Depression in Post Disaster Societies: A Systematic Review

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A B S T R A C T

Disaster increases the risk of depression in individuals one to six years after the event. This paper describes depression in post-disaster societies. This study was a systematic review. Database searches included Google Scholar and Proquest, with the keywords post-traumatic, depression, and disaster. The article's criteria were in English, published in 2016-2020, and used (CES-D) questionnaire. This systematic review was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). This study used 15 articles meeting the criteria. Analysis of fifteen articles showed that individuals had mental health burdens after a disaster occurs. One of them was depression. There is a depression in post-disaster societies. Future studies should explore the correlation between PTSD and depression after a disaster.

INTRODUCTION

Research showed that psychiatric disorders, including post-traumatic stress disorder (PTSD) and depression, increase after natural disasters. However, most of the disaster survivors suffering from psychiatric symptoms did not receive mental health services, despite the large budget involved in meeting the mental health needs of the victims. Understanding the factors that drive the use of post-disaster mental health services can have important public health implications so that the needs of survivors can be adequately met. The high incidence of mental disorders from year to year can be caused by several factors depending on the mental disorders experienced. The causes consist of biological, psychological, and socio-cultural factors. In addition, the cause can also be in the form of disasters, both natural and non-natural disasters. When someone experiences a disaster, both natural and non-natural, it will have an impact on psychology which can trigger depression (Yunere, Sari, and Tusadiah 2018).

The World Health Organization reported that people with mental disorders in Indonesia were around 236 million people. 6% of them had mild mental illnesses, and 0.17% had severe mental disorders. In addition, 14.3% of them were shackling. Furthermore, 60 million people had bipolar disorder, and 47.5

million people had dementia. Moreover, more than 350 million people worldwide suffer from depression, and Indonesia was ranked 4th in the world with a relatively high incidence of depression (WHO 2016).

Many studies reported conflicting results on the correlation between the severity of post-traumatic stress disorder (PTSD) and the magnitude of the disaster. An investigation revealed that a village with a higher earthquake-related exposure level had a lower PTSD incidence. Meanwhile, the study found that PTSD was more severe among victims in cities closer to the epicenter (higher exposure) than victims in locations further away from the earthquake (Xu, Wang, and Tang 2019).

Mild depression did not have a statistically significant correlation with the use of mental health services, but moderate or severe depression showed a positive association with Mental Health Service utilization. In addition, findings in the US reported a significant relationship between the severity of mental disorders and healthcare service utilization. On the other hand, studies in physical illness revealed that poor health status was associated with high levels of healthcare service utilization (Zhao et al. 2019). The utilization of Health Services for mental health problems improves psychosocial functioning in individuals. Such underutilization in the long term can cause social dysfunction in the whole family. In addition, it ultimately leads to an increase in national, social, and financial burdens (Choi 2017).

Previous studies reported on the prevalence and factors that predispose depression. Demographic characteristics such as age, gender, and economic level were consistently reported as factors associated with depression. In addition, problems of activity impairment due to acute or chronic health status were correlated with mental health problems, including alcohol drinking, smoking, depression, or stress (Choi 2017). Smoking and stress can cause a decrease in health status in individuals. This paper describes depression in post-disaster societies.

METHOD

This study was a systematic review. Database searches included Google Scholar and Proquest with keywords post-traumatic, depression, and disaster. Next, the Authors selected articles based on criteria published in 5 years until 2020 with full text and English. This systematic review was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

RESULT

The initial literature search found 30 articles (3 in Google Scholar and 27 in Proquest). Next, 15 journals were matching the criteria required. Then, the data was extracted as relevant topic codes and grouped qualitatively by the researchers to find the main theme.
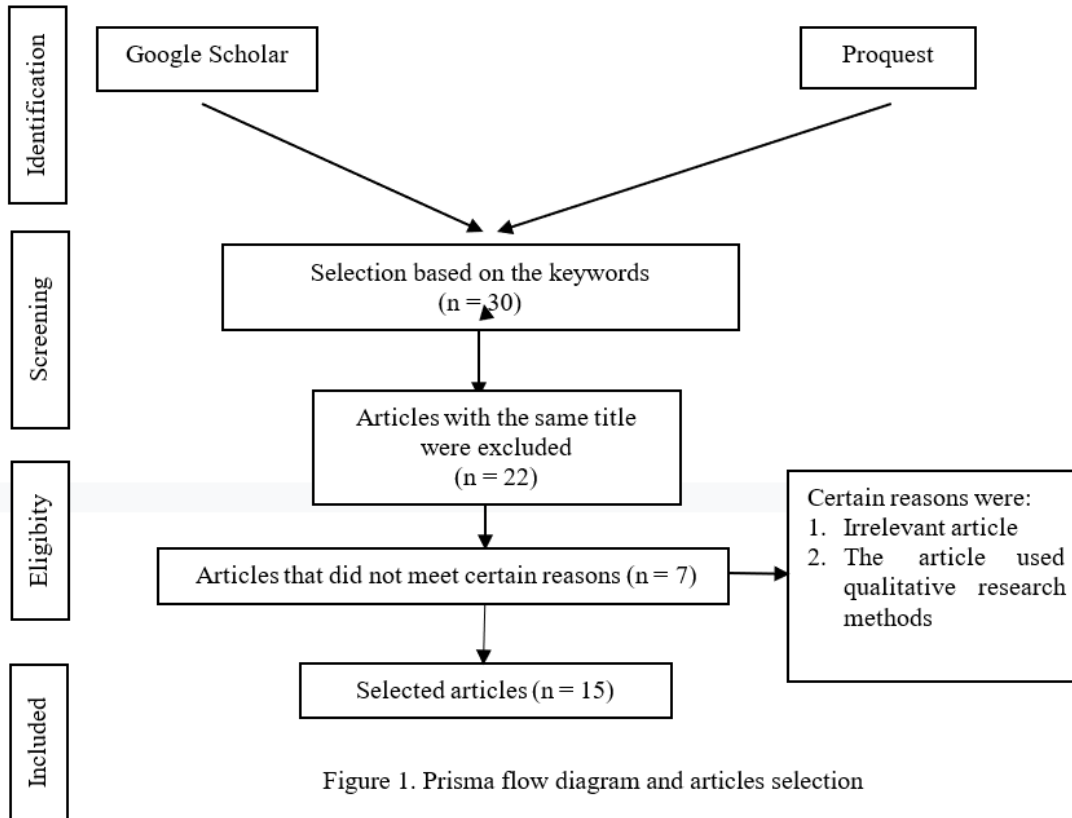
Figure 1. Prisma flow diagram and articles selection

