

Building New Resources After Fire Disasters: The Experience of Fire Survivors

Anna Papadimitriou

Panteion University of Social and Political Sciences

Karakasidou Eirini

Panteion University of Social and Political Sciences

ABSTRACT

The current qualitative study aims to explore the experience of individuals who survived wildfires, focusing on the meaning they attributed to the wildfire experience, the psychological impact, coping strategies, and the cultivation of positive aspects arising from the experience. Natural disasters, such as wildfires, floods, and earthquakes, constitute traumatic experiences for individuals, as they cause significant losses, such as the loss of lives, property, and environmental destruction, with profound effects on mental health. Nevertheless, there have been limited reports in the research literature suggesting that traumatic experiences can lead to the development of resources and positive elements. This study seeks to examine the overall experience of wildfires. The research involved 12 participants aged 25 to 55 from various regions of Greece, who had experienced wildfire disasters at least five years ago. Semi-structured interviews were conducted and analyzed using the IPA (Interpretative Phenomenological Analysis) method. The findings reveal a wide range of results regarding the meaning-making of the event, the wildfire experience, the psychological consequences, the strategies adopted, and the resources built. As the study of wildfire experiences remains relatively limited, future research should focus on exploring these experiences and highlighting positive elements emerging from trauma. Additionally, it is crucial for governments to implement measures to safeguard the mental health of individuals who survive natural disasters, as well as their families.

Keywords: fire disasters, fire survivors, experience, IPA.

INTRODUCTION

Natural disasters, including wildfires, floods, earthquakes, and hurricanes, represent a global issue with dramatic impacts at physical, psychological, social, environmental, practical, and economic levels (Makwana, 2019). In recent years, there has been an apparent increase in the frequency of natural disasters worldwide, likely attributed to climate change (Makwana, 2019). Depending on their underlying causes, natural disasters can be classified as endogenous or exogenous. Endogenous causes include natural disasters stemming from natural origins, while exogenous causes refer to disasters (e.g., wildfires) resulting from climate changes (Chaudhary & Piracha, 2021). Moreover, according to Tzilini and Lavdanitis (2016), natural disasters can also be categorized into meteorological disasters (e.g., storms, hurricanes), climatological disasters (e.g., droughts, wildfires caused by temperature fluctuations), geophysical disasters (e.g., earthquakes, volcanic eruptions), and hydrological disasters (e.g., floods). Depending on

the geographical location, different phenomena are more prominent and frequent. For example, hurricanes often affect the United States, Puerto Rico, the Dominican Republic, and the U.S. Virgin Islands (Sattler et al., 2002). Italy is a country frequently threatened by the natural phenomenon of flooding (Iadanza et al., 2021). In Greece, the most common natural disasters are wildfires, earthquakes (Papanikolaou et al., 2011), and floods (Angelakis et al., 2020; Papanikolaou et al., 2011). All natural disasters are accompanied by extreme consequences. For instance, forest fires are challenging to manage and additionally cause significant material, ecological, economic, and human losses (Tedim et al., 2015).

Natural disasters constitute a traumatic event for people. Regardless of whether individuals are directly victimized or not, they can be psychologically affected. It is no coincidence that in the DSM, the diagnosis of post-traumatic stress disorder (PTSD) applies not only to victims but also to witnesses of traumatic events or individuals involved in such incidents (American Psychiatric Association [APA], 2013). For example, cases of this diagnosis have been documented in firefighters who are exposed to wildfires and are required to intervene immediately (Obuobi-Donkor et al., 2022). This suggests that natural disasters are not merely phenomena that affect individuals in isolation; the consequences and trauma they leave behind manifest on a collective level (Beaglehole et al., 2018). Moreover, the impacts of natural disasters are not exclusively immediate and short-term. People affected by such events are often required to adapt to new realities and circumstances because they may experience the loss of loved ones, housing, and employment. Therefore, natural disasters compel individuals to adjust to new conditions and alter their way of life (Beaglehole et al., 2018).

Research on natural disasters generally focuses on their effects on individuals' health and the psychosocial consequences for survivors (Woodhall-Melnik & Grogan, 2019). The impact of natural disasters is evident in terms of mental health, as survivors often experience mental health issues and psychopathology, such as depression, anxiety disorders, and post-traumatic stress disorder (PTSD) (Besige, 2023; Garfin & Silver, 2016). The consequences of natural disasters, such as death, injuries, loss of property, and threats to life, are recognized as risk factors for mental health (Papanikolaou et al., 2011). Additionally, people are inherently vulnerable to natural disasters, as these events are beyond human control, leaving individuals feeling powerless and unable to cope or manage them effectively (Han et al., 2016). On a collective level, natural disasters also bring about profound economic and social consequences. During the occurrence of such events, governments implement emergency management measures and often receive assistance from other countries, as the available financial resources are frequently insufficient (Ranke, 2016).

The burden on individuals' mental health also arises from the disruption of their relationship with the natural and social environment in which they live. Beyond the adjustments survivors of natural disasters must make, they are also called upon to rebuild their relationship with the natural environment—a relationship now characterized by fear, anxiety, distress, and negative emotions (Bratman et al., 2019). The relationship individuals form with the natural environment is crucial for mental health; thus, the disruption caused by a disaster can negatively affect their functionality and, consequently, their mental well-being (Bourque & Cunsolo Willox, 2014).

As a result, when natural disasters occur, they impact mental health, with consequences observed both in the short and long term (Thordardottir et al., 2018). Survivors of natural disasters often experience severe challenges to their mental health, exhibiting symptoms of mental disorders and a decline in overall well-being (Douki et al., 2021).

Natural disasters are inherently associated with unpredictability and lack of control. Events beyond an individual's control, combined with the absence of predictability, disrupt stability and evoke intense negative emotions such as anxiety and distress. According to Harville et al. (2015), natural disasters are generally traumatic events in a person's life. Trauma theories suggest that trauma is triggered when individuals encounter events and situations that break predictability, exposing them to death, threats to physical integrity, loss of possessions, abandonment, and more (Harville et al., 2015). How individuals assign meaning to the traumatic event will determine whether they develop psychopathology or attribute a different meaning to their traumatic experience, as will be further analyzed below.

Another approach that explains the effects of natural disasters on individuals is rooted in grief theories. Grief as a concept is closely tied to loss, whether physical or symbolic. Survivors of natural disasters inevitably face loss. Initially, this could mean the loss of loved ones or pets due to the disasters, such as drowning or burning. It could also involve the loss of property, such as homes and businesses. These are examples of physical losses. However, we can also talk about symbolic losses, as every loss is connected to the individual's personal meaning-making process (Sandhu & Kaur, 2013). Undoubtedly, after natural disasters and exposure to loss, individuals experience grief. Grief is a normal psychological reaction to loss, a state in which individuals must adapt to a new condition and reality. During the grieving process, individuals experience a range of negative emotions, including shock, numbness, anger, despair, sadness, and depression, before eventually reaching acceptance (Kübler-Ross & Kessler, 2014). All of these affect the individual's well-being and mental health. While grief is a natural reaction, if it persists for more than six months, diagnoses such as major depressive disorder or prolonged grief disorder may apply (APA, 2013). These disorders—depression, prolonged grief, adjustment disorder, and post-traumatic stress disorder (PTSD)—are often observed in survivors of natural disasters (Garfin & Silver, 2016). Beyond the negative emotions experienced, individuals may also display anhedonia, a lack of interest in life, hopelessness about the future, and difficulty in finding new meaning in life (Sandhu & Kaur, 2013).

