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Public and Mental Health Consequences of Repeated Wildfire Displacement; Public Health Emergencies in California Communities, USA

Emmanuel AK[1*], Jokoh PE[2], Chisom UA[3], Chinyem OM[4], Olaoye EB[5], Akinwusi D[6], Ogundeko O[7]

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[1*] Agbeni Kehinde Emmanuel, Faculty of Social Sciences, Lagos State University, Nigeria.
[2] Peterkings Eriuroro Jokoh, Department of Pharmaceutical Health Outcomes and Policy Research, University of Houston, United States of America.
[3] Uchejuru Amarachi Chisom, Department of Public Health, Imo State University, Nigeria.
[4] Okonkwo Michael Chinyem, University of Houston, Texas, United States of America.
[5] Eniola Blessing Olaoye, National University of Natural Medicine, Portland, Oregon, United States.
[6] Dotun Akinwusi, SFP, Hochschule für Technik und Wirtschaft, Berlin, Germany.
[7] OluwafunmilayoOgundekoOlugbami, Faculty of Health and Life Sciences, Department of Health Data Science, University of Liverpool, United Kingdom.

The increasing intensity of wildfire events and duration of wildfire seasons, combined with current and anticipated wildfire-related health impacts underscores the importance of understanding the full range of potential health effects including impacts on mental health and well-being. This study adopted the quantitative research method. A survey questionnaire was used to sample the opinion of 94 victims of wildfire in California using the simple random sampling technique. The study concluded that consistent California wildfire had significant public health issues especially mental health. Reviewed studies highlighted that the risk of losing a home, the depression of damage homes and schools have impact on the mental health of the victims. Specifically, the study revealed that some effective coping strategies for individuals affected by the California wildfires include the provision of free or low-cost counseling, therapy, and crisis intervention programs in affected areas. Additionally, creating safe spaces where displaced individuals can share experiences and coping strategies fosters a sense of belonging and collective healing The study recommended that there is need to include practical advice on how people can protect themselves from smoke exposure, such as using air purifiers, and wearing appropriate masks when outdoors. While staying indoors may lessen exposure, it does not eliminate risk. Emphasize the increased risks for sensitive groups and socioeconomically disadvantaged communities. Highlight efforts to improve community preparedness and adaptation strategies for future wildfire seasons and discuss potential policy interventions that could mitigate wildfire risks and protect public health.

Keywords: public health, mental health, california wildfire, wildfire displacement

Corresponding Author

Agbeni Kehinde Emmanuel, Faculty of Social Sciences, Lagos State University, Nigeria.
Email: agbenikehinde333@gmail.com

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1. Introduction

Wildfires are increasingly devastating because of a rise in occurrences, along with a steady increase in their severity, size, and duration over the past two decades. This is influenced by three main elements: climate change, past fire suppression in U.S. forest management, and the growth of the wildland-urban interface (WUI), defined as "the area of transition between undeveloped land and human development." Consequently, in the past ten years, eight of California's ten biggest wildfires have occurred.

Likewise, outside of a U.S. context, wildfires in the European Union scorched nearly 2 million acres in 2022, roughly 2.5 times the severe wildfires that have well-known environmental and economic impacts. Wildfires of high severity lead to lasting losses of species and ecosystems31, and they also significantly increase greenhouse gas emissions. The California Camp Fire of 2018 resulted in 85 fatalities, obliterated more than 18,000 buildings, and caused $19 billion (adjusted for inflation) in damages. (Atkinson et al., 2014).

Currently, federal fire suppression expenses exceed $2.5 billion annually, alongside costs shouldered by state, local, and Tribal authorities. The overall economic impact of wildfire damages across the country is estimated to be "tens to hundreds of billions of dollars" each year. Greater focus is now directed toward the social implications of wildfires on public health. From 2007 to 2018, 99.5% of California's residents resided in a county that experienced at least one smoke wave or persistent smoke event. Currently, a study from Stanford University indicates that PM2.5 pollution specifically from wildfires has risen to a level that it has undone decades of improvements in air quality in the U.S. achieved through the Clean Air Act. (Appel et al. 2021).

