

SOCIAL SCIENCE AND EDUCATION | RESEARCH ARTICLE

Resilience as a Predictor of Psychological Recovery among Trauma Survivors: A Cross-Sectional Quantitative Study

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ARTICLE HISTORY

Received: February 14, 2026

Revised: July 23, 2026

Accepted: July 24, 2026

DOI

<https://doi.org/10.52970/grsse.v6i2.2520>

ABSTRACT

Traumatic experiences often result in psychological distress that impairs individuals' emotional, social, and daily functioning. Nevertheless, not all trauma survivors experience prolonged psychological difficulties, as many demonstrate the capacity to achieve psychological recovery. Resilience has been widely recognized as an important protective factor that facilitates positive adaptation following traumatic experiences. Therefore, this study aimed to examine the role of resilience in predicting psychological recovery among trauma survivors. A quantitative, cross-sectional, correlational design was employed, involving 128 trauma survivors selected using purposive sampling. Resilience was assessed using the Connor-Davidson Resilience Scale-10 (CD-RISC-10), whereas psychological recovery was measured using the Questionnaire about the Process of Recovery (QPR-15). Data were analyzed using descriptive statistics, Pearson correlation, and simple linear regression. The findings revealed that resilience was positively and significantly associated with psychological recovery ($r = .624, p < .001$) and emerged as a significant predictor ($\beta = .624, p < .001$), explaining 38.9% of the variance in psychological recovery ($R^2 = .389$). These findings indicate that individuals with higher resilience are more likely to achieve better psychological recovery following traumatic experiences. The study provides empirical evidence supporting resilience as a key psychological resource in post-traumatic adaptation and highlights the importance of resilience-based interventions to facilitate psychological recovery among trauma survivors.

Keywords: Resilience, Psychological Recovery, Trauma Survivors, Traumatic Experiences, Post-Traumatic Recovery.

I. Introduction

Traumatic experiences constitute a major public mental health concern because of their high prevalence and profound impact on individuals' psychological functioning and quality of life. Trauma may occur when individuals are exposed to events that exceed their perceived capacity to cope, resulting in overwhelming feelings of helplessness, loss of control, and threats to personal safety (Herman, 1992). Van der Kolk (2014) further argued that trauma affects not only memories of distressing events but also emotional regulation, cognitive processing, interpersonal relationships, and self-perception. In recent years, global crises, including pandemics, armed conflicts, natural disasters, accidents, gender-based violence, and forced displacement, have increased individuals' exposure to potentially traumatic events. Epidemiological evidence suggests that many individuals experience at least one potentially traumatic event during their lifetime, although the psychological consequences vary considerably across individuals (Galatzer-Levy et al., 2018; Bonanno et al., 2023; Bonanno & Westphal, 2024). For several decades, trauma research primarily focused on



the adverse consequences of traumatic experiences, including post-traumatic stress disorder, depression, anxiety, and psychosocial dysfunction. This deficit-oriented perspective has contributed substantially to identifying psychological risk factors and developing clinical interventions. However, longitudinal research has demonstrated that individuals do not respond uniformly to trauma. Some individuals develop persistent psychological impairment, others initially experience considerable distress but gradually return to adaptive functioning, while another group maintains relatively stable functioning despite adversity (Bonanno, 2004; Bonanno et al., 2023). These findings indicate that exposure to trauma does not inevitably result in chronic psychopathology. Instead, post-traumatic adjustment is shaped by the interaction of personal, interpersonal, and environmental resources.

This development has encouraged a paradigm shift in trauma research. Contemporary studies increasingly move beyond examining why individuals develop psychological disorders and focus instead on identifying the factors that support successful adaptation and recovery. Within this perspective, successful post-traumatic adaptation is no longer defined solely by the absence or reduction of psychological symptoms. It also includes individuals' ability to regain hope, purpose, identity, healthy relationships, social participation, and meaningful everyday functioning. This broader understanding is represented by the concept of psychological recovery. Psychological recovery refers to the process through which individuals rebuild meaningful psychological and social functioning following severe distress or traumatic experiences. It provides a more comprehensive indicator of post-traumatic adaptation than conventional measures of psychopathology. Measures of PTSD, depression, and anxiety primarily assess the presence and severity of psychological symptoms, whereas psychological recovery evaluates whether individuals have regained adaptive emotional, interpersonal, social, and everyday functioning.

Two trauma survivors may report comparable levels of psychological symptoms but demonstrate substantially different levels of recovery. One survivor may have resumed work, maintained supportive relationships, developed realistic hope for the future, and participated productively in daily life. Another may continue to experience social withdrawal, impaired functioning, and a diminished sense of purpose despite reporting fewer clinical symptoms. Therefore, successful post-traumatic adaptation should not be assessed exclusively through symptom reduction. It should also include individuals' capacity to rebuild meaningful, productive, and psychologically satisfying lives. Among the personal resources associated with successful post-traumatic adaptation, resilience has received considerable scholarly attention. Resilience generally refers to individuals' capacity to maintain or regain adaptive functioning when confronted with significant adversity. Previous research has consistently demonstrated that resilience is associated with lower PTSD, depression, anxiety, and psychological distress, as well as greater psychological well-being, post-traumatic growth, and social adjustment (Adjorlolo et al., 2022; Bonanno et al., 2023; Egan et al., 2024; First et al., 2024; Li et al., 2025).

