The Impact of Life Events and Depressive Symptoms on the Association Between Momentary Negative Affect and Momentary Resilience: Implications for Mental Health

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Abstract:

Resilience plays a considerable role in understanding individual mental health. As previous literature indicated an important negative association between negative affect (NA) and momentary resilience (MR), this study aimed to find evidence for this association and further investigate the possible moderating effect of depressive symptoms and life events on this relationship and its impact on mental health, by using Experience Sampling Methods (ESM). The study consisted of 62 participants. (M age = 29.95, SD = 13.76; Males = 25, Females = 37). The data were analysed using linear mixed-effects models to test the hypothesised relationship between momentary NA and MR and the possible moderators of this relationship: depressive symptoms and life events. The results showed evidence for the negative association between momentary NA and MR and for live events as a moderator. However, no evidence was found for depressive symptoms moderating the relationship between MR and momentary NA. To gain more understanding of why NA and depressive symptoms independently predict MR, future research could include factors such as social support or situational factors. Lastly, the significant finding of the moderating effect of life events impacts our understanding of how life events possibly affect emotion or stress regulation and thus, future research should investigate this further.

Keywords: momentary resilience, depressive symptoms, momentary negative affect, life events, mental health

The Impact of Life Events and Depressive Symptoms on the Association Between Momentary Negative Affect and Momentary Resilience: Implications for Mental Health

In practically every region of the world, mental health concerns are alarmingly prevalent and on the rise (Torre et al., 2021There are numerous causes for this increase, including worsening economic conditions, social inequality, discrimination, COVID-19, etc. (Witteveen & Velthorst, 2020). Especially during the COVID-19 pandemic, society's mental health was greatly challenged. Anxiety and depressive symptoms arose as people feared getting infected, had less social support and were advised to stay indoors (Nochaiwong et al., 2021). According to Nochaiwong et al. (2021), the occurrence of mental health issues was significantly higher during COVID-19 than beforehand. The worldwide prevalence estimates for depression was estimated to have a prevalence of 28.0%; anxiety, 26.9% and stress, 36.5%. Subsequently, this enormous increase in (daily) stressors increased the risk of developing mental disorders, significantly contributing to disability, raising the danger of premature fatality, lowering the quality of life, and imposing a heavy strain on healthcare systems (Torre et al., 2021).

Resilience

As society is dealing with an increase in mental health concerns due to various causes, it can be said that society's resilience is being heavily challenged. Moreover, considering the occurrence of numerous stressors in people's lives (Chen, 2016), it is crucial that the human organism can effectively deal with these stressors and recover from them in order to avoid adverse mental health outcomes. This is known as resilience (Burtscher et al., 2022). Ong and Leger (2022) described resilience as a dynamic system's ability to adapt to environmental adversity. They add that resilience is best understood as an active, changing response to (daily) stressors, not a set personality trait. Further, due to the ability to effectively handle stressors and thus prevent adverse health outcomes, one can state that resilience plays a

crucial protective role against mental health problems (Burtscher et al., 2022). Meaning that people with high resilience are less likely to develop mental complaints. Thus, it seems central to investigate how resilience works and what factors might influence this.

Measuring Resilience and Negative Affect on a Momentary Level with Experience Sampling Methods

As the information on a nuanced understanding of the adaptive capacity of individuals under different (daily) stressors is lacking, it is crucial to investigate resilience on a deeper level to inform mental health interventions on how best to tailor them to the individual needs of the affected. For this reason, recent studies have been investigating momentary resilience (MR) using Experience Sampling Methods (ESM). This method allows researchers to capture real-time data on individuals' ongoing experiences, providing detailed insights into how these mental states, in response to stressors, fluctuate over time (Verhagen et al., 2016). Thus, it captures more dynamic and sensitive reactions to stressors that traditional retrospective measures may miss (Verhagen et al., 2016), contributing to a more nuanced understanding of individual resilience.