The main health risk from wildfires is air pollution caused by smoke. Smoke from wildfires consists of thousands of substances, such as particulate matter (PM), carbon dioxide, carbon monoxide, nitrogen oxides, complex hydrocarbons, and irritating gases (Ahangar et al, 2022). These substances inflict different degrees of harm on human health, influenced by the type of material burned and its reactions with atmospheric chemical compounds (Gettleman et al. 2022).

Exposure to PM 2.5 Most epidemiological studies regarding wildfire smoke have focused on its release of PM2.5, or particulate matter less than 2.5 micrometers wide, which can readily settle in the lungs and infiltrate the bloodstream. (Honf et al. 2016). Even short exposure to PM2.5 has been demonstrated to trigger increases in asthma, respiratory issues, allergic responses, strokes, heart attacks, and overall hospital admissions. The health impacts are not restricted to immediate wildfire occurrences, though: exposure to PM2.5 has been associated with enduring harm to the heart, lungs, liver, kidneys, and immune system. (Jiang, 2022). A study from Harvard University indicated that a slight rise in PM2.5 exposure was linked to an 8% rise in Covid-19 related deaths (Appel et al, 2021). Recent studies have indicated a link between PM2.5 exposure from wildfires and the occurrence of tuberculosis. Additionally, exposure to smoke pollution is related to preterm birth and increased risk factors when encountered during any stage of pregnancy. (Grell et al 2022).

While the respiratory impacts of wildfire smoke on children are well-documented, there remains substantial variability in study findings due to differences in wildfire smoke composition, exposure measurement methods, and study populations. Moreover, gaps in research persist regarding the long-term and developmental impacts of wildfire smoke exposure on children. As wildfire events become more frequent and intense due to climate change, understanding these health effects and addressing the vulnerabilities of children at different developmental stages remain critical research priorities, (Miller, 2020).

2. Statement of Problem

The increasing intensity of wildfire events and duration of wildfire seasons, combined with current and anticipated wildfire-related health impacts underscores the importance of understanding the full range of potential health effects including impacts on mental health and well-being, (Miller, et al 2020). The mental health effects of climate change generally, and wildfire smoke specifically, have not been adequately examined compared to physical health endpoints. Studies documenting the risk of adverse mental health consequences after experiencing a wildfire have focused on the traumatic experience of being in a life-threatening experience, losing property,

The stress of evacuation, and the stress of recovery, (Reid et al 2016). Less attention has focused on the effects of smoke on mental health and well-being. Exploring this relationship is even more pertinent considering the growing body of research documenting the negative effects of air pollution on mental health, including depression, anxiety, suicide, and psychological distress, (Adetona et al 2016).

Objectives of the Study

1. To access the long-term psychological impacts of repeated wildfire displacement on affected individuals and communities.
2. To evaluate the public health challenges faced by displaced populations resulting to mental health.

Research questions

1. What are the long-term psychological impacts of repeated wildfire displacement on affected individuals and communities?
2. What are the public health challenges faced by displaced populations resulting to mental health?

3. Literature Review

Conceptualising California Wildfire

The wildfire crisis in California is not just an environmental disaster but a significant public health emergency with immediate and long-term consequences.As of Jan. 9, 2025 multiple majorwildfires have burned more than 28,000 acres in California, killing at least five people and putting some 130,000 residents under evacuation orders. The death toll is expected to rise as rescue workers search through the rubble. ThePalisades Fire(the largest one), has already consumed 17,234acres in Los Angeles County, (Miller et al 2020). These numbers are alarming, especially considering the typical wildfire season hasn't even begun, (Jaffe et a, 2012). The most immediate concern for health journalists covering this crisis is the impact of wildfire smoke on human health. According to Miller et al, (2020). Wildfire smoke is a complex mixture of pollutants, with particulate matter measuring 2.5 micrometers or smaller (PM2.5) being particularly hazardous, according to the U.S.Environmental Protection Agency.

