

# Stress, Anxiety and Depression: Its Relationship With Quality of Life Among Flood Victims

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**Abstract:** Natural disasters such as floods often leave psychological impact on victims. This study addresses the relationship between stress, anxiety and depression among flood victims and its relationship with quality of life. A total of 294 flood victims in the district of Kubang Pasu, Kedah, Malaysia were chosen as samples for this study. The study utilized the Depression, Anxiety and Stress Scale (DASS) to measure stress, anxiety and depression while the World Health Organization Quality of Life (WHOQOL-BREF) and the Impact of Events Scale-Revised (IESR) was utilized to measure quality of life. Results indicated that stress, anxiety and depression have significant negative association with quality of life. In addition, stress and anxiety were found to be significant predictors to quality of life. Effective and efficient social and infrastructural support from the government, relevant authorities and agencies as well as from non-governmental organizations (NGOs) are needed to further strengthen and enhance the overall quality of life of flood victims.

**Keywords:** Anxiety, Depression, Flood, Stress, Quality of life

## Introduction

Floods that repeatedly occur bring high risk to victims involved. It brings uncomfortable feelings among victims in high risk populations. This is due to the facts that flood may occur without warning. Prolong stress, anxiety and depression can affect the quality of life of the victims.

According to The Meteorological Department of Malaysia, the frequency of floods in Malaysia has risen. It is estimated that the average rainfall in Malaysia is 2500 mm a year. This has put Malaysia as among the most heavily rainfall countries. A study had found that between the year 1992 to 2002, flood had been regarded as catastrophe and affected the life of people in most countries in Asia. It had taken 420,867 lives and affected almost 1.7 million victims. The estimated losses were around USD369, 362,000.00.

The decision to leave home and move to the evacuation centre is an unpleasant experience (Abbasi and Shaikat 2012; Said et al. 2013). Victims will be facing physical and psychological problems. Psychological problems have been identified to exist among victims of catastrophes in newly development countries. Stress has been said to be the most significant effect experienced by victims followed by anxiety. Difficulties in sleeping, symptoms of stress, body pain and physical injuries, the increase of illegal substances and taking sick leave are among the effects of stress (Norris 2005).

Catastrophe such as flooding may affect one's life and should be tackled wisely. Even though support in terms of security and basic needs have, nevertheless, assisted victims in reducing stress; emotional and psychological assistance should be given due consideration (Raphael et al. 1995). In the World Conference on Disaster Reduction in Kobe, Japan, the presentation on the Hyogo Framework 2005-2015 mentioned that catastrophe such as floods will not leave only physical damages but psychological damages to the victims. Therefore, there is a need to understand, tackle and decrease the psychological effects experienced by victims in order to assist and enhance their quality of life.

This article discusses a study on the relationship between stress, anxiety and depression with the quality of life among flood victims in Malaysia as well as the significant variables that predict quality of life.

## Past Studies

Psychological effects are a long and serious effects experienced by flood victims. During rainy seasons, victims often encounter feelings such as worry, fear, nervous, and unpleasant thinking of the situation that they are facing (Syed Hussain et al. 2011). This has indirectly decreased the everyday

quality of life for the victims. Individuals having stress, anxiety and depression will eventually be lead to lower quality of life. They will be more susceptible to nervousness, easily agitated, fear and lose focus. The disturbed feelings will lead to unhappiness and loss of passion and excitement towards the environment. The needs for consistent quality of life or well-being of individuals stem from the facts that they will lead towards healthy and relax lifestyle, effective social life, happiness and satisfaction, able to achieve goals and acquire better physical and mental health (Ferrans 1990).

Quality of life is an indicator in picturing the situation and change in individual's life and society. The stress, anxiety and depression faced by the flood victims are due to the facts that they are facing loss of properties, damage of households and infrastructure, the presence of diseases as well as communication and transportation problems and eventually, deaths. Most researches have given focus on the quality of life experienced by cancer patients. Less research have focused on the quality of life faced by flood victims after the catastrophe (Tan et al. 2004).

