# Interdisciplinary-action-research: Post-earthquake interventions with older people in Chile

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## Abstract

This article reflects on a methodological research proposal developed from the perspective of *interdisciplinary action research* in the context of fear-coping interventions for older people in seven rural areas of southern Chile, following the earthquake and tsunami of February 2010. First, we used interventions based on music and art therapy to gather information on their emotional condition. We not only identified high levels of psychological stress, but also that their strengths were related to the Chilean culture and folk traditions. The creative strategies used proved to be therapeutic and healing, since participants reported they were able to express their fears, giving new meaning to their experiences in a collective context. The results highlight the importance of engaging with community members in the production of knowledge, and in defining collectively the cultural pertinence of interventions. It concludes with a discussion about the possibility of replicating this proposal in post-disaster intervention contexts.

## Keywords

Interdisciplinary-action-research, natural disasters, older people, psychosocial interventions, Chile

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## Introduction

Chile has a long history of natural disasters, such as earthquakes, tsunamis, floods, droughts, and volcanic eruptions. Over the years, these events have resulted in hundreds of deaths, thousands of displaced persons, increased unemployment and business closures, and damage to infrastructure throughout the country.

Numerous earthquakes have struck Chile since recordkeeping began. It is estimated that from 1552 to the present, there have been approximately 67 earthquakes greater than magnitude 7 on the Richter scale, of which, the earthquakes of 1939, 1960, 1985, and 2010 are notable recent examples.

The greatest earthquake in human history occurred in 1960, when a magnitude 9.5 (Richter scale) earthquake struck off the southern coastline of Chile. It produced a huge tsunami with a wave height of 18 meters that reached Hawaii and the coast of Japan.

On February 27, 2010, at 3:34 in the morning, Chile was devastated by a magnitude 8.8 (Richter scale) earthquake. This event affected an area of the country more than 630 long, where 80% of the country's population lives (OPS, 2010). The earthquake was followed by a tsunami with waves that reached heights of up to 10 meters, devastating many communities on the central and southern coast. In total, 525 people lost their lives (Serrano, Castro, Serrano, & Ortiz, 2011). This earthquake was of historic proportions (it was 800 times more powerful than the 2010 Haitian earthquake) and is among the five largest earthquakes ever recorded.

This earthquake was followed by several aftershocks that produced considerable additional destruction, including the loss of electricity and water in all affected regions and the destruction of roads, highways, and airports, which caused serious transportation and communication problems. The prevailing fear, the impossibility of communicating with family and friends, and the lack of information generated increased anxiety and panic among the public. In many cities, there was a lack of food and shelter, forcing many people to sleep in tents, in cars, or on the streets because their homes had been destroyed or damaged by the ocean. This situation continued for weeks until basic services were gradually restored and a slow process of reconstruction began. We conducted our action research in this post-disaster context.

## Psychosocial effects of natural disasters

At the psychosocial level, the effects of natural disasters cause a general disturbance that exceeds the ability of the affected population to cope with the event, thus giving rise to important consequences for the population's mental health. Moreover, these events also typically have economic consequences as a result of the devastation, such as impoverishment and environmental and infrastructural destruction, as well as the lack of basic services such as potable water, electricity, and food. In addition, the loss of lives and material goods has deleterious effects on people's lives and disintegrates families, thereby fracturing the community's social network and causing severe psychological consequences (Iturra & Kinkead, 2011;

OPS, 2010). The Pan American Health Organization (2010) estimates that, depending on the magnitude of the disaster, between 30 and 50% of the exposed population experiences some type of psychological problem, as well as other health problems.

## Our proposal

This article explores a process of psychosocial interventions targeting older people that were implemented a few weeks after the earthquake and tsunami of 2010 in the area of Cutemu, which is located in the district of Paredones. These interventions were the basis of a study that was conducted over a period of two years by an interdisciplinary team from the University of Chile. Our proposal arose from the fieldwork performed in response to the demands of seniors' organizations that requested interventions to help the elderly population cope with their fears regarding aftershocks and new earthquakes.

### Location and participants

Paredones is a rural district located south of the Metropolitan Region and comprises 32 towns distributed over an area of 562 km$^2$. An important characteristic of the social and demographic profile of the district concerns the sustained increase in the population over 65 years of age with respect to the population younger than 14 years of age (MINSAL, 2009). The situation of the elderly was characterized by significant geographic isolation, illiteracy, and low income, all of which leaves this population vulnerable.

