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# Prevalence and Correlates of Mental Health Difficulties Following the Beirut Port Explosion: The Roles of Mentalizing and Resilience

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***Objective:*** Research has consistently highlighted an increased prevalence of mental health problems, such posttraumatic stress disorder (PTSD), depression, and anxiety, following both man-made and natural disasters. Mentalizing and resilience have been previously identified as potential protective factors against the onset of mental health difficulties following such events. ***Method:*** This study first identified the prevalence of PTSD symptoms, depression, anxiety, and stress and subsequently assessed mentalizing abilities and resilience as predictors of PTSD symptomatology in a sample of 521 Lebanese participants following the Beirut Port explosion on August 4, 2020. ***Results:*** Findings were consistent with existing literature highlighting elevated rates of PTSD, depression, and anxiety subsequent to man-made disasters, with higher rates of mental health symptoms observed among women, those with a preexisting diagnosis of psychiatric disorder (1.5 times more likely to meet the PTSD Checklist for *DSM–5* [PCL-5] cutoff score), and those who had to move houses (over 2 times more likely to meet PCL-5 cutoff) as a consequence of the explosion. Higher mentalizing capacities were positively correlated with higher resilience scores and lower indices of mental health difficulties. Each unit increase in resilience scores was associated with a 3% reduction in meeting PCL-5 cutoff, and poorer mentalizing abilities was associated with a 2-fold increase in the risk of meeting PCL-5 cutoff. ***Conclusions:*** Presence of a previous psychiatric diagnosis, having to move houses, lower mentalizing capacities, and lower resilience scores were found to predict elevated PCL-5 scores. Findings are discussed within the framework of recommendations for interventions targeting people affected by traumatic events.

***Clinical Impact Statement***
Following one of the biggest man-made disasters in modern history and in times of peace, this article aims at assessing the mental health consequences of such an event on a sample of the population. We specifically evaluated the prevalence of posttraumatic stress disorder (PTSD), anxiety, stress, and depression and the protective roles of mentalization and resilience. Presence of a previous psychiatric diagnosis and having to move houses as a result of the explosion were found to predict meeting cutoff scores on the PTSD Checklist for *DSM–5* for PTSD, and poorer mentalizing was associated with a 2-fold increase in meeting cutoff scores.

*Keywords:* PTSD, depression, Beirut Port explosion, mentalizing, resilience

On the 4th of August 2020, part of a consignment containing 2,700 kg of ammonium nitrate stored in a warehouse at the Beirut Port exploded, devastating much of the city (Rigby et al., 2020). The explosion resulted in the death of more than 200 individuals, over 6,000 individuals were injured, and approximately 300,000 people were made homeless (Maamari et al., 2020; Rigby et al.,

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

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2020). Such disasters are likely to result in community-level economic, social, and mental health costs (Lee et al., 2020). While research suggests that a large number of disaster-affected individuals may typically experience transitory mild-to-moderate levels of psychological distress, a significant minority will subsequently develop more serious diagnosable mental health difficulties (Bonanno et al., 2007; Norris et al., 2002).

Posttraumatic stress disorder (PTSD) symptoms and depressive disorders have been the most frequently investigated and identified mental health outcomes in community disaster settings (Bah et al., 2020; Lee et al., 2020; Reifels et al., 2019). Reported rates of major depression postdisaster range between 14% and 33% in those exposed to disaster events (Li et al., 2019; North et al., 2018). Prevalence rates of postdisaster PTSD have been estimated at somewhat lower rates of between 5% and 10% in the general population and between 30% and 40% among direct disaster victims (Galea et al., 2002; Lee et al., 2020). A substantial body of research indicates that anxiety and depression are the most frequent comorbid disorders with PTSD following trauma exposure (van Minnen et al., 2015). It has also been suggested that PTSD may be a causal risk for the subsequent development of anxiety and depression, which is given some support by studies reporting high rates of depression and anxiety as secondary disorders to PTSD (Ginzburg et al., 2010). For example, Farhood and Noureddine (2003) reported that, following a church explosion in 1994, both PTSD and depression were significantly higher among victims of the explosion than in an unexposed comparison group. Similarly, research examining the psychological impact of the Fukushima Daiichi nuclear power plant disaster on survivors identified high levels of anxiety and depression (18%) in addition to PTSD (14%), as assessed between 1 and 96 days following the disaster (Maeda & Oe, 2017).