There is also a relationship between the quality of life and well-being before and after the catastrophe (Wang et al. 2000). Stress, anxiety and depression may be reduced if victims are given early assistance in terms of physical and emotional support. The level of physical health, quality of life and well-being will be increased. Studies by past researchers found that there was a relationship between the psychological effects experienced by catastrophe's victims with their well-being and quality of life. (Wang et al. 2000; Nygraad and Heir 2012; Rostam et al. 2009; Tov and Diener 2009; Carr et al. 2001; Wu et al., 2006; Rapaport et al. 2005; Moore et al. 2005; Papanikolaou et al. 2012). They have found that psychological effects may decrease the quality of life after the catastrophe. In addition, Rostam et al. (2009) found that Tsunami victims that received attention and assistance from the government showed better quality of life. The findings is supported by a study done by Xiong et al. (2010) where good social support had been seen as a contributor towards higher quality of life. Apart from social support, the victims' profile, the environment and the role of community and government may determine individuals' quality of life (Hayrol et al. 2011).

## **Methods**

### ***Research Design***

A cross-sectional survey via quantitative approach was utilised for this study. The survey measured the level of stress, anxiety and depression as well as the quality of life. Questionnaire was chosen as the main instrument to gather data.

### ***Population and Samples***

The population consists of flood victims in the district of Kubang Pasu in the state of Kedah, Malaysia. In the 2010 a Flood Report was released by the Department of Irrigation and Drainage in the district of Kubang Pasu, where there were 1138 victims involved. The numbers were based on the registration at the evacuation center (based on those who registered and resided at the evacuation center for a period of more than 4 days). A total of 294 samples were chosen to participate in this study. The number of samples was based on the determination of sample size table by Krejcie and Morgan (1970).

Two types of sampling techniques were applied namely cluster sampling (probability sampling) and convenience sampling (non-probability sampling). In the first phase, cluster sampling was utilised to obtain sampling categories based on areas. It was based on the division of samples according to a smaller cluster district in the affected areas. In the second phase, to acquire samples in the identified smaller cluster district, the convenience sampling technique has been utilised. This particular technique has been applied since it is difficult to select samples randomly and because not all samples were willing to participate

### ***Instruments***

The questionnaire is divided into three sections. Section A consists of demographics information. Section B measures stress, anxiety and depression while Section C measures the quality of life. The instruments utilised and its profiles are as follow:

**Table 1** Instruments

Section	Instrument	Number of items
Demographic	Self-constructed	5
Stress, anxiety and depression	Depression, Anxiety and Stress Scale (DASS) by Lovibond and Lovibond (1955)	42
Quality of life	World Health Organization Quality of Life (WHOQOL-BREF) (1966) and Impacts of Events Scale – Revised (IESR) by Weiss and Marmar (1997)	22

### ***Data Analysis***

Data gathered was analysed using inferential statistic (pearson correlations and regression) via the Statistical Package for the Social Sciences (SPSS).

### **Results and Discussion**

#### ***Stress, Anxiety and Depression with Quality of Life***

Pearson correlation results (Table 2) show stress ( $r = -.65$ ,  $p < .01$ ), anxiety ( $r = -.65$ ,  $p < .01$  and depression ( $r = -.60$ ,  $p < .01$ ) correlates significantly with quality of life among flood victims' sample. It was found that stress, anxiety and depression had negative significant correlations with the quality of life among flood victims. The higher the stress, anxiety and depression level, the lower the quality of life they are experiencing.

**Table 2** Correlations among variables

Variables	n	Quality of Life
Stress	294	-.65***
Anxiety	294	-.65***
Depression	294	-.60***

\*\*\*  $p < .001$

This results is in line with studies from other researchers that stated psychological effects as factors that may lower down the quality of life and well-being of catastrophe's victims (Wang et al. 1999; Nygaard and Heir 2012; Katiman et al. 2009; Tov and Diener 2009; Carr et al. 2001; Wu et al. 2006; Rapaport et al. 2005; Moore et al. 2005; Papanikolaou et al. 2012). Prolong stress will cause deterioration of the quality of life enjoyed by victim (Papanikolaou et al. 2012). The psychological effect faced by the victims may reduce the current quality of life (Wu et al. 2006). According to Rapaport et. al (2005), the deterioration of the quality of life in individual is also affected by the anxiety and depression level depending on the time duration they are facing the situation. On the other hand, Rostam et al. (2009) found that Tsunami victims who received attention and support from the government showed better quality of life.

