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RESILIENCE TO STRESS: STRESSFUL LIFE EVENTS AND THEIR INFLUENCE ON RECOVERING FROM STRESS THROUGH NEGATIVE AFFECT AND SELF-CONFIDENCE

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Abstract

Background: Experiencing stressful life events (SLEs) showed to alter affective stress reactivity to future stressors which leaves individuals with faster and higher levels of psychological distress to future smaller stressors.

Aim: The goal was to investigate if SLEs not only alter stress reactivity but also influence the affective recovery in which changes in functioning and positive adaptions in psychological states take place. The affective recovery was operationalized in terms of negative affective stress recovery (NA stress recovery) and recovery of self-confidence.

Methods: In a laboratory session, stress was induced with the Montreal Imaging Stress Test (rMIST), an experimental stress test that evokes a psychosocial stress response by giving negative feedback on the performance of arithmetic tasks. 53 participants between the age of 18 to 35, with sufficient skills in Dutch, no history of endocrine/cardiovascular diseases, and no use of medications/illicit drugs participated. Self-reported questionnaires about NA and self-confidence were conducted throughout the session to be able to measure NA stress recovery and self-confidence recovery. In order to test the influence of SLEs on NA stress recovery and self-confidence recovery, two independent linear regression analyses were executed.

Results: SLEs showed no association with NA stress recovery. However, it was found that SLEs influence self-confidence recovery. The more SLEs an individual experiences, the slower the self-confidence increases after being exposed to a stressor.

Conclusion: It gets apparent that healthy individuals who experienced multiple SLEs should be recognised as being at risk for negative psychological consequences when already facing minor stressors. Longer periods of low self-confidence leave individuals with an increased risk of lower general well-being.

Introduction

Experiencing stressful life events (SLEs) can cause individuals to experience intensive stress responses that can lead to prolonged psychological distress and physiological problems (Brown & Harris, 1989). Despite the risks that exposure to stress bears, its occurrence is a natural mechanism that plays a role in protecting humans from possible threats. From an evolutionary viewpoint, a stress response was inevitable to ensure the survival of all mammalian species, including humans (Seaward, 2017). However, Seaward (2017) describes that the experience of any situation that appears to be a threat to our mental, physical, or spiritual well-being, the body reacts, and physiological responses and adaptations trigger this stress response. Nevertheless, Dohrenwend and Dohrenwend (1974) described that there are stressful stimuli, everyone, experiences as natural events – the "life events" like going to school, having a job, having relationships, or retiring. Normally, these events do not develop high or longitudinal stress levels. Still, stress responses that are exaggerated or are experienced over a longer period could be triggered due to the happening of an SLE like the death of a family member / a loved one, accidents, divorce, etc. These events are non-normative and have a higher impact on people and their health (Schwarzer & Luszczynska, 2013). Not only do SLEs show to have psychological effects on for example anxiety and depression, (Nolen-Hoeksema & Morrow, 1991) intrusive thoughts, or a decreased positive self-concept (Updegraff & Taylor, 2021), but it was also demonstrated that the affective reactivity to future stressors is increased (Eckenrode, 1984; Kanner et al. 1981; Wichers et al., 2009). As a result of this increased reactivity, affected individuals suffer more frequently under the stress of daily events which then may accumulate even more into a psychopathological outcome (Collip et al., 2008; Harkness et al., 2015; van Winkel et al., 2008). However, the findings of an increased stress reactivity may not provide a full understanding of the effects SLEs have on the stress response to future stressors as it misses the view on the phase that follows reactivity, namely stress recovery.

