

University of Denver

Digital Commons @ DU

---

Electronic Theses and Dissertations

Graduate Studies

---

1-1-2009

## The Effects of Individual, Family, and Community Factors on Adult Resilience: A Study on the Tsunami Survivors of 12/26/2004

Johny Augustine  
*University of Denver*

Follow this and additional works at: <https://digitalcommons.du.edu/etd>



Part of the [Community Psychology Commons](#), and the [Social Work Commons](#)

---

### Recommended Citation

Augustine, Johny, "The Effects of Individual, Family, and Community Factors on Adult Resilience: A Study on the Tsunami Survivors of 12/26/2004" (2009). *Electronic Theses and Dissertations*. 754.  
<https://digitalcommons.du.edu/etd/754>

This Dissertation is brought to you for free and open access by the Graduate Studies at Digital Commons @ DU. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ DU. For more information, please contact [jennifer.cox@du.edu](mailto:jennifer.cox@du.edu), [dig-commons@du.edu](mailto:dig-commons@du.edu).

THE EFFECTS OF INDIVIDUAL, FAMILY, AND COMMUNITY FACTORS ON  
ADULT RESILIENCE: A STUDY ON THE TSUNAMI SURVIVORS OF 12/26/2004

---

A Dissertation

Presented to

the Faculty of the Graduate School of Social Work

University of Denver

---

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

---

by

Johny Augustine

August 2009

Advisor: Dr. Lynn Parker

Author: Johny Augustine  
Title: THE EFFECTS OF INDIVIDUAL, FAMILY, AND COMMUNITY FACTORS ON ADULT RESILIENCE: A STUDY ON THE TSUNAMI SURVIVORS OF 12/26/2004  
Advisor: Dr. Lynn Parker  
Degree Date: August 2009

## ABSTRACT

This study examined the various factors at the individual, family, and community level that helped the adult individuals survive the trans-oceanic tsunami which hit the coastal areas of India on December 26, 2004. The study made use of a concurrent mixed methods design to achieve the above objective. The quantitative section of the research examined the effects of individual, family, and community factors on adult post-traumatic growth. The qualitative section of the study sought to capture the subjective experience of the tsunami survivors using a phenomenological approach. The target population were adults, aged 18 to 55 from Kerala, India, who were exposed to the tsunami natural disaster of 2004. Using the purposive sampling method, I recruited 301 participants for the quantitative research and 8 participants for the qualitative research. Analysis of the quantitative data, using hierarchical regression analysis, revealed that religion, employment, family type, family flexibility, and family communication were the significant predictors of post-traumatic growth. Analysis of the qualitative data, using the modified form of the Van Kaam's method of phenomenological analysis, revealed 6 major themes, including the subjective experience of encountering killer waves, the subjective experience during rescue and relief phase, the subjective experience during recovery process, resources at the personal, family, and community level, obstacles to recovery, and recommendations to improve disaster services. Implications for social work

practice, research and education, and policy were discussed. The findings of this study may enhance the ability of social scientists to influence disaster-related practice, policy, and research in India.

## ACKNOWLEDGEMENTS

My deepest thanks go to the courageous tsunami survivors in Alappad, whose struggles for survival is the subject of this study. I hope I have done them justice through this work. I am also grateful to the many key informants, particularly M. M. Rajeev and C. K. Vivek, who helped me access and recruit participants from Alappad. Their expertise and knowledge of the community helped me conduct and complete this study.

I am extremely grateful to my dissertation chair, Dr. Lynn Parker, and my committee members, Dr. Enid Cox, and Dr. Kathy Green for their invaluable support and encouragement. Your thoughtful comments, feedback, and patient guidance have helped to strengthen and build my study. Dr. Enid Cox, I owe you special heartfelt thanks for being with me all these 5 years of my doctoral education as a mentor, teacher, and a great friend. Your intelligence, scholarship, and compassion have inspired me all these years and will continue to inspire me in future. I also wish to thank Drs. Jeffrey M. Jensen and Kathleen Ohman for their continuous support throughout my doctoral education.

