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Positive emotions in earthquake survivors in El Salvador (2001)

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Abstract

The purpose of this study was to analyze, within a more extensive intervention program, the existence of positive emotions and positive coping in the refugees at the two largest shelters created after the earthquakes of El Salvador in January, 2001. One hundred and fifteen survivors were interviewed in the shelters about different aspects related to positive cognitions and emotions experienced during their sojourn at the camps, as well as their perception of aspects of posttraumatic growth. The results show that most of the people affected by the earthquake revealed a consistent pattern of positive reactions and emotions. The potential implications of these results in the individual sphere, as buffering elements to protect people from the effects of a traumatic experience receive comment.

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1. Introduction

According to the World Disasters Report (IFRC-RCS, 2002) in 2001, approximately 170 million people were affected by natural disasters, catastrophes, and wars. Natural disasters were responsible for the death of 665,598 persons between 1991 and 2000, and 39,073 people were reportedly killed by disasters in 2001. The majority of persons affected by disasters live in countries from the southern hemisphere, which suggests that the increase in disasters is related not only to geographic vulnerability factors, but essentially to socioeconomic factors. In fact, on average 13 times more people die due to disasters in poor countries than in developed countries (IFRC-RCS, 2002).

It has been suggested that, natural disasters probably do not have such undesirable consequences as do traumatic events caused by humans (e.g., wars, interpersonal violence, homicides, etc.), because natural disasters do not have a component of intentionality in the damage produced, which may shatter people's core life assumptions about a just and predictable world (Janoff-Bulman, 1992). However, natural events may have devastating consequences in another sense. For example, their typically sudden and unexpected occurrence could foment the psychological conditions of helplessness and vulnerability (Weaver & Clum, 1996). In addition, the losses that these events cause are usually multiple in an individual sense (loss of home, belongings, work, and even of loved ones) as well as in a collective sense (destruction of the social framework, community destructuring, loss of mutual support networks, etc.), with their associated mourning processes (Eisenbruch, 1991; Martín-Beristain, Dona, Páez, Pérez-Sales, & Fernández, 2000).

2. Life events, psychopathology, and resilience

Much of the current literature concerning the psychological consequences of traumatic events has focused on the concept of posttraumatic stress disorder (PTSD). Studies of the general population indicate a lifetime prevalence of "traumatic events" in more than 50% (Breslau, Davis, & Andreski, 1995). Taking into account that the estimated lifetime prevalence of PTSD is only 1–3% in the general population (5–15%, if the less severe forms are included)—Kessler (2000)—it is evident that research must pay much more attention to the remaining majority of the population who, despite having suffered at least one traumatic event in their lifetime, have not developed PTSD.

The relatively low prevalence of PTSD among persons exposed to traumatic situations coincides with the research about factors that determine psychological well-being. These investigations show that the influence of *objective* life events and external circumstances is fairly irrelevant when determining subjective well-being. In fact, despite the popularity of the stress model in psychopathology, the total loading of stressful factors only accounts for 10% of the total variance of

people's reactions to those objective stressors (Diener, Suh, Lucas, & Smith, 1999; Maercker and Herrle, 2003). The explanation for this limited relationship is that the impact of adverse life events on people's well-being is exerted via a complex network of mediational cognitive and motivational processes (Lyubomirsky, 2001), which accounts for the fact that, even when faced with extreme traumatic experiences (for example, sudden death of a child, torture, or rape), people usually react better than one would generally expect (Avia & Vázquez, 1998). Some studies have shown that even in such situations, during those periods, victims can experience positive emotions that are at least as intense and lasting as the negative emotions (e.g., Linley, 2003; Wortman & Silver, 1987, 1989).

It is well known that exposure to adverse events can eventually cause an extensive range of psychopathological responses. However, it is not so well known that the existence of positive emotions and feelings can also be very important to reduce or mediate the impact of trauma. For example, specific studies on resilience have shown that relatively stable personality factors (e.g., *happiness* or *optimism*) can mediate the impact of vital stressors (Cummins & Nistico, 2002; Lyubomirsky, 2001). It has been shown that, when faced with negative life events, people who were previously happier or more optimistic tended to appraise these events in a more benevolent way, even drawing positive consequences from the negative experiences endured (DeNeve & Cooper, 1998; Folkman, 1997), being more optimistic about the future (Scheier & Carver, 1991; Taylor & Armor, 1996), feeling more capable of exerting personal control over their achievements (Bandura, 1995; Cummins & Nistico, 2002; Seligman, 1990), using faith as a way to control the situation (Folkman, 1997; Myers, 2000), trusting more their own ability to overcome difficulties (Taylor & Brown, 1988), making more adaptive social comparisons (Ahrens, 1991; Aspinwall & Brunhart, 2000), and showing less tendency to excessively ruminate about themselves and the impact of their current circumstances (Lyubomirsky & Nolen-Hoeksema, 1993).