A stress response can namely be divided into stress reactivity and recovery. First, individuals react to stress and afterwards recover from it. In the reactivity process, individuals react physiologically and/or psychologically to a threat (Baum et al., 1987). Then, the process of recovering starts in which the stressor-induced reactions/responses are changed through positive adaptations (Haynes et. al., 1991). To measure these effects that stress has on an individual; often anticipated or actual stress tasks are used to elicit imagined or real stress on the individual. Measuring stress can be difficult, as there are many aspects of the definition of stress, and it is a process that occurs in daily life that needs to be captured (Hellhammer et al., 2010). However, past research showed that with the help of stress tasks like the Trier Social Stress Task (TSST) (Kirschbaum et al., 1993) or the repeated Montreal Imaging Stress Test (rMIST) (Dedovic et al., 2005), stress can indeed be measured in a laboratory setting (De Calheiros Velozo et al., 2021; Schwarzer & Luszczynska, 2013). The rMIST showed to be a reliable and validated tool to induce physiological and psychological stress (Dedovic et al., 2005) which does not require video equipment and additional personnel like it would be needed in other tests (Williams, Haggerty & Brooks, 2004). The rMIST is an experimental stress test that evokes a psychosocial stress response in participants (De Calheiros Velozo et al., 2021). This psychosocial stress response is induced by asking the participants to solve arithmetic tasks and making them feel pressured to perform well by receiving negative feedback.

This stress task is also used to measure the body's responses to a stressor as stress responses can differ a lot across individuals. The same stressor can cause different responses that may not even match the estimated threat (Campbell & Ehlert, 2012). In contrast to such an exaggerated stress response, there are also adaptive stress responses. An adaptive stress response matches the threat that the stressor bears and the body's responses can come back to a neutral state soon after the threat is not apparent anymore. In short, it is flexible and brief. An exaggerated response that prepared the body for an action that is not appropriate for this stressor

drains a lot of energy from the body (e.g., glucose). The time until the bodily reactions return to baseline level is therefore critical for the individual's health consequences (Beckmann & Kellmann, 2004). Essential to this psychological recovery phase are positive changes in emotional states (affective recovery), i.e., lower levels of negative feelings such as fear or anger, and an increase in more positive affects like joy, enthusiasm (Ulrich, 1979), and perceived control (Litt, 1988). Hence, in the affective recovery phase, the affects change back to the baseline level, as they were before the stress exposure (de Calheiros Velozo et al., 2022). Research by Vaessen et al. (2019) showed that people in early psychosis showed to have a delayed recovery of NA which is influenced by the high number of prior experienced SLEs. Nevertheless, these findings do not cover the influence SLEs have on a healthy population, that does not have a history of psychotic or affective disorders. Additionally, the affective recovery was similar to other research only measured in terms of negative affect (NA) (e.g., feeling annoyed or afraid) which describes the time in which NA decreases back to baseline level (Krkovic & Lincoln, 2018). Other studies showed that also positive emotions or states play an important role when looking at the process of recovery (Folkmann, 2008; van Steenbergen et al., 2021).

Positive states like perceived control (Litt, 1988), self-esteem (Rector & Roger, 1997), and self-confidence (Ertekin Pinar et al. 2018; Holahan & Moos, 1985) were found to be of importance when facing a stressor. The level of self-confidence in individuals showed to influence how fast and adaptive they recover physically from a stressor (Elfering & Grebner, 2011; McEwen 1998). Being self-confident was described as believing in one's abilities for example to achieve a specific goal (Bandura, 1977; Clark et al., 2008). Believing in one's own abilities can be a crucial factor when facing stress and having to recover from it. This was also stressed by Nima et al. (2013), who showed that individuals that were able to successfully cope with an SLE showed high levels of self-confidence. However, Hou et al. (2016) found that the

experience of stressful life events decreases self-confidence (and overall well-being). This shows that SLEs leave individuals with a decreased sense of self-confidence, which could make it more difficult to successfully recover from upcoming future stressors. As a consequence, the question arises if prior experienced SLEs influence the increase in self-confidence after experiencing new stressors. Gaining new insight into the influence SLEs have on the individual's affective recovery and how this impacts the response to future stressors could add knowledge to existing intervention programmes or clinical practice. Identifying factors that might be important for adaptive stress recovery could be trained and used to handle future stressors better.

Present study

The present study investigated if SLEs influence the affective stress recovery. The ability to recover is conceptualized by looking at the decrease in NA (NA stress recovery) and the increase in self-confidence (self-confidence recovery) after being exposed to a stress task (rMIST). In order to provide an answer to the research question 'What is the association between SLEs (1) and NA stress recovery (2) and self-confidence recovery?', two hypotheses were formulated: **Hypothesis 1:** Individuals who experienced a higher number of SLEs have a slower NA stress recovery (decrease in NA) than individuals with a lower number of SLEs 15 minutes after being exposed to a stress task. **Hypothesis 2:** Individuals who experienced a higher number of SLEs have a slower self-confidence recovery (increase in self-confidence) than individuals with a lower number of SLEs 15 minutes after being exposed to a stress task.

