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# Patients' resilience and distress over time: Is resilience a prognostic indicator of treatment?

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## Abstract

**Background:** Resilience is a positive adaptation or the ability to maintain mental health despite experiencing difficulty. Many researchers are linking resilience with many aspects of life, most often with better mental health. Resilience can affect health status and symptoms, but conversely, it can also be affected by health status or symptoms. From the literature it appears that resilience can even be a predictor of psychiatric symptoms. Resilience can predict severity of symptoms, but the question is whether symptoms can also affect resilience over time when previous levels of resilience are controlled for. The aim of this study was to explore the relationship of resilience scores and the expression of distress in the context of treatment over time.
**Methods:** Ninety-five patients diagnosed with affective and anxiety disorders from a clinical sample treated psychotherapeutically with (N = 81) or without (N = 14) a pharmacological treatment at a psychotherapy day center participated in the study. All the participants were assessed three times: at the beginning of the treatment, after treatment (after 6 weeks), and after a follow-up interval of 6 months after the end of therapy. The *Resilience Scale for Adults* and the *Clinical Outcomes in Routine Evaluation Outcome Measure* were used in the study.
**Results:** All distress indicators were expressed more before the treatment compared to right after the treatment or half a year after the treatment. Distress indicators were more stable from Time 1 to Time 2, while from Time 2 to Time 3 they were less stable. In this study, resilience increased during the treatment and stayed stable after the treatment. Looking at bidirectional relationships between distress indicators and resilience over time, the results of this study suggest that levels of resilience have a prognostic value for the reduction of symptoms over the course of treatment. However, decrease in distress does not predict increase in resilience.
**Conclusions:** Levels of resilience measured by RSA scores seem to have a certain prognostic value for the reduction of symptoms over the course of treatment. Perception of self was the strongest predictor of lower levels of distress over time when distress and perception of self-stability are controlled for. Results suggest that decreased distress indicators are not directly related to increasing resilience over six weeks or over six months. Considering that resilience is rather stable over time and indicators are less stable, it is possible that resilience could be increased by personal or environmental factors, and a decrease in distress is not a contributing factor. In this study distress decreased over time, while resilience characteristics increased for the whole sample. Patients in this study underwent treatment, and decreases in global distress were a result of treatment. An increase in resilience over time supports the effectiveness of treatment. However, there were no significant differences between treatment types while evaluating models. Results suggest that treatments (psychotherapy or psychopharmacological with psychotherapy) were equally effective for the chosen patients.


## 1. Introduction

Why are some people more prone to experiencing stress while others are less prone to it? Why some people develop psychiatric symptoms and disorders, such as anxiety, insomnia, depression or even posttraumatic stress disorder (PTSD); why others develop moderate psychological symptoms; still others report no psychological symptoms in response to stress? The answer could lie in their level of resilience. Essentially, resilience refers to a positive adaptation or the ability to maintain mental health despite experiencing difficulty [1]. Resilience refers to the capacity of an individual to avoid negative social, psychological and biological consequences of extreme stress that would otherwise compromise their psychological or physical well-being. Recent reports indicate that resilience in humans

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represents an active, adaptive process and not simply the absence of pathological responses that occur in more susceptible individuals [2,3]. Resilience refers to a dynamic process encompassing positive adaptation within the context of significant adversity. Implicit within this notion are two critical conditions: (1) exposure to significant threat or severe adversity; and (2) the achievement of positive adaptation despite major assaults on the developmental process [4]. Resilience describes the ability to thrive in the face of adversity or to bounce back from challenges or setbacks, and is one of several factors that can influence how individuals respond to stress [5]. Thus, resilience — the ability of most people, when exposed even to extraordinary levels of stress and trauma, to maintain normal psychological and physical functioning and avoid serious mental illness [6].