The economy of this geographical area is oriented toward agricultural production and the forestry industry. Therefore, these older men and women have been engaged primarily as seasonal workers whose tasks include planting pine trees, harvesting fruit, collecting mushrooms, and making handicrafts and textiles. At present, these individuals subsist on a welfare pension from the government or on money sent to them by their children who have migrated to nearby cities.

The 2010 catastrophe revealed the invisibility of the elderly as a priority social group given the lack of specialized programs or interventions to support or satisfy their emotional and psychosocial needs and to strengthen their social networks. It also revealed the destruction of an important part of the historical heritage of these localities, which entailed the loss of a common historical past (see Figure 1).

## What we did and how we did it

In responding to the concrete request to work with these older people and offer them tools to face their fears, we first had to define the process and the type of interventions to employ given the geographical, social, and cultural particularities of this population. Our first participatory strategy was to work with the leaders of

**Figure 1.** Adobe house in Paredones destroyed by the 2010 earthquake.

the senior organizations, which were our main partners in the co-organization of the interventions and served as our direct links with the participants and communities involved. The organizations' role was to identify the local issues, invite participants, co-evaluate activities and provide us with feedback from their communities.

Our proposal began by designing a general workshop with the following objectives: (a) to provide information and a series of tools and strategies to cope with fear and (b) to gather information on the psychological and psychosocial condition of these older people. The workshop included exercises that promoted awareness of the body through breathing and the use of intermediary objects such as balloons. This was followed by a creative expression activity, and we then proceeded to psycho-educational and discussion activities regarding the effects of the earthquake and tsunami on their personal and community life experiences.

> For us, it has been very useful; we really needed something like this (workshops). I think all the communities [did] because of the stress we had after the earthquake. I say this because the balloons helped us get rid of the stress and because of the physical contact with others, using our hands to touch each other. That meant overcoming that fear we all had and talking with people from other communities. To dare to talk and laugh as well (...). I think you are a great support for all of us here, and we feel very thankful. (Male community leader)

Approximately 150 people from seven rural areas in Paredones participated in these diagnostic workshops.

This first intervention indicated that some of the people had significant levels of psychological stress associated with experiences of anxiety and trauma. Specifically, the older people from the locality of Cutemu presented with greater levels of psychological and psychosocial damage. Those cases that we considered more serious were referred to local government health services for psychological treatment.

We also identified that their strengths as members of these communities were directly related to the culture and traditions of the Chilean countryside, particularly folk music and folklore as means of expressing their oral history. These first contacts with these older people and their history revealed the importance of: (a) the tradition of the *canto a lo divino* (song to the divine), which consists of memorizing and singing individually with a *guitarra traspuesta* (specially tuned Chilean guitar) *décimas* (ten-line poetic form) in *cuartetas* (four-line verse) on various religious themes of the Catholic faith; and (b) dances such as the *cueca*, which is a musical genre and a loose mixed couple's dance. It is Chile's national folkloric dance. Through the *canto a lo divino*, these older people sang the stories of the earthquakes and other natural disasters in their locality. Knowing these forms of expression allowed us to develop future interventions and define the cultural relevance of employing music and art therapy techniques.

These encounters presented us with various dilemmas that blended ethical and methodological aspects. From an ethical perspective, we interrogated the disciplinary limits of the interventions involved in our fieldwork. This questioning arose from the committed bonds established with these people, who demonstrated their interest by continuing to work together:

> This is the first time that I have been in a workshop...first of all, you are going to continue coming back, aren't you? That's why you are gathering opinions, so as to organize the puzzle about what you are going to be working on. So, I think that we older people need mobility. I would love to have movement workshops. I would also like vocal communication. That is, a workshop where we sing old songs. (81-year-old female)

The above quote reflects these individuals' engagement with the process, by offering suggestions for ways to sustain participation, which shows a level of reflexivity and the interest in taking an active role in the design of the interventions. They also expressed interest in learning relaxation and fear-management techniques.