Methods

Design

To address these hypotheses, data from the experimental laboratory study by De Calheiros Velozo et al. (2021) was used. Within this study, the rMIST was used to investigate habituation, sensitisation, and anticipation effects to repeat stress induction.

Participants

Recruited were the participants by flyers that were spread online or in paper form throughout the city. The participants needed to be between the age of 18 to 35. In addition, sufficient skills in the Dutch language were required to be able to answer various self-report questionnaires and to understand the information presented in the informed consent. Exclusion criteria were a history of endocrine or cardiovascular diseases, and chronic or ongoing use of medications (except birth control pill). Participants were also excluded when they used illicit drugs in the past three months, worked night shifts, or were allergic to certain patches or conductive gels. Each participant was informed that they would receive a reward of 30€ after completing the study.

Procedure

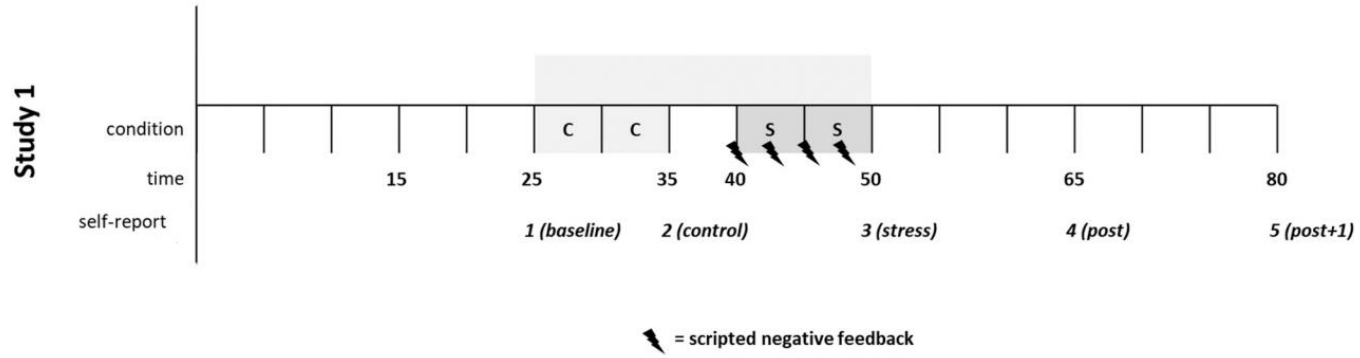
Before the study was executed, Sociaal-Maatschappelijke Etische Commissie (SMEC) of KU Leuven gave ethical approval. Prior to the start of the study, the participants signed the informed consent. The experiment consisted of a test trial in which the participants had to complete the rMIST. The modified version of an often-used experimental stress task evokes a psychosocial stress response (De Calheiros Velozo et al., 2021) which is characterised by social-evaluative stress. This means that threats occur when a component of one's self-identity is, or potentially is, negatively judged (Dickerson et al., 2004). Therefore, the rMIST is made to make the participants feel pressured to perform well in the arithmetic tasks (see Dedovic et al., 2005 for details).

The rMIST was composed of a baseline phase, a testing phase, and a post-stress phase. The baseline phase took part in the first twenty-five minutes after the arrival of the participants who already were seated in front of the computer which showed a white screen. This period is a standard time that is used to stabilize the participant's physiology in a test trial (Petrowski et al., 2012). In the last five minutes of the baseline phase, baseline measurements like demographics were taken from the participants. Then the testing phase began, which was composed of a control period and a test period. As it is displayed in Figure 1, both the control and test period had a length of 600 s. In between the control and test period, a break of 300s was scheduled. In the control period, the participants received already mental arithmetic tasks to complete. In the test period, again the participants had to solve a series of mental arithmetic tasks but with an increased level of difficulty. After the control period, the participants received the information that they are teamed up with another participant and that they are competing. In reality, the participants did not compete against each other. The task was manipulated, and each participant received negative feedback (underperformed in comparison to the opponent) four times during the test period.