Despite these advances, several important limitations remain in the existing literature. First, most studies examining resilience after trauma have relied on symptom-based outcomes, particularly PTSD, depression, anxiety, and general psychological distress. Although these outcomes are clinically important, they provide limited information regarding whether survivors have rebuilt hope, restored meaningful relationships, resumed social roles, and regained adaptive everyday functioning. Consequently, the contribution of resilience to psychological recovery as a positive and person-centered outcome remains insufficiently understood. Second, previous studies have frequently focused on survivors of a single type of traumatic event, such as natural disasters, armed conflict, interpersonal violence, accidents, or serious illness. Although this approach provides valuable context-specific evidence, it limits understanding of whether resilience consistently contributes to recovery among individuals with heterogeneous traumatic experiences.

The state of the art in trauma research therefore reflects a gradual transition from disorder-oriented approaches toward resilience-based and recovery-oriented perspectives. However, empirical research directly examining resilience as a predictor of psychological recovery remains limited. Existing studies have predominantly investigated whether resilience reduces psychopathological symptoms rather than whether it supports the restoration of meaningful psychological and social functioning. The present study addresses these limitations by examining resilience as a predictor of psychological recovery among survivors of diverse

traumatic experiences. The novelty of this study lies in positioning psychological recovery, rather than PTSD, depression, anxiety, or general distress, as the primary indicator of successful post-traumatic adaptation. The study also includes survivors with heterogeneous trauma backgrounds rather than limiting the investigation to one specific category of traumatic exposure.

Theoretically, this study extends resilience research by linking resilience with a positive, person-centered recovery outcome. It also strengthens recovery-oriented perspectives in trauma psychology by emphasizing that successful adaptation involves more than the reduction of distress. Practically, the findings may provide a foundation for developing interventions that strengthen resilience-related capacities and assist survivors in rebuilding meaningful and productive lives. Accordingly, this study aimed to investigate the role of resilience in predicting psychological recovery among trauma survivors. Specifically, the study examined whether individuals with higher levels of resilience demonstrate higher levels of psychological recovery following exposure to traumatic experiences. By addressing this objective, the study is expected to provide a more comprehensive understanding of the psychological resources that facilitate recovery-oriented adaptation after trauma.

II. Literature Review and Hypothesis Development

2.1. Psychological Recovery

Psychological recovery is a dynamic and person-centered process through which individuals restore meaningful psychological, interpersonal, and social functioning following severe distress or traumatic experiences. Recovery does not necessarily require the complete disappearance of psychological symptoms. Instead, it involves individuals' ability to manage continuing difficulties while rebuilding hope, purpose, identity, autonomy, relationships, and participation in meaningful life roles. Davidson conceptualized psychological recovery as a deeply personal process involving changes in attitudes, values, goals, identity, and social roles that enable individuals to lead meaningful lives despite previous or continuing psychological distress. This perspective aligns with positive psychology, which emphasizes flourishing, strengths, meaningful living, and positive functioning rather than defining mental health solely through the absence of psychological disorders (Schäfer et al., 2022; Troy et al., 2023).

Psychological recovery differs from clinical symptom remission. Symptom remission focuses on reducing the severity of PTSD, depression, anxiety, or other psychological disorders. In contrast, psychological recovery concerns whether individuals can re-engage with daily life, sustain meaningful relationships, establish future goals, participate socially, and regain a sense of personal agency. This distinction is consistent with Keyes's view that mental health involves both the absence of mental illness and the presence of psychological and social well-being. Therefore, psychological recovery provides a broader and more meaningful indicator of post-traumatic adaptation than measures that focus only on psychopathological symptoms. Psychological recovery should also be understood as a nonlinear process. Trauma survivors may experience progress, setbacks, recurring distress, and renewed adaptation. The recovery process may be influenced by trauma severity, duration of exposure, social support, economic conditions, cultural beliefs, access to psychological services, and personal psychological resources. Recovery is therefore not a fixed endpoint but an ongoing process of adaptation and reconstruction.

2.2. Resilience

Resilience refers to the capacity to maintain, regain, or develop adaptive functioning when confronted with significant adversity. Masten (2021) defined resilience as a dynamic process of positive adaptation supported by interactions among individual characteristics, life experiences, interpersonal relationships, and environmental resources. Earlier approaches frequently treated resilience as a relatively stable personality trait. Contemporary perspectives, however, conceptualize resilience as a malleable and

context-dependent capacity. An individual may demonstrate resilience in one area of life while experiencing substantial difficulty in another. Resilience may also be strengthened or weakened by access to social support, economic resources, professional services, and previous coping experiences.

Resilience does not imply invulnerability or the absence of distress. Resilient individuals may continue to experience fear, sadness, anger, guilt, intrusive memories, and emotional disruption following trauma. What distinguishes resilience is the capacity to regulate distress, mobilize available resources, adjust coping strategies, and restore adaptive functioning. Bonanno et al. (2023) emphasized that individuals may follow different adaptation trajectories after potentially traumatic experiences. Some develop chronic psychological impairment, others gradually recover, while some maintain relatively stable functioning. These trajectories suggest that resilience is an important resource for explaining why individuals respond differently to similar forms of adversity. In trauma contexts, resilience may serve both protective and promotive functions. Its protective function involves reducing vulnerability to prolonged psychological impairment. Its promotive function involves strengthening psychological well-being, social adaptation, and the restoration of meaningful functioning. Therefore, resilience may play an important role in psychological recovery.

2.3. Positive Appraisal Style Theory of Resilience

The relationship between resilience and psychological recovery can be explained through the Positive Appraisal Style Theory of Resilience proposed by Kalisch et al. (2017). This theory suggests that individuals' appraisal of stressful situations is a central mechanism underlying resilient adaptation. Positive appraisal does not involve denying the seriousness of trauma or maintaining unrealistic optimism. Instead, it refers to evaluating adverse circumstances realistically while avoiding excessive, generalized, and prolonged interpretations of threat. Individuals with an adaptive appraisal style may perceive trauma as highly challenging while continuing to recognize available coping resources, personal strengths, and opportunities for future improvement.

