necessarily apply for individuals exposed to violence.

In the next few decades, new pandemics are likely to occur (Madhav et al., 2017). To be prepared for this, we need to learn from the present and plan for targeted interventions that will reduce the potential negative consequences of pandemics and pandemic-induced restrictions on psychological distress in the community. Facilitating social support from existing social networks or by supplementing these networks would likely lessen psychological distress, particularly in people with low perceived social support. During a pandemic, providing opportunities for people to spend time together and maintaining or increasing the availability of services that provide social support may be powerful public health interventions.

Importantly, whereas social support did buffer against psychological distress for the majority of our sample, this was not the case for victims of violence. Taking measures to protect personal safety are acceptable and necessary exceptions to the social distancing policy, and shelters need to be open at all times. Health agents and policy makers should make sure that information that it is acceptable and possible to reach out to shelters and

other health care services is widely disseminated to the public. In addition to being open and available, it may be necessary for care and health services to follow an active outreach strategy by contacting people who might be at risk of exposure to violence, and check if they have any current unmet health care needs. Additionally, crisis management plans for pandemics should include plans for protecting the mental health of vulnerable groups such as individuals exposed to violence.

Questions remain regarding which types of social support are helpful for whom in what situations, and how to create interventions that increase perceived social support. As worries and emotions may be transient, studies that measure these frequently (e.g. by using an experience sampling methodology) may provide more specific knowledge that can be used to design interventions to improve social relationships.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

### Funding

No external funding for conducting this study was received.

### ORCID

Marianne Skogbrott Birkeland  <http://orcid.org/0000-0002-2388-8474>

Siri Thoresen  <http://orcid.org/0000-0001-5688-7948>

Ines Blix  <http://orcid.org/0000-0002-1603-6281>

### Data availability statement

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

### References

- Beeble, M. L., Bybee, D., Sullivan, C. M., & Adams, A. E. (2009). Main, mediating, and moderating effects of social support on the well-being of survivors of intimate partner violence across 2 years. *Journal of Consulting and Clinical Psychology, 77*(4), 718–729. doi:10.1037/a0016140
- Bergman, S., Bjørnholt, M., & Helseth, H. (2021). Norwegian shelters for victims of domestic violence in the COVID-19 pandemic—navigating the new normal. *Journal of Family Violence, 1*(1). doi:10.1007/s10896-021-00273-6
- Betsch, C., Wieler, L. H., & Habersaat, K. (2020). Monitoring behavioural insights related to COVID-19. *The Lancet, 395* (10232), 1255–1256. doi:10.1016/S0140-6736(20)30729-7
- Birkeland, M. S., Blix, I., & Thoresen, S. (2020). Trauma in the third decade: Ruminative coping, social relationships and posttraumatic stress symptoms. *Journal of Affective Disorders. doi:10.1016/j.jad.2020.09.095*
- Blix, I., Birkeland, M. S., & Thoresen, S. (2021). Worry and mental health in the Covid-19 pandemic: Vulnerability factors in the general Norwegian population. *BMC Public Health, 21*(1), 928. doi:10.1186/s12889-021-10927-1
- Bradbury-Jones, C., & Isham, L. (2020). The pandemic paradox: The consequences of COVID-19 on domestic violence. *Journal of Clinical Nursing, 29*(13–14), 2047–2049. doi:10.1111/jocn.15296
- Brewin, C., MacCarthy, B., & Furnham, A. (1989). Social support in the face of adversity: The role of cognitive appraisal. *Journal of Research in Personality, 23*(3), 354–372. doi:10.1016/0092-6566(89)90007-X
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research, 287*, 112934. doi:10.1016/j.psychres.2020.112934
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357. doi:10.1037/0033-2909.98.2.310
- Coker, A. L., Smith, P. H., Thompson, M. P., McKeown, R. E., Bethea, L., & Davis, K. E. (2002). Social support protects against the negative effects of partner violence on mental health. *Journal of Women's Health & Gender-based Medicine, 11*(5), 465–476. doi:10.1089/15246090260137644
- Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology, 91*(4), 917. doi:10.1037/0021-9010.91.4.917
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science, 19*(1), 1–15. doi:10.1002/bs.3830190102
- Dias, N. G., Costa, D., Soares, J., Hatzidimitriadou, E., Ioannidi-Kapolou, E., Lindert, J., ... Fraga, S. (2019). Social support and the intimate partner violence victimization among adults from six European countries. *Family Practice, 36*(2), 117–124. doi:10.1093/fampra/cmy042
- El-Gabalawy, R., & Sommer, J. L. (2021). “We Are at Risk Too”: The Disparate Mental Health Impacts of the Pandemic on Younger Generations: Nous Sommes Aussi à Risque: Les Effets Disparates de la Pandémie Sur la Santé Mentale des Générations Plus Jeunes. *The Canadian Journal of Psychiatry 66*(7). doi:10.1177/0706743721989162.
- Elklit, A., Pedersen, S. S., & Jind, L. (2001). The crisis support scale: Psychometric qualities and further validation. *Personality and Individual Differences, 31*(8), 1291–1302. doi:10.1016/S0191-8869(00)00220-8
- Elmer, T., Mepham, K., Stadtfeld, C., & Capraro, V. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLoS One, 15*(7), e0236337. doi:10.1371/journal.pone.0236337
- Ertan, D., El-Hage, W., Thierrée, S., Javelot, H., & Hingray, C. (2020). COVID-19: Urgency for distancing from domestic violence. *European Journal of Psychotraumatology, 11*(1), 1800245. doi:10.1080/20008198.2020.1800245
- Fawole, O. I., Okedare, O. O., & Reed, E. (2021). Home was not a safe haven: Women's experiences of intimate partner violence during the COVID-19 lockdown in Nigeria. *BMC Women's Health, 21*(1), 32. doi:10.1186/s12905-021-01177-9
- Feeney, B. C., & Collins, N. L. (2015). A new look at social support A theoretical perspective on thriving through



