



Resilience and coping in trauma spectrum symptoms prediction: A structural equation modeling approach



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ABSTRACT

Resilience is increasingly recognized as a relevant factor in shaping psychological response to natural disasters. Aim of the study is to examine in the context of a natural disaster the potential effects of resilience on the relation between coping and trauma spectrum symptoms, using structural equation modeling.

A sample of 371 students who survived the earthquake in L'Aquila (Italy) were cross-sectionally evaluated using Resilience Scale for Adolescents, Brief Cope and Trauma and Loss Spectrum scale.

The model shows a direct path of positive and emotional coping styles on resilience. Emotional coping shows also a direct impact on the outcome; positive and emotional coping results to be positively correlated as well as emotional and disengagement coping styles. Resilience directly affects the PTSD symptoms, partially mediating the impact of the coping styles. The model explains 30% of the variance in the outcome, i.e. the Post-Traumatic Stress Disorder (PTSD) symptoms, with very good fit indexes.

Resilience operates as a protective factor from stress symptom development. It is likely that emotional and disengagement coping skills are rapidly involved after a traumatic exposure but when problem focused coping intervenes, resilience allows it to buffer the stressors or even guides toward a more successful outcome.

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1. Introduction

Coping is conceived to be a cognitive and behavioral process by which individuals manage specific external and/or internal challenging or threatening demands that are appraised as taxing or exceeding the resources of the person (Lazarus, 1993). Coping strategies may be important mediating factors between stressors and a wide variety of outcomes: from the development of symptoms of Post-Traumatic Stress Disorders (PTSD) or depression in case of negative outcomes, to the continuation of normal or even the beginning of a more successful life (Freeman & Fowler, 2009). Different coping styles result in different outcomes, and this relationship could be influenced both by the stressor's characteristics (e.g. controllability) and other personal and environmental factors (e.g. social and familial support) (Lazarus, 1993).

Lazarus (1993) made a distinction between emotion and problem focused coping strategies, as non-mutually excluding but often complementary strategies. The first consists of coping efforts that are directed toward regulating emotional states, such as denial/avoidance, distraction or minimization, seeking meaning, self-blame, expressing/sharing feelings; it is directed at regulating emotional responses to a problem, more likely used when the subject believes that nothing can be done to modify the challenging environmental conditions. On the other hand, the problem focused coping strategies are efforts to act on the source of stress to change the person, the environment, or the relationship between the two, such as planned problem solving or confrontation. This form of coping is more likely to be used when harmful environmental conditions are considered to be amenable to change.

Coping skills have been however categorized in many other ways: engagement approach coping, dealing with the stressor or related emotions, vs. disengagement coping, aimed at escaping the threat or related emotions, is a relevant distinction. Engagement coping includes problem-focused coping and some forms of emotion-focused coping while disengagement coping includes

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responses often emotion focused in the attempt to escape feelings of distress (Carver & Connor-Smith, 2010).

More recently the investigators involved in the study of how individuals, even if facing the most pernicious adversities, manage to avoid psychological collapse and maintain healthy adjustment, introduced the concept of resilience as a construct able to explain the outcome variation. Resilience typically refers to positive adaptation despite adversity. It describes and explains unexpected positive outcomes despite high risk of maladjustment when one is exposed to any type of trauma. It has been widely conceptualized as a multidimensional or a one-dimensional construct on the basis of theoretical assumptions or empirical findings (Campbell-Sills & Stein, 2007; Fonagy, Steele, Steele, Higgitt, & Target, 1994; Wyche et al., 2011).

Although coping and resilience both focus on responses to stress, these concepts are distinct but related. Coping refers to the set of cognitive and behavioral strategies used by an individual to manage the demands of stressful situations (Folkman & Moskowitz, 2004), whereas resilience refers to adaptive outcomes in the face of adversity. Furthermore coping involves a set of skills, whereas resilience indicates a successful result of the exercise of those skills (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Not everyone who uses coping skills is resilient. Some attempts to cope are not successful, and if the coping skill does not lead to a good outcome, the person is not resilient (Beasley, Thompson, & Davidson, 2003; Campbell-Sills, Cohana, Murray, & Stein, 2006; Glennie, 2010).

However the lack of a shared theoretical construct and other methodological pitfalls affect the resilience research (Davydov, Stewart, Ritchie, & Chaudieu, 2010). Resilience defines and describes, rather than explains, the positive outcome: if we consider resilience as a positive outcome attribute, the risk of having a concept with a tautological explanation exists (Leipold & Greve, 2009). On the other hand, resilience has been conceptualized as a personality trait (Block & Block, 1980) or a trait constellation or a stable resource that allows a favorable performance under stress (Weed, Keogh, & Borkowski, 2006).