Previous research using ESM to measure MR in relation to other factors has shown important findings regarding a possible relationship between momentary negative affect (NA) and MR. Firstly, a study by Tugade et al. (2004) has demonstrated that NA restricts one's focus on encouraging particular action tendencies (e.g., fight, flight), possibly indicating that individuals are likely to find it more difficult to overcome daily stressors than when feeling positive emotions. Similarly, corroborating research showed that an increased NA leads to a slower recovery to a normal state after facing stressors (Myin-Germeys et al., 2018). In addition, Myin-Germays et al. (2018) stated that high individual NA leads to an increase in the perception of stress in certain situations, which possibly influences their ability of MR as their action tendencies are lower and their perceived stress is higher compared to individuals

with lower NA. This could lead to adverse mental health outcomes (Catabay et al., 2019).

In conclusion, difficulty in overcoming stressors and slower recovery, possibly due to high individual momentary NA, arguably might be indicative of lower resilience, thus, exhibiting the possible relationship between momentary NA and MR. Consequently, this relationship is seemingly essential to investigate as it could give insight into why specific individuals perceive more stress than others in the same particular situations and thus have an increased risk of mental health problems. Therefore, the following paragraphs examine factors possibly predicting or strengthening the relationship between MR and momentary NA.

Depressive Symptoms as a Moderator

A possible influencing factor in the relationship between momentary NA and MR is depressive symptoms. These symptoms include depressed mood, less interest in pleasurable activities, guilt or worthlessness, recurrent negative thoughts, etc. (Truschel, 2022). Hoorelbeke et al. (2019) state that depressive disorders are well-known predictors of stress-related complaints. They add that even after recovering from depressive episodes, individuals are still more likely to show sensitivity to stress and depressive symptoms, which might be due to repetitive negative thought patterns (Hoorelbeke et al., (2019). Arguably, negative thinking and negative affect are closely related as one likely influences the other and vice versa. Similarly, Stefanovic et al. (2021) agree with this claim by stating that the relationship between negative thinking and negative affect is reciprocal. Moreover, this sensitivity to stress due to depressive episodes and possibly persistent depressive symptoms arguably indicates that these symptoms can alter how negative emotions or NA can impact MR. For example, negative emotions, such as feelings of hopelessness or worthlessness, can make it more difficult for an individual to use the ability of MR (Hardeveld et al., 2009). this amplification of NA due to depressive symptoms can also make it more difficult for an individual to bounce back from adversity, as it may lower their belief or motivation to cope

(Hardeveld et al., 2009) and thus lowers their action tendencies to resolve stressors (Myin-Germeys et al., 2018). Therefore, it seems likely that depressive symptoms moderate the relationship between momentary NA and MR and is thus an important factor to investigate.

Recent Life Events as a Moderator

Next to depressive symptoms, recent life events could also play an essential role in the relationship between momentary NA and MR. Life events have a tremendous psychological impact on the individual, possibly increasing their stress level over a more extended period, for instance, illness, break-up, death, job loss, etc. (Goldstein & Naglieri, 2010). Furthermore, while various studies touched upon the concepts concerning MR, none investigated the possible moderating role of life events between momentary NA and MR using ESM. Moreover, to illustrate the potential moderating effect of recent life events on the relationship between these concepts, we can refer to the beginning of this article, where we talk about the significant stressor of COVID-19. According to (Nochaiwong et al., 2021), this event has led to an enormous increase in personal negative affect, including feelings of loneliness, feeling down, anxiety, and even suicidal ideation. This major event is similar to other heavy life events that possibly have a major psychological impact on people and thus can cause increased NA and decreased MR. Furthermore, since NA likely causes more individual perceived stress and lower action tendencies, the ability of MR is also expected to be less, which increases the risk of mental health complaints (Sinvani et al., 2021). Thus, the factor of life events can potentially strengthen the negative relationship between Momentary NA and MR and is therefore believed to act as a moderator between these variables.