Each participant was asked to fill in a self-reported questionnaire five times (Figure 1). The first time point of self-report was at the baseline measurement. The second was after the control phase. The third after the stress phase. The fourth measurement was taken during the recovery phase 15 minutes after the stress task (post). The last recovery measurement was taken 30 minutes after the stress task (post+1). Each self-report included items that asked about the participant's mood. During the recovery period, the participants were asked to stay for a while longer in the room and watch a neutral muted video (i.e., a documentary about the wild) for an hour.

Figure 1

rMIST procedure



Note. C=control period, S= stress period, with the time from arrival in minutes, the five sampling measures of self-reported stress, and the moments where feedback was given. From "The repeated Montreal imaging Stress Test (rMIST): Testing habitual, sensitization, and anticipation effects to repeated stress induction, " by J. De Calheiros Velozo, T. Vaessen, J. Pruessner, I. Van Diest, S. Claes, and I. Myin-Germeys, 2021, *Psychoneuroendocrinology*, *128*(105217), p. 3 (https://doi.org/10.1016/j.psyneuen.2021.105217), Copyright 2021 by Elsevier Ltd.

Measures

Negative affective stress recovery

NA was measured using a self-reported questionnaire that was taken from studies using experience sampling methodology (Myin-Germeys et al., 2009) and was modified for this purpose. During the session, the participants filled in the questionnaire five times (after baseline, control, stress, post, and post+1). The items 'at the moment, I feel tense / under pressure / down / annoyed / irritated' were used to measure NA. All items scored on a 7-point Likert scale from 1- not at all to 7- extremely. The scale showed good reliability ($\alpha > .80$). Further, the five items for NA were averaged for the time point of stress (NA stress) and the post timepoint (NA post) to have indications about the NA in both crucial phases. Next, the NA stress recovery variable was computed. To compose the variable, NA stress was subtracted with

NA post. By doing so, the decrease in NA from the stress phase to 15 minutes after (post) is calculated and the magnitude of recovery within 15 minutes visible.

Self-confidence recovery

Self-confidence was measured with the help of self-reported questionnaires that were taken from studies using experience sampling methodology (Myin-Germeys et al., 2009) and modified for this study. The questionnaire included two items 'at the moment, I feel in control / confident'. Both items scored on a 7-point Likert scale from 1- not at all to 7- extremely. The scale also had good reliability ($\alpha > .80$). Next, both items were averaged for the time point of stress (self-confidence stress) and the post timepoint (self-confidence post) to see how self-confident the participants felt at these time points. Further, self-confidence recovery was computed. To compose the variable, self-confidence stress was subtracted from the self-confidence post. Thereby, the increase in self-confidence from the stress phase to 15 minutes after the stress exposure (post) is calculated and the magnitude of recovery within 15 minutes visible.

Stressful life events

To assess the type and number of SLEs each participant experienced during the last 24 months, the Life Events and Difficulties Schedule (LEDS) by Brown and Harris (1978) was used. The LEDS scale showed good reliability ($\alpha > .80$). 61 life events were displayed in this questionnaire. Events like death, divorce, change in finances, end of school, marriage, and engagement were displayed. First, the participants had to indicate whether they experienced a particular event or not. If the participant experienced an event, the questionnaire also assessed the degree of stress that event caused. They had to rate how pleasant this event was, ranging from "very unpleasant" (-2) to "very pleasant "(2). In order to identify the number of just the SLEs a participant experienced, all events that were rated lower than 0, which is "unpleasant" (-1) and "very unpleasant" (-2) were included as an SLE. Consequently, all events that were

scored a 0 and higher, which are “neutral” (0), “pleasant” (1), and “very pleasant” (2) were rated as neutral and pleasant events and were not considered as an SLE and therefore not included. At last, to get the total number of SLEs for each participant, all events that were rated as stressful were summed.

Data analysis

All data analyses were performed using the software SPSS version 27. First, participants who did not answer all the required self-report questionnaires were excluded from the sample. Next, NA stress recovery, self-confidence recovery, and the total number of SLEs were checked for normality, linearity, and homoscedasticity. All assumptions were met. Subsequently, for all variables (NA stress, NA post, self-confidence stress, self-confidence post, NA stress recovery, self-confidence recovery, and SLEs) descriptive statistics were calculated, to check the mean scores, maximum, minimum, and standard deviations. Additionally, to test whether the number of SLEs is associated with NA stress recovery and self-confidence recovery, two separate linear regressions were calculated. In prior studies that investigated the recovery from stressors, age and gender showed to be associated with the recovery process (Rausch et al., 2008; Vaessen et al., 2019). Therefore, both variables were added as covariates to the models.