Another theoretical model that explains the effects of natural disasters on mental health is the anxiety model. Exposure to challenges and difficult events, combined with the lack of sufficient skills and available resources to cope with them, negatively impacts mental health and well-being. Consequently, to protect themselves from the possibility of re-experiencing a natural disaster, individuals remain in a constant state of vigilance and experience stress (Berrebi et al., 2020). Traumatic life experiences are always accompanied by negative emotions and serious mental health consequences. However, emerging approaches highlight the importance of positive components that can arise after traumatic events and help individuals adapt by providing a new perspective on the situation. Trauma, in this context, can lead to a positive psychological change known as post-traumatic growth. Post-traumatic growth emerges from the cognitive processes activated after exposure to a traumatic event. After some time has passed following the natural disaster, individuals may begin to process their trauma and the event differently, discovering new aspects of themselves, recognizing their character strengths,

gaining a renewed sense of life's meaning, and building resilience. Through the development of these components, individuals may eventually experience beneficial effects on their mental health, even after exposure to a traumatic event such as a natural disaster (Schneider et al., 2018).

Nevertheless, the experience of natural disasters is primarily studied in the literature regarding their impact on individuals' mental health, with the aim of designing appropriate therapeutic interventions to help survivors manage psychopathological symptoms. Few studies focus on the "positive" experience that can emerge after exposure to a traumatic event, such as natural disasters. Moreover, when discussing experiences, the subjective nature of the aftermath of exposure to a natural disaster—such as wildfires—is acknowledged. The way individuals experience and make sense of such events is unique and deeply personal to each person.

Despite this, due to the global increase in natural disasters, there is significant research interest in this area. Heightened anxiety and the diagnosis of anxiety disorders are commonly observed among survivors of natural disasters. A study conducted with 379 survivors of the 2016 Fort McMurray wildfire in Canada found that participants exhibited anxiety disorders, including post-traumatic stress disorder (PTSD) and panic disorder. Specifically, 62.5% of participants displayed symptoms of PTSD. From this group, 55 individuals were selected for interviews, which confirmed the PTSD diagnosis. Additionally, one-quarter of these participants experienced depression, and nearly half reported problems with insomnia (Belleville et al., 2019).

Similarly, another study was conducted on a sample of 1,573 Chinese adolescents who survived the Wenchuan earthquake. The study examined the prevalence of mental disorders among participants following the earthquake. The results showed that after six and 18 months, 62.9% and 56.1% of participants, respectively, were diagnosed with a mental disorder. Additionally, the participants were found to have at least one of the following mental disorders, with some cases involving comorbidity, most notably PTSD. There was also a high prevalence of anxiety disorders (panic disorder, generalized anxiety disorder, social phobia, separation anxiety disorder), depression, conduct disorder, and attention deficit hyperactivity disorder (Geng et al., 2018). PTSD, in particular, is often reported as the most common disorder among survivors of any natural disaster (Besige, 2023).

Even though experiencing a traumatic event, such as a natural disaster, might occur only once or have a short duration, it can have long-term effects on survivors. A study conducted on adolescent and young adult survivors in Sweden, 25 years after a fire disaster, revealed that a significant proportion of participants (21.3%) reported that the experience still had an impact on their lives even after 25 years. Moreover, more than half of the participants stated that it played a defining role in their lives overall (Lundin & Jansson, 2007). This suggests that depending on how participants interpret such an experience or the support they might seek (e.g., psychotherapy), an event like surviving wildfires can influence their lives and have long-term effects on their mental health.

A scoping review gathered a wide range of studies examining the mental health effects of wildfires on adults and children. A total of 60 studies meeting the selection criteria showed that the most common disorders among survivors were PTSD, depression, and generalized anxiety

disorder. However, other disorders were also reported in these studies, such as substance use and distress related to the environment. Regarding the latter, ecological grief, eco-anxiety, and solastalgia were documented. Additionally, the scoping review highlighted resilience as a common factor, albeit to a lesser extent compared to the psychopathology mentioned above. Specifically, a number of studies indicated that survivors demonstrated resilience and good adaptation, citing psychotherapy, group involvement, and coping strategies as factors that contributed to building resilience (To et al., 2021).

From the findings retrieved in the global literature, it appears that there is some limitation in the study of the experience of wildfires among survivors. This research aims to examine the experience of the wildfire as well as the resources that survivors built in order to cope with the new and unprecedented conditions they faced. Specifically, in the Greek literature, there are no studies that explore this phenomenon, even though Greece is one of the countries where natural disasters occur.

The aim of this research is to study the personal experience of individuals who are survivors of wildfires. Studying and understanding this experience will help identify the impacts of natural disasters, as well as explore the resources these individuals build years after the traumatic event.

The research questions that this study aims to answer are:

- Q1: What was the experience of the wildfire survivors?
- Q2: What were the impacts they experienced on their mental health?
- Q3: Με ποιους τρόπους οι επιζώντες διαχειρίστηκαν το βίωμα της πυρκαγιάς;
- Q4: How does this experience affect the present?
- Q5: How did the participants give meaning to their wildfire experience?
- Q6: What resources do they feel they have developed through their wildfire experience?

METHODOLOGY

Participants

The sample of this research consisted of 12 Greek adult individuals who had experienced the wildfire event. The participants were five men and seven women, aged between 25 and 55 years, and were residents from various regions of Greece, with the majority coming from the suburbs of Athens. The inclusion criteria for the sample were that all participants had to be adults and had experienced the event at least five years ago. Those who did not meet these criteria were excluded from the study. The participants were approached using convenience sampling, and an announcement was made on social media. Additionally, with the help of two key informants from the researcher's broader social circle who met the criteria, other participants who also met the criteria and were able to participate in the study were contacted.

Materials

A semi-structured interview was conducted to gather the necessary information relevant to the research topic, with open-ended questions. The questions were improvised, and the interview guide followed a basic structure with flexibility to modify the questions depending on the flow of the interview. After conducting a thorough literature review on the effects of forest fires and other natural disasters (e.g., floods) on the psychology of victims, the interview questions were

formulated. There were 15 questions covering topics related to the experience of the fire, coping strategies, emotions experienced, the meaning attributed to the event, and the new reality. Additionally, some demographic questions were asked before the interview began. The interview lasted approximately 60-70 minutes.

Procedure

The participants were approached through a combination of convenience sampling and snowball sampling. During the communication between the researcher and the participants, the framework and purpose of the research were clarified from the outset. The interview was conducted in person with participants residing in Athens, while for participants living in other areas of Greece, the interview was conducted in vivo, with an average duration of 60 to 70 minutes. Throughout the research, from its design to the interview process, ethical guidelines were adhered to. The study addressed a sensitive topic, so the interview process was carefully designed and adapted to the participants' needs. The questions were formulated with care to avoid burdening participants while discussing their experiences. Additionally, the participants were informed that participation in the study was voluntary and that they could request to stop the interview at any time if they felt uncomfortable or no longer wished to participate. The participants' responses were coded and presented anonymously.