Another ethical aspect related to formalizing the academic relationship of the participants with the research team, specifically, by offering the participants emotionally stable conditions and the certainty that our interventions would not be temporary or sporadic but rather a process in which they would have an active role. At this point, the participants signed an informed consent protocol, which allowed us to explain the aspect of confidentiality and define the time we would work with the community, thereby providing a sense of organization and continuity, as

suggested by Montero (2000). The consent protocol also specified how the collected information would be used and that the information would be made available to the participants.

From a methodological perspective, we realized that these interventions had a healing effect on the participants based on their reflections and comments. Therefore, our interventions had to include psychosocial and support strategies. According to the World Health Organization, the ''term *psychosocial* indicates the connection between psychological and social processes, and the fact that both interact constantly with each other, having a reciprocal influence'' (OMS, 2010, p. 1).

Based on these first experiences, we concluded that every intervention has the potential to create both psychosocial healing and scientific data. This recognition led us to develop an ongoing project and addressed our ethical and methodological questions based on the following research questions. (a) What elements that form part of a community's resources are activated when a natural disaster occurs? (b) What types of psychosocial interventions make it possible to deploy these community resources to decrease fear and generate strengths in such a community?

## Interdisciplinary-action-research in the context of natural disasters

The development of action research is a complex historical process. According to Brydon Miller, Greenwood, and Maguire (2003), some elements of action research appeared in the ''early labor-organizing traditions both in the US and Europe, in the Catholic Action Movement and in liberation theology'' (p. 11).

Our practice, in the context of post-disaster conditions, was based on the contributions of Latin American authors and theories that were part of our training and professional experience as academics. One of the political, social, and cultural research approaches is the methodology of participatory action research (PAR), which was primarily developed in Latin America by Osvaldo Fals-Borda (1985).

The development of PAR in Latin America began in the 1950s and was influenced by some of the premises of liberation theology, critical pedagogy, and militant sociology, among others (Montero, 2000). Fals-Borda (1985), however, introduced the notion of participation into this type of research. Initially, the idea of participation arose as a need to abandon the 'neutrality' of more traditional research, which imposed distance between the researchers and the situations and/or problems they wished to study (Montero, 2000).

According to Fals-Borda, the aim of PAR is to articulate the production of knowledge with social change based on the premise that each person and community possesses self-knowledge that must be considered when designing any research project and/or political work (1985). Fals-Borda proposes strategies such as participative observation and community interventions with the persons and groups affected by a problem, and those persons and groups then participate actively in discussions and actions designed to solve these problems. In this way, those

affected become into co-researchers because of the dialogical relationship in which the researchers and community members offer their knowledge and expertise in the joint construction of new knowledge (Fals-Borda, 1985; Montero, 2000). These notions are central to our conceptualization because they confirm the idea that the self-knowledge that the older people possess allows them to rethink and question their social context in light of the catastrophe and therefore to identify and assess their capabilities and cultural knowledge during the post-disaster social reparation process.

Although PAR is traditionally understood as a process in which the community participates in the entire research project – from the formulation of the problem through the action and results – it also implies the responsibility of both the researcher and the participants. In our case, it was the community itself that requested an intervention, and our psychosocial interventions were one of the sources of knowledge in this action research process. Finally, we regard participation as an exchange of experiences and knowledge (Fals-Borda, 1985).

Paulo Freire's critical pedagogy has been extremely important in the development of PAR, as he challenges us to think of the participants as active members who are capable of questioning themselves and the environment through an action-reflection-action praxis. Thus, participating in a mutual process of questioning, learning, and reflecting leads to the construction of meanings (Fals-Borda, 1985; Freire, 1986; Montero, 2000).

The main objectives of PAR are: (a) the collective process of investigating social issues to produce knowledge; (b) the critical recovery of history; (c) the use and validation of popular culture; and (d) the return and dissemination of new knowledge. Considering these objectives, we focused on the critical recovery of history through memory stories and on the use and validation of the music and traditions of this community through *mateadas comunitarias* (*mate* drinking community meetings). A *mateada* is an informal conversational gathering in which participants meet to drink *mate*. It has a ritualistic meaning because it takes place around a brazier where water is heated to prepare the *mate*, which is then drunk communally. We also recognized that our role was to return the knowledge produced through different intervention strategies, such as a community collage.