The increasing frequency and intensity of wildfires in California are closelylinked to climate change, (Khreis et al 2017).

As temperatures rise and drought conditions persist, the wildfire season is extending, and fires are becoming more severe. This trend is likely to continue, potentially leading to chronic smoke exposure not only for many Californians but extending to any area where wind carries smoke.In the past,wildfire smoke has extended to the East Coast, (Brey & fische, 2016).

Public Health Consequences of Wildfire

A growing body of literature highlights the potential neuropsychological, metabolic, and developmental impacts of particulate matter (PM) exposure on children. Studies have linked PM exposure to adverse health outcomes such as ADHD, autism, impaired school performance, and memory deficits (Wilkins et al 2016). Animal studies provide evidence that ultrafine particles (≤0.1 μm in diameter), a fraction of PM, can penetrate systemic circulation and cross the blood–brain barrier, raising concerns about their impact on the developing brain (Wegesser et al, 2010). In addition to neuropsychological effects, there is emerging evidence suggesting that PM exposure may influence metabolic and growth outcomes in children. Exposure to PM has been associated with reduced birth weight, impaired linear growth, and increased risks of obesity, (Oliveira et al, 2019). For example, research from Indonesia found that prenatal exposure to particulate matter correlated with reduced height at age 17, even after adjusting for potential confounders, indicating long-term health impacts (Ristovski et al, 2012). Similarly, a population-based retrospective cohort study in China demonstrated that an interquartile range (IQR) increase in PM2.5 or PM10 exposure during pregnancy resulted in a decrease in birthweight by 3 grams or more in full-term infants, (Nhung et al 2017). Moreover, prenatal exposure to polycyclic aromatic hydrocarbons (PAHs), a component of PM, was associated with higher body weight in children, with evidence of an exposure–response relationship, (Bennett et al, 2017). These findings suggest that early-life PM exposure may "program" fundamental metabolic and cell-signaling mechanisms, leading to lifelong health impacts, including poorer cardiovascular health in adulthood, (Miller et al, 2022).

Wildfire smoke, a significant source of particulate matter, introduces unique risks due to its composition,

Which includes higher levels of PAHs and volatile organic compounds (VOCs) compared to ambient air pollution. Several of these components, such as benzo(a)pyrene, benzene, and formaldehyde, are known carcinogens (Wilkins et al, 2018). Exposure to VOCs has also been linked to wheezing in children. Recurrent wildfire smoke exposure may therefore contribute to an increased lifetime cancer risk, particularly in children. Furthermore, certain developmental windows may be especially critical. For example, exposure to PM2.5 during the second trimester of pregnancy has been associated with increases in childhood blood pressure, highlighting the importance of timing in determining health outcomes, (Khreis et al., 2017).

Animal studies reinforce these concerns. Rhesus monkeys exposed to wildfire smoke during infancy demonstrated long-term decreases in lung function and altered inflammatory markers in adolescence, with some sex-dependent variations (Adetona et al, 2016). This underscores the potential for lifelong respiratory and immune system impacts from early-life smoke exposure. Similarly, environmental chemicals from PM exposure may disrupt lung development in utero and throughout childhood, with some effects only becoming apparent years later, (Bennett et al, 2020). Wildfire particulate matter is compositionally different from typical ambient air pollution in the USA, closely resembling biomass smoke. Studies conducted during wildfire events in Southern California revealed that organic carbon compounds comprised a higher proportion of PM2.5 compared to non-wildfire events, aligning more closely with biomass smoke (Nhung et al , 2017). Research on biomass burning in developing countries provides insight into potential health effects, as children exposed to household biomass smoke consistently exhibit higher rates of lower respiratory infections, pneumonia, and adverse birth outcomes (Adetona et al 2017). These findings are relevant to understanding wildfire smoke exposure, given the compositional similarities between wildfire and biomass smoke, despite differences in chronic exposure profiles.