Studies on resilience are expanding rapidly. Resilience is studied by researchers from diverse disciplines, including psychology, psychiatry, sociology, and others disciplines. Various sources of resilience are mentioned in the literature. One of these sources is personal factors. The findings in the literature indicate that intellectual functioning, cognitive flexibility, social attachment, positive self-concepts, emotional regulation, positive emotions, spirituality, active coping, hardiness, optimism, hope, resourcefulness, and adaptability are associated with resilience [7]. Psychosocial factors associated with depression and/or stress resilience include positive emotions and optimism, humor, cognitive flexibility, cognitive explanatory style and reappraisal, acceptance, religion/spirituality, altruism, social support, role models, coping style, exercise, capacity to recover from negative events, and stress inoculation [8]. In addition to personal factors are biological and environmental factors. Biological factors refer to brain structure, functioning, neurobiological systems, hormones, and neurotransmitters [9]. Neurobiological factors that are discussed and contrasted include serotonin, the 5-HT1A receptor, polymorphisms of the 5-HT transporter gene, norepinephrine, alpha-2 adrenergic receptors, neuropeptide Y, polymorphisms of the alpha-2 adrenergic gene, dopamine, corticotropin-releasing hormone (CRH), dehydroepiandrosterone (DHEA), cortisol, and CRH receptors. These factors are described in the context of brain regions believed to be involved in stress, depression, and resilience to stress [8]. Recent research has begun to identify the environmental, genetic, epigenetic and neural mechanisms that underlie resilience, and has shown that resilience is mediated by adaptive changes in several neural circuits involving numerous neurotransmitter and molecular pathways. These changes shape the functioning of the neural circuits that regulate reward, fear, emotion reactivity and social behavior, which together are thought to mediate successful coping with stress [3]. Eleven possible neurochemical, neuropeptide, and hormonal mediators of the psychobiological response to extreme stress were identified and related to resilience or vulnerability. The neural mechanisms of reward and motivation (hedonia, optimism, and learned helpfulness), fear responsiveness (effective behaviors despite fear), and adaptive social behavior (altruism, bonding, and teamwork) were found to be relevant to the character traits associated with resilience [2]. Environmental factors include social support, relationships with family and peers, good parenting skills, community factors, cultural factors, spirituality, religion, etc. [3]. Hence, there are many sources of resilience, which often interact, and it may be hard to make a clear distinction between them. It is understandable that it is harder to change some sources of resilience, for example biological factors; however, environmental factors might be corrected easier over a lifetime.

Many researchers are linking resilience with many aspects in life, but most often with better mental health. It has been found that resilience negatively relates to anxiousness, depressed mood, and suicidal intentions [10]. Resilience has also been found to maintain a significant relationship with physical health. Resilience is positively associated with better physical health for women that are undergoing treatment as well as better recovery tendencies [11]. Resilience relates not only to health, but also to the ability to cope with the stress that affects our health. Thus, resilience seems to be a protective factor. Resilience may be one of the key protective factors against depression and other mental disorders [12].

Some researchers indicate that protective aspects of resilience can be grouped into three categories that may overlap: positive personal dispositions, family coherence, and social resources outside the family [13]. Thus, it appears that personal or environmental dispositions could be a source for resilience as well as a resilience-protective resource. Likewise, resilience can affect these dispositions, but it can also be affected by these dispositions. Resilience can affect health status and symptoms, but conversely it can also be affected by health status or symptoms.

What does the existing literature suggest about these affects? Hjemdal et al. [12] looked the first time at how a self-report scale for adult resilience could predict the development of psychiatric symptoms. In this study the authors sought to determine whether healthy subjects with a high level of resilience would experience fewer psychiatric symptoms when faced with stressful life events, as compared with healthy subjects with lower resilience rates. They found that individuals who reported higher scores on the resilience scale were essentially unchanged regarding the number of psychiatric symptoms when exposed to stressful life events. The authors suggested that this finding indicates that these events did not negatively impact individuals who had more protective resources available. However, individuals who reported lower levels of resilience developed higher numbers of psychiatric symptoms at follow-up when exposed to stressful life events. On the other hand, more psychiatric symptoms manifested after stressful events for subjects with lower scores on the resilience scale [14]. Higher expression of protective resilience factors has been found to indicate lower expression of psychological symptoms and, to a certain extent, the absence of psychopathology [12,15,16]. These results were applied to the total RSA (Resilience Scale