Results

Sample and descriptive statistics

Fifty-eight participants took part in this study and the data of 53 participants were included for further analysis. Five participants were excluded because they did not answer the self-reported questionnaires which are needed for further analysis. Thirteen percent of those participants were male (n = 7) and 87% were female (n = 46). The average age of the participants was 24 years (SD = 3.03). The youngest respondent was 19 years old and the oldest was 35 years old.

Table 1

Descriptive Statistics of the Sample (N = 53)

Baseline characteristic	n	%
Occupation		
Student	32	60
Young adult in occupation	21	40
Nationality		
Belgian	46	87
Dutch	3	6
Greek	1	2
Other	3	6

Note. N = number of respondents, % = percentage of respondents, Other = No answer

Next, Table 2 shows the descriptive statistics of the self-reported questionnaires throughout the laboratory setting. In addition, the NA stress recovery and self-confidence recovery are displayed.

Table 2

Descriptive Statistics of self-reported questionnaires (N = 53)

Scale	M (SD)	Min	Max
SLE total	3.39 (3.02)	0.00	16.00
NA stress	3.71 (1.48)	1.00	6.80
NA post	1.94 (1.14)	1.00	6.60
NA stress recovery	-1.77 (1.27)	-5.40	0.06
Self-confidence stress	2.86 (1.55)	1.00	6.00
Self-confidence post	3.85 (1.58)	1.00	7.00
Self-confidence recovery	0.99 (1.12)	-2.50	4.00

Note. M = mean of respondents, SD = standard deviation of respondents, NA stress = NA of timepoint of stress, NA post = NA 15 minutes after stress

The association between SLEs and NA stress recovery

The first hypothesis states that individuals who experienced a higher number of SLEs have a slower NA stress recovery (decrease in NA) than individuals with a lower number of SLEs 15 minutes after being exposed to a stress task. A regression analysis showed no significant effect of SLEs on the NA stress recovery (R^2 = .052, $F(3,48) = 1.92$, $p = .138$). The results are displayed in Table 3.

Table 3

Regression analysis for SLEs influencing NA stress recovery and Covariates (N = 53)

			95% CI		
Effect	B	SE	Lower	Upper	p
(Constant)	.90	1.36	-1.81	3.61	.51
SLE	-.06	.04	-.14	.02	.16
Gender	.00	.50	-.99	.99	.99
Age	-.10	.06	-.21	.01	.08

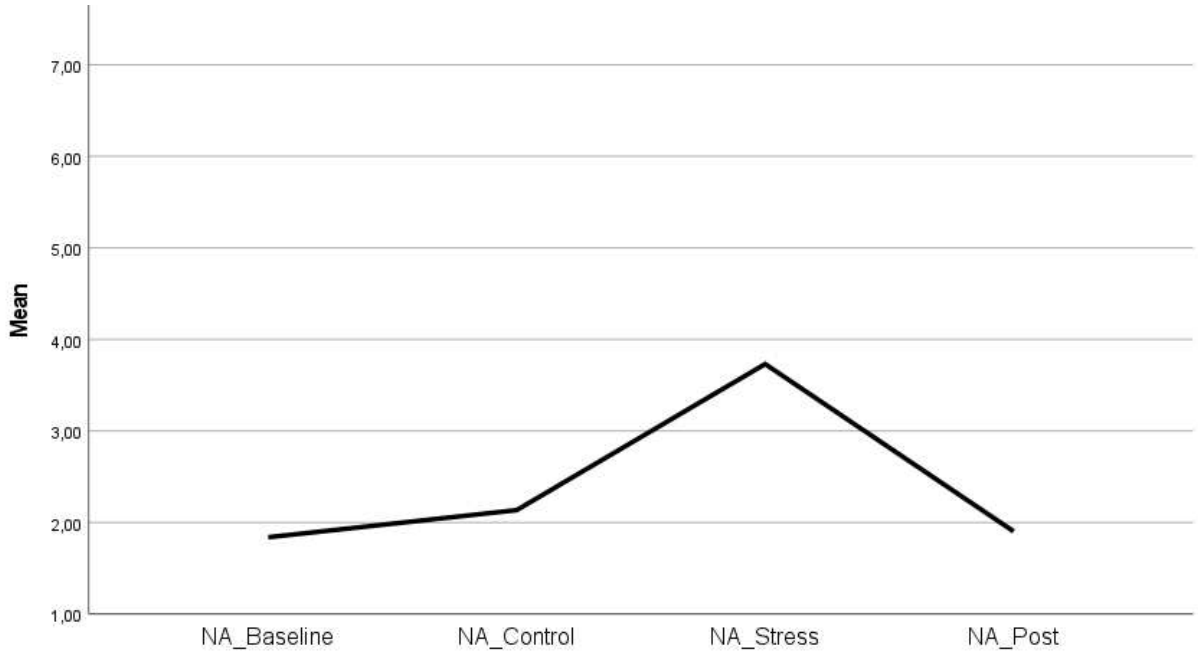
Note. Model Significance: $R^2 = .11$, $F(3, 48) = 2.00$, $p = .130$

