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# THE EFFECTS OF INJURY AND DISPLACEMENT ON TYPHOON YOLANDA SURVIVORS

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THE EFFECTS OF INJURY AND DISPLACEMENT  
ON TYPHOON YOLANDA SURVIVORS

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Social Work

---

by  
Alexis Lauren Mitchell  
Crystel Nayeli Chaparro  
June 2015

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Approved by:

Dr. Corry Dennis, Faculty Supervisor, Social Work  
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## ABSTRACT

This study was conducted with a group Filipino survivors of Typhoon Yolanda. It examines the effects of being injured or displaced as a result of the natural disaster on the effectiveness of a pilot project addressing depression, anxiety and hope. Eight adults (N = 8) completed a series of five workshops along with a pre and post questionnaire. Those that were displaced, exhibited a reduction in depression (24%), a reduction in anxiety (12.8%), and an increase in hope (14.78%) after completing the workshops. Furthermore, the individuals that were injured experienced a reduction in anxiety (22.7%), an increase in depression (28.48%), and an increase in hope (14.86%).

## ACKNOWLEDGMENTS

We would like to express our gratitude to all of the parents who took part in this research and assisted in completing this project. This experience was beyond valuable as it provided personal growth both emotionally and mentally. We were inspired by this population's inner strength and unique coping mechanisms. We were blessed by the greeting, collaboration and wonderful hospitality from the whole Maya community overall and for that we are most grateful.

A special thanks to the Cebu Fuente Rotary Club in the Philippines who helped us through the planning and implementation of this project. We also want to express our appreciation to all of the staff from Maya Elementary school in Cebu, Philippines for their warm hospitality, use of their facility and helping with participant recruitment.

Our most sincere appreciation to Dr. Cory Dennis, who supported us from the beginning, when this project was just an idea. You pushed us farther than we thought we could go through the development and completion of our project. Thank you for your guidance and for encouraging us to trust ourselves and one another. Thank you for your wisdom, assistance, advocacy, time, and patience during the course of this project.

Lastly, we would like to acknowledge and convey our appreciation to one another. This process could have not been as efficient and cherished without this strong and respectful team combination. Together we

accomplished what seemed to be a distant idea. The long days and late nights were survived through our mutual encouragement, laughter, and respect for one another.

## DEDICATION

We would like to dedicate this thesis to our parents who have provided unlimited support.

Crystel's parents: Miguel Angel and Catalina Chavez - Thank you for your encouragement and loving support through this project and my educational advancement overall. Thank you for your wisdom and advice that provided the strength and courage to never give up. I would also like to thank my daughter Kate M. Chaparro, for her patience and understanding through these last couple of years.

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## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGMENTS .....	iv
LIST OF TABLES .....	viii
CHAPTER ONE: INTRODUCTION	
Problem Statement .....	1
Purpose of the Study .....	3
Significance of the Project for Social Work .....	4
CHAPTER TWO: LITERATURE REVIEW	
Introduction .....	7
Disaster Mental Health .....	7
Displacement .....	8
Injury .....	9
Intervention .....	10
Theories Guiding Conceptualization .....	12
Summary .....	13
CHAPTER THREE: METHODS	
Introduction .....	14
Study Design .....	14
Sampling .....	14
Data Collection and Instruments .....	15
Procedures .....	16
Protection of Human Subjects .....	17
Data Analysis .....	17

Summary .....	17
CHAPTER FOUR: RESULTS	
Introduction .....	19
Data Results .....	19
Data Outcomes .....	20
Hypothesis Objective .....	22
Summary .....	26
CHAPTER FIVE: DISCUSSION	
Introduction .....	27
Discussion .....	27
Limitations .....	30
Recommendations for Social Work Practice, Policy and Research .....	32
Conclusion .....	32
APPENDIX A: INFORMED CONSENT .....	34
APPENDIX B: INSTRUMENT .....	36
APPENDIX C: ACCESS LETTER .....	40
REFERENCES.....	42
ASSIGNED RESPONSIBILITIES PAGE .....	45

## LIST OF TABLES

Table 1.	Pretest and Posttest Comparative Changes .....	21
Table 2.	Anxiety Pretest and Posttest Mean (SD) and Effect Size .....	22
Table 3.	Depression Pre-test and Post-test Mean (SD) and Effect Size .....	24
Table 4.	Hope Pretest and Posttest Mean (SD) and Effect Size .....	25

## CHAPTER ONE

### INTRODUCTION

This chapter describes the importance of researching the effects that natural disasters have on populations who are vulnerable and predisposed to natural catastrophes. We will discuss some of the consequences and mental health problems that could be provoked by natural disasters. Attention must be given to the fact that although natural disasters occur frequently, much research has not been conducted regarding the later effects that manifest in the affected population.

#### Problem Statement

Natural disasters are unpredictable and very harmful to anything and everyone around them. In addition to physical damages and financial problems, natural disasters can also provoke mental health complications, such as depression and anxiety, even months after the catastrophe occurs. There are many factors that could influence a person's response to a natural disaster. These may include: age, sex, caregiving responsibilities, loss of property, social support, or experiencing the death of a loved one (Wu, 2013). Moreover, being injured or displaced may also play an important role in what responses manifest and the presentation of mental health issues.

Individual responses to natural disaster vary greatly from person to person (Bonanno et al., 2010). It has been established that most natural

disaster survivors do not develop persistent pathological responses (Bonnano et al, 2010). Chronic symptoms remain elevated beyond the first few months following the target event only in, at most, about thirty percent of adults and youth, and this figure is typically lower (Bonnano et al, 2010). Wickrama and Ketring (2011) report that though many recover, a “substantial proportion of natural disaster victims continue to experience serious mental and physical health problems even several years following the disaster” (p. 278).