Study's Aim and Hypotheses

Considering the previous information, a possible negative relationship between momentary NA and MR may have detrimental consequences for an individual's mental

health. Therefore, this study aims to find evidence for this association and investigate factors that possibly strengthen or moderate this association, such as depressive symptoms and life events, to inform interventions to prevent or diminish the risk of mental health complaints. Regarding this, the following hypotheses have been stated:

H1: Momentary NA is negatively associated with MR.

H2: Momentary NA is negatively associated with MR, and this association is stronger in individuals who report higher levels of depressive symptoms.

H3: Momentary NA is negatively associated with MR, and this association is stronger in individuals who have reported life events in the past 12 months.

Methods

Participants

This study focused on between-person data and comprised 103 participants. Further, participants in this study were required to be at least 18 years old and have a solid comprehension of the English language. In addition, participants were gathered via convenience sampling, with the help of WhatsApp social media platforms such as Facebook and Instagram. Regarding reimbursements, participants were offered a personal overview of their results, including graphs and explanations. Finally, the study was approved by the University of Twente ethics committee (nr. 230631).

Procedure

This ESM study was conducted over a period of a week, with assessments carried out ten times per day using a customised smartphone app named Ethica (Ethica, n.d.). The app sent participants momentary prompts at random times during the day, requesting them to complete a brief survey within a timeframe of 15 minutes. Next to the ESM survey, a

questionnaire for baseline measurements was also sent via Ethica. Via this app, participants received an email with a registration link. Participants first needed to download the app on their devices via this link. Afterwards, they had to create an account and wait until the study started. When the study began, the participants received the baseline questionnaire, which included informed consent and demographic questions about gender, age, nationality, occupation and education. After this, various variables were measured (e.g., depressive symptoms, threatening life events, etc.) This questionnaire took approximately 10 to 15 minutes to fill out. Secondly, the ESM survey was released on the same day as the baseline questionnaire. The ESM survey appeared randomly throughout the day, and each took about one to two minutes.

Measures

Demographics

To gain insight into the participants' demographics, six questions were asked regarding age, gender, nationality, occupation, degree and belief system.

Baseline Questionnaire

The List of Threatening Events. The 12-item self-report questionnaire, List of Threatening Events (LTE) (Brugha & Cragg, 1990), was used as a baseline measurement for a possible predictor variable of momentary resilience. It consists of 12 main types of stressful life events chosen. For each response category, participants indicated whether each of the 12 distinct life events occurred (yes/no) during the previous 12 months. The cumulative LTE score for each response category is determined by adding the item scores (maximum score = 12). Next, a reliability analysis was conducted to assess the internal consistency of the scale used. The results showed good reliability (α = .75). The 95% confidence interval of alpha ranged from .73 to .77.

Brief Symptom Inventory-18 (BSI-18). The BSI-18 (Derogatis, 2000) is a self-reported screening instrument developed to evaluate the level of psychological distress in participants along three dimensions: somatisation, depression, and anxiety. The 18 items are evenly distributed across the three dimensions, and participants were instructed to use a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely) to indicate the extent to which they have been "distressed or bothered" by the exhibited symptoms over the past seven days. Each item contributes to a single subscale, assessed by adding the six subscale items' scores. The actual scores for the three subscales range from 0 to 24. The global severity index (GSI) measures the total of the three subscales. Higher scores signify greater distress (Derogatis, 2000). Derogatis (2000) provided acceptable estimates of internal consistency for the normative community sample of 1,134 adults (0.74 for somatisation, 0.79 for anxiety, 0.84 for depression, and 0.89 for the global severity index). In the current sample, the internal consistency was measured using Cronbach's alpha (Bates et al., 2015) (α =. 92).