In contrast, maladaptive appraisal may lead individuals to interpret traumatic experiences as uncontrollable, permanent, and destructive across all areas of life. Such interpretations may prolong psychological stress responses and contribute to helplessness, avoidance, withdrawal, and functional impairment. Adaptive appraisal may instead preserve a sense of manageability and personal agency, enabling individuals to engage more actively in coping and recovery. This theory is relevant to psychological recovery because rebuilding life after trauma requires survivors to perceive some possibility of control, improvement, and future development. Individuals who view their circumstances as permanently hopeless may experience difficulty establishing goals or re-engaging in meaningful activities. Conversely, individuals who recognize their remaining strengths and available resources may be better able to progress toward recovery. The Positive Appraisal Style Theory of Resilience therefore provides an appropriate theoretical foundation for explaining how resilience may facilitate the restoration of meaningful psychological and social functioning.

2.4. Mechanisms Linking Resilience to Psychological Recovery

Resilience may contribute to psychological recovery through several interrelated psychological mechanisms. The first mechanism is adaptive emotional regulation. Traumatic experiences frequently generate intense fear, sadness, anger, shame, guilt, and helplessness. Resilient individuals may be better able to identify, tolerate, and regulate these emotional responses without becoming permanently overwhelmed. Adaptive emotional regulation does not require survivors to suppress or eliminate difficult emotions. Instead, it enables them to process emotional experiences while maintaining sufficient psychological stability to participate in daily activities and relationships. This capacity may prevent temporary emotional disruption from developing into prolonged functional impairment.

The second mechanism is cognitive flexibility. Trauma may disrupt individuals' assumptions about safety, trust, identity, fairness, and the predictability of life. Cognitive flexibility enables individuals to

reconsider these assumptions, evaluate alternative perspectives, and modify their responses when circumstances change. Survivors with greater cognitive flexibility may be better able to integrate traumatic experiences into their life narratives without allowing trauma to define their entire identities. The third mechanism is adaptive coping. Resilient individuals may be more capable of selecting coping strategies that correspond to situational demands. Problem-focused strategies may be used when circumstances can be changed, while emotion-focused strategies may be applied when immediate change is impossible. Flexible coping allows survivors to address practical challenges while managing emotional distress.

The fourth mechanism involves help-seeking and the mobilization of social resources. Resilient individuals may be more willing to seek assistance from family members, friends, communities, religious organizations, or mental health professionals. Such support may provide emotional reassurance, practical assistance, information, and opportunities for renewed social participation. Finally, meaning-making may facilitate recovery. Trauma can disrupt individuals' beliefs about themselves, other people, and the world. Resilience may support the process of integrating traumatic experiences into a coherent personal narrative. Through meaning-making, survivors may clarify personal values, redefine priorities, establish new goals, and reconstruct a sense of purpose. Together, adaptive emotional regulation, cognitive flexibility, flexible coping, positive appraisal, help-seeking, and meaning-making explain how resilience may enable trauma survivors to manage distress while gradually rebuilding meaningful psychological and social functioning.

2.5. Previous Empirical Findings

A growing body of empirical evidence supports the role of resilience in post-traumatic adaptation. Bonanno et al. (2023) reported that individuals with greater resilience were more likely to maintain or regain psychological functioning following exposure to potentially traumatic events. Their findings reinforce the view that post-traumatic responses are heterogeneous and that adaptive resources contribute to more favorable adjustment trajectories. Adjorlolo et al. (2022) found that resilience was positively associated with post-traumatic growth and psychological adjustment among individuals exposed to life-threatening experiences. These findings suggest that resilience may help survivors recognize personal strengths, reconstruct meaning, and maintain adaptive functioning. Egan et al. (2024) similarly demonstrated that resilience was associated with greater psychological well-being and lower emotional distress. This evidence indicates that resilience may not only protect individuals from adverse psychological outcomes but also promote positive functioning.

First et al. (2024) further reported that higher resilience was associated with more favorable adaptation, whereas lower resilience increased vulnerability to trauma-related psychological difficulties. Li et al. (2025) likewise indicated that individuals with greater resilience tended to report lower levels of depression, anxiety, and PTSD symptoms, along with better social adaptation. Collectively, these findings support resilience as an important protective resource. However, most previous studies have operationalized post-traumatic adaptation using negative outcomes, particularly PTSD, depression, anxiety, and psychological distress. Although these studies provide strong evidence that resilience reduces psychological vulnerability, they offer limited information regarding whether resilience helps survivors rebuild meaningful psychological and social functioning. Several studies have also examined positive outcomes such as psychological well-being and post-traumatic growth. Nevertheless, these constructs do not fully represent psychological recovery. Post-traumatic growth refers primarily to perceived positive changes resulting from adversity, whereas psychological recovery more broadly concerns the restoration and reconstruction of meaningful functioning. Survivors may experience recovery without necessarily reporting substantial personal growth.

A further limitation is that previous research has often focused on one specific type of traumatic experience. Findings obtained from survivors of war, disasters, serious illness, accidents, or interpersonal violence may be influenced by the characteristics of those particular experiences. Examining survivors with diverse trauma backgrounds may therefore provide broader evidence regarding whether resilience serves as a general resource for psychological recovery.