The Philippines is a country that is predisposed to frequent and intense natural disasters such as hurricanes, typhoon, and earthquakes. A typhoon, which is another name for a hurricane or cyclone, dependent on its location, is considered such when the winds of a tropical storm reach 74 mph. At 111 mph, it is labeled intense; and, when winds reach 150 mph it is considered a super typhoon (Than, 2013). Some locations and their inhabiting populations are more vulnerable to these typhoons. For example, the South China Sea and the Philippine Sea experience thirty percent of the world’s yearly typhoons. The East Pacific ocean experiences the next highest rate at fifteen percent on average. Because of their position in the Ring of Fire and their surrounding seas, Indonesia, the Philippines, and Taiwan, among other nations, are subject to repeated natural disasters such as typhoon, earthquakes, and tsunamis (Gaillard, Liamzon, & Maceda, 2005).

Because of the swift and brutal nature of typhoons, it is imperative that vulnerable populations be prepared. While early warning systems have been

developed to encourage early evacuation, steps must be taken to better equip these populations with psychological tools to cope with and recover from such disasters. Research in this area is also needed to better prepare emergency response teams and ensuing short and long term aid workers to effectively address the survivors' responses to trauma, such as depression, stress, anxiety, and grief (Bonanno, Brewin, Kaniaisty, & La Greca, 2010). Additionally, hope should be assessed and fostered in natural disaster victims. When responding to a trauma caused by a natural disaster, help must be provided as soon as possible in order to ensure the wellbeing of all victims; however, due to lack of resources, staff, and time, this is not always the case.

#### Purpose of the Study

The purpose of this study is to analyze whether psychoeducation and group therapy will promote resiliency by reducing depression and anxiety and increasing hope in the study's participants who experienced an injury or displacement. The Rotary Club of Cebu Fuente in the Philippines identified the community of Maya as a town in need of the aforementioned services due to being one of the provinces most affected by Typhoon Yolanda. Our goal is to conduct psychoeducational workshops and assess a group of adult parents by testing whether they experience a decrease in anxiety and depression levels, and an increase in hope. These variables will be measured through pre and post assessment. These services will allow clients to learn adaptive skills to apply to current and future anxiety provoking situations. Psychoeducational

workshops will teach coping skills to help manage anxiety, reduce stress and improve mood. Cognitive Behavioral Therapy will help clients identify and replace negative thought processes with positive alternative thoughts, thus improving client's resiliency. Displacement and injuries will also be taken in consideration to analyze if these factors influence mental health problems and response to the intervention.

Because very little research has been conducted in the Philippines, data, experiences, and statement from this research can be useful to inspire and integrate additional treatments to aid this population in the future.

#### Significance of the Project for Social Work

Addressing the mental health needs of disaster survivors with appropriate interventions is important because it is not going to disappear. Hundreds of natural disasters, whether they be hurricanes, floods, earthquakes or fires, happen every year throughout the world. It is important to develop and implement effective strategies and modalities for certain symptoms and specific cultural populations. This is especially true for populations that are particularly vulnerable to recurrent natural disasters like the Philippines. The inhabitants of high hurricane activity areas could greatly benefit from more research on this topic, and the development of culturally appropriate interventions.

Numerous studies have been conducted on the responses to natural disasters, particularly typhoons and tsunamis in Taiwan, Sri Lanka and

Thailand; however, research on the Filipino population appears to be limited. The literature on natural disaster displacement and mental health consequences is sparse and specific. One literature review on the topic by Uscher-Pines (2009) that included forty studies, noted this particular field of study is riddled with weaknesses. The type of disaster, severity, duration, location, culture, and state of victims pre-disaster (on which there is typically very limited data) make every incident unique, in turn, making results of these studies difficult to generalize (Uscher-Pines, 2009).

Displacement and the impact of the distance and duration from home where a natural disaster survivor is relocated to, is another area that has not been adequately studied. Hurricane Katrina was not the norm in that some victims were displaced outside of the surrounding region. It has not been determined if removing individuals from the devastated area triggered long term positive effects or if it proved to create additional challenges (Uscher-Pines, 2009). Wu (2013) studied survivors of the 2009 Typhoon Morokat in Taiwan, in particular the Bunun tribe from two mountain districts. The families were relocated to another part of Taiwan. In this article, the author argues that this was a potentially harmful move because the Han Chinese that lived in the area where the Bunun were relocated to, were more pessimistic and less collective in culture. The argument was made the Bunun tribal members would have been more reliant on their kin and social networks than any agency.



It is very clear that more research regarding displacement, injury and hope with Filipino natural disaster victims is needed. It is never late to train and educate victims who suffer from any type of trauma. Moreover, as future social workers, it is our duty to advocate and help vulnerable populations. This includes all citizens of the Philippines, since they are frequent targets of natural disasters. Another reason is that numerous rural areas in the Philippines do not have the resources or infrastructure to provide therapeutic services for people who were affected by the natural disasters. Although food, water and additional resources are crucial for victims to sufficiently carry out their day to day activities, none of these can be executed without proper mental health treatment and understanding. As social workers, we might not be able to predict or prevent natural disasters from happening, but we can assist this population by addressing mental health problems by educating them and empowering them with useful coping skills.

This study hypothesizes that those who were injured or displaced will have higher levels of depression and anxiety and lower levels of hope in the pre-test results. In addition, this study hypothesizes that after attending the series of workshops focused on decreasing depression and anxiety management through coping skills, that adults who have experienced only an injury, due to Typhoon Yolanda, will experience greater changes in reported levels of stress, anxiety, depression and hope, than those who have been displaced, displaced and injured, or experienced neither.

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

We will summarize and critically review the available research pertaining to mental health following disasters, the effects of injuries and displacements on survivors, and methods of treatment. We will examine cultural implications and theoretical approaches used in research.

#### Disaster Mental Health

Experiencing a disaster, natural or man-made, can cause an individual to experience a host of mental health issues, including, but not limited to, symptoms of post-traumatic stress disorder (PTSD), anxiety, and depression. There is a general consensus that mental health support for survivors is crucial and that people are generally resilient and recover with little to no intervention (Norris et al., 2002). However, the research varies on timelines for symptoms to manifest and endure. Some report that most recover from both physical and psychological problems within a year from the incident (Norris et al., 2004), while others report enduring mental health issues four years or more post-event (Van der Velden, 2006).