ESM Measures

Momentary Resilience. The item that the research team came up with to represent and measure momentary resilience was: "Right now, I feel like I ***can handle unpleasant situations***.". This item was scored on a Likert scale ranging from 1 to 7 with 1 representing "strongly disagree" and 7 representing "strongly agree".

Momentary Negative Affect. Momentary negative affect was measured with the items: "Right now, I feel ***stressed", "***Right now, I feel ***anxious", "***Right now, I feel ***irritable", "***Right now, I feel ***lonely", "***Right now, I feel ***down".*** These items were scored on a Likert scale ranging from 1: "strongly disagree" to 7: "strongly agree". After this, the variables were created by grouping all the items indicating negative affect. Next, the means were calculated out of the total scores for each item.

Statistical Analysis

A Pearson's correlation was made use of to determine the bivariate correlations between predictor variables, namely depressive symptoms (as measured by BSI-18), threatening life events (as measured by LTE), momentary NA, and MR in the present study. More specifically, for the momentary NA and resilience, the person mean scores were used and correlated with the retrospective questionnaires BSI-18 and the LTE.

Further, three linear mixed-effects regression models were conducted with the lmer function (Bates et al., 2015) in R Studio to test the research hypotheses. The models included res_14 ("Right now, I feel like I ***can handle unpleasant situations***."), as the outcome variable MR and Mom_Na (momentary NA), BaseBSI (depressive symptoms) and Base_le (life events) as the predictor variables. Additionally, the participants were included as a random effect and random intercepts were used. The covariance structure postulated that random intercepts for multiple levels of 'name' followed a normal multivariate distribution. In addition, the model was estimated using the method of Restricted Maximum Likelihood (REML). This method takes into consideration the random effects structure and seeks to estimate the fixed effects while disregarding the random effects accurately.

The first model aimed to test the first hypothesis, namely, whether there was a negative association between momentary NA and MR. The model was specified as follows: res_14 ~ Mom_Na + (1|name). The dependent variable in this model was MR, while the independent variable was momentary NA.

Secondly, we tested whether momentary NA is negatively associated with MR and whether this association is stronger in individuals who report higher depressive symptoms. The model was specified as follows: res_14 ~ Mom_Na + Mom_Na * BaseBSI + (1|name). The dependent variable in this model was MR, the independent variables were momentary NA and baseline depressive symptoms, and the moderating variable was the interaction

between momentary NA and baseline depressive symptoms.

The third model aimed to test the last hypothesis that momentary NA is negatively associated with MR, and this association is stronger in individuals who report life events in the past 12 months. The model was specified as follows: res_14 ~ Mom_Na + Mom_Na * Base_le + (1|name). The dependent variable in this model was momentary resilience, the independent variable was momentary NA and life events, and the moderating variable was the interaction between momentary NA and life events.

Results

Sample Characteristics

The sample included 149 responses to the baseline questionnaire. However, some participants filled in the questionnaire multiple times. The initial responses were retained, while the remainder were omitted from the data. Following exclusion, 88 responses remained. After merging the baseline data with the ESM data, another 26 participants were omitted, as we used a cutoff score of 10 measurements in total. This criterion score was chosen because the mean response rate was low. With a cutoff score of 10, researchers can ensure that participants have provided enough data to carefully make meaningful inferences and possibly detect patterns in their daily experiences. Additionally, the analytic sample included 62 participants. In total, participants responded to 1740 questions, with an average compliance rate of (1740/4340) x 100 = 40.09%. Table 1 depicts the characteristics of the sample.

Table 1.

Sample characteristics

Participants	(n=62)

Gender	N (%)
Male	25 (40.3%)
Female	37 (59.7%)
Age, mean (SD)	29.95 (13.76)
Observations per person, mean (SD)	28.1 (13)

Descriptive Statistics

The descriptive statistics and correlations of the variables are presented in Table 2. It shows significant negative correlations between the outcome variable: MR, and the predictor variables, momentary NA and depressive symptoms. This indicates that the higher the MR, the lower the momentary NA, and the lower the depressive symptoms are. Additionally, the predictor variables, momentary NA and depressive symptoms, as well as depressive symptoms and life events, show a significant positive relation with each other, indicating their possible relatedness.