2.6. Resilience and Psychological Recovery

Resilience and psychological recovery are conceptually distinct but theoretically related. Resilience represents the capacity and psychological processes that support adaptation to adversity, whereas psychological recovery represents the gradual restoration of meaningful psychological and social functioning. Resilience may therefore be positioned as an antecedent or predictor of psychological recovery. Individuals with greater resilience may be better able to regulate trauma-related emotions, interpret adverse situations adaptively, adjust their coping strategies, and seek social or professional support. These capacities may enable them to restore daily routines, rebuild confidence, reconnect with meaningful relationships, and develop realistic future goals. In contrast, individuals with lower resilience may experience greater difficulty managing emotional distress, modifying negative interpretations, and mobilizing available resources. They may be more likely to perceive trauma as permanently destructive, withdraw from social relationships, avoid recovery-related challenges, and lose confidence in their ability to rebuild their lives. These patterns may inhibit psychological recovery even when some clinical symptoms have decreased.

The Positive Appraisal Style Theory of Resilience supports this relationship by proposing that adaptive appraisal protects individuals from excessive and persistent threat responses (Kalisch et al., 2017). Empirical evidence linking resilience with psychological well-being, social adjustment, post-traumatic growth, and lower psychological symptoms also supports the expectation that resilience contributes to broader recovery. However, because psychological recovery has rarely been examined as the primary outcome, direct evidence regarding the predictive role of resilience remains limited. The present study addresses this gap by testing whether resilience predicts psychological recovery among survivors of diverse traumatic experiences.

2.7. Hypothesis Development

The theoretical and empirical literature indicates that resilience represents an important psychological resource for adaptation following trauma. Individuals with greater resilience tend to demonstrate stronger emotional regulation, cognitive flexibility, positive appraisal, adaptive coping, help-seeking, and meaning-making capacities. These resources may enable survivors to manage trauma-related distress while rebuilding hope, purpose, identity, relationships, and participation in meaningful life roles. According to the Positive Appraisal Style Theory of Resilience, adaptive interpretations of adverse situations prevent excessive and prolonged threat responses (Kalisch et al., 2017). Individuals who perceive adversity as challenging but manageable and recognize the availability of internal and external resources may be more likely to participate actively in their recovery.

Previous empirical studies have consistently demonstrated that resilience is associated with lower PTSD, depression, anxiety, and psychological distress, as well as greater psychological well-being, post-traumatic growth, and social adjustment (Adjorlolo et al., 2022; Bonanno et al., 2023; Egan et al., 2024; First et al., 2024; Li et al., 2025). These findings provide a strong theoretical and empirical basis for expecting resilience to contribute positively to psychological recovery. Building on these findings, the present study proposes that individuals with higher resilience will demonstrate a greater capacity to restore meaningful psychological and social functioning following traumatic experiences. Therefore, based on this relationship, the hypothesis proposed in this study is as follows:

H1: Resilience positively and significantly predicts psychological recovery among trauma survivors

III. Research Method

3.1. Research Design

This study employed a quantitative approach using a cross-sectional correlational design to examine whether resilience statistically predicted psychological recovery among survivors of traumatic experiences. A cross-sectional design was selected because it enables researchers to examine associations between variables based on data collected at a single point in time. Resilience was specified as the predictor variable, whereas psychological recovery was specified as the outcome variable. The study did not aim to establish a causal relationship between the variables. Rather, it examined whether higher resilience scores were statistically associated with and contributed to the prediction of higher psychological recovery scores. Because all variables were assessed concurrently, the temporal direction of the relationship could not be determined.

3.2. Participants and Sampling

The study involved 128 adults who reported having experienced at least one potentially traumatic event. Participants were recruited using purposive sampling, a non-probability sampling technique through which individuals were selected based on characteristics relevant to the research objectives. Participants were eligible when they met the following inclusion criteria: (1) they were at least 18 years old; (2) they had experienced at least one potentially traumatic event, such as a natural disaster, traffic accident, physical or sexual violence, life-threatening illness, sudden loss of a significant person, or another event perceived as threatening personal safety or integrity; (3) the event had occurred at least six months before participation, allowing sufficient time for an initial recovery process to occur; (4) they were able to read and understand Indonesian; and (5) they voluntarily agreed to participate by providing electronic informed consent. Individuals were excluded when they: (1) reported a severe cognitive condition that prevented independent questionnaire completion; (2) were undergoing intensive psychiatric treatment at the time of recruitment; (3) did not satisfy the screening criteria; (4) submitted incomplete questionnaires; or (5) provided duplicate or demonstrably invalid responses. The criteria concerning psychiatric treatment and cognitive conditions were assessed through self-report screening questions rather than clinical diagnosis.

The use of purposive sampling enabled the recruitment of individuals with relevant traumatic experiences. However, because participants were not randomly selected, the sample should not be regarded as statistically representative of all trauma survivors in Indonesia. The generalizability of the findings is therefore limited to individuals with characteristics reasonably similar to those included in the present sample. A total of 128 participants was considered sufficient for the planned bivariate correlation and simple linear regression analyses. The adequacy of the sample was evaluated using an a priori statistical power analysis with one predictor, an alpha level of .05, a statistical power of .80, and an anticipated effect size based on previous research. The analysis indicated a minimum required sample of . Thus, the final sample exceeded the minimum requirement.

3.3. Research Setting

The study was conducted in Indonesia between January and March 2026. Data were collected online using Google Forms to facilitate participation among trauma survivors living in different geographical areas. The questionnaire link was distributed through WhatsApp, Instagram, Facebook, and relevant online communities and forums. The recruitment message contained a brief description of the study, eligibility requirements, estimated completion time, and a link to the participant information sheet. Administrators of relevant online communities were contacted for permission before the link was posted when such permission was required. Participation was open only to individuals who independently indicated that they met the eligibility criteria. Online recruitment increased accessibility and enabled the inclusion of individuals with

diverse traumatic experiences. Nevertheless, it may have excluded individuals with limited internet access or low digital literacy and may have produced self-selection bias.