This process of collective research uses information that is collected through community meetings, socio-drama, artistic techniques, and cultural gatherings and is then systematized by the group as a source of objective knowledge of facts and themes (Fals-Borda, 1985). In this context, PAR uses oral traditions, testimonies from witnesses, archives from families and communities, popular stories and other techniques to activate the collective memory (Fals-Borda, 1985). Our emphasis was to recover the collective memory of this community with respect to the strategies they had used in their daily lives and their relation to the land following other earthquakes or traumatic events. This type of reflexive participation allows the people to understand their strengths and weaknesses, thus making it possible to begin a process of psychosocial reparation (Montero, 2000).

In this sense, Kagan, Burton, and Siddiquee (2007) state that action research has led to an interesting development in group psychotherapy as this type of group experience is aimed at a mutual knowledge of the participants, which leads to individual changes. Accordingly, it may be considered a form of action research. Similarly, the therapeutic dimension of our action also employs elements taken from clinical and psychosocial work developed in the context of the repression experienced during the military dictatorship in Chile. The notion of a 'committed bond', developed by the Chilean psychologist Elizabeth Lira (1997) in the framework of her clinical work with torture survivors, is particularly relevant. This concept implies that the psychotherapist is *ethically not neutral* in the face of the suffering of others and that their emotional situation is the result of a previous traumatic experience (Lira, 1997). This is complementary to the notion of 'committed experience' developed by Fals-Borda (1985). This commitment, which is taken up by the external agents and members of the community, is translated into the unification of shared goals of social transformation. In our interventions, this bond and committed experience was translated into the commitment to assist these older people in their reparation process and assume new academic responsibilities. Among other things, this meant traveling and working on weekends to accommodate the availability of the participants.

In summary, our proposal came from praxis and an understanding of participative action research based on its development in Latin America as a vision shared by some of the principles of action research developed in other countries (the US and UK). Thus, we emphasized interdisciplinary intervention strategies as knowledge production techniques with the goal of psychosocial reparation in post-disaster contexts.

## Construction of knowledge from fieldwork

Our experience did not arise from the safety and comfort of discussions in our offices but rather from the chaotic environment of a post-disaster context that involved the entire country. The three researchers on this project included a clinical/community psychologist, an art therapy psychologist, and a social anthropologist who did not know one another until they began organizing activities for the most affected communities and began working together in the field with their students. This article reflects our interdisciplinary process through the construction of a group voice representing the collective experiences of the researchers.

It is important to note how different disciplinary views are articulated in the context of a disaster when disciplines, such as seismology or geology, are involved in measuring and explaining the magnitude of such events using instruments. Similarly, other disciplines from the social sciences, such as social anthropology and psychology, explore the effects of these natural phenomena on the lives of the people to help them identify their symptoms, provide emotional support, and identify and use their personal and community resources.

## Narrative as an intervention strategy

Understanding that we were working with a group of older people who had been affected at both the psychological and psychosocial levels, we searched for approaches from which to design our intervention strategies. In this context, the notion of trauma is particularly relevant. We understand trauma as "a stressful occurrence that is outside the range of usual human experience, and that would be markedly distressing to almost anyone" (Levine, 1999, pp. 35–36). Literature specializing in trauma (Cyrulnik, 2003; Herman, 1997; Levine, 1999; Van der Kolk, 1994) emphasizes the importance of constructing a narrative of the traumatic experience as the beginning of a therapeutic process. At the collective level, both psychosocial workshops and group psychotherapy can offer safe environments for this process to occur. These collective instances are also a first step in processing and integrating these traumatic events into the individual historical continuum, which is integrated into a group narrative from which it is possible to understand group members' life experiences.

In this way, the narratives become units of meaning, offering a framework for locating and understanding the lived experience (Epston, White, & Murray, 1996). Consequently, these personal narratives, which are immersed in the processes of emotional exchange that unite the past with the present, help to organize memories and to organize the meanings given to the future development of our experiences (Gergen, 1996). Therefore, through the construction of narratives of the traumatic event, individuals accept the possibility of reflecting on the experience, which helps give new meaning to these events in the present and thus contributes to overcoming the traumatic experience during the process of psychosocial reparation.

The concept of narrative is closely linked to the concept of collective memory. Maurice Halbwachs (1992) defines the narrative as a social practice constructed by integrating the individual memories that are formed and organized by means of social frameworks constructed from general representations of society, including the values and needs of that society.