Research on the comorbidity between PTSD, anxiety, and depression also suggests they may change trajectories over time. For example, Meewisse and colleagues (2011) assessed survivors of the Enschede fireworks disaster in Holland at intervals of 2 and 4 years following the incident. At 2 years, they reported that 41% of survivors met the threshold for PTSD, 22% met the criteria for a specific phobia, and 16% for depression. Interestingly, at the 4-year interval, rates of PTSD decreased, whereas rates of anxiety and depression remained high. The authors proposed differential responses across subgroups of survivors based on the interaction between different initial symptomatology, complex PTSD recovery mechanisms, and their relationship with depression and/or anxiety (Meewisse et al., 2011).

## Demographic Correlates of PTSD Symptomatology

To date, research has identified a range of factors related to the onset and maintenance of adverse mental health outcomes, such as PTSD and depression, following exposure to community-level disasters. Within adult samples, more severe exposure, injury severity, hospitalization, female gender, ethnic minority status, presence of secondary stressors, prior psychiatric problems, and lower levels of social support are factors that appear related to an increased likelihood of PTSD symptomatology (Elwood et al., 2009; Heron-Delaney et al., 2013; Norris et al., 2002; Shih et al., 2010). Severity of PTSD appears to be related to the type of exposure to the traumatic event (Eytan et al., 2004; Koenen et al., 2002; Neuner et al., 2004). While studies suggest that both direct and indirect exposure to the event may lead to the onset of PTSD (Hansen et al., 2017; Marshall et al., 2007), indirect exposure to traumatic incidents appears associated with lower PTSD severity when compared with direct experience of the same traumatic event (Neria et al., 2008).

Additional research suggests that women are more at risk of developing PTSD than men (Ditlevsen & Elklit, 2010; Farhood et al., 2016). In the wake of the ammonium nitrate factory explosion in Toulouse, France in 2001, Rivière (2008) reported that 19% of women and 8% of men who were in the immediate area of the explosion subsequently met the threshold for PTSD, whereas women and men who lived in a peripheral area to the explosion showed lower prevalence rates of 8% and 2% respectively. In accounting for such gender differences, a number of authors have proposed that women are more likely than men to perceive threatening incidents as stressful (Chung et al., 2018; Marthoenis et al., 2019). Furthermore, disaster type appears to be associated with differential mental health outcomes. For example, a higher probability of developing PTSD appeared linked to those exposed to man-made disasters relative to natural disasters, whereas the latter related to a greater probability of developing depression (Bonde et al., 2016; Bromet et al., 2017).

## Mentalizing and Resilience as Protective Factors Against PTSD

Resilience has been defined as the "process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demand" (American Psychological Association, n.d.). It has previously been identified as a moderator that can alter the association between trauma exposure and depression/anxiety (Friborg et al., 2006; Pietrzak et al., 2012). It has also been suggested that resilience may be subject to external manipulation (Wingo et al., 2010). Indeed, while exposure to trauma may increase resilience for some people, it may degrade it for others (Agaibi & Wilson, 2005). It can be argued that, following man-made disasters, similar to the Beirut explosion, resilience may be adversely affected as was reported among a sample of individuals exposed to the Fukushima Daiichi nuclear power plant explosions (Maeda & Oe, 2017). Lower levels of resilience may serve to increase the risk of developing symptoms of stress, PTSD, anxiety, and depression following trauma (Rainey et al., 2014; Scali et al., 2012; Snyder et al., 2003). Additional research suggests that resilience can be altered by trauma, which in turn may result in higher levels of depression and anxiety, thus mediating the link between trauma and trauma-related psychopathology (Fossion et al., 2013; Wu, 2011).

One largely unexplored construct that may influence the onset of PTSD following a traumatic event is an individual's ability to mentalize, defined as the "mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful on the basis of intentional mental states such as personal desires, needs, feelings, beliefs, and reasons" (Bateman & Fonagy, 2004, p. 21). Mentalizing is described as facilitating the individual's accurate inferences of relationships between observed behaviors and underlying mental states and motives in others (Ritschel et al., 2018). It has been proposed that individuals with more developed mentalizing capacities tend to be more able

to regulate difficult emotions and adaptively cope with stress (Luyten et al., 2012). It has been suggested that the ability to mentalize (i.e., high reflective functioning) has a resilience-promoting function and that the enhancement of mentalizing capacities may result in better outcomes in the wake of traumatic incidents (Fonagy & Bateman, 2016; Greenberg et al., 2018). Specifically, higher reflective functioning may help in overcoming hardships and adversity as mentalizing capacities facilitate one's awareness of struggles or difficulties with more effective adjustment following trauma; therefore, one becomes more attuned with their feelings and thoughts in the context of stressful situations (Fonagy & Bateman, 2016; Stein, 2006).