High risk regions for natural disasters, such as Sri Lanka and Taiwan, as well as more recent disasters, such as hurricane Katrina and Japan's earthquake/tsunami in 2011 have been the topic of several studies (Wu, 2013;

Uscher-Pines,2009; Commers, Morival, & Devries, 2012). However, areas such as the Philippines, in spite of being a high activity area, have not been the focus of much research. This current study attempts to fill the gap in the existing literature.

### Displacement

Moving is widely recognized as one of the most stressful life events. Being involuntarily evacuated due to the destruction of your home and community can be devastating and is related to higher levels of stress and other negative symptoms (Lazarus et al., 2002). This, again, is another area of conflicting findings. In a study by Watanabe, Okumura, Chui and Wakai (2004), it was found that depression levels were similar between older adult Taiwanese who had experiences displacement due to loss of their home and those who had not. Thienkrua et al. (2006) found similar result in post-traumatic stress disorder symptoms and depression among relocated and non-relocated children in the 2004 Thailand tsunami. Other studies report a marked disparity in psychological morbidity among individuals who have been displaced (Van Griensven et al., 200; Uscher-Pine, 2009).

The impact of the distance from home to the site of the relocation is another area that has not been adequately studied. Hurricane Katrina was not the norm in that some victims were displaced outside of the surrounding region. It has not been determined if this had long term positive effects by removing individuals from the devastated area or created more challenges

(Uscher-Pines, 2009). Wu (2013) studied the effects of relocation on survivors of the 2009 Typhoon Morokat in Taiwan. In this article, the author argues that the relocation was a potentially harmful move because the Han Chinese that lived in the area of relocation were less positive in outlook and less collective in culture. The argument was made that the Bunun tribal members would have been more reliant on their kin and social networks than any other agency had they remained closer to their original area.

The type of area an individual is relocated to plays a significant role in the survivor's adjustment and recovery according to Quosh (2013). He differentiates between urban and rural setting in his evaluation of the ADAPT (Adaptation and Development after Persecution and Trauma) program utilized with refugees in Syria, citing that urban settings have benefits such as "better availability of health, education and other services and a better infrastructure, compared to rural settings" (p. 314). Uscher-Pines, (2009) asserts that the literature does indicate that those experiencing displacement have a higher likelihood of also experiencing mental health problems. Bonanno et al., (2010) posits that the relation to negative mental health effects and displacement alone remains unclear.

### Injury

It has been established that a physical ailment can contribute to one's mental health status. Wickrama and Ketring's study of tsunami exposed mothers (2011) suggests a reciprocal relationship between the two. Prolonged

displacement or enduring economic losses can contribute to deteriorating health. Conversely, if an individual sustain an injury or experiences a chronic illness, this may negatively impact one's mental health.

Identifying physical injuries sustained as a direct result of the disaster is generally clear cut. One challenge that arises in assessing post disaster health status is the discerning between pre-existing conditions and those that are result of post disaster stress-related (Bonanno et al., 2010; Uscher-Pines, 2009). Bonanno et al. (2010) notes that the ideal design should include a baseline for health status; however, especially in economically depressed regions, obtaining an accurate health record, especially a mental health record, is unlikely. Neither study reported on if an injury experience plays a role in one's response to intervention.

### Intervention

Critical Incident Stress Debriefing (CISD) is a seven stage group approach to crises or disasters. At one point, it was a widely accepted universal response to affected populations. Recent data has proven this method is less effective than originally thought and has found to be harmful in some instances as it may hinder the natural recovery process (Stallard et al., 2006). The World Health Organization (WHO) actually advised against its use in recovery efforts in the 2004 tsunami (Bonanna et al., 2010). Although everyone will not develop a persistent mental health issue, there are a few individuals who can initially experience trauma responses such as depression

and anxiety. Therefore, it is imperative to treat only those whose symptoms are enduring (Van der Velden et al., 2006; Bonanno et al., 2010).

Another treatment that could be used is the Psychological First Aid (PFA). This tool serves as an alternative to CISD, and it operates on three axis that have been found to be most helpful in one's long term recovery. These axis are: 1) safety and hope, 2) access to support, and 3) empowerment (World Health Organization, 2011).

The timing of the intervention can also influence a survivor's recovery. Sample, Greene, and Johns (2012) interviewed twenty survivors of a manmade disaster who experienced Traumatic Brain Injuries (TBI) regarding their quality of life, healthcare experiences, mental health care experiences and their return to daily life. Many of the survivors recall the presence of counselors immediately after the bombing attempts and at support groups soon after. Twenty five percent or more of the participant reported not substantially benefiting from the groups. One participant of that study attributed the failure of the therapy groups to the timing and the heterogeneous makeup of the group. One participant stated, "It was too early. People were too emotional...there were people who were within a few feet of me that hardly had a scratch; there were families of those we had lost. So it was a very good degree of individuals to sit in a room and say, 'Okay let's fix you. Let's talk about what you need'" (Sample, Greene, & Johns, 2012, p. 1676). All but two of the participants in this study did cite the support of their

social network (family, friends, and community) as being a central in their recovery (Sample, Greene, & Johns, 2012).

Powell and Leytham (2014) found positive results with an intervention delivered three to eight months after the disaster, falling inside the long-term recovery period. The study focused on building resiliency among parenting adults following the 2011 6.3 magnitude earthquake in Christchurch, New Zealand. The intervention was a one three-hour psychoeducational workshop whose content included information about children's common responses to trauma, types and sources of stress, coping techniques, resources and building social and community supports (Powell & Leytham, 2014).

#### Theories Guiding Conceptualization

Bronfenbrenner's ecological model (Bronfenbrenner, 1988) influenced our study in that each system is bidirectional influenced by each other. This means that external factors, such as rate of reconstruction in the community or their children's response to the disaster, could be affecting the adult's levels of depression, anxiety, and hope. The biopsychosocial model (Silove, Steel, & Psychol, 2006) informed the study by encouraging the consideration of biological influences, such as injuries sustained in the typhoon on mental health outcomes and responses to interventions. Lastly, the resiliency theory, developed by Norris et al. (2008) also shaped our study. With the Philippines being an understudied, yet high risk area, we were concerned with utilizing an intervention that would aid in building the capacity to be resilient within the

population. A pillar of Norris' theory is that "Interventions are needed that boost and protect naturally-occurring social supports in the aftermath of disasters" (Norris et al., 2008, p. 143).