Quality of life is related with the sense of helplessness and depression. A stress individual has a huge gap to cover in terms of their current and present quality of life. Social support seems to be one of the factors that may affect their life quality. In addition, early assistance receive by the victims may reduce stress, anxiety and depression enhancing their well-being and quality of life (Wang et al. 2000). Nygaard and Heir (2012) stipulated that the lesser the psychological symptoms, the better the quality of life of the individual. Government support can be seen as moderating the effect between stress, anxiety and depression with the quality of life and well-being (Muda et al. 2006). Government must ensure that the emergency plan during flood and early preparation is done comprehensively incorporating physical, mental and social assistance in order to minimise the effect and to ensure that the quality of life is not affected (Tapsell 2011).

### ***Predictors for Quality of Life***

Linear regression analysis was performed to determine significant predictors for quality of life among flood victims. It is aimed at determining whether stress, anxiety and depression predicts and influences the quality of life. Based on the analysis (Table 3), it was found that stress and anxiety predict quality of life. These two variables contribute a total of 44.5 percent variance towards quality of life. The F value was 76.43 and significant at the .001 level. Stress ( $t = -3.88$ ,  $p < .001$ ) and anxiety ( $t = -3.81$ ,  $p < .001$ ) predicts quality of life significantly. The beta value showed that stress ( $\beta = -.80$ ) was the most significant predictor that contributes towards quality of life among the flood victims followed by anxiety ( $\beta = -.78$ ).

**Table 3** Linear regression analysis among variables

Variables	$\beta$	Beta	t	p
Stress	-.80	-.43	-3.88	.000
Anxiety	-.78	-.40	-3.81	.000
Depression	.29	.16	1.65	.099
$R^2 = 0.445$				
Adjusted $R^2 = 0.439$				
$F = 76.43$ , $p < .001$				

Based on the regression analysis, the most dominant predictor for quality of life is stress. The result indicates that if an individual faces with situations that alleviate stress, the quality of life may be affected. Based on The Stress Life Event Theory, stress is an individual adaptation strategy towards his environment. Recurring incidents may worsen the stress level. Traumatic incidents faced by the flood victims can be considered personal since flooding causes loss of residence, family members and households (Chatterjee and Arora 2005). Each time the incidents occur, the body becomes unbalanced and try to adapt to the situation. Through this adaptation process, a lot of energy is released and this may cause psychological problems and create uneasiness in individuals.

During the monsoon season, a feeling of anxiety and worry arises thinking of the possibility of another flood. Loss of interest with other activities is a natural phenomenon and the mind keep

focusing on the effect of flood if it occurs again. According to Tapsell (2001), the recovery process and the memory of rebuilding the life after flood create certain stress level to the flood victims. The assistance and support from the government and relevant authority will ease the stress faced by the victims. The other social effects might include personal problems faced at home and at place of work.

Individuals may feel helpless if flood recurs and they won't be able to decrease the effects and losses caused by flood. Anxiety is also seen as a factor that may decrease quality of life (Zhan 1992). Quality of life relates to perception, value system, goal, hope and expectation of the flood victims. It is influenced by the individual background, health and individual situation.

## Conclusion

Flood causes great impact on human psychosocial and mental health (Stanke et al. 2012). Therefore, stress makes an individual less positive towards its environment, produce low energy level, less enthusiasm and this will affect overall life quality. Norris (2005) opines that these unique feelings may be overcome by effective self-control, self-esteem, hopes and self-confidence. Sense of control will decrease the anxiety and stress level of the victims. This may be further strengthened by effective and efficient social and infrastructural support from the government, relevant authorities and agencies as well as from non-governmental organizations (NGOs).

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