Analysis

The analysis of the data collected from the interviews was conducted using Interpretative Phenomenological Analysis (IPA). IPA is the most suitable method for analyzing individuals' lived experiences and the interpretations and meanings they assign to psychological or social phenomena they encounter. Through the lens of IPA, the participants' perspectives and the meaning of their lived experiences are highlighted (Larkin et al., 2012). Through the analysis of the interviews, participants' thoughts and emotions emerged, leading to the identification of new dimensions (Smith, 2017) of their experience with the phenomenon of wildfires. It should be noted that the IPA-based analysis process was conducted according to the six steps proposed by Smith and Shinebourne (2012), which include: reading, coding, clustering, iteration, narration, and contextualization.

Reliability of the Analysis

In qualitative research, it is very important to ensure the reliability of the analysis, as the researcher's subjective perspective may influence the derivation of valid conclusions. The interviews, as well as the initial analysis, were conducted by Mrs. Papadimitriou. Subsequently, Dr. Karakasidou carried out the supervisory review, examining the subthemes that emerged to ensure they were indeed derived from the interview excerpts, reviewing their grouping into overarching themes, and adding some additional subthemes. The analysis process conducted by all authors followed the guidelines provided for IPA analysis by Smith et al. (2009).

RESULTS

The results that emerged were organized into superordinate themes with subordinate themes. Specifically, the themes that emerged were:

1. **Experience of the wildfire** (destruction, loss)
2. **Impact on mental health** (emotional domain, cognitive domain, depersonalization, impact on functionality, sleep difficulties, eating disturbances)
3. **Coping strategies** (psychotherapy, medication, resignation)

4. **Meaning-making** (unpredictable event, feeling of helplessness, fear for the future)
5. **Focus on the present** (return to normalcy, avoidance, reliving)
6. **Positive reframing** (resilience, discovering new strengths, giving meaning to more important things, empathy, helping others, gratitude)

Superordinate themes	Subordinate themes	Quotes
Experience of the wildfire	Destruction	"It was a disaster, no exaggeration at all..." (Maria, aged 39)
	Loss	"...after the wildfire, I never found my dog, Louiza, again." (Zoi, aged 29)
Impact on mental health	Emotional domain	"I was so scared." (Anna Maria, aged 48)
	Cognitive domain	"I sat and tried to think about what happened back then, and I truly couldn't remember." (Pavlos, aged 43)
	Depersonalization	"It was like I had left my body, like I was someone else." (Marina, aged 30)
	Impact on functionality	"Of course, in the state I was in at that time, I couldn't work." (Maria, aged 39)
	Sleep difficulties	"I kept having nightmares. Even now, sometimes I dream about the car catching fire and me having to fill buckets with water." (Christos, aged 55)
	Eating disturbances	"I was undernourished... I couldn't eat." (Marina, aged 30)
Coping strategies	Psychotherapy	"With my psychologist, we worked a lot on not being afraid for the future, that the same thing would happen again." (George, aged 35)
	Medication	"Medication alone is not enough, but after the first month, the stress symptoms were not as intense." (Christos, aged 55)
	Resignation	"I felt completely insignificant in the face of everything that was happening. I felt useless to do anything and relied entirely on others." (Marina, aged 30)
Meaning-making	Unpredictable event	"I felt that all the dreams I had made were meaningless; after all, why plan when you can't predict the next day?" (Georgia, aged 25)
	Feeling of helplessness	Marina (aged 30) also expressed feeling "helpless for everything that happened and everything that was to come." (Marina, aged 30)
	Fear for the future	"You're afraid to think too far ahead, about the long-term, because, in the end, you can never be sure about anything." (Christine, aged 44)
Focus on the present	Return to normalcy	"When something bad happens, something beyond human comprehension, life keeps moving forward without asking you." (Chris, aged 38)
	Avoidance	"I continued my activities, but I didn't handle the procedural issues related to the house." (Georgia, aged 25)
	Reliving	"It's like you're reliving it all over again, again and again." (Pavlos, aged 43)
Positive reframing	Resilience	"I definitely feel stronger in managing difficult situations." (Pavlos, aged 43)
	Discovering new strengths	"It felt like a new world opened up after some time... I discovered that I was stronger than I thought." (Chris, aged 38)
	Giving meaning to more important things	"I finally understand what really matters." (Angela, aged 37)
	Empathy	"I feel like I can relate to others more meaningfully because I better understand their emotions." (Angela, aged 37)

	Helping others	<i>"I feel like I can help the people close to me more meaningfully." (Maria, aged 39)</i>
	Gratitude	<i>"..grateful for what I experienced and for what I ultimately learned." (Anna Maria, aged 48)</i>

Experience of the Wildfire

The first superordinate theme that emerged concerned the experience of the wildfire. Within this superordinate theme, the participants of the study shared how they experienced the wildfire, describing it primarily as a feeling of destruction and loss.

Destruction:

There was a general consensus that for wildfire survivors, this experience was characterized as destruction. Participants viewed the situation as nothing less than catastrophic. It was a life-altering experience that is difficult to erase from their memory, especially due to the intensity of the event. They were forced to survive this devastating experience, enduring any losses it brought. It was an experience that left a deep and lasting impression. As some participants vividly stated, *"It was a disaster, no exaggeration at all..."* (Maria, aged 39), *"It was a catastrophe. It won't ever be erased from my memory as long as I live."* (Christine, aged 44), *"I think Greece hadn't experienced such destruction in years."* (Pavlos, aged 43)

Loss:

Loss was another concept consistently expressed by all participants when discussing their experience of the wildfires. Every participant mentioned losses, whether it involved property (e.g., homes, cars), pets or animals, or jobs. While these losses were short-term in nature, their consequences persisted for many years, and some participants stated that even now, they have not fully recovered from these losses, which continue to affect their daily lives. None of the participants reported the personal loss of a loved one, but they did note that people close to them experienced such losses. Loss, while a unique experience, was also a shared one, yet it had different implications for each individual's life.

"Although I personally didn't suffer the loss of a loved one, which is the most significant loss, losing my home was a huge burden." (Anna Maria, aged 48)

"...after the wildfire, I never found my dog, Louiza, again." (Zoi, aged 29)

"The store where I worked was destroyed...so suddenly, I was left without a job." (Pavlos, aged 43)

Impact on Mental Health

A second superordinate theme that emerged concerned the impact of the wildfire experience, which was categorized under the theme of impact on mental health. These effects were identified across different areas, including the emotional domain, the cognitive domain, depersonalization, impacts on functionality, and difficulties with sleep and eating.

Emotional Domain:

The primary effects of the wildfire experience were observed in the emotional domain, where participants experienced intense negative emotions, primarily fear, terror, panic, despair, and sadness. These negative emotions fluctuated constantly and persisted for a long time, even after

the disaster had ended. Even in the present, participants report negative emotions, though they are not of the same intensity or duration. Nevertheless, these emotions still exist and are often triggered during “anniversary” periods or when similar incidents, such as wildfires or floods, occur in the country.

"I remember the despair—I felt it, I saw it around me, I felt something tearing inside me." (Angela, aged 37)

"At night, I would lie down and feel a constant terror, like someone would wake me up and tell me to run." (Georgia, aged 25)

"I was so scared." (Anna Maria, aged 48)

Cognitive Domain:

Participants reported symptoms such as difficulty concentrating and memory problems. There was significant confusion, and they were unable to accurately recall events and details from those days of the wildfires. They also described difficulty focusing and successfully completing tasks or maintaining attention on something for an extended period.