Children are uniquely vulnerable to the health effects of wildfire smoke due to their developing systems and higher minute ventilation per kilogram of body weight compared to adults. Numerous studies have consistently demonstrated a link between wildfire smoke exposure and increased pediatric respiratory issues.

For over 25 years, research has shown that wildfire events exacerbate asthma symptoms in children (Jaffe, 2012). The ozone generated from wildfire smoke leads to over 2,000 pediatric emergency room visits for asthma annually in the USA, (Wegesser et al, 2010). In a 2003 wildfire event in San Diego, asthma symptom worsening was found to be modified by body mass index (BMI), with obese children experiencing the highest increases in prescriptions for short-acting beta-agonists.

However, during a similar wildfire event in 2007, all children demonstrated similar increases in medication use regardless of BMI, highlighting variability in responses across events. Age was also found to modify asthma risk, with children under five years old showing the strongest associations between wildfire PM2.5 and asthma visits, (Brey & Fische, 2016). Similarly, in a Medicaid cohort during the 2007 wildfires, infants had the highest rates of ER visits for wheezing (Gauderman et al, 2015). These findings emphasize that young children may be particularly susceptible to wildfire smoke-related respiratory impacts.

Further research supports that wildfire PM2.5 exposure, rather than PM10, is a better predictor of asthma exacerbations. For instance, studies from Colorado revealed that smoke-related PM2.5 exposure was associated with increased asthma emergency room visits in children, while PM10 exposure was not. Meta-analyses have confirmed that wildfire smoke exposure increases asthma-related emergency room visits and hospitalizations in children, although the magnitude of these effects is often smaller than in adults (Jaffe, 2012). This discrepancy could be due to differences in dose-response relationships or study heterogeneity. Moreover, recent studies suggest that younger age and higher BMI may be important susceptibility factors for wildfire smoke-related asthma exacerbations.

Mental Health Consequences of Wildfire

Pathways betweenwildfire smoke exposure andmental health andwell-being. There is evidence of potential mechanisms operating at several levels including the Individual, Social and community networks, Living and working conditions, and Ecological levels, (Adetona et al, 2016). These levels are nested and interactively influence mental health and well-being.

Mechanisms can cross between multiple levels and can influence mental health and wellbeing differently, based on cumulative and intersectional experiences. The interplay and interaction between these mechanisms may be complex and vary in different communities, people, and situations.

Individual level mechanisms include physiological and physical mechanisms such as diminished sleep quantity and quality changes in cerebral perfusion, physical symptoms from the smoke, food insecurity and reductions in outdoor physical activity, (Miller et al , 2020). The individual level also includes psychological and emotional mechanisms, such as previous negative physical harms from the smoke, perceived risk of danger, and negative reminders from smoke, (Bennett et al, 2017).

These are nested in social and community network factors including isolation from people and reduced summertime outdoor activity brought on by smoke the potential for family stress and violence that may occur and risk communications from authorities that may be limited or inadequate, (Reid et al, 2016). The individual level and social and community level factors are placed in the context of living and working conditions such as home evacuations school relocations and reductions in access to one's livelihood particularly for outdoor workers and people in the recreation and tourism industries, (Oliveira et al, 2019).

All of this occurs in the ecological context of increasing and possibly yearly, repeated and prolonged smoke events and the feeling of a loss of nature that occurs, (Nhung et al, 2017). As authors have noted, it is challenging to tease out the mental health impact of exposure to wildfire smoke from the impact of evacuation and traumatic experiences such as an approaching fire front and lack of information or poor communication from government agencies, (Miller et al, 2020). Tough these proposed pathways arose from our review they must be considered preliminary and hypothetical.