### Summary

Disaster mental health is still a murky area of research. As Uscher-Pines (2009) noted, due the nature of natural disasters, there is a distinct lack of generalizable research and an abundance of conflicting data. However, researchers have learned that though most do recover with little to no intervention, thirty percent or less will experience mental health issues following a disaster (Norris et al., 2002). Displacement and injury do have effects on an individual's mental health, though there is little research on its outcomes with regards to specific interventions (Uscher-Pine, 2009; Bonnano et al., 2010; Wu, 2013). Group interventions have been effective; however, timing of implementation and group homogeneity seems to be among the determining factors in the survivor's response to treatment (Sample, Greene, & Johns, 2012; Powell & Leytham, 2014).



## CHAPTER THREE

### METHODS

#### Introduction

We will review and describe the strategies used to analyze the effects of injury and displacement on typhoon Yolanda survivors in addition to an overview of how this research was accomplished. We will also describe our sampling methods and participants, in addition to the materials, instrument, and process. Moreover, the method in which our human subjects were protected will also be clarified to include confidentiality and rationale.

#### Study Design

The purpose of this study was to examine whether psychoeducational workshops and group therapy could assist typhoon survivors who have been injured and displaced by promoting resiliency through reducing depression, and anxiety and increasing hope. Data was collected and compared through a pre-and-post questionnaire. Due to the fact that questionnaires were used to gather all data, our research method was quantitatively driven.

#### Sampling

The data for this study was obtained from parenting adults who reside in Maya, Daanbantayan, Philippines. Maya Elementary School aided the study by identifying a group of parents who may be willing and available to participate in the required psychoeducational workshops and complete the assessments for the

study. Of the parents referred by the school, the sample was determined by the parents' availability to attend the sessions.

### Data Collection and Instruments

The project involved international travel and took place in the town of Maya in the Philippines. The study was conducted through group face-to-face interaction. The data collection was gathered through pre-and-post self-report questionnaires. The scales used to measure hope, depression, and anxiety were preexisting and well established instruments with high reliability and validity. Anxiety was measured by using The Depression Anxiety Stress Scale (DASS) which a twenty-eight item screening tool (Lovibond & Lovibond, 1995). Depression was measured through the Patient Health Questionnaire (PHQ-9) which is a nine item screening tool (Kroenke, Spitzer, & Williams, 2001). Finally, in order to measure the adults hope levels, the Adult Hope Scale (AHS) was utilized (Snyder et al., 1991).

Since we were working with a different culture, our questionnaires were culturally sensitive and were provided both in English and Cebuano to accommodate all participants. Surveys provided to all participants included demographic information such as gender, age, and family size. They also included information on injuries to self or others in the family, and displacement (See Appendix B). Data gathering was completed between August 4, 2014 and August 9, 2014.

## Procedures

The potential participants were provided a verbal overview of what the research entails and an informed consent in the language of their choosing (English or Cebuano) [See Appendix A]. Those who elect to participate signed the informed consent and were provided the pre-test survey. The post survey was completed after the close of the final session. All sessions and data collection took place at Maya Elementary School. This location was chosen as it was central and familiar to the participant because at least one child of the all of the participant attended at the time of the study. The survey took approximately 20-30 minutes to complete. The instrument was also available in both languages and participants were offered both. The survey includes measures of anxiety, depression, and hope as well as information on injuries sustained by the participant and those in the participant's care and displacement information. The intervention consisted of five 90 minute psychoeducational workshops. Each session was facilitated by two Master of Social Work students. Topics included coping skills, managing depression and anxiety symptoms, awareness and expression of emotion, both personally and with family members, expectations, and faulty thinking. A therapeutic component was included in the structure of the sessions that allowed the participants to process at the end of each workshop. Data was collected from August 4, 2014 to August 9, 2014. See Appendix B for complete instrument.

## Protection of Human Subjects

This study was approved by California State University, San Bernardino Institutional Review Board. All participant data was kept confidential. Because the project involves international travel, data was kept using cloud technology to avoid loss of information if computers were to be confiscated or duplicated in customs. All participants were assigned a participant number. This number and data was stored in password protected google docs file. The identifying information (participant name and the assigned number) was stored in a password protected file on Microsoft OneDrive.

## Data Analysis

We used frequencies and effect sizes to determine how the various groups responded to the intervention. Because of the sample's small number of participants, we used effect size to measure the impact of the intervention on differing groups and to identify the amount of non-overlap between the two. The effect sizes range from 0 to .572.

## Summary

The purpose of this study was to examine the effectiveness of a psychoeducational workshop intervention on Typhoon Yolanda survivors who experienced displacement or injury. Our sample consisted of eight parenting adults identified by Maya Elementary school in Cebu, Philippines. The participants completed a survey before and after a week of group therapy and

psychoeducational sessions. Confidentiality of all participants was protected. Analysis included frequencies calculated through SPSS. In addition effect sizes were calculated through an online effect size calculator which were used to examine pre and post measures of anxiety, depression, and hope in those that experienced an injury or displacement.

## CHAPTER FOUR

### RESULTS

#### Introduction

The purpose of this study was to examine whether psychoeducational workshops are effective in addressing depression, anxiety and hope with typhoon survivors who have been injured and displaced. We will discuss the demographic characteristics of the participants in addition to the various outcomes gathered from the analyses that were performed. Findings for this data analysis were generated and analyzed through the use of SPSS.

#### Data Results

Initially, 12 parents signed up to participate in the study and completed the pre-test questionnaire. Of the 12 parents, only eight attended all workshops and completed the post-test questionnaire. All eight participants, seven females and one male, were Filipino parents living in Maya, Daanbantayan, Philippines. They ranged in age from 31 to 51 years old with the average age being 38. They were surveyed both prior to and after completing the program. The number of children in the home ranged from one to six with those children ranging from one to 19 years of age. Of the eight participants, five were displaced due to Typhoon Yolanda, three experienced injury either personally or of an immediate family member in their care as a result of the typhoon. The types of injuries reported were lacerations and

ruptured organs. Two participants experienced neither displacement nor injury and two participants experienced both injury and displacement.