Time and space are among the most important social frameworks. Time refers to the dates that represent meaningful events and may be subsequently evoked, thereby allowing societies or groups to construct traditions and an identity that allows them to recognize themselves as members of that group (Halbwachs, 1992; Mendoza, 2005). In the same way, each society transforms the space that it occupies in particular ways by constructing fixed frameworks that enclose the memories and whereby the groups live their realities and give meaning to their experiences (Halbwachs, 1992; Mendoza, 2005). However, the most important framework is language, through which people construct, communicate, and maintain the contents and meanings of memory. Therefore, narratives and memories were fundamental in the conceptualization of our work, given the characteristics of the population with whom we were working. For these people, the telling and singing of stories and the remembering and identifying of landmarks, persons, and events were fundamental actions of those who had lived much and who wished to leave an

imprint for future generations by sharing their experiences and reorganizing their pasts during the acts of remembrance.

## Art therapies as intervention strategies

From the perspective of art, we highlight the dramatic influence of popular education in the development of art and social participation practices. Cabrera (2001) and Reyes (2014) discuss the particular development of artistic education in Latin American from the critical pedagogical perspective of Paulo Freire, whereby the contextual view and cultural relevance serve as the foundation for the development of meaningful experiences through art.

The practice of artistic education offers sensitive methods that make it possible to approach phenomena from within, that is, from the sociocultural reality of the individual, as opposed to a more external perspective, using empathy and sensitivity as the main tool. Furthermore, artistic education, in its contextual vision, converges on the objectives of awareness and the transformation of social relations in a specific space and time. The aim of our interventions was psychosocial reparation, and they were conducted in the context of a vulnerable rural impoverished space during a time of post-disaster social instability.

We used psychosocial interventions based on art therapy wherein the artistic media were used creatively as vehicles for nonverbal and/or symbolic communication in a contained and supportive environment (Karkou & Sanderson, 2006). These types of therapeutic practices were developed in clinical individual and psychosocial community contexts (Reyes, 2014). The art therapy interventions nurtured a methodology of group intervention that allowed access to personal and group experiences from non-verbal, sensory, perceptive, metaphorical, and symbolic resources. The participants achieved different levels of insight and validation of their personal and collective consciences during the therapeutic experiences.

## Ethnography as an intervention strategy

Developing interventions with a community of older adults implies a commitment to a group of people who are seeking help to confront their fears. This collective work produces and configures a dialogic process that includes building trust and leads to knowledge of the Other. The challenge was, therefore, to understand the texture of everyday life and the structure of the memories within this rural community. This implied a hermeneutical exercise of constant interpretation and dense description (Geertz, 2005). Within this framework, the ethnographic approach became a transversal tool for comprehension and dialogue between the macro- and the micro-level aspects of the participants' experience with their natural and material environments. Based on Yi-Fu Tuan (2007), we sought access to "the affective link between the people and the place and the surroundings" (p. 13), the link that is present in the memories, the pristine origin of which is culture. Ethnography allowed us to gain access to a territory that was unknown to us, and

thus, we began creating meanings between the community and ourselves, thereby making visible that which was invisible, making clear emotions that were blurry, and making comprehensible the perceptions and appraisals of each of the individuals who experienced one of the country's largest natural disasters. Initially, we, as researchers, felt like foreigners because we were uprooted from the city and inserted into an isolated rural community that was in ruins. This was the starting point of our ethnographic observation that facilitated understanding the sociocultural context in which we would be working.

## The interventive actions

Our psychosocial workshops in the locality of Cutemu considered three intervention strategies. The first strategy included techniques to achieve consciousness of one's own body and emotions, thus favoring states of mental calm and physical sensations of relaxation. The second approach, which had a creative character, began with the group re-creating folk music, while the third strategy, which included a process of group interventions with visual and plastic materials, concluded with the creation of a community collage. All of the workshops ended with shared reflections on the creative experiences and discussions of the individual and collective themes.