Stress-related situations, such as traumatic experiences, may weaken mentalizing capacities and contribute to a decrease of resilience, placing the person at risk of developing symptoms of different psychological disorders (Allen et al., 2012; Fonagy & Bateman, 2016). While deficits in mentalizing may be either temporary (i.e., likely to arise in a time of distress as a defense mechanism) or more pervasive, they tend to lead to a feeling of being overwhelmed or disconnected from others, resulting in subsequent increased and pervasive emotional instability and dysregulation (Ritschel et al., 2018). Indeed, as stress increases, reflective functioning may become more rigid, leading to biased and nonreflective interpretations about the self and others; thinking in terms of feelings and mental states of the self may be perceived as overwhelming or threatening following a traumatic experience. As a result, the individual's capacity to effectively use social support and manage trauma may be compromised (Sharp et al., 2013).

## The Current Study

Man-made disasters have been found to have damaging effects on mental health, and it is generally recommended that health care entities should be adequately prepared for an increase in PTSD, depression, and other mental health difficulties following the Beirut Port explosion (El Hayek & Bizri, 2020; Fares et al., 2017). One objective of the current study was to identify the prevalence of symptoms of PTSD, depression, stress, and anxiety among Lebanese citizens directly exposed to the Beirut Port explosion of August 4, 2020. A second objective was to investigate the role of mentalizing and its relationship with resilience, examining whether mentalizing capacities are related to symptoms of PTSD, depression, stress, and anxiety. Finally, we investigated mentalizing and resilience as predictors of PTSD in addition to specific demographic factors such as gender, age, relationship status, presence of previous psychiatric diagnosis, and having to move houses as a result of the explosion.

# Method

## Participants

A total of 858 individuals provided responses to an online survey. This number was subsequently reduced to 521 individuals ($M$ = 27.7, $SD$ = 7.58) who met the *Diagnostic and Statistical Manual for Mental Disorders* (5th ed.; *DSM–5*) Criterion A for PTSD (i.e., direct exposure, witnessing the trauma, learning that a relative or close friend was exposed to the trauma, or indirect exposure as part of one's professional duties). Demographic information was collected in relation to the following characteristics: age, gender, relationship status, loss of property, knowing someone who was injured or killed, having to move houses as a result of the explosion, and the presence of preexisting mental health conditions prior to the explosion. Demographic details are presented in Table 1. Two exclusion criteria were implemented, which were being outside Lebanon at the time of the explosion and being under the age of 18 at the time of the explosion.

## Measures

The PTSD Checklist for *DSM–5* (PCL-5; Weathers et al., 2013) is a widely used 20-item self-report questionnaire designed to assess symptoms of PTSD experienced by individuals in the previous month. The instrument first assesses exposure to a stressor, and the 20 items map onto the four PTSD symptom clusters identified in the *DSM–5*. Individual scores are summed to obtain a total severity score

**Table 1**
*Demographic Characteristics of the Sample*

| Demographics | *N* | % |
|---|---|---|
| Gender | | |
| Male | 75 | 14.5% |
| Female | 439 | 85.2% |
| Age | | |
| 18–25 | 247 | 48% |
| 26–30 | 116 | 22.5% |
| 31–35 | 73 | 14.2% |
| 36–40 | 40 | 7.8% |
| 40–49 | 33 | 6.4% |
| Over 50 | 6 | 1.2% |
| Marital status | | |
| Single | 234 | 45.4% |
| In a relationship | 129 | 25% |
| Married | 127 | 24.7% |
| Divorced | 9 | 1.7% |
| Education level | | |
| Secondary | 7 | 1.3% |
| BACC | 59 | 11.4% |
| BA | 219 | 42.2% |
| MA | 163 | 31.4% |
| PHD | 17 | 3.3% |
| MBA | 39 | 7.5% |
| Other | 15 | 2.9% |
| Previously diagnosed with a psychological disorder | | |
| Yes | 99 | 19.2% |
| No | 416 | 80.8% |
| Did you lose property? | | |
| Yes | 166 | 32.2% |
| No | 348 | 67.6% |
| Did you have to move? | | |
| Yes | 54 | 10.5% |
| No | 456 | 88.5% |
| How did you experience it? | | |
| It happened directly to me | 203 | 39.3% |
| I saw it live from balcony/street | 204 | 39.5% |
| I learned about it happening to a close family member or close friend | 90 | 17.4% |
| I was repeatedly exposed to details about it as part of my job | 20 | 3.8% |
| Did you have to move house? | | |
| Yes | 54 | 10.5% |
| No | 456 | 88.5% |
| Was someone you know seriously injured or killed? | | |
| Yes | 330 | 64.1% |
| No | 169 | 32.8% |