### Data Outcomes

After comparing and analyzing the pretest and posttest mean scores, it was established that the participants that experienced displacement exhibited a 12.8% decrease in anxiety, a 24% decrease in depression, and a 14.78% increase in hope. The group that was displaced displayed a 55.68% reduction in anxiety, a 19% reduction of depression, and a 3.3% reduction in hope.

There was a 22.78% decrease in anxiety, a 28.48% increase in depression and a 14.86% increase in hope from pretest to posttest for those individuals who experience injury. Moreover, for the individuals who were not injured, we found that the anxiety levels decreased by 40.71%, depression decreased by 43.75%, and there was no change in the levels of hope after comparing pretest and posttest.

When it comes to the individuals who are neither displaced nor injured, the levels of anxiety decreased by 54.55%, depression decreased by 36.36% and their hope levels was not affected by the interventions. Conversely, the individuals who were injured and displaced exhibited a 35.14% increase in anxiety, a 100% increase in depression, and a 32.32 increase in hope (see Table 1).

Table 1. Pretest and Posttest Comparative Changes

Comparative Changes in Averages		
Displaced (n = 5)		
Group	Changes in raw score	Changes by percentage
Anxiety	-3.0	12.8%
Depression	-1.5	24%
Hope	+7.5	14.78%
Not Displaced (n = 3)		
Anxiety	-18.0	55.68%
Depression	-1.33	19.0%
Hope	-2.0	3.3%
Injured (n = 3)		
Anxiety	-7.67	22.7%
Depression	+1.33	28.48%
Hope	+8.67	14.86%
Not Injured (n = 5)		
Anxiety	-9.2	40.71%
Depression	-3.5	43.75%
Hope	0	0
Injured & Displaced (n = 2)		
Anxiety	+6.5	35.14%
Depression	+2	100%
Hope	+16	32.32%
Neither Injured Nor Displaced		
Anxiety	-9	54.55%
Depression	-2	36.36%
Hope	0	0



### Hypothesis Objective

This study hypothesized that those who were injured or displaced would have higher levels of pre-intervention anxiety scores than other groups. After comparing the pre and posttest, it was determined that this hypothesis was supported. The group that suffered an injury only reported the highest average in anxiety with a mean score of 34, followed by those who were only displaced with a mean score of 23.4. Both of these groups scored higher on the anxiety measure than the individuals who experienced both an injury and displacement (see Table 2). When comparing the anxiety pre and post section, it was determined that the effect size between both sections is small for almost all of the groups. The effect size for all groups regarding anxiety is small.

Table 2. Anxiety Pretest and Posttest Mean (SD) and Effect Size

Group	Pre anxiety Mean (SD)	Post Anxiety Mean (SD)	Effect Size
Displaced	23.4 (8.678)	20.40 (6.229)	0.195
Not Displaced	32.33 (30.567)	14.33 (11.846)	0.362
Injured and Displaced	24.00 (9.644)	24.00 (2.0)	0
Neither Injured Nor Displaced	16.50 (19.09)	7.5 (.707)	0.316
Injured	34.00 (21.494)	25.00 (2.582)	0.282
Not Injured	19.50 (13.077)	11.25 (5.965)	0.376

Secondly, this study hypothesized that those who were injured or displaced would report higher pre-intervention depression scores. This hypothesis was met with mixed results. The pre-test intervention scores for the injured group, averaging a 6.0 mean score on the depression measurement, was only higher than the group that experienced neither injury nor displacement. The displaced only group only slightly surpassed the injured group with a mean score of 6.25 (see Table 3). The effect size allowed us to measure the strength of the difference between both the pre and post test scores. Consequently, a 6.0 on the pre-test intervention score for the injured group is considered to be very small. Congruently, the displaced group's score of 6.25 also falls under the same category. When assessing the difference in mean scores through effect size, most groups fall under the small effect size category. The only group whose effect size is considered to be at a medium category is the Not Injured with an effect size of 0.572 (See Table 3).

Table 3. Depression Pre-test and Post-test Mean (SD) and Effect Size

Group	Pre Depression Mean (SD)	Post Depression Mean (SD)	Effect Size
Displaced	6.25 (4.992)	4.20 (4.087)	0.219
Not Displaced	7.0 (4.359)	5.67 (3.786)	0.161
Injured and Displaced	4.67 (4.726)	6.00 (4.583)	0.141
Neither Injured Nor Displaced	5.50 (4.95)	3.50 (.707)	0.272
Injured	6.00 (4.690)	7.00 (4.243)	0.111
Not Injured	7.33 (4.726)	2.5 (1.292)	0.572

Pre-interventions scores on hope were hypothesized to be lower in those that had experienced an injury or displacement. This hypothesis was somewhat supported. Those ranking the lowest in hope prior to the intervention were those that experienced both an injury and displacement with a mean score of 49. Only marginally higher at 50.75 mean hope score, were the persons who were displaced. However, those who reported experience neither even had the next highest score or 53. The highest pre-interventions hope score was the not displaced group (See Table 4). The strength of the difference in effect size between most of the pre and post hope groups is small with the exception of the group who was neither displaced nor injured. The group who was not injured or displaced with an effect size of 0 represents effect between the pre and post hope measure as their mean scores did not change.

Table 4. Hope Pretest and Posttest Mean (SD) and Effect Size

Group	Pre Hope Mean (SD)	Post Hope Mean (SD)	Effect Size
Displaced	50.75 (11.587)	59.40 (9.990)	0.371
Not Displaced	60.67 (13.317)	58.6 (11.5)	0.0830
Injured and Displaced	49.0 (15.528)	59.0 (13.528)	0.347
Neither Injured Nor Displaced	53.00 (1.414)	53.00 (8.485)	0
Injured	55.75 (17.443)	61.75 (12.33)	0.195
Not Injured	54.0 (2.0)	56.50 (7.141)	0.232

Additionally, we hypothesized that the injured group would experience the most significant changes in mean scores on all measures. In regards to anxiety, this hypothesis was not supported. The injured group reported a 22.7% reduction in anxiety. This was only higher than the group that was displaced (12.8% reduction), as well as the group that was both injured and displaced who experienced no changes in anxiety after completing the intervention. Consequently, the difference between the pretest and posttest effect size is small.