- relationships. *Personality and Social Psychology Review*, 19(2), 113–147. doi:10.1177/1088868314544222
- Fitzpatrick, K. M., Harris, C., & Drawve, G. (2020). Living in the midst of fear: Depressive symptomatology among US adults during the COVID-19 pandemic. *Depression and Anxiety*, 37(10), 957–964. doi:10.1002/da.23080
- Goodman, L. A., Corcoran, C., Turner, K., Yuan, N., & Green, B. L. (1998). Assessing traumatic event exposure: General issues and preliminary findings for the stressful life events screening questionnaire. *Journal of Traumatic Stress*, 11(3), 521–542. doi:10.1023/A:1024456713321
- Heeren, A., Hanseeuw, B., Coughon, L.-A., & Lits, G. (2021). Excessive worrying as the driving force of anxiety during the first COVID-19 lockdown-phase in Belgium. <https://osf.io/9ehja/>.
- Joseph, S., Andrews, B., Williams, R., & Yule, W. (1992). Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology*, 31(1), 63–73. doi:10.1111/j.2044-8260.1992.tb00968.x
- Joseph, S., Williams, R., & Yule, W. (1992). Crisis support, attributional style, coping style, and post-traumatic symptoms. *Personality and Individual Differences*, 13(11), 1249–1251. doi:10.1016/0191-8869(92)90262-N
- Kaniasty, K., & Norris, F. H. (2008). Longitudinal linkages between perceived social support and posttraumatic stress symptoms: Sequential roles of social causation and social selection. *Journal of Traumatic Stress*, 21(3), 274–281. doi:10.1002/jts.20334
- Khoury, J. E., Atkinson, L., Bennett, T., Jack, S. M., & Gonzalez, A. (2021). COVID-19 and mental health during pregnancy: The importance of cognitive appraisal and social support. *Journal of Affective Disorders*, 282, 1161–1169. doi:10.1016/j.jad.2021.01.027
- Kilpatrick, D., Edmunds, C., & Seymour, A. (1992). *Rape in America: A report to the nation* (Vol. 101): National Victim Center.
- Kilpatrick, D., Resnick, H., Baber, B., Guille, C., & Gros, K. (2011). *The national stressful events web survey (NSESW)*. Charleston, SC: Medical University of South Carolina.
- Kilpatrick, D., Ruggiero, K. J., Acierno, R., Saunders, B. E., Resnick, H. S., & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: Results from the national survey of adolescents. *Journal of Consulting and Clinical Psychology*, 71(4), 692. doi:10.1037/0022-006X.71.4.692
- Lyons, M., & Brewer, G. (2021). Experiences of intimate partner violence during lockdown and the COVID-19 pandemic. *Journal of Family Violence*. doi:10.1007/s10896-021-00260-x
- Madhav N, Oppenheim B, Gallivan M, et al. Pandemics: Risks, Impacts, and Mitigation. In: Jamison DT, Gelband H, Horton S, et al., editors. *Disease Control Priorities: Improving Health and Reducing Poverty*. 3rd ed. Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2017 Nov 27. Chapter 17. Available from. [https://www.ncbi.nlm.nih.gov/books/NBK525302/doi:10.1596/978-1-4648-0527-1\\_ch17](https://www.ncbi.nlm.nih.gov/books/NBK525302/doi:10.1596/978-1-4648-0527-1_ch17)
- Mahapatro, M., Prasad, M. M., & Singh, S. P. (2021). Role of social support in women facing domestic violence during lockdown of Covid-19 while cohabiting with the abusers: Analysis of cases registered with the family counseling centre, Alwar, India. *Journal of Family Issues*, 0192513X20984496. doi:10.1177/0192513X20984496
- Marroquín, B., & Nolen-Hoeksema, S. (2015). Emotion regulation and depressive symptoms: Close relationships as social context and influence. *Journal of Personality and Social Psychology*, 109(5), 836–855. doi:10.1037/pspi0000034
- McCaw, B., Golding, J. M., Farley, M., & Minkoff, J. R. (2007). Domestic violence and abuse, health status, and social functioning. *Women & Health*, 45(2), 1–23. doi:10.1300/J013v45n02\_01
- Prati, G., & Mancini, A. D. (2021). The psychological impact of COVID-19 pandemic lockdowns: A review and meta-analysis of longitudinal studies and natural experiments. *Psychological Medicine*, 51(2), 201–211. doi:10.1017/S0033291721000015
- Public Health England. (2021). COVID-19: Mental health and wellbeing surveillance report. Retrieved from <https://www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report/2-important-findings-so-far>
- Salari, N., Hosseini-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., ... Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *Globalization and Health*, 16(1), 1–11. doi:10.1186/s12992-020-00589-w
- Santini, Z. I., Koyanagi, A., Tyrovolas, S., Mason, C., & Haro, J. M. (2015). The association between social relationships and depression: A systematic review. *Journal of Affective Disorders*, 175, 53–65. doi:10.1016/j.jad.2014.12.049
- Scarpa, A., Haden, S. C., & Hurley, J. (2006). Community violence victimization and symptoms of posttraumatic stress disorder: The moderating effects of coping and social support. *Journal of Interpersonal Violence*, 21(4), 446–469. doi:10.1177/0886260505285726
- Schumm, J. A., Briggs-Phillips, M., & Hobfoll, S. E. (2006). Cumulative interpersonal traumas and social support as risk and resiliency factors in predicting PTSD and depression among inner-city women. *Journal of Traumatic Stress*, 19(6), 825–836. doi:10.1002/jts.20159
- Smith, A. J., Felix, E. D., Benight, C. C., & Jones, R. T. (2017). Protective factors, coping appraisals, and social barriers predict mental health following community violence: A prospective test of social cognitive theory. *Journal of Traumatic Stress*, 30(3), 245–253. doi:10.1002/jts.22197
- Strand, B. H., Dalgard, O. S., Tambs, K., & Rognerud, M. (2003). Measuring the mental health status of the Norwegian population: A comparison of the instruments SCL-25, SCL-10, SCL-5 and MHI-5 (SF-36). *Nordic Journal of Psychiatry*, 57(2), 113–118. doi:10.1080/08039480310000932
- Sun, Y., Wu, Y., Bonardi, O., Krishnan, A., He, C., Boruff, J. T., ... Thombs, B. D. (2021). Comparison of mental health symptoms prior to and during COVID-19: Evidence from a living systematic review and meta-analysis. *medRxiv* 2021.2005.2010.21256920 doi:10.1101/2021.05.10.21256920.
- Tambs, K., & Moum, T. (1993). How well can a few questionnaire items indicate anxiety and depression? *Acta Psychiatrica Scandinavica*, 87(5), 364–367. doi:10.1111/j.1600-0447.1993.tb03388.x
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145–161. doi:10.1177/0022146510395592
- Thoresen, S., Birkeland, M. S., Arnberg, F. K., Wentzel-Larsen, T., & Blix, I. (2019). Long-term mental health and social support in victims of disaster: Comparison with ageneral population sample. *BJ Psych Open*, 5(1), e2. doi:10.1192/bjo.2018.74