To sum up, a series of personal characteristics, no doubt mediated by learning and cultural context, may be relevant to cope successfully with traumatic events, preventing the development of negative psychological consequences and enhancing the likelihood of being receptive to the learning opportunities or personal growth that may occur as a result of trauma (Calhoun & Tedeschi, 1999; Maercker & Herrle, 2003).

2.1. *The earthquakes of El Salvador (2001)*

On January 13, 2001, an earthquake razed the central part of the country, directly affecting more than fifty thousand people and killing 1100 people. The population from the affected zones gathered spontaneously in various shelters. The largest population group was established in Santa Tecla (Nueva San Salvador), in a place known as the Cafetalón, a sport facility. Many medium-sized shelters were also established in various parts of the regions of San Vicente and Sonsonate. On February 13, a second earthquake expanded the affected area

to the regions of La Paz, San Vicente, and Cuscatlán. More than 7000 persons (some sources indicated the existence of up to 12,000 in the first few days) gathered in the Cafetalón, all of them victims from that area and the surrounding townships.

As part of a broader participative research-action process to accomplish a psychosocial and community diagnosis of the refugees, semi-structured interviews of a randomly selected sample of people from the Cafetalón and the second largest shelter (Santa Gertrudis) were performed. The study was carried out 3 months after the first earthquake, at a time considered to be restructuring and decision-making moments. The aim was to afford both the displaced population and the authorities an impression of the situation of each shelter, and at the same time, to generate a participative process that would become a tool to strengthen the community (Pérez-Sales, 2001). A relatively innovative purpose of the study was to analyze the existence of positive emotions, thoughts, and experiences even in such extreme situations, under the assumption that these factors may play a role in determining the psychological impact of trauma. Although the literature concerning positive aspects of human functioning is growing (e.g., Linley, 2003; Maercker & Herrle, 2003; Ryff & Singer, 1998; Snyder & Lopez, 2002), to our knowledge, no studies have analyzed the presence of positive emotions, cognitions, and coping strategies in a traumatic context of this nature (i.e., refugees in shelters after a natural disaster). This is relevant, not only for a more comprehensive analysis of coping mechanisms, but also for suggesting new ways to intervene in similar catastrophes (Pérez-Sales, 2001; Pérez-Sales, Cervellón, Vázquez, Vidales, & Gaborit, in preparation).

3. Method

3.1. Sample

The interviews were carried out with a random sample, stratified by sex, group, and shelter (the Cafetalón vs. Santa Gertrudis). Interviews were performed with 115 persons from the Cafetalón (63) shelter and the Santa Gertrudis shelter (52). Their age ranged from 18 to 72. Forty-two percent of the participants were men ($M = 37.7$, $S.D. = 17.3$).

Participants were selected through a random process consisting of interviewing every adult in one of every three tents in both camps. To avoid sampling biases due to the time of the day, interviews were balanced to cover morning, afternoon and evening hours.

3.2. Instruments

The Community Cohesion Interview (CCI, Pérez-Sales, 2001), a 19-item semi-structured interview, was specifically designed for this situation and for the

cultural context of El Salvador with the aim of being administered during an urgent intervention carried out under the auspices of Doctors Without Borders-Holland (Pérez-Sales, 2001). In addition to gathering information about such aspects as community organization, appraisal of needs, and participation in shelter life, which are not included in this study, the CCI also covered individual positive coping factors and positive emotions and cognitions experienced *during* the time that the people lived in the shelters.² These positive items were based on previous community studies of similar populations that had endured situations of extreme adversity (Martín Baró, 1990; Martín-Beristain & Riera, 1997; Pérez-Sales, 1999; Pérez-Sales, Durán-Pérez, & Bacic, 2000) and on previous studies about the role of positive emotions on adverse events (e.g., Calhoun & Tedeschi, 1999; Ryff & Singer, 1998; Wong & Fry, 1998; Wortman & Silver, 1987). Specifically, the interview included 10 items which were mainly related to the two main components of well-being described in the literature: (a) hedonism and positive emotions and (b) eudamonia or growth of human potentials (Ryan & Deci, 2001). These 10 items were:

1. Ability to lend meaning to the experience (*Why do you think earthquakes occur?*)
2. Usefulness of religious beliefs (*What role did your religious beliefs play in the way you coped with this situation?*)
3. Emotional self-regulation (*When you felt bad, did you find a way to make yourself feel better? What did you do?*)
4. Experiencing positive emotions (*Despite all you have gone through these past months, can you recall any moment when you felt happy?*)
5. Usefulness of planned entertainment (*Do you feel that the leisure activities organized in the shelter for children and adults helped you?*)
6. Reappraisal and posttraumatic growth from the experience (*Taking into account all the things we have discussed, do you think that, after the earthquake, you have discovered within yourself new ways to cope with this kind of situation?*)
7. Perception of self-efficacy (*After all you have gone through, do you feel more prepared to deal with another disaster?*)
8. Usefulness of previous learning/oral traditions concerning disasters (*Were the things you learned years ago or that the elders taught you about their experiences with other disasters important for you?*)
9. Ability to make new friends (*Were you able to make new friends in the shelter?*)
10. Confidence in the future (*How do you see yourself and your family two years from now? Worse off than we are now. The same as we are now. Better off than we are now.*)

²A copy of the complete interview is available upon request from the authors.

Through a focus-group process, where key-informants from the shelters were invited to participate, each item was discussed for its relevance and wording. Then, a two-day training process, conducted by two of the authors (P.P. and P.C.), was carried out with the interviewers, by using role-playing exercises to discuss the contents and use of the interview. Finally, a brief pilot study was done with ten cases where discrepancies in rating subjects' responses were analyzed and discussed.

4. Procedure

The interviews were performed by a team of six people from the Department of Psychology of the José Simeón Cañas University, supervised by one of the authors (P.C.), and by psychologists from El Salvador who belonged to the Doctors Without Frontiers-Holland organization, and who were actually working in the shelters. All interviews were carried out between April 4 and 6, 2001 and the approximate duration of each interview was 45 min. There was an 8% rejection rate.

The interviewer began by asking participants to state their opinion about some aspects that usually help most people to deal with problems. For each item, participants were requested to clarify or give more details about their response, providing specific examples about their own case, and some additional questions were asked to facilitate elaboration of the information. For each item of the rest of the interview, the interviewers wrote down the interviewee's literal response for subsequent content analysis (Pérez-Sales, 2001).

5. Results

In this section, we present the combined data from the users of the two shelters (Table 1), who, with the exception of the item about recalling some moment of happiness, revealed no statistically significant differences in any of the remaining items about positive aspects related to the disaster experience. Nor were there significant differences regarding sex and age in the composition of the samples from both shelters. Lastly, all the combined results of both shelters were analyzed by sex and no significant statistical difference was found. All the differences in percentages were analyzed by means of chi square.

5.1. Lending meaning to the experience

Practically all the participants (72%) provided some kind of explanation for what happened. Although some people (31.4%) mentioned natural causes, the most common explanation (57.3%) attributed the earthquake to God's punishment of Man's evil behavior, violence, or lack of prayers and respect. In fact,

Table 1
Percentages of responses concerning positive thoughts, emotions, and feelings

Items	Percent
<i>Meaning</i>	
1. Lending meaning to the catastrophe	72.2
2. Use of religious beliefs to cope with the situation	87.7
<i>Positive emotional self-regulation</i>	
3. The feeling of having the resources to control one's own emotions	68.1
<i>Positive emotions and posttraumatic growth</i>	
4. Recalling some moment of happiness after the tragedy	72.5
5. The feeling that the entertainment activities in the shelter were useful	93.9
6. Positive learning	66.7
7. Perception of self-efficacy	64.0
8. Importance attributed to previous generations to deal with the present situation	51.3
9. Being able to make friends in the shelter	79.8
10. Long-term future prospects	
Better off than we are now	55.3
The same as we are now	10.5
Worse off than we are now	14.0
Better to think about the present and live day-to-day	20.2

Note. Total sample: $n = 115$.

apropos coping mechanisms, 100 of the 115 interviewees (88% of the sample) judged their religious beliefs to be “very useful” to cope with this situation.

5.2. Perception of efficacy of emotional self-regulation

Sixty-eight percent of the sample considered that they had some personal mechanism for coping with moments of anxiety or sadness. The most frequent mechanism was prayer (42%), followed by taking a walk (14%), visiting friends or relatives (7%), trying to keep busy (6%), or controlling negative thoughts (5%).