Depression levels for the injured only group lowered by 16.66% post intervention. This finding was contrary to our hypothesis. The injured only scores demonstrated the lowest change amongst all the groups with a small effect size after comparing both pretest and posttest. The depression scores, following the intervention, doubled for the group that experienced both injury and displacement with the smallest effect size of this category.

Finally, we hypothesized that the injured group would show the most significant changes in hope after completing the intervention. This hypothesis was not supported. The group showing the largest changes in hope was the group that was both injured and displaced with the effect size of 0.152.

### Summary

Our study yielded mixed results in regards to our hypotheses. The neither injured nor displaced group scored lower in pretest levels than all other groups on anxiety only. The individuals who experienced both injury and displacement scored lower on hope compared to the individuals that only had one or the other in the pretest. But, the displaced individuals scored lower in hope than the group that only experienced injury. The result for the injured group supported our hypothesis with the exception of anxiety. The range of effect sizes indicates that most of the groups experienced a small to medium effect due to the intervention.

## CHAPTER FIVE

### DISCUSSION

#### Introduction

This chapter discusses the importance of the findings of this study. It discusses the impact of interventions used and how the information that was gathered can be of help to similar populations and situations. Furthermore, it can serve as guide for those who would like to implement similar strategies in order to help others. Limitations will also be covered in this chapter.

To complete this study, we analyzed the pre and post test collected regarding the impact of a CBT intervention on anxiety, depression and hope. This phenomenon ought to be of interest to social work practitioners because this type of natural disaster is common but very little research is found regarding this population. Furthermore, it is crucial to acknowledge the great influence that professional help can provide within a short period of time and at a low cost. This is especially important when working with a vulnerable population who has limited resources but are also at risk for numerous natural disasters.

#### Discussion

Individuals who are impacted by a natural disaster, and consequently displaced or injured, are likely to experience a variety of emotions which can take place initially or a few months after the event. Sample, Greene, and

Johns (2012) found that implementing mental health service too soon after the traumatic event did not allow for the victim to resolve their medical issues first. Because they were still coping with the physical injuries, addressing mental health problems, was not a priority. The survivors indicated that this made the mental health interventions less effective. Thus, the timing of our intervention, being implemented nine months after the typhoon, was appropriate to maximize potential effectiveness.

The injured participants in our study showed a reduction in anxiety symptoms. However, their depressive symptoms increased over the course of the intervention. This could be due to the fact that they were more focused on the event because it was frequently discussed in the workshops. Culturally, this was not the norm. Traditionally, Filipinos attempt to avoid the negative memories and associated emotions surrounding the typhoon even after the initial shock passes and their loved ones were safe. Participants disclosed that they do not discuss the negative feelings and experiences of the typhoon. They continue to smile in the midst of adversity. This is congruent with Manuel Dy's (1994) observations on Philippine culture. This phenomena is not uncommon. Bonanno et al., (2010) found similar behavior patterns in families and communities not addressing the traumatic events as a way of protection and self-preservation. Bonanno et al., (2012) also found when examining PTSD, that exposure to the trauma through media can increase disaster related distress. It can be concluded that frequent discussion, as a form of

exposure, could also increase distress levels as it creates a perception of personal risk by conjuring traumatic memories. Reduction in anxiety can be explained by the culture. Because distressing events are not discussed, this may contribute to the high anxiety levels. Because of the frequent discussion in the workshops, anxiety was reduced.

We hypothesized that those who were injured or displaced would have higher levels of anxiety and depression and lower levels of hope. We found that those who were not displaced reported higher levels of anxiety and depression than those that were. This is contrary to Najarian et al.'s (2001) findings that relocated persons experienced significantly more psychological disturbances. The individuals that reported not being displaced were not questioned any further regarding their living situation. It is highly plausible, due to the state of disrepair, that many of the homes and buildings in the area were inhabitable at the time of the study. But, those who were not displaced could have remained in their homes in spite of it being severely damaged, lacking electricity and plumbing, or otherwise uninhabitable conditions. This could result in high levels of anxiety or depression, more so than being displaced and living in the home of a family member (Hopton & Hunt, 1996).

Those who were displaced reported lower levels of hope as predicted. In contrast, the group that was injured reported higher levels of hope than those that were not. This can be due to the fact the human body will heal and show visible signs of improvement. Because it is a biological process that is



influenced by, but not solely dependent on, outside factors, such as income, habitat and economic factors, an individual who was injured is more likely to see a laceration heal in less time that it would take to rebuild or repair a home, and therefore have more hope than a displaced individual.

The group that experienced both injury and displacement pre-intervention hope scores were very similar to those of the displaced group. This suggests that when an individual experienced both, the positive influence of witnessing an injury heal does not mitigate the effects of being displaced.

Our hypothesis of pre-test anxiety and depression scores being higher in those that experienced an injury or displacement was not supported. It appears that one cannot only consider conditions stemming from the initial event. As Uscher-Pines (2009) states, “pre event susceptibility factor of the relocated individual such as coping strategies, personality, sex, age, and socioeconomic status” must also be assessed and accounted for (p.18).

### Limitations

A limitation of this study relates to the manner in which participants were recruited and the design of the study. All participants were identified by the Mayan elementary school staff and were not randomly selected. In addition, participation was also based on interest and availability, which was similarly influenced by additional factors such as work, family and community obligations. The study lacked a comparison or control group. Utilizing a control group in disaster studies is difficult because the disasters cannot be predicted

and identifying participants in the wake of a disaster, possibly over long distances, can be challenging (Powell & Leytham, 2014; Yamashita, 2012). Moreover, although the group was composed of both females and males, the number of female participants greatly outnumbered the male participants, which might skew results. The sample size is small due to time limitation and resources, and was not demographically representative of this population overall.