Average NA over the timespan of the study

Based on the average NA that the participants reported it gets apparent that 15 minutes after the stress exposure (post) ($M = 1.94$, $SD = 1.14$) the NA decreased and almost went down to the level that was reported at baseline measurement ($M = 1.84$, $SD = .87$) (see Figure 2).

Figure 2

Average NA over the timespan of the study (N = 53)



Note. NA: Negative affect

The association between SLEs and self-confidence recovery

The second hypothesis states that individuals who experienced a higher number of SLEs have a slower self-confidence recovery than individuals with a lower number of SLEs 15 minutes after being exposed to a stress task. A regression analysis showed a significant effect of the number of SLEs on self-confidence recovery (R^2 = .218, $F(3,48) = 4.47$, $p = .008$). The results are displayed in Table 4.

Table 4

Regression analysis for SLEs influencing self-confidence recovery (N = 53)

			95% CI		
Effect	B	SE	Lower	Upper	p
(Constant)	-.76	1.15	-3.10	1.54	.51
SLE	.12	.03	.05	.20	.001
Gender	.24	.42	-.60	1.08	.60

Age	.05	.05	-.05	.14	.35

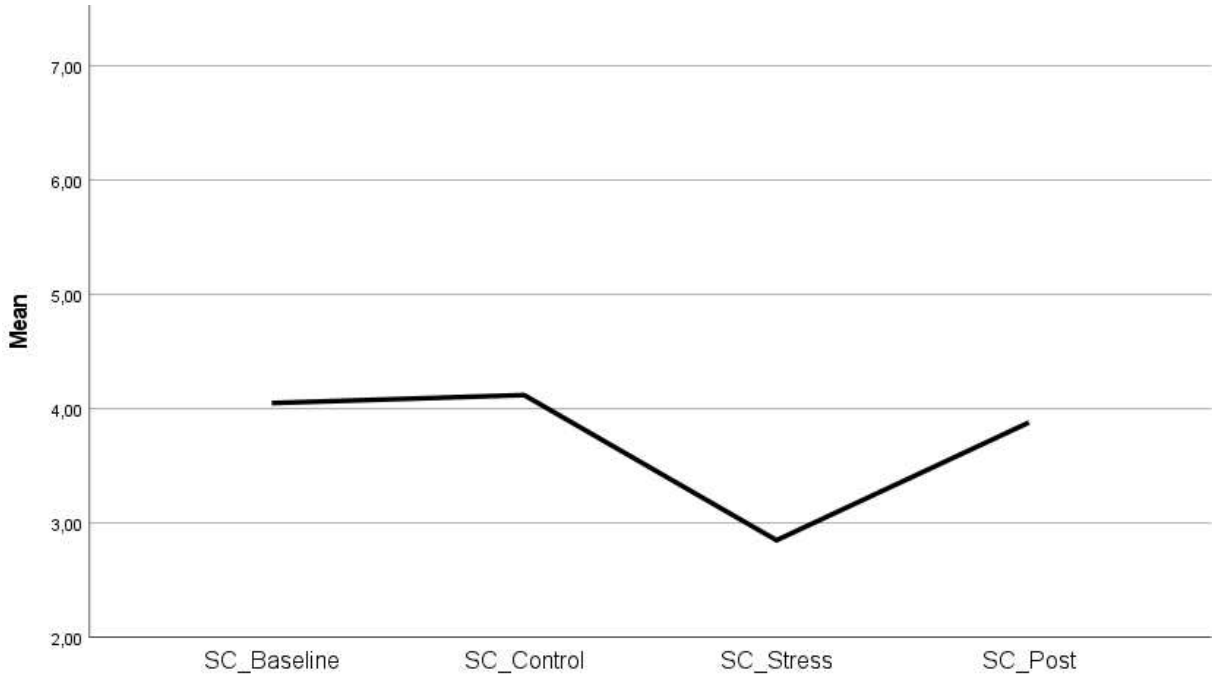
Note. Model Significance: $R^2 = .23$, $F(3, 48) = 4.90$, $p = .005$