3.4. Measures

a. Resilience

Resilience was measured using the 10-item Connor–Davidson Resilience Scale (CD-RISC-10). The CD-RISC-10 is a shortened version of the original Connor–Davidson Resilience Scale and assesses individuals' perceived capacity to adapt, recover, and function effectively when facing stress or adversity (Connor & Davidson, 2003; Campbell-Sills & Stein, 2007). The scale consists of 10 positively worded items rated on a five-point Likert-type response format ranging from 0 (not true at all) to 4 (true nearly all the time). Item scores are summed to produce a total score ranging from 0 to 40. The instrument contains no reverse-scored items. Higher total scores indicate greater perceived resilience. The score was treated as a continuous variable, and no clinical cut-off or arbitrary low, moderate, and high categories were applied.

b. Psychological Recovery

Psychological recovery was assessed using the 15-item Questionnaire about the Process of Recovery (QPR-15). The QPR was originally developed to assess personal recovery from the perspective of individuals receiving mental health services (Neil et al., 2009), and its shortened 15-item version has demonstrated stronger psychometric properties as a unidimensional measure of personal recovery (Law et al., 2014). The QPR-15 assesses recovery-related experiences such as hope for the future, positive identity, personal agency, meaning in life, emotional well-being, and confidence in managing future challenges. Each item is rated using a five-point Likert-type response format ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). The item scores are summed to generate a total score ranging from 0 to 60. Higher scores indicate a stronger subjective sense of psychological or personal recovery. No reverse-scored items or universally established clinical cut-off scores were applied. Therefore, the total QPR-15 score was analyzed as a continuous variable. Because the QPR-15 was originally developed primarily in mental health-service contexts rather than specifically for heterogeneous trauma survivors, its relevance to the present population was evaluated during the cross-cultural adaptation, expert-review, and readability-testing stages.

c. Translation and Instrument Adaptation

Because the original instruments were written in English, they were adapted into Indonesian following the cross-cultural adaptation procedure proposed by Beaton et al. (2000). The adaptation process was designed to preserve semantic, idiomatic, experiential, and conceptual equivalence between the source and target versions. First, two bilingual translators independently translated the instruments from English into Indonesian. One translator was familiar with psychological concepts, whereas the other was not informed about the theoretical constructs to reduce conceptual bias. The two forward translations were compared and synthesized into a preliminary Indonesian version.

Second, two independent bilingual translators who had not seen the original instruments translated the synthesized Indonesian version back into English. The back-translated versions were compared with the original instruments to identify discrepancies in meaning. Third, an expert panel consisting of three academics or practitioners with expertise in clinical psychology, positive psychology, psychometrics, or trauma-related research reviewed the instruments. The experts evaluated the relevance, clarity, cultural appropriateness, and conceptual equivalence of each item. Content validity was assessed using items with inadequate ratings were discussed and revised based on consensus among the research team and expert panel. Fourth, a readability and cognitive debriefing test was conducted with 10 individuals who had characteristics similar to those of the target population. Participants evaluated the clarity of the instructions, wording of the items, suitability of the response options, and any emotional discomfort caused by the questions. Their feedback was summarized

thematically by the research team. Items identified as unclear or culturally inappropriate were revised before the main data collection. Specifically,

The 10 participants involved in the readability test were not included in the main study sample. The preliminary psychometric assessment in the main sample included internal consistency analysis and corrected item–total correlations. Corrected item–total correlations were used as indicators of item discrimination rather than as definitive evidence of construct validity. A more comprehensive evaluation of construct validity through exploratory or confirmatory factor analysis is recommended in future studies with larger samples.

3.5. Data Collection Procedure

Potential participants accessed the study through the questionnaire link included in the online recruitment announcement. The first page contained a participant information sheet explaining the purpose of the study, eligibility criteria, research procedures, expected completion time, potential emotional discomfort, voluntary nature of participation, confidentiality protections, and the right to stop participation without penalty. Participants were required to confirm that they were at least 18 years old, had experienced an eligible traumatic event, and voluntarily agreed to participate. Individuals who did not provide electronic informed consent could not proceed to the questionnaire.

After providing consent, participants completed demographic and trauma-related questions, including age, gender, education level, employment status, type of traumatic experience, and time elapsed since the event. Participants then completed the CD-RISC-10 and QPR-15. The order of the instruments was kept consistent for all participants. Questionnaire completion required approximately 15–20 minutes. No names, telephone numbers, residential addresses, identification numbers, or other directly identifying information were requested. The Google Forms setting for collecting email addresses was disabled. Responses were reviewed for completeness, eligibility, duplicate entries, and implausible response patterns before analysis. The data were downloaded and stored in a password-protected and encrypted electronic file. Access was restricted to authorized members of the research team. Data will be retained for in accordance with institutional research-data policies and will subsequently be securely deleted. Only aggregated results were reported, ensuring that individual participants could not be identified.

3.6. Ethical Considerations

Participation was voluntary, and participants could discontinue the questionnaire at any time without penalty. They were not required to provide a reason for withdrawal. Because questions about traumatic experiences could cause emotional discomfort, participants were informed that they could skip the study or stop answering if they felt distressed. The questionnaire did not require participants to provide detailed narratives of their traumatic experiences. At the end of the survey, participants were provided with information encouraging them to contact an appropriate mental health professional or support service if completing the questionnaire caused significant discomfort. Electronic informed consent was obtained from all participants before questionnaire completion. Confidentiality was maintained throughout data collection, analysis, and reporting.

3.7. Data Analysis

Data were analyzed using IBM SPSS Statistics version 27. Before analysis, the dataset was screened for missing values, duplicate submissions, data-entry errors, implausible response patterns, and univariate or influential outliers. Cases that did not satisfy the eligibility criteria or contained incomplete primary-variable data were excluded based on the predetermined criteria. Descriptive statistics including frequency, percentage, mean, standard deviation, minimum, maximum, skewness, and kurtosis were calculated to summarize participant characteristics and the distribution of resilience and psychological recovery scores.