Wildfires can induce a wide range of mental health issues, including acute stress, post-traumatic stress disorder (PTSD), anxiety, depression, and substance abuse. These effects are particularly pronounced in individuals directly affected by the fires, such as evacuees, first responders, and those who lose their homes or loved ones.

In a wildfire disaster-prone, such as California, the lifetime exposures to traumatic events could a very high among their population (Marthoenis et al., 2018). However, repeated exposure to news about catastrophic wildfires on mass or social media can also trigger trauma in viewers. Acute Stress and Post-Traumatic Stress Disorder Wildfires often entail life-threatening situations, sudden evacuations, and extended periods of uncertainty, all of which can provoke acute stress reactions. If these reactions are not effectively addressed, they may develop into PTSD, (Kaulfus et al 2017).

Research on the 2018 Camp Fire in California revealed that direct exposure to large-scale wildfires significantly increased the risk of mental health disorders, particularly PTSD and depression (Silveira et al., 2021). Moreover, 67% of individuals directly impacted by the Camp Fire reported experiencing recent psychological trauma (Grennan et al., 2023). The January 2025 wildfires could indicate a similar or potentially higher prevalence of psychological distress among affected populations. Anxiety and Depression The prolonged disruption to daily life caused by wildfires including displacement, financial strain, and the destruction of community infrastructure is a significant driver of anxiety and depression. Children, adolescents, and elderly individuals are particularly vulnerable, as they often lack the resources or coping mechanisms to manage stress (To et al., 2021; Varshney et al., 2023).

These challenges underscore the urgent need for mental health support systems and community-based interventions to address the psychological aftermath of wildfires. Substance Use Disorders Wildfire survivors are at heightened risk of developing substance use disorders as a maladaptive coping mechanism. Substance use has been often observed among wildfire survivors (To et al., 2021; Varshney et al., 2023). Increased rates in alcohol or drug use were observed among evacuees following the Hurricane Katrina in 2005, (Cepeda et al., 2016), a pattern likely to be replicated in Southern California. The long-term psychological distress following wildfires extends beyond immediate mental health conditions such as depression, anxiety, PTSD, and substance use. Prolonged exposure to the aftermath of wildfires including displacement, financial strain, and the destruction of community infrastructure can lead to enduring stress and trauma, (Kaulfus et al 2017).

Rebuilding homes, dealing with insurance claims, and recovering livelihoods are prolonged stressors that can exacerbate pre-existing mental health conditions or give rise to new ones. This prolonged disruption to daily life is a significant driver of anxiety and depression. Children, adolescents, and elderly individuals are particularly vulnerable, as they often lack the resources or coping mechanisms to manage stress (Abatzoglou & Williams, 2016) The enduring psychological distress following wildfires underscores the critical need for targeted mental health interventions and support systems to assist affected individuals, particularly vulnerable populations such as children, adolescents, and the elderly. Vulnerable Populations Wildfires disproportionately impact certain populations, leading to significant mental health challenges. Children and adolescents exposed to such disasters may experience lasting psychological effects, including developmental delays and behavioural issues. This group is known for their high prevalence of experience traumatic disorder following a disaster (Marthoenis et al., 2019, 2022). Elderly individuals often face physical and cognitive challenges that exacerbate their vulnerability during and after wildfires. Low-income communities, with limited access to healthcare and resources, find it harder to recover and manage mental health challenges. First responders, such as firefighters, police officers, and emergency medical personnel, are at high risk for PTSD and burnout due to repeated exposure to traumatic events, (Kaulfus et al 2017),. Additionally, pregnant women are at risk of preterm birth, low birth weight, and stillbirth, exacerbated by heat stress from wildfires causing heat exhaustion or heat stroke. Individuals who become homeless or lose their properties and have nowhere to stay are at heightened risk for mental health issues, including anxiety, depression, and PTSD, (Abatzoglou & Williams, 2016) The loss of a home and the uncertainty of housing can lead to increased stress and a sense of instability, further exacerbating mental health challenges. These profound mental health challenges faced by vulnerable populations highlight the urgent need for targeted interventions and support systems to aid their recovery and resilience, and to plan for better preparation in the future, (.Eisenman & Lindsay, 2022), The January 2025 Southern California wildfires serve as a stark reminder of the complex interplay between environmental disasters and mental health.