"I sat and tried to think about what happened back then, and I truly couldn't remember." (Pavlos, aged 43)

"I remember people talking to me, and I was just looking at them...but I couldn't focus on what they were saying." (Nikos, aged 47)

Depersonalization:

A notable experience reported by participants was depersonalization during the wildfires. The symptoms of depersonalization, in particular, persisted for a long time even after that period had ended. Participants described feeling as though what was happening was occurring to someone else, while they themselves felt like mere observers. They also mentioned that, in those moments, they experienced no emotions and felt detached from the situation.

"What was happening at that moment, it was like it was me, but someone else, and I was just watching her from afar." (Angela, aged 37)

"I had no connection to who I was. I was just observing what was happening without feeling anything." (Zoi, aged 29)

"It was like I had left my body, like I was someone else." (Marina, aged 30)

Impact on Functionality

All participants reported that their experience of the wildfire affected their functionality and how they managed and coped with daily life, with consequences that lasted long term. They particularly mentioned difficulties in meeting work responsibilities, managing daily tasks, and maintaining their social lives.

"Of course, in the state I was in at that time, I couldn't work." (Maria, aged 39)

"I was lucky to have a supportive network that helped me practically manage some obligations. In the state I was in, I couldn't even take care of my kids." (Anna Maria, aged 48)

"There were people who wanted to help me, but I had isolated myself at that time and had no desire or energy to go out or communicate." (George, aged 35)

Sleep Difficulties:

Participants reported significant disruptions to their sleep. They described difficulty falling asleep, insomnia, fragmented sleep, and nightmares, which were either directly related to the wildfire or unrelated. Sleep disturbances seemed to greatly trouble the participants, leaving them with persistent fatigue and exhaustion or anxiety when heading to their rooms to try to sleep.

"I had no sleep schedule back then. I might just lie down and end up falling asleep in the morning." (Angela, aged 37)

"My sleep was greatly affected, and it really troubled me. I would sleep and wake up repeatedly throughout the night." (Anna Maria, aged 48)

"I kept having nightmares. Even now, sometimes I dream about the car catching fire and me having to fill buckets with water." (Christos, aged 55)

Eating Disturbances:

Participants' appetites were significantly impacted, leading to drastic weight gain or loss. Some participants reported gaining a lot of weight after the traumatic event, which they had not managed to lose even five years later. Others spoke about losing weight because they were unable to eat. Those who lost weight mentioned eventually returning to a normal weight after a few years, while others described a shift from extreme weight loss to significant weight gain.

"I was undernourished... I couldn't eat." (Marina, aged 30)

"I didn't eat at all back then, but after a few years, I started eating compulsively, going to the opposite extreme." (Angela, aged 37)

"I didn't go out, I didn't work; the only thing that gave me comfort was food, which is why I gained so much weight at the time. Even now, I still haven't been able to lose it." (Chris, aged 38)

Coping Strategies

The third superordinate theme concerned the ways of coping with the wildfire experience and the resulting impact on mental health. The main coping strategies mentioned by the participants included psychotherapy, pharmacotherapy, and resignation.

Psychotherapy:

To a large extent, participants reported that psychotherapy helped them manage and make sense of the experience. They mentioned that there were local and national organizations providing counseling and mental health first aid. However, many started psychotherapy sessions later on to deal with the negative symptoms that emerged after the event. Many stated that beyond addressing the negative symptoms in therapy, they continued in order to find meaning in the experience and to move forward without fearing its recurrence. Although psychotherapy was almost always combined with medication for the participants, it was emphasized that they would not have derived the same benefits without psychotherapy.

"Psychotherapy helped me manage basic difficulties, such as coping with anxiety and being able to sleep." (Maria, aged 39)

"Even when I felt better, I didn't stop psychotherapy. I had to do something with all of this, to give it meaning." (Marina, aged 30)

"With my psychologist, we worked a lot on not being afraid for the future, that the same thing would happen again." (George, aged 35)

"Medication helped me, but psychotherapy helped me stand on my own two feet more." (Chris, aged 38)

Medication:

The use of medication was deemed necessary for almost all participants. In general, based on the participants' statements, they did not find it difficult to commit to and adhere to their medication regimen, which helped them in combination with psychotherapy. According to the participants, medication was particularly effective in reducing stress symptoms and improving sleep quality. They noted that it provided a solid foundation for alleviating negative symptoms and enabling them to work on processing and finding meaning in their experience.

"Medication alone is not enough, but after the first month, the stress symptoms were not as intense." (Christos, aged 55)

"For medication to have positive results, there needs to be consistency and commitment." (Anna Maria, aged 48)

Resignation:

However, the majority of participants also highlighted the phenomenon of resignation as a way of coping with the experience, especially in the initial period after the wildfires. They essentially mentioned that they lacked the strength and courage to manage and respond to the challenges posed by the experience. They felt helpless, and for them, withdrawal and apathy were the only options, as they believed there was nothing meaningful they could do to deal with the new circumstances. Some mentioned that until they began psychotherapy, which helped them reframe this adverse experience in a new perspective, resignation was their primary strategy. Others even noted that they would have preferred to "perish" in the wildfire, as at that time, managing the situation and starting a new life seemed even harder than simply having it all end.

"For me, I felt like I had nothing else to look forward to in life. Watching my house disappear, I often wondered why I didn't disappear too." (Christos, aged 55)

"No, there was nothing I could do. I felt completely powerless in the face of these new circumstances and surrendered to the situation without wanting any control over it." (Anna Maria, aged 48)

"I felt completely insignificant in the face of everything that was happening. I felt useless to do anything and relied entirely on others." (Marina, aged 30)

Meaning-making

The next superordinate theme that emerged concerned how participants made sense of the wildfire experience. In this theme, the fire survivors primarily focused on the destructive dimensions brought about by the wildfire experience.

Unpredictable Event:

For the participants, the wildfire symbolized the lack of predictability in life. As an unpredictable, sudden, and unexpected event, it did not give the participants time to prepare for what was coming. This experience was generalized to the rest of their lives, making them feel that life is inherently unpredictable. This unpredictability caused them anxiety and insecurity about facing challenges, planning for the future, setting goals, and dreaming.

"You suddenly find yourself somewhere without a script for life, unable even to think about tomorrow." (Zoi, aged 29)

"I felt that all the dreams I had made were meaningless; after all, why plan when you can't predict the next day?" (Georgia, aged 25)

"I felt a constant threat, that something bad could happen at any moment." (Chris, aged 38)

Feeling of Helplessness:

The sense of helplessness was another subordinate theme that emerged in the context of meaning-making. Maria (aged 39) constantly referred to her feelings of helplessness and despair, saying, *"I constantly felt alone and that there was no one there to help me."* Similarly, Pavlos (aged 43) stated, *"I felt helpless, no matter how many people approached me to help, I didn't feel there was truly a solution."* Lastly, Marina (aged 30) also expressed feeling *"helpless for everything that happened and everything that was to come."*

Fear for the Future:

Another dimension highlighted by the participants was fear for the future. Even though the experience was in the past, and despite at least five years having passed since the wildfire, participants still feel fear for the future. There is a fear of dreaming and setting new goals or making long-term plans, as they constantly fear that something bad will happen and overturn everything.