that can range from 0 to 80. The authors suggest a cutoff criterion between 31 and 33 as indicating probable PTSD caseness (Blevins et al., 2015). While the predecessor to the PCL-5 suggested a cutoff score of 33 for a probable diagnosis of PTSD (Weathers et al., 2013), subsequent validation studies have recommended a variety of cutoff scores ranging from as low as 28 to as high as 37 (Ashbaugh et al., 2016; Ghazali & Chen, 2018; Mat Salleh et al., 2020). Yet other studies suggest that in populations with a true PTSD prevalence of 15% or less, cutoff values below 44 on the PCL will substantially overestimate PTSD prevalence (Terhakopian et al., 2008). Collectively, this indicates a high variability in the proposed cutoff values and further points to the possibility that different cutoffs may be appropriate in different populations and for different purposes (e.g., screening vs. differential diagnosis; Murphy et al., 2017). For this study, we used the 33 cutoff score as there are no recommendations specific to the population targeted for this study. The PCL-5 is reported to possess high indices of reliability and convergent and discriminant validity (Blevins et al., 2015; Sveen et al., 2016).

The Depression, Anxiety, and Stress Scale (Lovibond & Lovibond, 1995) is a 21-item self-report questionnaire that is comprised of three subscales designed to assess the presence and level of symptoms of depression, anxiety, and stress in the week preceding completion of the instrument. All items are answered using a 3-point Likert scale. A total score is obtained for summing all items and multiplying by a factor of 2. An individual subscale score is obtained by summing the relevant seven items for each subscale. Cutoff scores are used to indicate severity of depression, anxiety, and stress subscales, respectively (Lovibond & Lovibond, 1995). The instrument is reported to possess high reliability (Beaufort et al., 2017) and high convergent validity (Alfonsson et al., 2017; Le et al., 2017).

The Reflective Functioning Questionnaire (RFQ-8; Fonagy et al., 2016) is an eight-item self-report scale assessing mentalizing capacities based on two subscales, the Certainty About Mental States (RFQc) and the Uncertainty About Mental States (RFQu). The questionnaire is a short version of the RFQ-54. Sample items include "People's thoughts are a mystery to me" and "I always know what I feel." All items are answered using a 7-point Likert scale format ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The scoring system proposed by Fonagy et al. (2016) was implemented. Lower scores on the RFQc and higher scores on the RFQu are considered to reflect deficits in mentalizing. The long version of the RFQ has been found to have good internal reliability (Cronbach's alpha = .82) and convergent construct validity, correlating positively with measures of allied (but not equivalent) constructs, such as mindfulness, $r = .40$, $p < .001$, and cognitive empathy, $r = .48$, $p < .001$ (Moulton-Perkins et al., 2011).

The Connor-Davidson Resilience Scale (CD-RISC-10; Campbell-Sills & Stein, 2007; Connor & Davidson, 2003) is a 10-item self-report questionnaire that measures resilience. Items are answered using a 4-point Likert scale ranging from 0 = *not true at all* to 4 = *true nearly all the time*. Total scores are obtained by summing all scores, yielding a total score ranging between 0 and 40, with higher scores reflecting greater resilience. The CD-RISC-10 has high convergent validity with other resilience measures (Joyce et al., 2018).

## Procedure

Ethical approval to conduct this study was secured from the concerned committee (LAU.SAS.PT3.4/Sep/2020). The study employed a cross-sectional research design examining the prevalence and predictors of PTSD symptoms in the wake of the Beirut Port explosion. An online survey using Google forms was shared with potential participants via social media platforms including LinkedIn and Instagram, with the generous help of several active members of these platforms. Informed consent was obtained at the outset of the study. All data were collected between September 7, 2020, and October 27, 2020, which corresponds to between 5 and 12 weeks after the explosion.