An additional limitation of the study is the lack of specificity regarding displacement. Participants of the study were all internally displaced (Nishikiori et al., 2006), that is displaced but still within the confines of their nation's borders. However, the Philippines is a nation of islands each with its own cultural and language variations. If a person relocated to a neighboring island, it could feel much more foreign than a more local relocation, and further exacerbate psychological distress. Also, as Uscher-Pines (2009) highlights, voluntary relocation and forced relocation are often not differentiated as was the case in this study. Furthermore, data was not collected regarding the number of actual times a person moved, only if they had been displaced. It is likely that a person who experienced five relocations would also experience more anxiety or depression than a survivor who has only relocated one time in the same nine month period. All these factors may have manifested themselves in the participant's responses to mental health measures.

Although our hypotheses were not completely supported, there was some support for the importance of our strategies, concepts, timing and mental health implementations.

### Recommendations for Social Work Practice, Policy and Research

The results of this study highlight the different kinds of impact that a natural disaster might have on its victims. Anxiety, depression, and hope are common factors that can affect the wellbeing of individuals. Unfortunately, the levels of anxiety, depression and hope can be easily influenced by additional factors, such as injury and displacement, following a disaster.

The findings suggest that a short term and low cost mental health intervention can have a positive impact on individuals who have fallen victim to a natural disaster such as a typhoon which is especially important for those residents with limited resources. In addition, this knowledge provides a great opportunity for social workers to target specific behaviors and apply useful interventions within a short period of time. One can then predict the individuals who are more likely to struggle with high levels of anxiety and depression along with low levels of hope.

### Conclusion

Psychoeducation is crucial as it can be easily shared and can have a positive effect on the community as a whole. It is imperative that more research be conducted surrounding displacement, injury, natural disasters and

the Philippines as effective interventions may be used with other affected populations. Workers can also benefit from increased education and training. Further research in this area is also needed to better prepare emergency response teams to effectively address survivors' responses to trauma, such as depression, stress, anxiety and grief, particularly among those who have been injured, displaced, or both (Bonanno, Brewin, Kaniaisty, & La Greca, 2010).

APPENDIX A  
INFORMED CONSENT

## **Informed Consent**

### **Informed Consent for Parent Workshops**

The purpose of this research is to discover if educational workshops are effective in reducing stress, anxiety, depression, and increasing hope. This study is being done by a group of Master of Social Work students from California State University, San Bernardino under the supervision of Dr. Cory Dennis, Assistant Professor. The research has been approved and is supported by the Rotary Club of Cebu Fuente and by Barangay Maya, San Isidro Labrador Church. Should you choose to participate, you would take part in five workshops lasting about 90 minutes, once a day, for five days. These workshops will be held at Barangay Maya, San Isidro Labrador Church. They will focus on ways to manage stress and anxiety in yourself and in your children. The study will use questionnaires to learn about your levels of stress, anxiety and hope before and after the workshops. The questionnaires will take 20-30 minutes to fill out, once on the first day and once on the last day. It is up to you whether you want to be a part of the study and whether or not you want to answer any questions. You may choose not to be a part of the study and will still be able to be part of the workshops. You may also choose to leave the study or the workshops at any time. Any information you give us as part of this study will be kept private. Information will be kept locked up or if on a computer, will be password protected. After the study is over, the information will be locked in a safe place until it is put on a password protected computer, and then paper copies will be destroyed. There is low risk involved in participating in this research. Because we are addressing responses to a natural disaster, some people may become upset when talking about things that happened during and after the Typhoon. If this occurs, and additional support is needed, you will be referred to: Fr. Renald "Bobby" G. Paraguya, parish priest of San Isidro Labrador Church. There are potential benefits of participation to you of learning how to better manage your stress and anxiety. We hope that results from this study will improve the help that mental health professionals provide to children and families that have experienced natural disasters. If you have any questions about this study, you may contact Cory Dennis, PhD, LCSW at 001-909-537-3501 or email him at [cdennis@csusb.edu](mailto:cdennis@csusb.edu). You may also contact Rotary Club of Cebu Fuente at 63-20917-202765988. Upon completion of this study, results will be available at Rotary Club of Cebu Fuente: 25-H Nichols Heights, Guadalupe, Cebu City, AND/OR the School of Social Work, California State University – San Bernardino: 5500 University Parkway San Bernardino, CA 92407. I have read and received a verbal translation of the information above. I understand this information and agree to participate in your study. If you have any questions before signing the consent, please ask a research team member.

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Please do not sign your name, only mark it with an "X"

APPENDIX B  
INSTRUMENT

## Instrument

### Questionnaires: Parent Workshops

Please read each statement and ✓ the box to which it indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

Statement	Did Not Apply to Me at All	Applied to Me to Some Degree, or Some of the Time	Applied to Me to a Considerable Degree, or a Good Part of Time	Applied to Me Very Much, or Most of the Time
I found myself getting upset by quite trivial things.				
I tended to over-react to situations.				
I found it difficult to relax.				
I found myself getting upset rather easily.				
I felt that I was using a lot of nervous energy.				
I found myself getting impatient when I was delayed in any way (e.g. traffic lights, being kept waiting).				
I felt that I was rather touchy.				
I found it hard to wind down.				
I found that I was very irritable.				
I found it hard to calm down after something upsets me.				
I found it difficult to tolerate interruptions to what I was doing.				
I was in a state of nervous tension.				
I was intolerant of anything that kept me from getting on with what I was doing.				
I found myself getting agitated.				
I was aware of dryness of my mouth.				
I experienced breathing difficulty (excessively rapid breathing, being out of breath even though I did not exert myself).				
I had a feeling of shakiness (legs going to give away).				
I found myself in situations that made me so anxious I was most relieved when they ended.				
I had a feeling of faintness.				
I sweat noticeably in the absence of high temperatures or physical exertion.				
I felt scared without any good reason.				
I had difficulty in swallowing.				
I was aware of the action of my heart in the absence of physical exertion (sense of heart rate increase, heart missing a beat).				
I felt I was close to panic.				
I feared that I would be "thrown" by some trivial but unfamiliar task.				
I felt terrified.				
I was worried about situations in which I might panic and make a fool of myself.				
I experienced trembling (e.g. in the hands).				