"Is there any point in planning something when everything can change from one moment to the next?" (George, aged 35)

"After that event, everything changed. I can't think about the future because I know everything can change. I mostly think day by day." (Nikos, aged 47)

"You're afraid to think too far ahead, about the long-term, because, in the end, you can never be sure about anything." (Christine, aged 44)

Focus on the Present

Focusing on the present emerged as a key theme, where participants spoke about their emphasis on the here and now, to which they were forced to return after the danger of the wildfire had passed. This theme highlighted three subdimensions: returning to normalcy, avoidance, and reliving.

Return to Normalcy:

Participants noted that despite what they had experienced, life and its demands continued, creating an urgent need for them to return to normalcy. Regardless of what had happened, they were required to manage situations and resume daily life and its demands, such as returning to

work, handling matters related to the loss of their property, caring for vulnerable loved ones (e.g., children, the elderly), and finding solutions for moving forward, particularly in cases where their primary residence had been lost due to the wildfire. Despite the adverse conditions that caused intense negative emotions and physical symptoms, participants felt compelled to set aside their own feelings and anxieties to cope with the “new” normal imposed upon them.

"It didn't matter how I felt; I had to return to my routine and deal with everything that came my way for me and my children." (Anna Maria, aged 48)

"When something bad happens, something beyond human comprehension, life keeps moving forward without asking you." (Chris, aged 38)

Avoidance:

In contrast, some participants mentioned that even though they had returned to daily life, they behaved in a way that was different from what might be expected. They experienced denial about what had happened and avoided taking action to resolve certain issues. While they stated that they had returned to normalcy, work, or studies, they avoided dealing with the practical consequences of the wildfire, delegating responsibilities to others, such as family members. This behavior was primarily observed among younger participants.

"I continued my activities, but I didn't handle the procedural issues related to the house." (Georgia, aged 25)

"I had a denial about dealing with it; I felt like it was my way of protecting myself." (Zoi, aged 29)

Reliving:

The third subordinate theme that emerged was reliving the experience. Many participants reported reliving the wildfire experience, especially during the first two years. Even as life gradually returned to normal, participants recalled reliving the experience during that period, particularly through flashbacks of the crisis and the immediate aftermath. While they mentioned dreams related to the wildfire, they also experienced moments during the day when they would relive the situation intensely, disconnecting from the present for a few minutes and re-experiencing the moment. They described vivid recollections of what they had gone through, although there were also memory gaps.

"I could be at work and suddenly recall events from that day, but it wasn't exactly a memory—it was like I was experiencing it all over again." (Marina, aged 30)

"It's like you're reliving it all over again, again and again." (Pavlos, aged 43)

Positive Reframing

Having endured the experience of the wildfire and the loss of property for at least five years, all participants highlighted positive aspects they gained from the experience, which they might not have cultivated otherwise. They noted that the realization of these positive aspects came with time and was not something they could recognize during the event itself.

Resilience:

All participants stated that the wildfire was a painful event in their lives, one they would remember forever. Some described it as the most traumatic experience they had encountered so far. However, the experience ultimately helped them handle daily challenges and stressful situations more effectively. They reported managing such events with greater composure, avoiding dysfunctional behaviors, and focusing less on negative emotions. Having gone through the traumatic event gave them the motivation to stay calm and respond better to critical situations, recognizing that they would likely have reacted differently if the event had not occurred.

"My life is divided into before and after losing my home. I've noticed that anything that came my way afterward, I was more resilient in facing it." (George, aged 35)

"I've stopped being as concerned about things as I used to. It feels like since I got through that, I can handle much more." (Zoe, aged 29)

"I definitely feel stronger in managing difficult situations." (Pavlos, aged 43)

Discovering New Strengths:

The wildfire experience gave survivors the opportunity to develop or discover new strengths and character traits they didn't know they had. Through this experience, participants got to know themselves better and cultivated skills such as strength, self-confidence, a sense of responsibility, and ecological awareness. These were qualities they either didn't have before or hadn't realized they possessed. Over time, it felt to them as though a new world had opened up, filled with new perspectives and opportunities they wouldn't have explored had they not gone through this event. Gradually, they discovered these new strengths during the process of rebuilding and making sense of the experience.

"It felt like a new world opened up after some time... I discovered that I was stronger than I thought." (Chris, aged 38)

"As a young girl back then, I always felt weaker, but over time I realized that since I managed to handle this, I was stronger and could manage anything." (Georgia, aged 25)

Giving Meaning to More Important Things:

The most common experience mentioned by all participants was that, after the wildfire, their worldview and understanding of what truly matters in life changed. While before the wildfire they mostly valued material possessions and achieving goals, after the event they began to place greater importance on human relationships and ideals. As Zoe (aged 29) remarked: *"I used to be someone who chased degrees on one hand and clothes on the other [laughed]. But after this, I started valuing human relationships more."* Similarly, Maria (aged 39) noted: *"After losing my home, I started appreciating people differently and focused on qualities in others that made me want to keep them close."* Participants appeared to change their priorities after the wildfire, recognizing what truly holds value in life: *"I finally understand what really matters."* (Angela, aged 37)

Empathy:

Another positive outcome that emerged after the wildfire was the development of interpersonal skills such as empathy. Participants noticed that after losing their possessions, they grew closer to people and began placing more emphasis on emotions and understanding

them. They felt that a new world had opened up to them, full of solidarity, compassion, and empathy. They found it easier to put themselves in others' shoes, understand them, and experience their emotions. Empathy for others' pain developed primarily through interactions with people who had shared similar experiences. This helped them realize that suffering is universal, and everyone faces difficulties. Cultivating empathy enabled participants to connect more deeply with others during tough moments instead of avoiding interaction.

"I feel like I can relate to others more meaningfully because I better understand their emotions." (Angela, aged 37)

"Now I focus more on how others feel rather than judging from my own perspective, as I would have done in the past." (George, aged 35)

Helping Others:

A positive shift noted by participants was a stronger inclination to help others. The experience of the wildfire fostered a more altruistic attitude, making them more willing to assist others in need. They felt that the event equipped them with the tools and skills to support others going through tough times. Additionally, seeing others—such as volunteer firefighters, health aid workers, mobile psychological support units, and those who provided housing or financial help—step up during their crisis inspired them to give back. This inspiration led some to become involved in volunteering.

"I realized I had a need to help those in vulnerable positions, which is why I chose to provide consistent financial assistance to orphanages." (Christine, aged 44)

"I feel like I can help the people close to me more meaningfully." (Maria, aged 39)

"Helping others, I've come to understand, is not about being exploited; it's a higher act of humanity." (Nikos, aged 47)

Gratitude:

The final positive element that emerged was the sense of gratitude. Participants, as wildfire survivors, had not experienced the loss of a loved one, only property loss or, in some cases, the loss of pets. The fact that they came close to death but ultimately survived—whether through luck, circumstances, or the help of others—fostered a profound sense of gratitude for life, for the chance to live, and for the people who stood by them, even strangers. They now experience gratitude more intensely in their daily lives, as *"every day is a celebration we must live to the fullest."* (Christine, aged 44) They feel *"grateful for what I experienced and for what I ultimately learned."* (Anna Maria, aged 48)

DISCUSSION

The purpose of this qualitative study was to explore the personal experiences of wildfire survivors, focusing on the impact of the phenomenon on their mental health and functionality, the meaning they attributed to the experience, and whether positive perspectives and resources emerged from it. Five research questions were formulated to be addressed through an interpretative phenomenological analysis of 12 adult individuals who had survived a wildfire at least five years prior to the interviews. The research was conducted in person, and participants shared their personal experiences related to the wildfires they endured, their

losses, the impact of the experience on their mental health, and, ultimately, the positive perspectives they were able to assess and appreciate in the long term.