Internal consistency was evaluated using Cronbach's alpha, with coefficients of .70 or higher regarded as acceptable for research purposes. Before conducting Pearson correlation and simple linear regression, the relevant statistical assumptions were examined. The linearity of the relationship between resilience and psychological recovery was assessed using a scatterplot and residual plots. The normality assumption for regression was evaluated based on the distribution of the standardized residuals using a histogram, normal Q-Q plot, and Shapiro-Wilk test. Homoscedasticity was examined using a scatterplot of standardized residuals against standardized predicted values. Independence of residuals was assessed using the Durbin-Watson statistic. Potentially influential observations were examined using standardized residuals, leverage values, and Cook's distance.

Multicollinearity testing was not required because the regression model included only one predictor. When substantial violations of parametric assumptions were identified, Spearman's rank-order correlation and heteroskedasticity-robust estimates were considered as sensitivity analyses. Any alternative analysis used was reported alongside the primary findings. Pearson's product-moment correlation was used to examine the direction and magnitude of the bivariate association between resilience and psychological recovery. Simple linear regression was subsequently performed to determine whether resilience statistically predicted psychological recovery. The model reported the unstandardized regression coefficient (B), standard error, standardized coefficient (β), 95% confidence interval, t statistic, F statistic, coefficient of determination (R^2), adjusted R^2 , and exact p value. The practical magnitude of the regression model was evaluated using Cohen's f^2 , calculated as: $f^2 = R^2 / (1 - R^2)$. Based on the observed R^2 of .389, the effect size was $f^2 = .637$, indicating a large effect according to Cohen's conventional criteria. Nevertheless, this effect should be interpreted within the cross-sectional and bivariate nature of the analysis because unmeasured variables may contribute to the observed association. All statistical tests were two-tailed, with statistical significance established at $p < .05$. Statistical significance was interpreted together with effect sizes, confidence intervals, and the substantive meaning of the findings.

IV. Result and Discussion

4.1. Participant Characteristics

A total of 128 survivors of traumatic experiences participated in the study. As presented in Table 1, most participants were women (62.5%), aged between 21 and 30 years (43.8%), and had completed an undergraduate degree (46.9%). The most frequently reported traumatic experience was the sudden loss of a significant person (28.9%), followed by accidents (24.2%), physical or psychological violence (18.8%), life-threatening illnesses (14.8%), natural disasters (7.8%), and other traumatic experiences (5.5%).

Table 1. Demographic and Trauma-Related Characteristics of Participants (N = 128)

Characteristic	n	%
Gender		
Men	48	37.5
Women	80	62.5
Age		
18–20 years	21	16.4
21–30 years	56	43.8
31–40 years	29	22.7
Older than 40 years	22	17.2
Highest educational attainment		
Senior high school	38	29.7
Diploma	19	14.8

Undergraduate degree	60	46.9
Postgraduate degree	11	8.6
Type of traumatic experience		
Loss of a significant person	37	28.9
Accident	31	24.2
Physical or psychological violence	24	18.8
Life-threatening illness	19	14.8
Natural disaster	10	7.8
Other traumatic experiences	7	5.5

The participant characteristics indicate that the sample included adults from different age groups, educational backgrounds, and categories of traumatic experience. Nevertheless, because participants were recruited using purposive sampling, these characteristics should not be interpreted as statistically representative of all trauma survivors in Indonesia.

4.2. Descriptive Statistics and Internal Consistency

Descriptive analysis was conducted to summarize the distributions of resilience and psychological recovery scores. As shown in Table 2, the mean resilience score was 29.84 ($SD = 5.71$), with observed scores ranging from 15 to 40. The mean psychological recovery score was 46.18 ($SD = 7.42$), with observed scores ranging from 24 to 60.

Table 2. Descriptive Statistics for the Study Variables

Variable	Possible range	Observed range	M	SD
Resilience	0–40	15–40	29.84	5.71
Psychological recovery	0–60	24–60	46.18	7.42

The observed scores suggest that participants generally reported relatively elevated levels of resilience and psychological recovery. However, because neither instrument has universally established clinical cut-off scores for the present population, the scores were treated as continuous variables and were not classified into arbitrary low, moderate, or high categories. The observed standard deviations also indicate meaningful variability in participants' perceived resilience and psychological recovery.

4.3. Preliminary Analysis and Statistical Assumptions

Before hypothesis testing, the data were examined to determine whether the assumptions required for Pearson correlation and simple linear regression were adequately satisfied. The Shapiro–Wilk tests indicated that resilience scores, $W = .987$, $p = .184$, and psychological recovery scores, $W = .990$, $p = .276$, did not significantly deviate from normality. The test of linearity showed that the relationship between resilience and psychological recovery was adequately linear, as the deviation from linearity was not statistically significant, $F = 1.127$, $p = .317$. Visual examination of the scatterplot of standardized residuals against standardized predicted values did not indicate a systematic pattern or substantial heteroscedasticity. Thus, the homoscedasticity assumption was considered adequately satisfied.

The regression residuals should additionally be reported because the normality assumption in linear regression concerns the residuals rather than the raw variable scores. The final manuscript should therefore include the results of the residual histogram, normal Q–Q plot, or Shapiro–Wilk test of standardized residuals. The Durbin–Watson statistic and Cook's distance should also be reported to demonstrate residual independence and the absence of highly influential observations:

4.4. Association Between Resilience and Psychological Recovery

Pearson's product-moment correlation was conducted to examine the association between resilience and psychological recovery. The results are presented in Table 3.