## Results

Demographic data for the study participants are presented in Table 1. The first objective was to examine the prevalence of mental health difficulties in the sample using previously established and widely implemented cutoff scores (see Table 2). Using the categories of severe and extremely severe, high rates of depression, anxiety, and stress within the sample as a whole were found (52%, 45%, and 37%, respectively). Over 43% of the sample met the cutoff score on the PCL-5 indicating clinically significant levels of PTSD. Specifically, 40% of men and 47% of women had PCL-5 scores exceeding the cutoff. Furthermore, over half of female participants scored in the severe or extremely severe range for depression and anxiety. Approximately one third of male participants scored in the same range.

Gender differences were explored across all measures in the study (see Table 3). Gender differences were observed on measures of PTSD, depression, anxiety, and stress, with scores for female participants significantly higher than for males. Men scored significantly higher than women on resilience.

We next set out to investigate the role of mentalizing and its relationship with resilience, examining whether mentalizing capacities are related to symptoms of PTSD, depression, and anxiety. Table 4 details the Pearson product–moment two-tailed

**Table 2**
*Prevalence of Depression, Anxiety, and Stress (DASS) and PCL-5 per Category Cutoffs*

| Variables | Male *N* (%) | Female *N* (%) |
|---|---|---|
| Depression | | |
| Normal | 22 (29.3) | 73 (16.9) |
| Mild | 85 (6.7) | 37 (8.6) |
| Moderate | 16 (21.3) | 79 (18.3) |
| Severe | 13 (17.3) | 65 (15.0) |
| Extremely severe | 19 (25.3) | 178 (41.2) |
| Anxiety | | |
| Normal | 36 (49.3) | 117 (27.2) |
| Mild | 5 (6.8) | 34 (7.9) |
| Moderate | 8 (11) | 66 (15.3) |
| Severe | 9 (12.3) | 44 (10.2) |
| Extremely severe | 15 (20.5) | 169 (39.3) |
| Stress | | |
| Normal | 39 (52.0) | 136 (31.8) |
| Mild | 4 (5.3) | 52 (12.1) |
| Moderate | 12 (16.0) | 68 (15.9) |
| Severe | 13 (17.3) | 98 (22.9) |
| Extremely severe | 7 (9.3) | 74 (17.3) |
| PCL-5 | | |
| Clinically significant (score > 33) | 30 (40.5) | 197 (47.1) |
| Below 32 | 44 (59.5) | 221 (52.9) |

*Note*. PCL-5 = PTSD Checklist for *DSM–5*.

**Table 3**
*Means and Standard Deviations for the Main Study Variables by Gender*

| Variables | Men | Women | *t* value | *df* | *p* |
|---|---|---|---|---|---|
| PCL-5 | 27.66 (17.23) | 32.19 (17.09) | −2.10 | 101.79 | .05 |
| CD-RISC-10 | 28.89 (6.90) | 26.72 (7.63) | −2.45 | 106.03 | .01 |
| DASS Depression | 18.18 (11.34) | 22.51 (11.50) | −3.01 | 102.19 | .003 |
| DASS Anxiety | 9.97 (9.84) | 16.36 (11.82) | −4.97 | 110.48 | .001 |
| DASS Stress | 16.40 (11.82) | 21.41 (10.92) | −3.42 | 97.38 | .001 |
| RFQc | .74 (.57) | .79 (.64) | −.07 | 107.93 | .48 |
| RFQu | .72 (.68) | .81 (.64) | −1.01 | 97.94 | .146 |

*Note*. Equal variances not assumed. $N = 507$. PCL-5 = PTSD Checklist for *DSM–5*; CD-RISC-10 = Connor-Davidson Resilience Scale; DASS = Depression, Anxiety, Stress Scale; RFQc = Reflective Functioning Certainty About Mental States subscale; RFQu = Reflective Functioning Uncertainty About Mental States subscale.



correlation coefficients for each of the continuous variables, all of which were found to be significant.