The main findings of the study pertain to: i) the experience of the wildfire as a disaster and a loss, its emotional and cognitive impacts, and feelings of depersonalization, ii) the effects on functionality, including difficulties with sleep and eating, iii) coping mechanisms, primarily psychotherapy, medication, and resignation, iv) the meaning attributed to the wildfire as an unpredictable event, feelings of helplessness, and fear for the future, v) focusing on the present as a return to normality, avoidance, and reliving the event, and finally, the study highlighted vi) positive reframing, including the cultivation of resilience, the discovery of new strengths, finding meaning in more important things, developing empathy, helping others, and experiencing gratitude.

The first research question explored the experience of wildfire survivors. For the participants, it emerged that they perceived the wildfire as both destruction and loss. The destruction was described as a unique and unparalleled experience that left them without adequate words to describe it. Regarding loss, they referred to the loss of properties, pets, animals, and jobs, but no one mentioned human losses, although such losses had occurred among people in their broader social circles. For the participants, even though the loss occurred at least five years prior, the consequences were long-term and continued to affect them in the present, which aligns with findings by Beaglehole et al. (2018), Mawana (2019), and Tedim et al. (2015), who highlight the dramatic consequences of natural disasters on various aspects of survivors' lives, including physical, psychological, social, environmental, practical, and economic levels. Although the current study was conducted at least five years after the wildfire experience, related research has shown that the consequences can persist long-term, with participants in that research reporting that the impact of the wildfire continued to affect them even 25 years later (Lundin & Jansson, 2007).

The second research question examined the impact of the wildfire on the participants' mental health. Throughout the interviews, survivors frequently referred to the consequences of the wildfire on their mental health, primarily at an emotional and cognitive level, including impaired functionality, difficulties and disturbances in eating and sleeping, and even symptoms of depersonalization. All these symptoms are referenced in the diagnostic system for mental disorders, the DSM, with the latest edition (DSM-V) including them as diagnostic criteria for post-traumatic stress disorder (PTSD) (APA, 2013). In this DSM diagnosis, one of the traumatic events in an individual's life can be experiencing a wildfire, whether as a victim, witness, or someone involved in any way, such as professionals like firefighters. The consequences of wildfires extend beyond the personal experience of the individual involved, encompassing a more collective nature (Beaglehole et al., 2018). Indeed, the participants in this study mentioned not only the impact on their lives and daily routines but also the effects on the lives of others and the environment. Participants spoke of the consequences on their daily lives, aligning with research indicating that natural disasters compel individuals to adjust to new realities, circumstances, and conditions, fundamentally altering their way of life (Beaglehole et al., 2018). Wildfire survivors were not only faced with the experience of the wildfire itself but also with its lasting consequences, including losses of lives, properties, and threats, factors which, according to the literature, constitute risk factors for mental health (Papanikolaou et al., 2011). The broader literature consistently references the development of PTSD

symptomatology, a mental disorder that most studies investigating the impact of natural disasters on survivors' lives ultimately focus on (Besige, 2023; Garfin & Silver, 2016; To et al., 2021). Additionally, the destruction of nature and the environment appears to affect mental health. Independent of material losses, the very destruction of nature creates mental health challenges that deeply impact individuals (Bourque & Cunsolo Willox, 2014; Bratman et al., 2019; Douki et al., 2021; Thordardottir et al., 2018; To et al., 2021). In their study, Bratman et al. (2019) identified a range of negative emotions, including anxiety, fear, and distress, stemming from the destruction of the environment and the need to rebuild this relationship anew. Several theories, such as the anxiety model (Berrebi et al., 2020), trauma theories (Harville et al., 2015), and the grief theory (Kübler-Ross & Kessler, 2014), explain the impact of such disasters on mental health. Even though the participants in this study did not experience a tragic human loss, they endured other losses, such as properties and symbolic losses, which, according to grief theory, are harmful to mental health. Overall, participants described experiencing a wide range of negative emotions. While the study's aim was not to collect diagnostic criteria for making diagnoses, the participants' accounts suggest they met certain criteria for various mental disorders beyond PTSD, such as anxiety disorders, depression, and adjustment disorder. These are among the most common mental health disorders emerging after a natural disaster (Belleville et al., 2019; Besige, 2023; Garfin & Silver, 2016; Geng et al., 2018). This underscores the urgent need to address such symptomatology effectively.

The third research question explored the strategies participants adopted to cope with their experiences. The responses highlighted psychotherapy, pharmacotherapy, and resignation. Specifically, psychotherapy was evaluated as the most effective coping mechanism, as it not only helped manage symptoms but also, over time, assisted participants in finding meaning in their experience, allowing them to attribute a new perspective and move forward with their lives. Psychotherapy also enabled participants to disengage from ineffective coping strategies, such as resignation, which is also supported by research as a means of building resilience after a traumatic event (To et al., 2021). On the other hand, medication was deemed effective but primarily in combination with psychotherapy, as it was mainly helpful in reducing anxiety and stress symptoms. However, in the long term, pharmacotherapy alone could not help participants restructure their experience. Resignation was also mentioned as a coping strategy, particularly in the early stages, when participants felt powerless to manage the situation and its new challenges. Interviews revealed that resignation was common during the initial stages, aligning with symptoms of certain mental disorders, such as depression (APA, 2013). Resignation hindered participants from coping with daily life and appeared to disrupt their relationship with the natural environment, which affected both their functionality and mental well-being (Bourque & Cunsolo Willox, 2014).

The fourth research question examined the wildfire survivors' experiences regarding how this event impacts their present lives. Many of the participants' responses about the effects of the wildfire on their mental health pertained to the present, as these effects were described as long-lasting (Thordardottir et al., 2018). Similar findings were reported in another study where fire survivors from Sweden mentioned that the wildfire experience continued to affect their lives even 25 years later (Lundin & Jansson, 2007). Specifically, participants highlighted the importance of returning to normalcy while also experiencing reliving of the wildfire experience and avoiding discussions about the event itself or related practical issues. These elements align with the symptomatology of PTSD as described in the DSM diagnostic manual (APA, 2013), as

well as in previous studies (e.g., Besige, 2023; Garfin & Silver, 2016; To et al., 2021). However, participants' responses indicated that focusing on the present was not an easy process, nor was it a conscious choice. They primarily referred to the urgent need to return to normalcy, withdrawal through avoidance, and a focus on the past through reliving the experience.

Continuing with the fifth research question, which explored the meaning participants attributed to their wildfire experience, they described it as an unpredictable event, accompanied by feelings of helplessness and fear for the future. The lack of predictability is a core characteristic in the process of assigning meaning to a traumatic event, according to trauma theories (Harville et al., 2015), as is the feeling of helplessness (Han et al., 2016). The meaning one gives to the wildfire experience—or to any traumatic event—affects both the present and the future (Harville et al., 2015). All the meanings participants attributed were unique because the process of meaning-making is a deeply personal experience for each individual. Regardless of the extent to which someone faced loss, natural disasters also bring symbolic losses, which relate primarily to personal meaning-making, beyond tangible losses (e.g., loss of property, human lives) (Sandhu & Kaur, 2013). Even the lack of predictability, feelings of helplessness, and fear for the future are considered symbolic losses, as they represent the loss of predictability, consistency, stability, dreams, and safety. Thus, even the difficulty in attributing meaning to something so devastating indirectly reflects an attempt to make sense of it (Sandhu & Kaur, 2013).