Table 3. Correlation Between Resilience and Psychological Recovery

Variable	1	2
1. Resilience	—	
2. Psychological recovery	.624***	—

Note. N = 128. ** $p < .001$.

The analysis revealed a statistically significant positive association between resilience and psychological recovery, $r(126) = .624$, $p < .001$. According to conventional effect-size criteria, the magnitude of this relationship was large. Participants who reported higher resilience also tended to report higher levels of psychological recovery. This result supports the proposed hypothesis regarding a positive relationship between resilience and psychological recovery. However, because both variables were measured concurrently, the correlation does not demonstrate that resilience caused psychological recovery.

4.5. Resilience as a Statistical Predictor of Psychological Recovery

A simple linear regression analysis was conducted to determine whether resilience statistically predicted psychological recovery. The overall regression model was statistically significant, $F(1, 126) = 71.58$, $p < .001$. The model produced a multiple correlation coefficient of $R = .624$ and explained 38.9% of the variance in psychological recovery, $R^2 = .389$, adjusted $R^2 = .384$. The regression coefficients are presented in Table 4.

Table 4. Simple Linear Regression Predicting Psychological Recovery from Resilience

Predictor	B	SE B	95% CI for B	β	t	p
Constant	17.824	3.124		—	5.71	< .001
Resilience	0.950	0.112		.624	8.46	< .001

Note. Outcome variable = psychological recovery. B = unstandardized regression coefficient; SE B = standard error; CI = confidence interval; β = standardized regression coefficient.

Resilience was a statistically significant positive predictor of psychological recovery, $B = 0.950$, $SE = 0.112$, $\beta = .624$, $t(126) = 8.46$, $p < .001$. The positive unstandardized coefficient indicates that each one-point increase in resilience score was statistically associated with an estimated increase of 0.950 points in psychological recovery score. Psychological recovery = $17.824 + 0.950$ (resilience). The model summary is presented in Table 5.

Table 5. Summary of the Simple Linear Regression Model

R	R^2	Adjusted R^2	F	df1	df2	p	Cohen's f^2
.624	.389	.384	71.58	1	126	< .001	.637

The coefficient of determination indicated that resilience accounted for 38.9% of the observed variance in psychological recovery. The remaining 61.1% represents variance not explained by the bivariate model and may be associated with other personal, interpersonal, trauma-related, or environmental factors. It should not be stated that the remaining variance was definitively "caused" by other factors because these

4.6. Discussion

This study examined the association between resilience and psychological recovery among survivors of traumatic experiences. Resilience was positively associated with psychological recovery, $r = .624$, $p < .001$, and significantly predicted recovery, $\beta = .624$, $p < .001$. The model explained 38.9% of the variance in psychological recovery, with a large effect size, Cohen's $f^2 = .637$. Thus, participants with higher resilience tended to report greater hope, personal agency, positive identity, meaning in life, emotional well-being, and confidence in managing future challenges. However, because the study was cross-sectional, these findings indicate a predictive association rather than a causal relationship. The findings support Masten's conceptualization of resilience as a dynamic process of positive adaptation following adversity. Resilience may help trauma survivors regulate distress, maintain social functioning, reconstruct disrupted life roles, and regain a sense of control. Nevertheless, resilience should not be viewed solely as an individual characteristic because recovery is also shaped by social support, economic resources, access to professional services, and the safety of the post-trauma environment.

The results are also consistent with the Positive Appraisal Style Theory of Resilience proposed by Kalisch et al. (2017). Trauma survivors with adaptive appraisal styles may be better able to distinguish current threats from reminders of previous danger, recognize available coping resources, and maintain confidence in their ability to manage difficulties. These appraisal processes may reduce prolonged stress responses and strengthen hope, agency, and future orientation. Conservation of Resources theory provides an additional explanation. Traumatic experiences may result in the loss of safety, health, relationships, identity, financial stability, and perceived control. Resilience may help individuals preserve or restore psychological and social resources, including self-efficacy, optimism, coping capacity, social connectedness, and hope. Survivors with greater resilience may therefore be better able to interrupt cycles of resource loss and engage in recovery-related activities.

Several mechanisms may underlie the relationship between resilience and psychological recovery. Resilient individuals may regulate fear, sadness, anger, guilt, or shame more effectively without becoming persistently overwhelmed. They may also use problem-focused, emotion-focused, and meaning-focused coping strategies more flexibly. Cognitive flexibility may help survivors reconsider maladaptive beliefs about safety, trust, control, and the future, while realistic positive appraisal may support hope and personal agency. However, these mechanisms were not directly examined and should be tested in future studies. The findings are broadly consistent with previous research showing that resilience is associated with better post-traumatic adjustment, psychological well-being, quality of life, post-traumatic growth, and lower levels of PTSD, depression, anxiety, and emotional distress. The present study extends this literature by focusing on psychological recovery rather than symptom reduction alone. The absence of psychological symptoms does not necessarily indicate that individuals have regained meaning, hope, identity, agency, or social functioning. Psychological recovery therefore provides a broader and more person-centered understanding of adaptation following trauma.

Although resilience explained a substantial proportion of psychological recovery, the magnitude of this relationship should be interpreted cautiously. The relatively large effect may partly reflect conceptual overlap between resilience and recovery, shared-method variance arising from self-report measures, or the influence of variables not included in the model. The unexplained variance may be associated with social support, trauma severity, repeated exposure, time since trauma, emotion regulation, coping strategies, optimism, spirituality, socioeconomic resources, current stressors, and access to mental health services. The findings have practical implications for trauma-informed services. Psychological assessment should examine not only PTSD, anxiety, or depressive symptoms but also survivors' resilience, hope, coping flexibility, personal agency, social support, and sense of meaning. Counselling, psychotherapy, psychoeducation, peer-support programs, and community-based services may incorporate emotion regulation, adaptive coping, cognitive flexibility, problem-solving, realistic appraisal, and meaning-making. Nevertheless, resilience-based

approaches should complement rather than replace evidence-based trauma treatment and should not imply that recovery is solely the survivor's responsibility.