**Over the last 2 weeks**, how often have you been bothered by any of the following problems?

Statement	Did Not Apply to Me at All	Applied to Me to Some Degree, or Some of the Time	Applied to Me to a Considerable Degree, or a Good Part of the Time	Applied to Me Very Much, or Most of the Time
Little interest or pleasure in doing things				
Feeling down, depressed, or hopeless				
Trouble falling/staying asleep, sleeping too much				
Feeling tired or having little energy				
Poor appetite or overeating				
Feeling bad about yourself – or that you are a failure or have let yourself or your family down				
Trouble concentrating on things, such as reading the newspaper or watching television				
Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual				
Thoughts that you would be better off dead or of hurting yourself in some way				
	<b>Not Difficult at All</b>	<b>Somewhat Difficult</b>	<b>Very Difficult</b>	<b>Extremely Difficult</b>
If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?				

**Directions:** Read each item carefully. Using the scale, please ✓ the box that best describes YOU.

Item	Definitely FALSE	Mostly FALSE	Somewhat FALSE	Slightly FALSE	Slightly TRUE	Somewhat TRUE	Mostly TRUE	Definitely TRUE
I can think of many ways to get out of a jam.								
I energetically pursue my goals.								
I feel tired most of the time.								
There are lots of ways around any problem.								
I am easily downed in an argument.								
I can think of many ways to get the things in life that are important to me.								
I worry about my health.								
Even when others get discouraged, I know I can find a way to solve the problem.								
My past experiences have prepared me well for my future.								
I've been successful in life.								
I usually find myself worrying about something.								
I meet the goals that I set for myself.								

## Displacement & Injury Questionnaire

1. Age: \_\_\_\_\_
2. Sex: Male or Female
3. Number of children in the home: \_\_\_\_\_
4. Ages of children in the home:  
\_\_\_\_\_
5. Did you have to live in a location other than your home because of the typhoon?
  - Yes
  - No

If **YES**, for how long? \_\_\_\_\_ Month(s)  
\_\_\_\_\_ Day(s)
6. How far away from your home was the location you are/were staying? \_\_\_\_\_ km
7. Are you currently still living in a location other than your home?
  - Yes
  - No
8. Did the typhoon cause you any injuries?
  - Yes
  - No

If **YES**, what was the nature of the injury?  
(Please mark all that apply)

<input type="checkbox"/> Cut	<input type="checkbox"/> Loss of limb
<input type="checkbox"/> Scrape	<input type="checkbox"/> Impairment or loss of hearing
<input type="checkbox"/> Puncture	<input type="checkbox"/> Impairment or loss of vision
<input type="checkbox"/> Sprain	<input type="checkbox"/> Infection
<input type="checkbox"/> Fracture	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Dislocation	
<input type="checkbox"/> Burn	
<input type="checkbox"/> Ruptured Organ	
9. Was anyone in your immediate family (parent, sibling, spouse/partner) injured?
  - Yes
  - No

If **YES** (to question # 9), please indicate who was injured and the nature of the injury.

### PARENT

- Cut
- Scrape
- Puncture
- Sprain
- Fracture
- Dislocation
- Burn
- Ruptured Organ
- Loss of limb
- Impairment or loss of hearing
- Impairment or loss of vision
- Infection
- Other: \_\_\_\_\_

### SPOUSE/PARTNER

- Cut
- Scrape
- Puncture
- Sprain
- Fracture
- Dislocation
- Burn
- Ruptured Organ
- Loss of limb
- Impairment or loss of hearing
- Impairment or loss of vision
- Infection
- Other: \_\_\_\_\_

### CHILD

- Cut
- Scrape
- Puncture
- Sprain
- Fracture
- Dislocation
- Burn
- Ruptured Organ
- Loss of limb
- Impairment or loss of hearing
- Impairment or loss of vision
- Infection
- Other: \_\_\_\_\_

DASS developed by S. Lovibond and P. Lovibond  
 Adult Hope Scale developed by C. Snyder, C. Harris, J. Anderson, and S. Holleran, S.  
 Displacement and Injury Questionnaire: developed by Alexis Mitchell

APPENDIX C  
ACCESS LETTER

**Maya Elementary School**  
Maya, Daanbantayan, Cebu

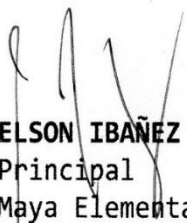
June 19, 2014

To Whom It May Concern:

This letter verifies that Maria Del Fierro and her research team (under the supervision of Dr. Cory Dennis) from California State University, San Bernardino have Maya Elementary School's support in connecting with the community of Maya, Daanbantayan, Cebu to conduct research on the influence of therapy and workshops in children and families who were impacted by Super Typhoon Haiyan.

We understand confidentiality and anonymity will be maintained for all participants as the research team engages the community in group therapy for the children, workshops for their parents, and community assessments to evaluate the needs post natural disaster.

Sincerely,



**ELSON IBÁÑEZ**  
Principal  
Maya Elementary School

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## ASSIGNED RESPONSIBILITIES PAGE

This was a two-person project where authors collaborated throughout. However, for each phase of the project, certain authors took primary responsibility. These responsibilities were assigned in the manner listed below.

1. Data Collection:  
Co-Leader: Crystel Chaparro  
Co-Leader: Alexis Mitchell
2. Data Entry and Analysis:  
Team Effort: Crystel Chaparro and Alexis Mitchell
3. Writing Report and Presentation of Findings:
  - a. Introduction and Literature  
Team Effort: Crystel Chaparro and Alexis Mitchell
  - b. Methods  
Team Effort: Crystel Chaparro and Alexis Mitchell
  - c. Results  
Team Effort: Crystel Chaparro and Alexis Mitchell
  - d. Discussion  
Team Effort: Crystel Chaparro and Alexis Mitchell