I sincerely thank the Graduate School of Social Work at University of Denver and the Fahs-Beck Fund for the financial support I was given to pursue my doctoral dissertation research. Thanks as always to Pat Corwin, for the magic she does with her editing work. Without you, I wouldn't have met the deadline of June 29<sup>th</sup>.

Last but not least, I would like to acknowledge my family members and life-long friends for believing in me, and inspiring me to pursue my dreams. I am truly grateful for their consistent and unwavering love and support that has carried me this far.

## TABLE OF CONTENTS

Chapter 1: Introduction .....	1
Paradigm Shift in Disaster-Related Trauma Research.....	2
Resilience: Delineating the Construct.....	4
The Bio-Ecological Model of Human Development .....	7
Post-Traumatic Growth.....	11
Statement of the Problem.....	13
Study Purpose and Research Questions .....	15
Significance of the Study to the Field of Social Work .....	17
Chapter 2: Literature Review .....	20
Personal Attributes and Psychological Functioning Following a Trauma.....	22
Family Processes and Positive Adjustment in the Aftermath of a Trauma .....	32
The Role of Social Capital in Disaster Response and Recovery .....	39
Disaster Mental Health: Where Does India Stand? .....	43
Chapter 3: Data and Methods .....	48
Quantitative Research .....	53
Survey Research.....	53
Hypotheses .....	54
Unit of Analysis and Sampling Procedures .....	55
Measures .....	58
Data Analysis .....	61
Qualitative Research .....	65
Phenomenological Approach in Qualitative Research .....	65
Research Question and Interview Guide Questions.....	67
Methods.....	68
Chapter 4. Findings of the Quantitative And Qualitative Data.....	79
Quantitative Data .....	79
Intercorrelations Between Socio-Demographic Characteristics and Post-Traumatic Growth.....	83
Intercorrelations Among Sample Characteristics and Individual Factors	86
Intercorrelations Among Sample Characteristics and Family Factors .....	87
Intercorrelations Among Sample Characteristics and Social Capital Variables .....	89
Intercorrelations Between Individual Factors and Post-Traumatic Growth .....	91
Intercorrelations Among Family Factors and Post-Traumatic Growth ....	92
Intercorrelations Between Post-Traumatic Growth and Social Capital Variables .....	93
Hierarchical Regression Analyses and Hypotheses Tests .....	94
The Regression Models and Hypotheses Test Results .....	96
Summary of the Quantitative Research .....	101
Qualitative Research Findings .....	103

Socio-Demographic Characteristics of the Study Sample .....	104
The Phenomenon of Surviving the Tsunami .....	105
The Composite Textural-Structural Synthesis .....	143
Chapter 5: Discussion .....	149
Socio-Demographic Profile of the Sample .....	149
The Extent and Nature of Post-Traumatic Growth .....	151
Factors Contributing to Post-Traumatic Growth .....	152
Employment as a Resource for Post-Traumatic Growth .....	153
Religious Belief and Post-Traumatic Growth.....	154
Family Resources and Post-Traumatic Growth .....	156
Implications.....	158
Implications for Social Work Practice.....	158
Implications for Social Work Research and Education .....	161
Implications for Social Policy.....	163
Strengths and Limitations of the Study.....	165
Study Strengths .....	165
Study Limitations.....	166
Conclusion .....	167
References .....	169
Appendix A.....	195
Appendix B.....	196
Appendix C .....	197
Appendix D.....	198
Appendix E .....	201
Appendix F.....	203
Appendix G.....	205
Appendix H.....	207
Appendix I .....	209