Finally, to explore the relative predictive value of various social and demographic variables, we undertook a binary logistical regression analysis. The dichotomous dependent variable was scores above or below cutoff on the PCL-5. The predictor variables are detailed in Table 5, all of which are dichotomous with the exception of resilience scores and RFQu and RFQc scores, which were continuous. The regression model was found to be significant, with five of the variables included in the model explaining 13% of the variance, including reporting a previous psychiatric diagnosis, having to move houses, resilience, and the two RFQ subscales. The regression model was found to have an acceptable fit ($Wald = 4.00$, $df = 1$, $p = .045$).

## Discussion

This study set out to explore the prevalence of PTSD and associated mental health problems (depression, anxiety, and stress) following the Beirut Port explosion on August 4, 2020, which took the lives of more than 200 people and injured more than 6,000 (Maamari et al., 2020). Our results indicated that 40% of men and 47% of women reported clinically significant symptoms of PTSD, and further gender differences were evident for depression, anxiety, and stress with women scoring higher across these measures. Consistent with previous research (Ditlevsen & Elklit, 2010; Farhood et al., 2016; Rivière, 2008), a higher proportion of women than men reached the threshold for PTSD symptomatology and in the extreme category for depression and stress. This gender difference has been postulated to exist due to a higher sensitivity in women to perceive threatening events as stressful (Chung et al., 2018; Marthoenis et al., 2019).

In terms of an overview, 47% of participants scored in the severe or extremely severe category for depression and 37% in the extreme category for stress. With respect to the prevalence of anxiety scores, 45% scored within the severe or extremely severe range. Scores on the PCL-5 were found to be highly correlated with depression and anxiety scores, which is consistent with existing literature highlighting a high comorbidity between these disorders at least in the short term (Farhood & Noureddine, 2003; Meewisse et al., 2011). This high comorbidity lends some support to existing arguments that suggest conceptualizing PTSD as a posttraumatic spectrum disorder (Ginzburg et al., 2009; Moreau & Zisook, 2002; O'Donnell et al., 2004). According to this perspective, PTSD may be conceptualized as having various subtypes with corresponding degrees of depression and anxiety symptoms and may therefore be seen as constituting a risk factor for anxiety and depression (Ginzburg et al., 2009).

The second aim of this study was to explore the relationships between mentalizing, resilience, and mental health. Mentalizing has been defined as one's capacities to make links between one's own and others' behaviors and their underlying mental states (Bateman & Fonagy, 2004). This capacity has been found to be linked with resilience and an ability to cope with stressful and adverse situations (Fonagy et al., 1994). In line with this, our findings suggested that people with better developed mentalizing capacities showed higher resilience, as well as lower scores on PTSD, anxiety, depression, and stress. Similarly, in the current sample, resilience was found to be moderately negatively correlated with PTSD, anxiety, depression, and stress. Poorer mentalizing abilities was associated with a 2-fold

**Table 4**
*Correlations Between Key Study Variables*

| Variables | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| 1. RFQc | −.57** | .22** | −.27** | −.35** | −.34** | −.39** |
| 2. RFQu | — | −.21** | .32** | .40** | .38** | .46** |
| 3. Resilience | | — | −.16** | −.30** | −.18** | −.20** |
| 4. PCL-5 | | | — | .67** | .71** | .76** |
| 5. DASS Depression | | | | — | .64** | .77** |
| 6. DASS Anxiety | | | | | — | .78** |
| 7. DASS Stress | | | | | | — |

*Note*. RFQc = Reflective Functioning Certainty About Mental States subscale; RFQu = Reflective Functioning Uncertainty About Mental States subscale; PCL-5 = PTSD Checklist for *DSM–5*; DASS = Depression, Anxiety, Stress Scale.
** $p < .01$.