There were 15 articles regarding depression after a disaster. Post-traumatic depression was obtained by analysis using the Center for Epidemiological Study and Depression Scale (CES-D) questionnaire. Research articles as listed in table 1.

Table 1. Descriptive Table of Selected Journals Related to Depression after a Disaster

Number	Author, Year, Title	Results
1	Association between earthquake experience and depression 37 years after the Tangshan earthquake: a cross-sectional study (Gao et al. 2019)	After 37 years of the Tangshan earthquake, most survivors with depression were women and individuals over 18 years old at the time of the quake.
2	Clinical Decision-Making Following Disasters: Efficient Identification of PTSD Risk in Adolescents (Danielson et al. 2017)	This study improved the efficiency of PTSD assessment among young people after natural disasters. Four significant variables were identified in this study, including lifelong depression, history of trauma, social support, and family conflict. High scores on any of these variables increased PTSD incidence were 2-3 times in adolescents. In addition, characteristics of natural disasters were not correlated to PTSD diagnostic status
3	Depression and post-traumatic stress during major social unrest in Hong Kong: a 10-year prospective cohort study (Ni et al. 2020)	There was an increased depression after unrest in Hongkong. In 2019, the prevalence of suspected PTSD was estimated to be 12·8%. The risk factors of mental health burden in the population were heavy social media use (≥ 2 h per day) in depression and neutrality towards the extradition bill in suspected PTSD. Meanwhile, age, sex, educational levels, or household income were not associated with depression and PTSD. In addition, depression could be decreased with family support. The study estimated additional healthcare needs to overcome these mental health burdens was 12%.