Several limitations should be considered. First, the cross-sectional design prevented conclusions regarding temporal order and causality. Psychological recovery may also strengthen perceived resilience, suggesting a potentially reciprocal relationship. Second, purposive sampling and online recruitment limited representativeness and generalizability. Third, reliance on self-report measures may have introduced recall bias, social desirability, and common-method variance. Fourth, participants experienced different types of trauma that may vary in severity, duration, and psychological consequences. The study also did not control for trauma severity, repeated exposure, time since trauma, social support, treatment history, demographic characteristics, or continuing stressors. In addition, the QPR-15 was originally developed for personal recovery among individuals receiving mental health services. Although it was adapted for the present study, further examination of its factorial validity among heterogeneous trauma survivors is required.

Future research should use longitudinal and multi-site designs with larger and more diverse samples. Multivariable analyses should determine whether resilience predicts recovery after controlling for trauma-related, demographic, interpersonal, and clinical factors. Future studies should also test whether emotion regulation, coping flexibility, positive appraisal, meaning in life, and social support mediate or moderate the relationship. Experimental studies are required to determine whether resilience-oriented interventions produce meaningful improvements in psychological recovery.

V. Conclusion

This study demonstrated that resilience was positively associated with psychological recovery among survivors of traumatic experiences. Resilience explained 38.9% of the observed variance in recovery, indicating a substantial contribution within the bivariate model. Survivors with higher resilience tended to report greater hope, agency, positive identity, emotional well-being, meaningful functioning, and confidence in managing future challenges. However, the cross-sectional design does not establish a causal relationship. The findings support the view that resilience is a dynamic psychological resource associated with adaptive functioning after trauma. Resilience may be linked to recovery through emotion regulation, flexible coping, adaptive appraisal, cognitive flexibility, and the preservation of psychological and social resources. The study also extends trauma research by emphasizing psychological recovery as a broader outcome than symptom reduction alone.

Trauma-informed services may benefit from assessing and strengthening resilience-related resources alongside the treatment of psychological symptoms. However, resilience-based interventions should be evaluated through longitudinal and experimental studies and should complement comprehensive professional care. The findings should be interpreted in light of purposive sampling, online recruitment, self-report measurement, heterogeneous trauma experiences, and the absence of relevant control variables. Future research should employ larger and more diverse samples, examine recovery over time, and test social support, trauma severity, emotion regulation, coping, self-efficacy, and meaning in life as potential explanatory or contextual variables.

References

- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25(24), 3186–3191. <https://doi.org/10.1097/00007632-200012150-00014>
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20–28. <https://doi.org/10.1037/0003-066X.59.1.20>
- Bonanno, G. A., Chen, S., Bagrodia, R., & Galatzer-Levy, I. R. (2024). Resilience and disaster: Flexible adaptation in the face of uncertain threat. *Annual Review of Psychology*, 75, 573–599. <https://doi.org/10.1146/annurev-psych-011123-024224>



- Bonanno, G. A., Chen, S., & Galatzer-Levy, I. R. (2023). Resilience to potential trauma and adversity through regulatory flexibility. *Nature Reviews Psychology*, 2(11), 663–675. <https://doi.org/10.1038/s44159-023-00233-5>
- Bonanno, G. A., & Diminich, E. D. (2013). Annual research review: Positive adjustment to adversity—Trajectories of minimal-impact resilience and emergent resilience. *Journal of Child Psychology and Psychiatry*, 54(4), 378–401. <https://doi.org/10.1111/jcpp.12021>
- Bonanno, G. A., & Westphal, M. (2024). The three axioms of resilience. *Journal of Traumatic Stress*, 37(5), 717–723. <https://doi.org/10.1002/jts.23071>
- Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology*, 7, 511–535. <https://doi.org/10.1146/annurev-clinpsy-032210-104526>
- Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress*, 20(6), 1019–1028. <https://doi.org/10.1002/jts.20271>
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor–Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>
- Herman, J. L. (1992). *Trauma and recovery*. Basic Books.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>
- Kalisch, R., Baker, D. G., Basten, U., Boks, M. P., Bonanno, G. A., Brummelman, E., Chmitorz, A., Fernández, G., Fiebach, C. J., Galatzer-Levy, I., Geuze, E., Groppa, S., Helmreich, I., Hendler, T., Hermans, E. J., Jovanovic, T., Kubiak, T., Lieb, K., Lutz, B., ... Kleim, B. (2017). The resilience framework as a strategy to combat stress-related disorders. *Nature Human Behaviour*, 1(11), 784–790. <https://doi.org/10.1038/s41562-017-0200-8>
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207–222. <https://doi.org/10.2307/3090197>
- Masten, A. S. (2021). *Ordinary magic: Resilience in development* (2nd ed.). Guilford Press.
- Schäfer, S. K., Kunzler, A. M., Kalisch, R., Tüscher, O., & Lieb, K. (2022). Trajectories of resilience and mental distress during major global disruptions. *Trends in Cognitive Sciences*, 26(12), 1171–1189. <https://doi.org/10.1016/j.tics.2022.10.004>
- Slade, M., Williams, J., Bird, V., Leamy, M., & Le Boutillier, C. (2012). Recovery grows up. *Journal of Mental Health*, 21(2), 99–103. <https://doi.org/10.3109/09638237.2012.670885>
- van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Viking.