Table 2.

Descriptive Statistics and a Correlation Matrix Exhibiting the Associations Between the MR and Predictor Variables.

		Mean	SD	M-R	M-NA	BSI	LTE
M-R	*r*	5.06	1.08	1	-.25*	-.67*	-.21
M-NA	*r*	12.92	4.21		1	.73***	.24

BSI	*r*	1.75	.65	1	.73***
LTE	*r*	.14	.17		1

Note. M-R = Momentary resilience, M-NA = momentary negative affect, BSI = Brief Symptom Inventory, LTE = List of Threatening Events. *p < .05, **p < .01, ***p < .001.

NA & MR, With Possible Moderators: Depressive Symptoms & Life Events

Table 3 displays the outcome of the first linear mixed-effects model that test hypothesis one. In line with the first hypothesis, momentary NA is a significant negative predictor of MR, meaning that the higher an individual's momentary NA, the lower their MR. This finding suggests that the first hypothesis can be accepted as an important negative relationship between momentary NA and MR is exhibited.

Table 3.

Linear Mixed-Effects Model 1: momentary NA on MR.

	b	*SE*	*t*	*p*
(Intercept)	6.50	.11	57.69	<.001 ***
M-NA	-.55	.02	-23.96	<.001 ***

Note. * = significance, Intercept = momentary resilience, M-NA = momentary negative affect. *p < .05, **p < .01, ***p < .001.

Secondly, Table 4 shows the outcome of the second linear mixed-effects model. It exhibited that the variable of baseline depressive symptoms is also a significant predictor of MR. Additionally, the linear mixed effects model accounted for a considerable proportion of variance in MR (R-squared = .694). Further, while momentary NA and baseline depressive

symptoms can independently predict momentary resilience, the interaction does not significantly influence this relationship. Thus, against expectations, the second hypothesis was not supported.

Table 4.

Linear Mixed-Effects Model 2: the predictor variables on MR.

	b	*SE*	*t*	*p*
(Intercept)	7.35	.29	25.25	<.001 ***
M-NA	-.50	.07	-7.40	<.001 ***
BSI	-.50	.16	-3.16	.002 **
M-NA * BSI	-.02	.03	-.72	.47

Note. * = significance, Intercept = momentary resilience, M-NA = momentary negative affect, BSI = Brief Symptom Inventory. *p < .05, **p < .01, ***p < .001.

Lastly, Table 5 presents the third model, which showed that momentary NA was found to have a significant negative association with MR, while the association between life events and MR was not significant. However, a significant interaction was found between momentary NA and life events. Additionally, the linear mixed effects model accounted for a considerable proportion of the variance in MR (R-squared = .698). In conclusion, the findings supported the third hypothesis that life events moderate momentary NA and MR.

Table 5.

Linear Mixed-Effects Model 3: of the predictor variables on MR.

	b	*SE*	*t*	*p*
(Intercept)	6.45	.15	44.12	<.001 ***
M-NA	-.49	.03	-15.78	<.001 ***
LTE	.03	.05	.62	.54
M-NA * LTE	-.03	.01	-3.06	.002 **

Note. * = significance, Intercept = momentary resilience, M-NA = momentary negative affect, LTE = List of Threatening Events. *p < .05, **p < .01, ***p < .001.

Discussion

Following the severity of the consequences and risks for an individual's mental health, possibly due to an important negative association between momentary NA and MR, this study aimed to examine this further, including two factors that could have a strong influence on this association, namely, life events and depressive symptoms. Moreover, this study aimed to investigate this to provide practical information or inform interventions that seek to prevent or reduce the risk of mental health complaints as well as to strengthen MR.