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4	Mental Health and Psychosocial Problems of Medical Health Workers during the COVID-19 Epidemic in China (Zhang et al. 2020)	During the COVID-19 pandemic, the prevalence of insomnia, anxiety, depression, somatization, and obsessive-compulsive symptoms was higher in medical health workers than in non-medical. Risk factors for insomnia, anxiety, obsessive-compulsive symptoms, and depression in medical health workers were living in rural areas, being female, and being at risk of contact with COVID-19 patients. Meanwhile, the risk factor for insomnia, depression, and obsessive-compulsive symptoms in non-medical health workers was organic disease.
5	PTSD and Depression Among Museum Workers After the March 18 Bardo Museum Terrorist Attack (Romdhane, Chennoufi, and Cheour 2017)	The research showed that 68.6% of the respondents had PTSD, and 40.6% had severe depression. Gender did not correlate, but social support was associated with both incident
6	Psychological Distress and Health-related Quality of Life in Relocated and Nonrelocated Older Survivors after the 2008 Sichuan Earthquake (Cao et al. 2015)	The elderly in the relocated group was significantly had higher psychological distress than in the non-relocated group. In addition, health-related quality of life (HRQoL) in the relocated group was lower than in the non-relocated group. Its risk factors were relocation from pre-earthquake residence, aging, lower educational level, the loss of family members during the earthquake, chronic illnesses, and the death of a spouse after the quake.
7	Cross-Sectional Data Within 1 Year of the Fukushima Meltdown: Effect-Size of Predictors for Depression (Lebowitz and Lebowitz 2016)	Depression occurred in 23 % of the female and 17% of the male participants. House damage, age, income reduction, home water incursion, and casualty acquaintance were the strongest predictors. Meanwhile, education level, location during the disaster, and workplace damage did not correlate with depression.
8	Reducing depressive symptoms after the Great East Japan Earthquake in older survivors through group exercise participation and regular walking: a prospective observational study (Tsuji et al. 2017)	The study revealed that group exercise participation and regular walking could reduce depressive symptoms in older survivors.
9	Relational Satisfaction from Providing and Receiving Support is Associated with Reduced Post-Disaster Depression: Data From Within One Year of the 2011 Japan Triple Disaster (Lebowitz, A. J. and Lebowitz 2017)	Self-providing support among post-disaster populations suggested a buffering effect in depression. Thus, it could be a positive coping in post-disaster societies.
10	Risk Factors of Post-traumatic Stress and Depressive Disorders in Longmenshan Adolescents After the 2013 Lushan Earthquake (Xu, Wang, and Tang 2019)	The risk factor of PTSD in adolescents after the earthquake was earthquake exposure. Meanwhile, psychosocial stressors following the event were the predictor of depression
11	Overview of the Psychosocial Condition in the Merapi Slope Communities After 6 Years of the Mount Merapi Eruption (Purborini et al. 2016)	The study indicated that the majority of respondents with psychosocial disorders were women and the late elderly category. The Regional Government and related institutions should deal with post-disaster psychosocial problems in the Merapi Slope Communities.
12	A Nationwide Survey of Psychological Distress among Italian People during the COVID-19 Pandemic: Immediate Psychological Responses and Associated Factors (Mazza n.d.)	The research identified persons at greater risk of suffering from psychological distress during the COVID-19 outbreak. The persons were female gender, had a negative effect, and detachment. In addition, they had an acquaintance infected, a history of stressful situations, and medical problems. Moreover, respondents with an infected family member and had to work outside their house showed higher anxiety and stress levels
13	The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users (Li n.d.)	The study found an increase in negative emotions, including anxiety, depression, and anger. In addition, there was a decrease in positive and life satisfaction after the COVID-19 pandemic declaration
14	The Correlation between Coping Mechanisms and the Risk of Depression in Survivors After the Store Fire Disaster at Pasar Atas, Bukit Tinggi, in	The study indicated that post-fire victims had maladaptive coping mechanisms. There was a significant association between coping mechanisms and the risk of depression in

	2018 (Yunere, Sari, and Tusadiah 2018)	Survivors After the Store Fire Disaster at Pasar Atas, Bukit Tinggi, in 2018.
15	Mental Health Service Need and Use in the Aftermath of Hurricane Sandy: Findings in a Population-Based Sample of New York City Residents (Lowe et al. 2016)	Only 7.8 % of disaster survivors reported post-disaster service needs and service use (4.4 %) since the hurricane, 5.9 % were classified as having unmet needs (i.e., needs without use), and 2.5 % as using services without needs. In addition, independent variables influencing unmet mental health service needs were younger age, male gender, higher education, and exposure to more disaster-related stressors.

DISCUSSION

Individuals had mental health burdens after a disaster occurs. One of them was depression. Disaster-related exposures are a major contributing factor to PTSD and depression. Feelings of dying, getting hurt, or seeing relatives die or be injured in an earthquake are significant factors that contribute to PTSD and depression. Among these factors, feelings of dying contributed the most to the risk of PTSD and depression. Previous research also reported individual experiences and fears to be significant predictors of PTSD and depression severity. Negative events in life can cause stress and depression in individuals.

A study revealed that trauma exposure was the strongest predictor of depression, while life events only correlated with depressive symptoms. However, although depression and PTSD might overlap in many ways, the contributing factors were likely to be different. The study showed that PTSD was highly correlated with earthquake-related exposure (geographic exposure). At the same time, depression was most associated with psychosocial stressors (adverse life events) after a traumatic event (Xu, Wang, and Tang 2019). Mental health services were rare in post-disaster communities. However, research has revealed an efficient and empirically-based clinical decision-making tool (Danielson et al. 2017). A coping mechanism is an individual's way of solving problems, adapting to change, and responding to threatening situations. It responds to concerns threatening the individual, both physically and psychologically (Yunere, Sari, and Tusadiah 2018).

PTSD appears a month or a year after the disaster. Symptoms include fears related to the disaster – such as the fear of being separated from their parents or family – and sleep disturbances – such as nightmares, screaming, and bedwetting. The accumulation of psychosocial trauma can manifest into physical and psychological symptoms, such as nausea, moodiness, withdrawal, nightmares, anxiety, feeling threatened, and loss of life expectancy (Muhafilah and Herawati 2019). It is essential to correctly identify vulnerable groups according to socio-economic changes and develop appropriate, specific, and individual interventions for PTSD (Choi 2017).

Capacity building for health and social services in real-time is needed to cope with the surge in mental health burdens. Health and social workers should recognize possible psychiatric sequelae during and after major social unrest through systematic planning and regular interactions. The high prevalence of depression and suspected PTSD could result in impaired functioning in individuals, as well as substantial

economic costs (M. Y. Ni et al. 2020). The essential role of the family as a support system can reduce depressive symptoms in communities living among families, especially in Asia (Amatullah 2019).

CONCLUSIONS

There is a depression in post-disaster societies. Future studies should explore the correlation between PTSD and depression after a disaster.

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