5.3. Experiencing positive emotions

Despite all the adverse and painful circumstances, 72.5% of the refugees could recall some moment of happiness during the 3 months following the earthquake.³ In the interview, they were asked to list the events that they considered to have been moments of *happiness*. Table 2 displays the response transcription and categorization in nonexclusive categories (i.e., including all the responses provided by the interviewees). The events identified can be grouped into two

³ Whereas 82% said they recalled “some moment of happiness” in the Santa Gertrudis shelter, only 64% of the interviewees from in the Cafetalón shelter said they recalled such an experience. Organizational differences and differences in respectful treatment between the shelters may account for this (Pérez-Sales et al., in preparation).

Table 2
Elements that generate moments of happiness

Categories		
<i>Being alive</i>	31.3 ^a	42.8 ^b
“The feeling that my family was alive”	14.7	20.0
“The feeling that, since the earthquake, my family is much more united”	7.8	10.6
“The feeling each new day that I’m alive”	6.0	8.2
“Another child was born after the earthquake”	2.6	1.9
<i>Feeling accompanied</i>	36.2	49.2
Clowns’ visits to the shelter, entertainment activities	14.7	19.9
When international and government aid arrived	9.5	12.9
When observing solidarity among victims	6.0	8.2
When praying	6.0	8.2

^a Percentages calculated from the total sample ($n = 115$).

^b Percentages from the total number of persons who identified positive emotions ($n = 84$).

categories: the fact of themselves or their family *being alive* (31.3%), and *feeling accompanied* in the situation (36.2%). Naturally, these positive feelings *co-existed* with negative ones (irritability, fear of the future, worries, etc.); for example, 50% of the sample had felt humiliated at some time in the shelter because of disrespect by the Authorities or because of a lack of dignity. Nonetheless, positive emotions were effectively present for the refugees while they were at the shelter.

5.4. Posttraumatic growth

With regard to potential positive consequences of the disaster, for 66.7% of the refugees the events had produced some kind of positive learning. In Table 3 are displayed the types of posttraumatic-growth situations listed by the interviewees. Once again, they are nonexclusive categories: growth in personal skills (30.2% of the total sample), valuing human relations to a greater extent (17.3%), existential reflections (12.9%), and instrumental learning (5.2%). Concerning the feeling that the experience would prepare them to face future disasters, the data were very similar: 64% said they felt more prepared to cope with a similar event in the future.

5.5. View of the future

Lastly, when asked about long-term future prospects (2 years from the time they were interviewed), 55.3% of the people thought they would be better off (qualitative analysis of the responses revealed that this hope of a better future was not so much based on confidence in their own possibilities but on the—perhaps more passive—sense of trust in God’s goodness). Out of the sample, 24.5% thought they would be the same or worse off and 20.2% preferred not to think

Table 3
Experiences related to positive learning in the shelter

Categories	Percentage ^a	Percentage ^b
<i>Human relations</i>	17.3	26.1
“I am more concerned about others.” “I appreciate people more.”	13.9	21.0
“I have more friends.” “I am closer to my neighbors.”		
“I cherish my family and children more.”	3.4	5.1
<i>Existential values</i>	12.9	20.1
“I must be closer to God.” “I should go back to God.”	12.1	18.1
“I learned to live day-to-day. It’s better not to think about the future.”	0.8	1.2
<i>Personal skills</i>	30.2	45.1
“Not be scared of tremors.” “Teach my children not to be afraid of earthquakes.”	10.4	15.6
“I’ve learned to be resigned.” “I’ve learned how to suffer.”	7.8	11.7
“I’ve learned to see things as they are.”		
“I feel stronger.”	4.3	6.4
“I feel more optimistic.”	2.6	3.9
“I’m not so shy. I dare to speak in public.”	1.7	2.5
“To have more self-respect, because I reacted better than I would have believed.”	1.7	2.5
“I learned to be more responsible.”	1.7	2.5
<i>Instrumental skills</i>		
“I have learned where I should rebuild my house.”	5.2	7.8

^a Calculated from the total sample ($n = 115$).

^b From the total number of people who identified some element of posttraumatic growth ($n = 76$).

about the future and to focus instead on day-to-day survival. Only 31.2% of the people thought that it was possible to prevent future catastrophes, although, coinciding with the above, analysis of the responses also suggested an element of passive resignation: When asked how these catastrophes could be prevented, the main strategy reported was prayer (83.3%; Table 4).