Addressing these challenges requires a multi-faceted approach that combines immediate support, long-term care, and preventive measures. The mental health consequences of wildfires are not just a local issue but a global one, necessitating collective action from governments, healthcare providers, researchers, and communities. By prioritizing mental health in disaster response and preparedness, there is need to better support those affected by wildfires and build a more resilient future.

Method and Materials

This study adopted quantitative research method. The review was based on two research questions. A survey questionnaire was used to sample the opinion of 94 victims of wildfire in California using the simple random sampling technique. The sample respondents were inclusively selected from established residents of California for a period of one years and above. Respondents of less than 20 years were excluded from the study because their knowledge of the topic might affect their objectives of the study.

4. Data Analysis

4.1 Demographic Analysis for Participants

Table 4.1.1: Age Distributions of Participants

Response Category	Frequency	Percentage of Frequency
20 yrs to 30 yrs	24	25.5%
31 yrs to 40 yrs	64	68.15%
41 yrs and above	6	6.4%

Table 4.1.1 shows that participants between age bracket of 20 years to 30 years are 24 (25.5%), those of between 31 to 40 years of age are 64 (66,12%), and participants from 41 years and above are 6 96.4%). Therefore, participants between 31 to 4 years of age are more in numbers.

Table 4.1.2 Religious Background of Participant

Response Category	Frequency	Percentage of Frequency
Christianity	88	95.7%
Islam	4	4.3%
41 yrs and above	6	6.4%

Table 4.1.2 shows that participants with Christian's background are 88 (95.7%), while those participants that are of Islam are 5 (4.3%). Therefore, there are more Christian participants than Muslim.

Table 4.1.3: Length of Residents of Participants

Response Category	Frequency	Percentage of Frequency
1yrs to 10 yrs	66	78.6%
11 yrs to 20 yrs	15	17%
21yrs and above	3	3.6

Table 4.1.3 shows that participants with 1 to 10 years residential history are 66 (78.6%), those with residential history for 10 years to 20 years were 15 (17.9%) and those with residential history from 21 years and above are 3 (3.6%). Therefore, there are more participants with 1-10 years in marriage.

Table 4.1.4: Marital Status of Participants

Response Category	Frequency	Percentage of Frequency
Married	80	85%
Single	15	16%

Table 4.1.7 shows that married participants are 80 (85%) and single parents' participants are 15 (16%). Therefore, there are more married respondents than single respondents.

Table 4.1.5: Number of Children of Participants

Response Category	Frequency	Percentage of Frequency
1-2	40	47.6%
3-4	40	47.6%
5 and above	4	4.8%

Table 4.1.5 shows that participants with 1-2 number of children are 40 (47.6%), those with 3-4 children are 40. (47.6%) and participants with 5 children and above are 4 (4.8%). Therefore, there are more participants having 1-4 children.

Table 4.1.6: Educational Background of Participants

Response Category	Frequency	Percentage of Frequency
High school certificate	34	37.8%
B.Sc	50	55.16%
M. Sc	6	6.7%

Table 4.1.5 shows that participants with high school attainment are 34 (37.8%), those with B. Sc educational qualifications are 50 (.55.6%) and those with M. Sc educational qualification are 6 (6.7%). Therefore, there are more participants with B,Sc educational qualifications.