Average Self-confidence over the timespan of the study

Based on the average self-confidence, Figure 3 shows that within the 15 minutes after the stress exposure (post) ($M = 3.85$, $SD = 1.58$) the feeling of self-confidence increases again approximately to the baseline level ($M = 4.05$, $SD = 1.48$).

Figure 3

Average self-confidence over the timespan of the study (N = 53)



Note. SC: Self-confidence

Discussion

This study was performed to investigate if the number of SLEs that were experienced by the participants is associated with NA stress recovery and self-confidence recovery after being exposed to a stressor.

The association between NA stress recovery and SLEs

In contrast to earlier studies, no association between NA stress recovery and SLEs was found. Prior findings indicated that people in early psychosis show a slower decrease in NA after experiencing stressors (Vaessen et al., 2019). Whereby the participants' prolonged stress-related feelings of tension after stress were attributed to a higher frequency of prior stressful events. Contrary to the current research, Veassen et al. (2019) worked with a sample that was diagnosed with a psychotic disorder. The current study did not solely include individuals diagnosed with a psychotic disorder but included all recruited individuals without medical conditions like cardiovascular diseases or the use of chronic/ongoing medication. Therefore, one could conclude that a slower NA stress recovery is attributed to the fact of being diagnosed with a psychotic disorder, which would explain why this effect was not found in healthy individuals. Another difference between these studies is the type of stressor that was used. Vaessen et al. (2019) researched daily life stressors, unlike the current study which induced stress in a laboratory setting, which makes it difficult to compare both findings.

Against the expectation that the number of SLEs show a negative impact, adjusting to SLEs may be far less distressing (Wortman & Silver, 1989) and can even cause positive emotions, changes in self-perception, social relationships, and life perspective (Dhooper, 1983; Folkman, 1997). Therefore, affective responses to the stress task could have stayed the same (like individuals with no or fewer SLEs) and be as adaptive as the participants with a lower number of SLEs. Maintaining the ability to adapt to stress and be resilient might have developed through exposure to an optimal amount of SLEs. Through graduated practice, individuals that experienced an optimal amount of stress in small doses can cope more effectively with more stress (Jaremko & Meichenbaum, 2013). Individuals then also gain experience in handling stressful situations which aid with cognitive processes that are important to recover and cope with future stressors (Staal & Bolton, 2008). As a consequence, the gained cognitive abilities

do not help to recover better, but the ability to recover probably does not get worse and stays similar to the individuals with fewer SLEs.

The influence of SLEs on self-confidence recovery

In line with the second hypothesis, the regression analysis showed that a higher number of SLEs leaves the individual with a slower self-confidence recovery after being exposed to new stressors. This finding stresses the research of Hou et al. (2016) who showed that the experience of SLEs impairs subjective well-being through a decrease in self-confidence. A possible explanation might be, that people who experienced more SLEs might feel confirmed in prior experiences of low self-confidence in new stressful situations and therefore need more time to increase self-confidence again. Respectively, individuals with fewer SLEs might not have many difficulties increasing or regaining the belief in one's own abilities after a stress task.