Table 4
Prevention strategies for future catastrophes

Categories	Percentage ^a	Percentage ^b
<i>External attribution</i>		
Believe in God and be a better person to prevent new earthquakes from happening	26	83.3
<i>Internal attribution</i>		
Learning which places can be considered safe for rebuilding	14	44.8
Receive training about antiseismic housing systems	14	44.8

^a Calculated from the total sample ($n = 115$).

^b From the total number of people who considered that it is possible to prevent new catastrophes ($n = 35$).

6. Discussion and comments

We believe these results should be discussed within the context of the theoretical framework of homeostatic emotional regulation, according to which, after an important vital event has occurred, people start to use active strategies to reestablish their emotional well-being. For example, according to the dynamic equilibrium model (Headey & Wearing, 1992), everyone has a set-point in subjective well-being, to which they try to return via regulatory strategies every time it is interrupted by an important vital event (see also Cummins & Nistico, 2002). Use of humor, religion, social interactions, etc., can also be interpreted as part of these regulatory mechanisms for coping with adversity (Aspinwall, 2001). Consequently, the impact of vital stressors must be analyzed from a dynamic perspective, understanding that so-called *coping mechanisms* may play a direct role in transforming negative emotions and/or maintaining positive ones (Cummins & Nistico, 2002; Fredrickson, 2001). Moreover, in adverse circumstances, various organizational and community factors may affect people's sense of well-being and dignity, which may have an impact on their final adjustment to these adverse circumstances.

6.1. *Meaning of the experience and causal attributions*

Most theories on causal attributions agree that people actively search for explanations of the negative events that happen to them (Abramson, Seligman, & Teasdale, 1978; Janoff-Bulman, 1992). Finding a logical explanatory framework within a critical context seems a necessary element of personal or community strengthening processes (Calhoun & Tedeschi, 1999; Frankl, 1963; Ryff & Singer, 1998). In fact, most of the people from our sample found an explanation for what had occurred, chiefly based on religious beliefs, which was probably psychologically helpful.

6.2. *Positive emotions and personal growth*

Our results lend support to the important role of positive emotions even in such critical situations. People agreed almost unanimously (94% of the sample) that the "leisure activities" programmed in the shelter (e.g., parties, clowns' performances, etc.) were an important aid in the difficult circumstances they were undergoing (in fact, this was the item with the highest percentage of positive responses). This result is in accordance with the observation that positive experiences during stressful circumstances may help relieve and transform negative emotions (Folkman, 1997; Folkman & Moskowitz, 2000). In addition, there is a growing body of experimental literature that shows that people who are psychologically resistant seem to be more inclined to experience both negative and positive emotions when faced with adverse events. Therefore, although important individual differences may predispose individuals to experience

positive emotions, our results emphasize the need to pay more attention to leisure and pleasant activities within shelters organized by administrators.

Most participants reported recalling moments of happiness after the disaster had occurred. It is likely that their ability to experience both negative and positive emotions during stressful circumstances may, in fact, play a role in coping effectively with that situation. Although recent models of PTSD emphasize the etiological role of the avoidance of negative memories in maintaining negative affect (e.g., Baum & Posluszny, 2001; Brewin, Dalgleish, & Joseph, 1996), the role of positive memories should not be ignored, as both components are to some extent independent of each other (Chang, 2001; Matt, Vázquez, & Campbell, 1992). For instance, several studies have shown that, although happy and unhappy people may experience similar negative life events, the former group tends to recall and think about these events more favorably by drawing some personal learning or by using retrospective humor (Lyubomirsky & Tucker, 1998). Although it may be too early to design specific interventions aimed at maintaining or creating positive moods in community settings such as refugee camps, future studies and field experiments should take into account the possibility of dealing with victims' negative and positive recollections of to enhance their mood regulation.

In order to cope effectively with a traumatic event, it is very important for individuals to believe in their own possibilities or to have a high sense of self-efficacy (Bandura, 1995). Although objective control over a given situation may be relatively low, maintaining a high perception of control is the most important factor for people's health status. In effect, the perception of "having lost control" may have more devastating effects on psychological and psychophysical health than the objective loss of control (Seligman, 1975; Thompson, 2002). According to our results, most of the victims of this natural disaster, who suffered devastating personal consequences, said they had learned something positive. We think that these responses suggest that not only do victims make an effort to reconceptualize crises as scenarios in which they may even acquire new skills, but they also achieve a sense of control and self-assurance that can help them to prevent psychological distress.