From a different point of view resilience can be a compliant and dynamic system, like an immune system, that subsists in the absence of a microbe attack; resilience also exists as a trait or competence having memory of ontogenetic or previous challenges, but it expresses its plastic activity in conforming and temporally coordinating coping processes in the presence of conflict or problem (Davydov et al., 2010; Patel & Goodman, 2007; Rutter, 1990). It is therefore a dynamic developmental protective process generated through successful engagement with adversities (Friborg, Hjemdal, Martinussen, & Rosenvinge, 2009; Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006).

Protective factors and mechanisms span broadly and can be divided into the overarching categories: (1) positive characteristics and resources of the individual; (2) a stable and supportive family environment marked by coherence; and (3) external social networks that support and reinforce adaptive coping (Rutter, 1990). A direct measure of resilience should include all these overarching categories (Hjemdal, Aune, Reinfjell, Stiles, & Friborg, 2007).

On April 6th 2009, at 3:32 am, an earthquake (Richter Magnitude 6.3) struck L'Aquila, Italy, a town with a population of 72,000 and a 'local health district' (i.e. Azienda Sanitaria Locale) of 105,000 inhabitants. The earthquake in L'Aquila caused the death of 309 people, with more than 1600 individuals injured, among which 200 were severely injured and hospitalized, and 66,000 displaced. Many buildings collapsed in the town of L'Aquila: large parts of it were completely destroyed (Stratta et al., 2012a).

These types of disasters deserve special attention because of their capacity to hit many individuals at once, offering unique opportunities to study human response to trauma on any level.

Several factors of resilience and coping strategies can have direct or indirect effects during the process of dealing with stress, modulating the raising of symptoms (Bonanno, Galea, Bucciarelli, & Vlahov, 2006; Campbell-Sills, Forde, & Stein, 2009; Davidson et al., 2005; Yang et al., 2010). Research on positive adaptation to stressful events may contribute to prevention and intervention efforts focused on helping individual recovery and protection from the development of stress-related disorders.

In this study we posit that resilience could interact with coping strategies to protect from maladjustment to stressful conditions. We hypothesize resilience as a protective process with the capacity for orienting and leading coping abilities toward a successful outcome in a population exposed to a natural disaster. This perspective could offer a closer connection between coping, resilience and the clinical outcome of a person confronted with stressful challenges.

To test this hypothesis a structural equation modeling approach has been used, with the statistical power available from a large sample to examine the potential effects of resilience on the relation between coping and symptom domains of the trauma spectrum (Dell'Osso et al., 2009).

2. Methods

2.1. Participants

The attending subjects were 371 students in the final year of senior high school, aged between 17 and 18 years, from four high schools in L'Aquila. Full data was available for two hundred and sixty-three students, 161 males and 102 females. All these students were exposed to the earthquake in L'Aquila. They were briefed on the general aims of the research and instructed on how to complete the instruments. Data was collected during the month of April 2011.

The study was approved by the local Institutional Review Board dealing with research issues and the school council approved the project.

2.2. Procedure

The following rating scales were administered.

The Resilience Scale for Adolescents (READ) (Hjemdal et al., 2006; Hjemdal et al., 2007) is a 28-item self-report scale using a 5-point Likert scale, with all items positively phrased. Higher scores reflect a higher degree of resilience. It consists of five factors; (1) Personal Competence; (2) Social Competence; (3) Structured Style; (4) Family Cohesion; and (5) Social Resources. The Italian validated translation of the original version was used (Stratta et al., 2012b).

The Brief Cope (Carver, 1997) is a 14-scale/28-item questionnaire that has demonstrated good psychometric properties as an assessment of dispositional as well as situational coping efforts. The 14 scales are composed of two items each which means the higher the score on each scale, the greater the use of the specific coping strategy. The response format is a scale using a 4-point Likert scale from 1 = never to 4 = always. The 14 coping strategies measured are: Acceptance, Religion, Planning, Positive Reframing, Using Instrumental Support, Active Coping, Using Emotional Support, Humor, Self-Distraction, Venting of Emotions, Self-Blame, Behavioral Disengagement, Denial and Substance Use.

The Trauma and Loss Spectrum (TALS) Self Report (Dell'Osso et al., 2009) provides evaluation of the post-traumatic stress spectrum. It offers a dimensional approach to PTSD exploring the presence/absence of post-traumatic spectrum that might occur during the lifetime of an individual. In this study subjects were asked to

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