The finding that the number of SLEs influence self-confidence recovery adds to the existing literature that people who experienced a high number of SLEs do not only experience a decrease in self-confidence after being exposed to stressors but that they also remain longer in a state of low self-confidence compared to individuals with less or no SLEs. This finding highlights the importance of supporting people who experienced multiple SLEs. Working on and developing abilities and skills to increase self-confidence faster after being exposed to future stressors could be central to future interventions. Further, as Hou et al. (2016) demonstrated that low self-confidence even impairs general well-being, the importance of future prevention and intervention programmes for affected people (experience of multiple SLEs) gets apparent.

Limitations and future research

First, one of the strengths the study displayed is that it investigated the consequences the number of experienced SLEs has on factors that are important for the process of recovering from future stressors within a healthy population. Therefore, the current study could identify

self-confidence as a factor of vulnerability within a healthy population which gives reason for new preventive implications not only on vulnerable populations (with affective or psychotic disorders). Nevertheless, some limitations need to be discussed. This study is based on a relatively small sample size of 53 healthy individuals. Other studies that investigated the effects of stress tasks recruited around 80 to 100 participants (Phillips, 2011; Grol & De Raedt, 2021). Even if the time and costs involved in such laboratory studies need to be considered when looking at the sample size, it still increases the probability of a type-II error (De Calheiros Velozo et al., 2021).

Further, Hughes et al. (1988) demonstrated that age is an important predictor of the distribution of SLEs among the population. The current sample was on average 24 years old. Looking back to the LEDS questionnaire which investigated the number of experienced SLEs in the last 24 months, it becomes apparent that some SLEs like marriage, divorce, the death of a child, child leave, and childbirth are life events that on average happen later in life. Therefore, some participants indicated never having experienced an SLE. The highest number of SLE was 16 out of 61. Therefore, it is difficult to generalize the current finding as the sample's age and experience of SLEs might not be representative of the population.

Another limitation of this study might be that only short-term stress was induced with a stress task that investigated affective recovery without the dynamics that normally occur in real life. Investigating stress responses in a laboratory setting only represents responses in an artificial environment. As a consequence, no conclusion could be drawn about daily stressors. In addition, recall errors, biases due to the use of retrospective self-reports, and the interaction effect of researcher and participants need to be taken into account when looking at the current results (Weltz et al., 2016). Despite the effect that SLEs showed to have on the recovery of self-confidence, self-confidence was only measured with the two items ‘At the moment I feel in control / confident’. In future research, more items could be included to be able to measure self-

confidence in a more detailed way. As self-confidence is the belief in one's own abilities like carrying out a specific action (Chemers et al., 2000), the items could be more specific. For example, in the study of Akbari and Sahibzada (2020), self-confidence in students was measured with items about how confident they feel about performing well in exams or feel confident about being prepared for the upcoming classes. These specifications could be of interest for follow-up research or prevention/intervention programmes.

Further, future research should be conducted to gain more insight into the adaptation processes that might take place as a result of exposure to multiple SLEs. Gaining experience in handling stressful situations could be the basis to develop and practice coping skills that may help to have a faster NA recovery/self-confidence recovery. Knowledge about these adaptative recovery skills could also add knowledge to existing interventions in clinical practice. For example, interventions for individuals that show an increased sensitization to stressors or have maladaptive coping skills. To tackle the limitation of the sample's age, future research could investigate if an older sample, which might have experienced a higher number of SLEs (due to the later occurrence of SLEs like the death of spouse, divorce, etc.) shows similar patterns of recovery in NA and self-confidence. This would extend the identification of possible at-risk groups for negative psychological consequences that the experience of multiple SLEs bear.

Conclusion

The aim of this study was to gain insight into the effects SLEs have on affective recovery after being exposed to new stressors. The current study adds that the more SLEs an individual experiences, the longer it takes to increase self-confidence after being exposed to new stressors. This finding highlights the risks SLEs bear for the experience of future stress exposures and stresses the importance of preventive and intervening measures. However, it was not confirmed that the number of SLEs is related to the time needed to decrease the NA after being exposed to a stressor. As a result, the repeated and optimal amount of exposure to SLEs could also have

an adaptative effect which increases expertise and skills to cope with future stressors. Nonetheless, these inferences remain to be confirmed by future research. Concludingly, the current research stresses the negative consequences the experience of SLEs has on self-confidence and the overall well-being of a healthy population under the age of 36.

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