The emotional impact of natural disasters on survivors is profound, which is why most research focuses on studying such effects (Woodhall-Melnik & Grogan, 2019). However, a review of the literature revealed a research gap regarding the positive outcomes participants might attribute to their wildfire experience and the positive perspectives they ultimately developed. According to trauma theories, the way individuals make sense of a traumatic event influences how they relate to it—whether they develop psychopathology or find new meaning in the experience (Harville et al., 2015). This does not mean that participants idealized the wildfire experience; rather, they later attributed a different meaning to it and recognized some positive aspects that would not have emerged without going through this process. This qualitative research concludes with the sixth research question, which investigated the resources participants felt they cultivated through their wildfire experience. The participants of this study, who survived fire disasters at least five years prior, reported that they developed new skills, such as resilience, new strengths, assigning value to more important things, empathy, helping others, and gratitude. While traumatic life events are often accompanied by negative emotions that affect mental health and functionality, it has been noted that after a challenging and traumatic event, people can discover new strengths if they reinterpret the distressing event differently. According to Schneider et al. (2018), individuals who have survived a traumatic event, such as a natural disaster, can cultivate character strengths, gain a renewed sense of life's meaning, and build resilience. Effective coping strategies, such as psychotherapy, play a crucial role in this process. This was also highlighted by the participants in this study, and a meta-analysis has shown that psychotherapy and effective strategies contribute to strengthening resilience (To et al., 2021). Indeed, even through traumatic events, individuals can discover new potentials and skills, transitioning from PTSD to fostering post-traumatic growth, which contributes to improved mental health and well-being by integrating the traumatic event into their personal narrative (Schneider et al., 2018).

LIMITATIONS-FUTURE DIRECTIONS

This study was designed with respect for the dignity of the participants, who experienced the traumatic event of a wildfire, an experience that brought significant consequences to their lives. Nevertheless, the research is subject to certain limitations. Firstly, the majority of participants lived in the suburbs of Athens and not in broader areas, provincial towns, or islands of Greece, where similar wildfire incidents have occurred. Additionally, a criterion for selection and inclusion in the study was that participants must have experienced the wildfire at least five years prior. This timeframe was chosen to ensure that participants were sufficiently removed from the event and could talk about their experience without being emotionally overwhelmed. While they did discuss their wildfire experience, the five-year gap may have posed challenges in recalling thoughts and emotions due to the avoidance of these thoughts and feelings, as well as cognitive suppression.

This study could serve as a starting point for future research, which could include participants and survivors of natural disasters such as wildfires, floods, and earthquakes, at a shorter timeframe following the traumatic event. Additionally, future research could involve more participants from other parts of Greece. Greece is a country prone to natural disasters like those mentioned earlier, and including participants from provincial towns and islands—where support resources (e.g., hospitals, psychological support structures) are more limited—could give a voice to these populations. Future studies could also include children and adolescents in their samples. Due to the sensitive nature of their age, children and adolescents are often excluded from studies, with samples typically focusing on adults. However, it is important to include minors as well to provide new perspectives that can inform the design of appropriate intervention programs that address the specific needs of these participants. Finally, from the literature review, similar studies that have examined the experience of natural disasters have primarily focused on the negative aspects of these experiences. Nevertheless, experiencing a traumatic event can also lead to the enhancement of positive attributes, such as the development of empathy, the strengthening of resilience, and the provision of assistance to others, as highlighted in this study. Therefore, it is crucial for future research to be designed with an emphasis on studying the positive dimensions that can be fostered following a traumatic event for the survivor.

PRACTICAL APPLICATIONS

The present study focused on examining the lived experience of the wildfire, emphasizing its meaning, its impacts, and the emergence of positive components for the survivors. By holistically understanding the experience of the wildfire and its effects on their mental health, the collection of this information can lead to the design of protocols and therapeutic interventions to help individuals who have survived a natural disaster manage the experience and the emotions it brings. As the experience of natural disasters constitutes a collective condition, rather than merely an individual experience—since when a natural disaster occurs, such as wildfires, earthquakes, and floods, it affects a large part of the population—it is crucial for health and mental health professionals to be trained in providing psychological first aid so that survivors receive immediate support in managing the psychological effects of the disaster. Furthermore, in practical application, the design of appropriate interventions aimed at survivors of natural disasters should equally focus on cultivating positive components and giving meaning to the experience through alternative perspectives. This allows individuals to grow and evolve personally by finding meaning in this experience, modifying previous beliefs

and lifestyles, discovering new strengths, and moving forward in life with new values (e.g., post-traumatic growth), ultimately being "*reborn from the ashes*".

IMPLICATIONS

In conclusion, even unpleasant events and experiences in a person's life can open new paths and perspectives, allowing one to learn something about oneself and others. As the saying goes, "what doesn't kill you makes you stronger." Unpleasant events are inevitable, but what ultimately matters is how you manage what happened—whether you let it overwhelm you and build defenses and passive behaviors or use the experience as part of your personal history and see it as an opportunity to discover new things about yourself and the world. This research focused on studying the personal experiences of wildfire survivors, with the sample drawn from various regions of Greece. Greece is indeed a country that faces natural disasters annually, beyond wildfires, such as earthquakes (Papanikolaou et al., 2011) and floods (Angelakis et al., 2020; Papanikolaou et al., 2011). Depending on the geographical location of each country, they are more prone to specific natural disasters, such as hurricanes in the United States, Puerto Rico, the Dominican Republic, and the U.S. Virgin Islands (Sattler et al., 2002), and floods in Italy (Iadanza et al., 2021). The present study highlighted the effects of wildfires on the mental health of survivors, proposing the training of authorities and mental health professionals to intervene and assist survivors of natural disasters to receive the best possible support. However, it is crucial for the state to take measures to protect the natural environment and, by extension, living organisms. Natural disasters like forest fires cause significant material, ecological, economic, and human losses (Tedim et al., 2015), which is why measures must be taken globally to protect the environment. After all, no person can be happy and safe when their neighbor's house is burning, and no country can be secure when vast areas of nature are burning globally. Hence, intervention and aid from other countries are deemed essential (Ranke, 2016).