- Thoresen, S., Jensen, T. K., Wentzel-Larsen, T., & Dyb, G. (2014). Social support barriers and mental health in terrorist attack survivors. *Journal of Affective Disorders, 156*, 187–193. doi:10.1016/j.jad.2013.12.014
- Thoresen, S., Myhre, M., Wentzel-Larsen, T., Aakvaag, H. F., & Hjemdal, O. K. (2015). Violence against children, later victimisation, and mental health: A cross-sectional study of the general Norwegian population. *European Journal of Psychotraumatology, 6*(1), 26259. doi:10.3402/ejpt.v6.26259
- Thoresen, S., & Øverlien, C. (2009). Trauma victim: Yes or no? Why it may be difficult to answer questions regarding violence, sexual abuse, and other traumatic events. *Violence against Women, 15*(6), 699–719. doi:10.1177/1077801209332182
- Tirone, V., Orłowska, D., Lofgreen, A. M., Blais, R. K., Stevens, N. R., Klassen, B., ... Zalta, A. K. (2021). The association between social support and posttraumatic stress symptoms among survivors of betrayal trauma: A meta-analysis. *European Journal of Psychotraumatology, 12*(1), 1883925. doi:10.1080/20008198.2021.1883925
- Van der Velden, P. G., Contino, C., Das, M., Van Loon, P., & Bosmans, M. (2020). Anxiety and depression symptoms, and lack of emotional support among the general population before and during the COVID-19 pandemic. A prospective national study on prevalence and risk factors. *Journal of Affective Disorders, 277*, 540–548. doi:10.1016/j.jad.2020.08.026
- WHO. (2002). Violence – a global public health problem In E. G. Krug, L. L. Dahlberg, J. A. Mercy, A. B. Zwi, & R. Lozano (Eds.), *World report on violence and health* (pp. 3–21). Geneva, Switzerland: World Health Organization
- Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., ... Xiong, Z. (2020). Coping style, social support and psychological distress in the general Chinese population in the early stages of the COVID-2019 epidemic. *BMC Psychiatry, 20*(1). doi:10.1186/s12888-020-02826-3