4.2 Data Analysis Based on Research Questions

Table 4.2.1: Long-Term Psychological Impacts of Repeated Wildfire Displacement on Affected Individuals and Communities

SN	Statement	N	Mean	Std. Deviation
Item 1	Persistent worry about future wildfires and the safety of their homes and loved ones is a long term psychological impact of wildfire.	94	3.2660	.72104
Item 2	Symptoms such as flashbacks, nightmares, and heightened vigilance due to trauma from past wildfire experiences.	94	3.5213	.52320
Item 3	Feelings of hopelessness, sadness, and disconnection caused by repeated loss of possessions, homes, or community stability	94	2.5000	.85194
Item 4	Emotional distress from surviving while others experienced significant losses or harm.	94	2.9787	.70297
Item 5	Difficulties in memory, focus, and decision-making due to prolonged stress.	94	2.9787	.86731
Item 6	Exhaustion from repeatedly rebuilding and adapting to life after displacement, leading to a diminished ability to cope with future challenges.	94	2.8191	.84195
	Valid N (listwise)	94		

The data in Table 4.2.1 showed the mean and standard deviation of respondents on long-term mental health impacts of repeated wildfire displacement on affected individuals and communities Given the 2.50 benchmark for acceptance, items 1-6 of the questionnaire had mean above the benchmark indicating that there is evident long-term mental health impacts of repeated wildfire displacement on affected individuals and communities. In summary, respondents agreed that persistent worry about future wildfires and the safety of their homes and loved ones is a long term psychological impact of wildfire with mean score of 3.2, symptoms such as flashbacks, nightmares, and heightened vigilance due to trauma from past wildfire experiences. with means score of 3.5, feelings of hopelessness, sadness, and disconnection caused by repeated loss of possessions, homes, or community stability with mean score of 2.5, emotional distress from surviving while others experienced significant losses or harm with mean score of 2.9, difficulties in memory, focus, and decision-making due to prolonged stress with mean score of 2.9 and exhaustion from repeatedly rebuilding and adapting to life after displacement, leading to a diminished ability to cope with future challenges with means score of 2.8.

Table 4.2.2: Coping Strategies for Mental Health Challenge by Wildfire Displaced Persons

SN	Statement	N	Mean	Std. Deviation
Item 7	Provision free or low-cost counseling, therapy, and crisis intervention programs in affected areas will help as coping strategy	94	2.9894	.84871
Item 8	Creating spaces for displaced individuals to share experiences and coping strategies, fostering a sense of belonging and collective healing.	94	2.7.340	.79211
Item 9	Training healthcare providers, social workers, and community leaders to understand and address trauma-related issues effectively	94	2.5000	.64960
Item 10	Expanding access to mental health support through virtual platforms, especially for displaced persons in remote or temporary locations.	94	3.2872	.62336
Item 11	Promoting practices like meditation, yoga, and relaxation techniques to help individuals manage anxiety and stress.	94	3.0638	.63599
Item 12	Providing training to improve self-efficacy and reduce anxiety about future wildfire risks, empowering communities to feel more prepared.	94	3.1809	.71786
	Valid N (listwise)	94		

The data in Table 4.2.2 showed the mean and standard deviation of respondents on coping strategies for mental health challenge by wildfire displaced persons. Given the 2.50 benchmark for acceptance, items 7-12 of the questionnaire had mean above the benchmark indicating that there is evident coping strategies for mental health challenge by wildfire displaced persons. In summary, respondents agreed that provision free or low-cost counseling, therapy, and crisis intervention programs in affected areas will help as coping strategy with mean score of 2.9, that creating spaces for displaced individuals to share experiences and coping strategies, fostering a sense of belonging and collective healing with mean score of 2.7, that training healthcare providers, social workers, and community leaders to understand and address trauma-related issues effectively with mean score of 3.2, that expanding access to mental health support through virtual platforms, especially for displaced persons in remote or temporary locations with mean score of 3.0, that promoting practices like meditation, yoga, and relaxation techniques to help individuals manage anxiety and stress with mean score of 3.0 and that providing training to improve self-efficacy and reduce anxiety about future wildfire risks, Empowering communities to feel more prepared with mean score of 3.1.