Working with older people in this community entailed establishing relationships with the directors of seniors' organization to plan activities. The workshops, which generally included 15 to 20 participants, were conducted on Saturday afternoons and lasted approximately four hours. Before starting, the researchers would pick up the participants who lived farthest from the site of the workshop. The workshops culminated with a *mateada*, after which the researchers would return the participants to their homes. Because this region was remote and difficult to access, the workshops were planned according to the weather, which thus affected their periodicity. For this reason, the workshops were conducted primarily during the spring and summer. During the winter, the rain made it impossible to access this location. Furthermore, the low temperatures prevented many of the elderly from participating in the activities. During the study, we conducted eight workshops.

The development of each of the workshops was audio-visually recorded, and members of the team took notes based on their observations of what was occurring. These materials served as a basis for reflecting on and systematizing the intervention and the research process as they unfolded.

## Creative music workshop

As a first approach, we initiated music workshops as a way to create a connection among the participants with their own creative and expressive resources. In art therapy approaches, adults with no artistic education usually associate visual and plastic resources with school activities, which means using materials such as

pencils, paper, paint, etc. As these activities require greater psychomotor effort, the participants often require greater motivation. In our case, due to the lack of schooling and the high levels of illiteracy and deteriorated literacy skills, the workshops began with music activities.

These activities included the folk music practices with which we became acquainted during our initial contacts with this community. Therefore, we considered it appropriate to use different forms of music to channel their personal experiences from the earthquake. This led us to propose the *décima* as a creative resource, as it allowed the participants to write and narrate short stories that could be either sung or read aloud. Small groups were thus formed to create the *décimas*. However, the activity was open to any creative form that was natural to the participants and their culture (traditional stories, *cuecas*, *décimas*, etc.). This activity also provided the participants with various musical instruments that were commonly used in the local folklore, such as guitars, tambourines, etc. Each of the groups included up to four people and a facilitator (psychology, social anthropology, and art therapy students, and the three researchers involved in the project). The facilitators stimulated the group dynamics and provided support to the participants. Initially, each participant spoke briefly about his/her experience the night of the earthquake, and the group then decided which story would be set to music. The creative work then began. The facilitator, acting as the scribe, wrote their creative ideas and works on a flipchart so that all groups could comment on the creations in a final reflective discussion (Figures 2 and 3).



**Figure 2.** Women singing.

*We were sleeping alone*
*And we gathered with our neighbors*
*There was a full moon and a beautiful sky*
*Gosh we got scared*
*And ran out in our underclothes*
*Together we started praying*
*Luckily God decided to help us*
*February 27 I did not want to remember*
*But we wrote the song and I remembered*
*just the same!*

**Figure 3.** Song written by participants.

## Art workshop

During our fieldwork, we noticed that ties with the land were a recurring theme in the participants' narratives. Therefore, the plastic creative work was oriented toward themes related to their environment and the natural landscape. This activity began with all of the participants seated at a table with art materials to be shared. The participants were asked to choose meaningful images from magazines or newspapers that represented their relationship with the land. They then cut out three or more pictures or images related to that experience. In the second phase, they pasted the selected images on a blank sheet of paper and complemented them with drawings or paintings. During this individual work, the facilitators assisted the participants with materials, techniques, and/or emotional containment. During this phase, we observed how creative expression gave rise to important emotional connections. The participants then worked in groups and collectively created a community landscape. During this process, the participants directed the collective composition of the collage, while the group facilitators pasted and placed the images following the participants' instructions. In a final discussion, participants reflected on how they had integrated the images to represent a shared vision of the land in which they lived. At the end of this intervention process, the participants decided to leave the collage in the community center as a representation of their experiences and the knowledge constructed collectively concerning their ties with the land and their local identity.

After the intervention activities concluded, the project ended with a gradual separation process. In most instances, telephone contact was maintained, and some of the older people continued to participate in academic and cultural activities at the university (Figures 4 and 5).

## Results

One of the main objectives of the interventions that comprised our research was the psychosocial reparation of this community of older people in Cutemu, based on investigating on the strengths they manifested in disaster contexts.

**Figure 4.** Personal landscape work.

Therefore, art therapy creative strategies proved to be highly therapeutic and healing for the participants. On the one hand, the use of folk music as a strategy to narrate their experiences related to the earthquake allowed them to express their fears, thus transforming the traumatic experience by means of a creative musical re-creation. In addition, by sharing their experience and setting it to music, the traumatic experience was given new meaning in a collective context.