As indicated by Lepore (2000), emotional adaptation to traumatic events can be facilitated by processes of cognitive integration that employ both assimilation mechanisms (i.e., reconsidering events to make them compatible with preconceptions) and accommodation mechanisms (i.e., changing mental models to fit the information inherent to the traumatic event). Posttraumatic growth is defined as a positive change experienced by the individual as a result of dealing with a traumatic event (Calhoun & Tedeschi, 1999, p. 11). These changes may be related to three main areas: interpersonal relations, sense of self, and philosophy of life. According to our results, it seems that most of the victims were capable of observing some positive aspects of their tragedy. For example, the notion that—more than information about previous catastrophes—the current crisis had increased their capacity to deal with future traumatic events or had even

contributed to creating new prospects may be interpreted as a way of reconceptualizing a very complex situation, lending meaning to the traumatic experience.

6.3. *Future and hope*

Feelings of hope (a general disposition to make conscious efforts to achieve a goal or objective, cf. Snyder, 1994) may have a profound effect both on secondary appraisal (i.e., individuals' perception of their own resources for dealing with a given situation) and on the coping mechanisms finally used to deal with the situation (Snyder, Sympton, Michael, & Cheavens, 2001). In fact, contemporary theories of depression establish that hopelessness is related to dysphoria (Elliott, Witty, Herrick, & Hoffman, 1991) and to health problems (Scheier & Carver, 1985, 2000), and is even considered to be a sufficient cause of depression (Alloy & Clements, 1998; Beck, Shaw, Emery, & Rush, 1979). Similarly, a negative view of the future is considered a close antecedent of depression (Beck et al., 1979). When the data about the survivors' view of the future are examined, it becomes evident that many of the people believed that their future would be the same as or better than the present (50.3%). Although it may seem obvious, given the dramatic circumstances at the time of the interviews, it should nevertheless be taken into account that hope is a necessary condition to undertake action and to avoid depression. In fact, only 14% believed they would be worse off, which may help identify samples of high psychopathological risk.

It is noteworthy that a significant proportion of participants (20.2%) were incapable of predicting their future. During the interviews, our impression was that this lack of response was not related to depression or indifference, but rather it was an existential, fatalistic attitude based on a chain of repeated traumatic events that, in many cases, had caused a great impact on their lives. Yet, it is interesting to note that those who were more hopeful about their future thought that the future would be better because God would decide their destiny and only He could know what would happen in the future. Along with the causal attributions of religious content, these responses underline the importance of religion in Latin American culture and support the inclusion of items or measuring instruments that are sensitive to the cultural peculiarities of each group, as was attempted when designing this study.

7. **Conclusions**

Despite the scarcity of research on psychological resistance mechanisms, Folkman and Moskowitz (2000) have hypothesized that there are three types of coping that may be effective to generate positive emotions when experiencing adverse life events: (a) positive reappraisal, (b) problem-focused coping, and (c) lending positive meaning to ordinary life events. A closer look at the results of our study may show that, even in extraordinarily difficult circumstances, these

mechanisms seem to operate, although we do not yet know whether these mechanisms can be taught to less resistant individuals, or which mechanisms would be more appropriate for specific circumstances (Fredrickson, 2001).

We do not yet know which personality variables (e.g., dispositional optimism) may interact with objective circumstances (e.g., shelter conditions) in response to trauma, a relationship more complex than often thought (see Ruini et al., 2003). However, we are convinced that some organizational improvements in shelter conditions or other refuge areas (e.g., favoring community participation or providing space for meetings or entertainment) may allow people to transform and reinterpret adverse situations, enhancing their emotional recovery and/or resistance, even in such extreme contexts (Pérez-Sales et al., in preparation). Hence, this type of finding may be very relevant to improve the design and organization of emergency shelters.

One of the limitations of our work, which tends to be common to this type of research, is that it is a naturalistic study within the context of a community strengthening action, rather than a designed and planned investigation. Time and setting constraints are very important in shelter fields, such that it becomes difficult to use more sophisticated instruments and/or methodologies, a problem often found in studies with this population (Hollifield et al., 2002). Although finding a consistent constellation of positive elements in the refugee shelters is important, future research should determine, using more adequate and complex measurements, the extent to which these factors are related to the refugees' state of health, adjustment, or functioning. In addition, future works should combine the use of both individual and community measurements of cohesion and coping. Thus, the interaction of individual and community factors could be analyzed, searching for ways to improve postcatastrophe psychosocial intervention programs.

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