Subsequently, this research provided us with the following (main) findings: First, in line with the first hypothesis, a significant negative relationship was found between NA and MR. Secondly, in contrast with the second hypothesis, there is no support for a moderating effect of depressive symptoms on momentary NA and MR. Lastly, in line with the third hypothesis, there was support for the third hypothesis, as a significant moderating relationship of life events between momentary NA and MR was found. In the following paragraphs, it is attempted to explain the findings.

Momentary NA & MR

The association found in this study between momentary NA and MR is in line with previous research that investigated the relationship between these concepts. For instance, Abolghasemi et al. (2013) found that men who scored higher on negative affect scored lower on resilience. Similarly, Schwerdtfeger & Dick (2018) found that higher momentary resilience was related to lower negative affect. Thus, exhibiting the importance of the association. Furthermore, the following paragraphs attempt to explain the finding of this relationship.

First, an individual's high NA may result in a shortage of psychological resources, which in turn affects their capacity for momentary resilience. According to Chen et al. (2018), negative moods deplete psychological resources, which in turn leads to poor self-regulation and eventually to mental health problems. Furthermore, they explain that the effects of negative mood on behaviour include the notion that NA occupies the attention resulting in fewer recourses to inhibit certain problematic behaviours or engaging in protective behaviours again stress or other forms of negative affect (Chen et al., 2018). Similarly, these findings are in line with Tugade et al. (2004), who suggested that an individual's NA restricts one's focus on encouraging action tendencies in the face of stressors. Thus, the depletion of psychological resources, possibly due to an individual's NA, may lead to more difficulty maintaining resilience. Therefore, this may explain, for example, why low resilience scores were observed in times of momentary negative affect.

Another reason for the association between momentary NA and MR could be disturbed emotional or cognitive processing. According to Tugade and Fredrickson (2004), for efficient emotion regulation, positive emotions and positive reappraisals of stressors are major contributors. They further add that individuals who tend to appraise (daily) stressors negatively are more often stuck in negative thought patterns, which lead to more (perceived) stress (Tugade & Fredrickson, 2004). In other words, individuals with high (momentary) NA, thus mainly feeling negative emotions at that time, are less likely to have positive reappraisal

and proper emotional regulation. Arguably, this means that individuals with momentary NA "bounce back" slower from momentary stressors, which reflects MR, compared with individuals feeling momentary positive emotions. Thus, possibly reflecting the negative association between momentary NA and MR.

Momentary NA & Depressive Symptoms on MR

The current study's findings are consistent with previous studies, showing that high levels of negative affect and depressive symptoms are associated with lower levels of resilience (Ong & Leger, 2022). Moreover, the finding that negative affect and baseline depressive symptoms independently predict MR supports research suggesting the importance of addressing both factors in interventions aimed at promoting resilience (Ehret et al., 2014; Graham-Engeland et al., 2015). This could be because depressed individuals tend to have persistent negative thought patterns on a cognitive level. On an emotional level, it leads to more (momentary) negative affect, which in turn, leads to lower (momentary) resilience (Franken, 2007; Joormann & Gotlib, 2010). Moreover, this relationship is crucial as it arguably implies that individuals affected by depressive symptoms and thus (momentary) NA are negatively spiralling on an emotional and cognitive level, increasing the risk of mental health problems.

Furthermore, depressive symptoms and momentary NA showed a significant positive relationship with each other (r. = .55). Meaning that the higher the depressive symptoms, the higher the momentary NA, thus strengthening the previous point. However, contrary to the hypothesis, the interaction between momentary NA and baseline depressive symptoms did not significantly show a moderating effect on the relationship between MR and NA. One explanation for this could be that both factors influence MR independently because baseline depressive symptoms may follow a different pathway to influence MR compared to momentary NA. More specifically, baseline depressive symptoms might reflect a more stable

pattern of negative affect due to, for instance, persistent negative thought patterns (Connell et al., 2014) rather than momentary negative affect, which may be influenced by many external factors such as environmental and physical factors (Dunton et al., 2015).