References

- American Psychiatric Association. [APA]. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author
- Angelakis, A. N., Antoniou, G., Voudouris, K., Kazakis, N., Dalezios, N., & Dercas, N. (2020). History of floods in Greece: Causes and measures for protection. *Natural Hazards*, 101, 833-852. <https://doi.org/10.1007/s11069-020-03898-w>
- Beaglehole, B., Mulder, R. T., Frampton, C. M., Boden, J. M., Newton-Howes, G., & Bell, C. J. (2018). Psychological distress and psychiatric disorder after natural disasters: systematic review and meta-analysis. *The British Journal of Psychiatry*, 213(6), 716-722. <http://dx.doi.org/10.1192/bjp.2018.210>
- Belleville, G., Ouellet, M. C., & Morin, C. M. (2019). Post-traumatic stress among evacuees from the 2016 Fort McMurray wildfires: exploration of psychological and sleep symptoms three months after the evacuation. *International Journal of Environmental Research and Public Health*, 16(9), 1064. <https://doi.org/10.3390/ijerph16091604>
- Berrebi, C., Karlinsky, A., & Yonah, H. (2021). Individual and community behavioral responses to natural disasters. *Natural Hazards*, 105(2), 1541-1569. <https://doi.org/10.1007/s1106>
- Besige, S. (2023). *Coping with Post-Traumatic Stress Disorder Among Victims of Fire Disasters in Kampala Capital City Authority, Uganda* (Doctoral dissertation). Kyambogo University.
- Bourque, F., & Cunsolo Willox, A. (2014). Climate change: the next challenge for public mental health?. *International Review of Psychiatry*, 26(4), 415-422. <https://doi.org/10.3109/09540261.2014.925851>

- Bratman, G. N., Anderson, C. B., Berman, M. G., Cochran, B., De Vries, S., Flanders, J., ... & Daily, G. C. (2019). Nature and mental health: An ecosystem service perspective. *Science Advances*, 5(7), eaax0903. <https://doi.org/10.1126/sciadv.aax0903>
- Chaudhary, M. T., & Piracha, A. (2021). Natural disasters—origins, impacts, management. *Encyclopedia*, 1(4), 1101-1131. 10.3390/encyclopedia1040084
- Douki, S., Tzagkarakis, S. I. and Spyridakis, E. (2021). Climate Change Policy and Mental Health. *HAPSc Policy Briefs Series*, 2(2), 298-306. <https://doi.org/10.12681/hapscpbs.29517>
- Garfin, D. R., & Silver, R. C. (2016). Responses to natural disasters. *Encyclopedia of Mental Health*, 4, 35-46.
- Geng, F., Liu, X., Liang, Y., Shi, X., Chen, S., & Fan, F. (2018). Prospective associations between sleep problems and subtypes of anxiety symptoms among disaster-exposed adolescents. *Sleep Medicine*, 50, 7-13. <https://doi.org/10.1016/j.sleep.2018.05.017>.
- Han, W., Liang, C., Jiang, B., Ma, W., & Zhang, Y. (2016). Major natural disasters in China, 1985–2014: occurrence and damages. *International Journal of Environmental Research and Public Health*, 13(11), 1118. <https://doi.org/10.3390/ijerph13111118>
- Harville, E. W., Jacobs, M., & Boynton-Jarrett, R. (2015). When is exposure to a natural disaster traumatic? Comparison of a trauma questionnaire and disaster exposure inventory. *PLoS One*, 10(4), e0123632. <https://doi.org/10.1371/journal.pone.0123632>
- Iadanza, C., Trigila, A., Starace, P., Dragoni, A., Biondo, T., & Roccisano, M. (2021). IdroGEO: A collaborative web mapping application based on REST API services and open data on landslides and floods in Italy. *ISPRS International Journal of Geo-Information*, 10(2), 89. <https://doi.org/10.3390/ijgi10020089>
- Kübler-Ross, E., & Kessler, D. (2014). *On grief and grieving: Finding the meaning of grief through the five stages of loss*. Simon and Schuster.
- Larkin, M., & Thompson, A. R. (2011). Interpretative phenomenological analysis in mental health and psychotherapy research. *Qualitative research methods in mental health and psychotherapy: A guide for students and practitioners*, 99-116. DOI:10.1002/9781119973249
- Lundin, T., & Jansson, L. (2007). Traumatic impact of a fire disaster on survivors—a 25-year follow-up of the 1978 hotel fire in Borås, Sweden. *Nordic Journal of Psychiatry*, 61(6), 479-485. <https://doi.org/10.1080/08039480701773329>
- Makwana, N. (2019). Disaster and its impact on mental health: A narrative review. *Journal of Family Medicine and Primary Care*, 8(10), 3090-3095. http://dx.doi.org/10.4103/jfmpc.jfmpc_893_19
- Obuobi-Donkor, G., Oluwasina, F., Nkire, N., & Agyapong, V. I. (2022). A scoping review on the prevalence and determinants of post-traumatic stress disorder among military personnel and firefighters: Implications for public policy and practice. *International journal of environmental research and public health*, 19(3), 1565. <https://doi.org/10.3390/ijerph19031565>
- Papanikolaou, V., Adamis, D., Mellon, R. C., Prodromitis, G., & Kyriopoulos, J. (2011). Double disaster: mental health of survivors of wildfires and earthquake in a part of Greece. *Psychology*, 2(02), 132-137. DOI:10.4236/psych.2011.2201
- Ranke, U. (2016). Natural Disasters: Definitions and Classification. In U. Ranke (Ed.), *Natural Disaster Risk Management* (pp. 55-182). Springer, Cham.
- Sandhu, D., & Kaur, S. (2013). Psychological impacts of natural disasters. *Indian Journal of Health and Wellbeing*, 4(6), 1317-1319. <https://www.proquest.com/openview/1d8aeae6eb90ca1295faac800f4d65f4/1?pq-origsite=gscholar&cbl=2032134>
- Sattler, D. N., Preston, A. J., Kaiser, C. F., Olivera, V. E., Valdez, J., & Schlueter, S. (2002). Hurricane Georges: A cross-national study examining preparedness, resource loss, and psychological distress in the US Virgin Islands, Puerto Rico, Dominican Republic, and the United States. *Journal of Traumatic Stress*, 15, 339-350. <https://doi.org/10.1023/A:1020138022300>

- Schneider, S., Rasul, R., Liu, B., Corry, D., Lieberman-Cribbin, W., Watson, A., ... & Schwartz, R. M. (2019). Examining posttraumatic growth and mental health difficulties in the aftermath of Hurricane Sandy. *Psychological Trauma: Theory, Research, Practice, and Policy*, 11(2), 127-136. <http://dx.doi.org/10.1037/tra0000400>
- Smith, J. A. (2017). Interpretative phenomenological analysis: Getting at lived experience. *The journal of positive psychology*, 12(3), 303-304. <https://doi.org/10.1080/17439760.2016.1262622>
- Smith, J.A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: theory, method, research*. Sage.
- Smith, J. A., & Shinebourne, P. (2012). Interpretative phenomenological analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 73–82). American Psychological Association. <https://doi.org/10.1037/13620-005>
- Tedim, F., Xanthopoulos, G., & Leone, V. (2015). Forest fires in Europe: Facts and challenges. In V. Leone (Ed.), *Wildfire hazards, risks and disasters* (pp. 77-99). Elsevier.
- Thordardottir, E. B., Gudmundsdottir, B., Petursdottir, G., Valdimarsdottir, U. A., & Hauksdottir, A. (2018). Psychosocial support after natural disasters in Iceland-implementation and utilization. *International Journal of Disaster Risk Reduction*, 27, 642-648. <https://doi.org/10.1016/j.ijdr.2017.11.006>
- To, P., Eboreime, E., & Agyapong, V. I. (2021). The impact of wildfires on mental health: a scoping review. *Behavioral Sciences*, 11(9), 126. <https://doi.org/10.3390/bs11090126>
- Tzilini, M., & Lavdanitis, M. (2016). Natural Disasters and Health Impacts. *Perioperative Nursing*, 5(3), 268-281. <https://doi.org/10.5281/zenodo.322612>
- Woodhall-Melnik, J., & Grogan, C. (2019). Perceptions of mental health and wellbeing following residential displacement and damage from the 2018 St. John River Flood. *International Journal of Environmental Research and Public Health*, 16(21), 4174. <http://dx.doi.org/10.3390/ijerph16214174>