5. Discussion of the Findings

Given the result for long term mental health impact of repeated wildfire among residents of California, the findings for the first research questions revealed that there are significant long-term mental health impacts of repeated wildfire displacement on affected individuals and communities. Majority of the respondents claimed that there is persistent worry, symptoms such as flashbacks, nightmares, and heightened vigilance due to trauma from past wildfire experiences. As the feeling of hopelessness, sadness, and disconnection caused by repeated loss of possessions, homes, or community stability result in intense mental health. The result agreed with existing studies as they claimed that wildfires can induce a wide range of mental health issues, including acute stress, post-traumatic stress disorder (PTSD), anxiety, depression, and substance abuse. These effects are particularly pronounced in individuals directly affected by the fires, such as evacuees, first responders, and those who lose their homes or loved ones. In a wildfire disaster-prone, such as California, the lifetime exposures to traumatic events could a very high among their population (Marthoenis et al., 2018). However, repeated exposure to news about catastrophic wildfires on mass or social media can also trigger trauma in viewers. Acute Stress and Post-Traumatic Stress Disorder Wildfires often entail life-threatening situations, sudden evacuations, and extended periods of uncertainty, all of which can provoke acute stress reactions. If these reactions are not effectively addressed, they may develop into PTSD, (Kaulfus et al 2017). The result for research question two indicated that there are some coping strategies which could be a significant help for individual affected by California wildfire as majority of the respondents that the provision free or low-cost counseling, therapy, and crisis intervention programs in affected areas will help as coping strategy, creating spaces for displaced individuals to share experiences and coping strategies, fostering a sense of belonging and collective healing and training healthcare providers, social workers, and community leaders to understand and address trauma-related issues effectively among others are very useful strategies to rehabilitate these victims of wildfire in California.

The result agreed with existing studies as studies stated that the enduring psychological distress following wildfires underscores the critical need for targeted mental health interventions and support systems to assist affected individuals, particularly vulnerable populations such as children, adolescents, and the elderly. Vulnerable Populations Wildfires disproportionately impact certain populations, leading to significant mental health challenges. Children and adolescents exposed to such disasters may experience lasting psychological effects, including developmental delays and behavioural issues. This group is known for their high prevalence of experience traumatic disorder following a disaster (Marthoenis et al., 2019, 2022).

6. Conclusion

The study concluded that consistent California wildfire had significant public health issues especially mental health. Reviewed studies highlighted that the risk of losing a home, the depression of damage homes and schools have impact on the mental health of the victims. Specifically, the study revealed that some effective coping strategies for individuals affected by the California wildfires include the provision of free or low-cost counseling, therapy, and crisis intervention programs in affected areas. Additionally, creating safe spaces where displaced individuals can share experiences and coping strategies fosters a sense of belonging and collective healing. Training healthcare providers, social workers, and community leaders to understand and address trauma-related issues effectively is also a crucial step. These and other strategies play a significant role in rehabilitating wildfire victims and supporting their mental health recovery

Recommendations

As California faces an uncertain future with climate change, accurate and responsible reporting on the health impacts of wildfires will be more important than ever. When reporting on this ongoing crisis, consider the following:

- Include practical advice onhow people can protect themselves from smoke exposure, such as using air purifiers, and wearing appropriate masks when outdoors. While staying indoors may lessen exposure, it does not eliminate risk.
- Emphasize the increased risks for sensitive groups and socioeconomically disadvantaged communities.
- Include information on the mental health impacts of wildfires andavailable resourcesfor those affected.
- Discuss therole of climate change,forest management practices, and urban planning in exacerbating wildfire risks.
- Highlight efforts to improve community preparedness and adaptation strategies for future wildfire seasons.
- Discusspotential policy interventionsthat could mitigate wildfire risks and protect public health.

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