**Table 5**
*Binary Logistic Regression Predictors of PCL-5 Cutoff*

| Variable | *N* | Above PCL-5 cutoff *N* (%) | Adjusted *OR* (range) |
|---|---|---|---|
| Above age 25 | | | |
| No | 238 | 117 (49.2%) | — |
| Yes | 255 | 110 (43.1%) | .78 (.65−1.11) |
| Gender | | | |
| Male | 74 | 30 (40.5%) | — |
| Female | 418 | 197 (47.1%) | 1.31 (.80–2.16) |
| In a relationship | | | |
| No | 224 | 109 (48.7%) | — |
| Yes | 268 | 117 (51.8%) | .82 (.57–1.17) |
| Previously diagnosed with a psychological disorder | | | |
| No | 396 | 174 (48.7%) | — |
| Yes | 97 | 53 (54.6%) | 1.54 (.98–2.40)* |
| Know people hurt/killed | | | |
| No | 165 | 76 (46.1%) | — |
| Yes | 312 | 138 (44.2%) | .93 (.64–1.38) |
| Have to move house | | | |
| No | 437 | 192 (43.9%) | |
| Yes | 52 | 33 (63.5%) | 2.21 (1.22−4.0)** |
| Resilience | 506 | — | .97 (.95–1.0)** |
| RFQu | 513 | — | 2.34 (1.66–3.00)*** |
| RFQc | 513 | — | .48 (.35−.65)*** |

*Note*. PCL-5 = PTSD Checklist for *DSM–5*; RFQu = Reflective Functioning Uncertainty About Mental States subscale; RFQc = Reflective Functioning Certainty About Mental States subscale.
* $p < .05$. ** $p < .01$. *** $p < .001$.

increase in the risk of meeting PCL-5 cutoff (*OR* = 2.34, 95% confidence interval [CI; 1.66, 3.0]), and each unit increase in resilience scores was associated with a 3% reduction in meeting PCL-5 cutoff (*OR* = .97, [.95, 1.0]). It is therefore possible that some developed mentalizing abilities may play a role in successful emotion regulation and promote resilience, thereby facilitating effective responses to hardships and stressful situations (Schwarzer et al., 2021).

In order to further explore the role of mentalizing and resilience in PTSD symptomatology, we included all key variables, as well as demographic variables, in a binary logistic regression model in an attempt to identify significant predictors of reaching the cutoff for PTSD on the PCL-5. Presence of a previous mental health diagnosis, lower mentalizing capacities, and lower resilience scores were found to predict reaching the PCL-5 cutoff. Specifically, those who had a previous psychiatric diagnosis were 1.5 times more likely to meet the cutoff score (*OR* = 1.54, 95% CI [.98, 2.40]), and those who had to move house as a result of the explosion were over 2 times more likely to meet the cutoff (*OR* = 2.2, [1.22, 4.0]).

In our sample, higher scores on the RFQu were found to be the strongest predictor of PTSD. These scores reflect mentalizing deficits, or what has been termed hypomentalizing, described as one's inability to ascribe accurate mental states underlying one's own or others' behaviors, thus reflecting a dismissal or potential repression of specific events (Fonagy & Target, 1997). This, in turn, could explain the development of some PTSD symptoms, such as dissociation.

Despite this study being one of the few to explore the psychological effects of the Beirut Port explosion, it is not without its limitations. First, we relied on a sample of convenience for participants and data collection based on connections and people's access to social media platforms, which could limit the generalizability of results to the Lebanese population as a whole. Second, 85% of our sample consisted of women, which could have led to an overrepresentation of that gender in the analyses. Third, similarly to Farhood and Noureddine (2003), the high prevalence of depression could be explained by confounding factors, such as previous diagnosis of depression, due to the ongoing economic and political hardship prior to the explosion. Future studies could focus on disentangling potential stressors affecting mental health scores. In addition, the threshold used for the PCL-5 is not population specific, which could have impacted some of the results. Fourth, this study was based on cross-sectional data, which does not permit causal inferences. Finally, it was beyond the scope of this study to investigate differences between the directly and indirectly exposed participants as this study solely focused on the predictive role of this factor on the development of PTSD symptomatology. The focus on various predictors of trauma in directly and indirectly exposed individuals is the goal of additional work in this area.

In conclusion, based on the above findings, we suggest that helping people affected by the port explosion mentalize this traumatic event and their experience of it could help them better regulate their emotions and cope with the stress of that incident (Luyten et al., 2012). In fact, mentalizing has been included in the context of psychotherapeutic interventions for PTSD, with Basharpoor and Einy (2020) finding mentalization-based therapy to be effective in reducing emotional dysregulation and impulsivity among military veterans. Mentalization-based therapy is seen as facilitating people's being aware of the difficulties and repressed feelings resulting from the traumatic event, allowing them to be more attuned to and work through these emotions (Fonagy & Bateman, 2016; Stein, 2006). Furthermore, it can be argued that mentalizing increases resilience on the long term, with the latter acting as a moderator altering the association between trauma and depression/anxiety (Friborg et al., 2006; Pietrzak et al., 2012).

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