Momentary NA & Life Events on MR

While various ESM studies measured daily stressful events in relation to momentary NA and MR (Wang et al., 2023; Moberly & Watkins, 2008), none have included life events as a retrospective measure. Therefore, previous findings can hardly be compared to the findings of this study since the operationalisation of life events and daily adverse events, often described as recent life events, differ. Moreover, although the second hypothesis was not supported by the study's findings, the third hypothesis was, which means that recent life events significantly influence the relationship between momentary NA and MR. Even though the interaction between life events and momentary NA was significant, life events did not independently predict RM, possibly indicating the importance of the interaction itself for predicting MR.

Next to the findings that various studies have suggested that recent life events cause a short-term increase in NA (Marco & Suls, 1993; Swendsen, 1998), another possible explanation for the significant interaction could be that life events increase an individual's sensitivity to stress, which in turn increases the person's vulnerability for a more often or higher NA, ultimately leading to lower MR. In an Ecological Momentary Assessment study, which focuses more on the dynamic development of behaviours in natural situations, whereas ESM focuses on representativeness (Tay, 2022), by Rauschenberg et al. (2022), it was found that individuals who reported lifetime events as well as impactful events in the past twelve months, reported higher and more intense momentary NA in response to stress. Thus, this might indicate that life events influence NA and make individuals more sensitive to stress while perceiving more stress than individuals who did not report life events. This amount of (perceived) stress negatively influences momentary resilience as well as overall resilience, as

high intensity and consistent stress may lead to emotional exhaustion, which in turn negatively influences MR (Schwerdtfeger & Dick., 2018).

Limitations

There are limitations that are worth noting within this study. First is the decreased sample size, which may result in a lack of statistical power (Maxwell, Kelley, & Rausch, 2008). With only 62 remaining out of 103 participants, The study may lack sufficient statistical power to identify significant effects of connections between variables and to restrict the ability to draw firm conclusions from data (Murphy et al., 2011). Hence, it is of importance to acknowledge and consider the potential influence of this limitation when interpreting the findings.

Also considered a limitation of this study is the rate of participant compliance. Participants were required to submit a brief questionnaire ten times per day, seven days per week. However, most of them had less than five responses per day (compliance rate: 40.09%). This poor compliance rate could affect the validity of the data and the generalizability of the findings. Moreover, participants who completed fewer assessments may have led to biased or incomplete data (Hahn et al., 2000). Therefore, while the ESM method has advantages in capturing real-time experiences, the poor compliance rate should be considered a limitation when interpreting the findings.

Finally, the sample's representativeness should be regarded a limitation. Participants were recruited from the network of the researchers, which may not have been representative of the larger population (Young, 2015). Participants connected to the researchers may share similar characteristics or experiences that differ from the general population, leading to selection bias and limited generalizability of the findings (Taherdoost, 2016). Therefore, caution is needed when interpreting the findings of this study, as they may not be generalisable to other populations or contexts.

Conclusion & Future Research

This study showed an important relationship between momentary NA and MR. While the factor of baseline depressive symptoms was also found to be a significant predictor of MR, the interaction between momentary NA and depressive symptoms was not significant. This could imply that the two factors influence MR independently but are both important to investigate in relation to MR. Future research could include factors such as social support or situational factors (Howell et al., 2006) that possibly give more insight into depressive symptoms and, in turn, may provide more information on the finding that momentary NA and depressive symptoms act as independent predictors.

Lastly, it was found that, while life events did not independently predict MR, the interaction between momentary NA and life events was significant in predicting MR. These findings have important implications for our understanding of how life events may affect emotion or stress regulation, potentially as a result of emotional exhaustion, and its mental health repercussions as a result of diminished resilience. In order to create efficient interventions that can improve resilience in the face of stress and adversity, further research is required to understand the mechanisms behind this link better.

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