On the other hand, in the art workshops, the materials used allowed some of the participants to open up to their own personal experiences and to share feelings of loneliness and fear with the group. The collective work allowed them to reaffirm their relationship with the environment, while the landscape theme helped them to identify important aspects of rural peasant life. This reinforced and strengthened their sense of belonging, thus connecting them with their local identity, which was composed of their trades, their relationships, and their cultural heritage all of which were identified as community strengths.

Similarly, in this intervention framework, collective memory that was materialized through narratives became the guideline for our actions based on the understanding that this practice is present in social anthropology, social and community psychology, and in art therapy. Thus, through the construction of individual and group narratives regarding the participants' experiences during the last

**Figure 5.** Community collage.

earthquake, we were able to identify their reactions and actions when faced with this and other traumatic events, such as the 1985 earthquake. In both cases, the participants remembered the high level of organization that appeared spontaneously after these events, organization that included the emergence of leadership and concern for the welfare of neighbors. This high level of organization included the creation of groups that verified the health conditions and the degree of damage faced by even the most remote neighbors; the distribution of tasks such as the collecting of food, water, and warm clothes; and the need to stay together in the first hours after the event and to take care of each other and provide mutual support until rescue teams arrived. "I was sleeping alone when the earthquake started. I came out of my house to see my neighbors. They were outside around a bonfire. We were seven families sleeping in tents for more than a month" (70-year-old male).

This reflexive process allowed them to acknowledge the resources that they possessed as a community to organize themselves. These resources had always been present, not only in the context of disasters but also in individual crises such as the illness or death of a relative or neighbor. This inquiry into their own strengths represented the beginning of the psychosocial reparation process.

I think that older people still have a lot to give, activities to develop and work to do. That creates health; you feel like going on in life, so it is a good thing, not like staying at home, thinking about the past. (78-year-old female).

Consequently, through art therapy, these interventions allowed for the active inclusion of this community in the research process regarding their own reality, which also allowed for some level of visibility at the local level: "now they take us into account, especially the municipality and society" (74-year-old male).

## Implications

Our proposal uses psychosocial interventions as a source of research in post-disaster contexts. These research strategies are centered on identifying the degree to which the communities have been affected psychologically and the resources available to those communities to implement interventions. The knowledge we obtained was returned to this community of older people through a process of psychosocial reparation using strategies derived from art therapy. In this sense, these interventions offered a context that merged the participants' local knowledge and the researchers' academic knowledge.

We expect this work to serve as a basis for the design of similar intervention processes in other disaster contexts. From our experience in the field, we recognize that these types of interventions must involve, at a minimum, the following aspects derived from our interdisciplinary action research approach. (a) The work should begin by considering the needs identified by the community itself. (b) The intervention team should encourage the development of ties and trust within the community. This would allow the team to negotiate and respond realistically to community demands that may emerge during the process. (c) Such an effort should identify the geographical characteristics of the locality and the particular characteristics of the community, e.g., age group, with whom the team will be working. (d) It is necessary to have knowledge of the sociocultural context and identify elements of the local popular culture, including myths, legends, and local stories, which will be used as the basis for the interventions and will make it possible to ensure that such interventions have cultural relevance. These cultural expressions in the communities have served historically, among other things, to collectively face previous traumatic events. (e) The team must include professionals from the social sciences and art therapy. (f) The members of the team are expected to engage in various tasks for which they must have previous training, such as group facilitation and emotional support as well as the use of creative resources in the collective processing of traumatic events. (g) Every intervention in the field produces important information, thus allowing for the design of an adequate intervention that can later be implemented in the community.

Our contribution to the field of post-disaster studies is based on a methodology that includes fieldwork interventions to produce information regarding the psychological stress of the communities affected as well as their strengths. As

demonstrated herein, it is necessary to develop a psychosocial support strategy that promotes psychosocial reparation of the affected communities. In this regard, the use of creative resources allowed identifying relevant cultural characteristics for the development of interventions that proved to be therapeutic and healing for these older people. This information might be crucial in designing post-disaster interventions, especially in the context of material reconstruction.

Finally, this type of work was significant for us as researchers because we learned that it is possible to implement interdisciplinary interventions and conduct research in the field during the aftermath and amid the chaos of a catastrophe. Similarly, we reaffirmed that knowledge is co-constructed in community action where not only is knowledge produced but psychosocial reparation processes are also initiated.

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