## LIST OF TABLES

Table 1 <i>Socio-Demographic Characteristics: Age and Family Size</i> .....	80
Table 2 <i>Other Socio-Demographic Characteristics of the Sample</i> .....	81
Table 3 <i>Means, Standard Deviations, and Ranges for Post-Traumatic Growth Inventory and Five Subscales</i> .....	82
Table 4 <i>Intercorrelations Among Sample Characteristics and Post-Traumatic Growth</i> . 84	
Table 5 <i>Intercorrelations Among Sample Characteristics and Individual Factors</i> .....	86
Table 6 <i>Intercorrelations Among Sample Characteristics and Family Factors</i> .....	88
Table 7 <i>Intercorrelations Among Sample Characteristics and Social Capital Variables</i> 90	
Table 8 <i>Intercorrelations Between Individual Factors and Post-Traumatic Growth</i> .....	91
Table 9 <i>Intercorrelations Among Family Factors and Post-Traumatic Growth</i> .....	92
Table 10 <i>Intercorrelations Between Post-Traumatic Growth and Social Capital Variables</i> .....	93
Table 11 <i>Regression of Post-Traumatic Growth on Socio-Demographic, Individual, Family, and Community Variables</i> .....	97
Table 12 <i>Subjective Experience of Encountering “Killer” Waves</i> .....	107
Table 13 <i>Subjective Experience During the Rescue and Relief Phase</i> .....	111
Table 14 <i>Subjective Experience During Recovery Process</i> .....	117
Table 15 <i>Resources at the Personal, Family, and Community Level</i> .....	128
Table 16 <i>Obstacles to Recovery</i> .....	135
Table 17 <i>Recommendations for Improving Disaster Services</i> .....	142



## CHAPTER 1: INTRODUCTION

On December 26, 2004, an earthquake of an unprecedented magnitude of 9.3 on the Richter scale, as recorded by the Meteorological Department of India, occurred in the Indian Ocean, generating “killer waves,” called a tsunami. These giant waves struck the coastal areas of Indonesia, India, Maldives, Thailand, and Sri Lanka, leaving hundreds of thousands of people dead, causing enormous destruction to property, and leaving millions stranded without food, shelter, and safe drinking water. Preliminary estimates show that around 250,000 people died (United Nations International Strategy for Disaster Reduction, 2005), 50,000 people were missing, and 1.4 million people were displaced. The economic loss incurred cost billions of dollars. The worst-affected countries were Indonesia, Sri Lanka, India, and Thailand.

The waves, 2 to 3.5 meters in height, together with the increased level of seawater caused extensive damage to the coastal areas of several states in India, including Kerala, Tamil Nadu, Andhra Pradesh, Pondicherry, and the Andaman and Nicobar Islands. Approximately 10,000 people died and thousands of people were displaced in these states. The individual, familial, social, economic, demographic, and political ramifications of this trans-oceanic tsunami disaster are beyond comprehension. The way people responded to, and coped with this disaster were determined by the presence or absence of individual, family, and community resources, and the support each individual had at the time and during the period following the disaster. The present research is an

empirical effort focused on understanding the various factors at the individual, family, and community levels that helped the individuals survive this trans-oceanic tsunami, despite its dreadful impact on the lives of the people in these countries.

### Paradigm Shift in Disaster-Related Trauma Research

Comprehensive reviews (Diaz, Lakshminarayana, & Bordoloi, 2004; Norris, 2006; Norris et al., 2002) of existing disaster literature in the developed as well as developing world indicate that, in disaster situations, people are prone to develop mental health problems, such as post-traumatic stress disorder (PTSD), acute stress disorder, anxiety, depression, and dissociative disorders. The extent of these psychological distresses depends on several factors including the type and severity of the disaster, the degree of exposure, and the magnitude of individual loss and community destruction. Understanding individual psychopathology and maladaptive behavior following a disaster and exploration of the causes of these dysfunctional behaviors were the focus of disaster research until recently. This undue emphasis on maladaptive behavior is based on the assumption that traumas will generally lead to dysfunctional behavior in children and adults (Glick, 2006), though that is not often the case. Recently, in response to this perspective, a new line of thinking has emerged, particularly in trauma research, to examine not only the positive adjustment of the individual in the context of a significant adversity but also the strengths and resources that foster this positive adjustment process (Ganor & Ben-Lavy, 2003; Lazarus, 2004; Luthar, Cicchetti, & Becker, 2000). This heightened focus on the positive adjustment of individuals is due to the increasing awareness among social scientists and the growing research evidence that many people

thrive in situations of adversity, despite their high-risk status (Luthar et al., 2000). Even in the field of natural disaster research, researchers (Linley & Joseph, 2004; Paton, Violanti, & Smith, 2003) are in accord that exposure to a disaster often results in positive growth among the individuals. This ability to successfully adapt to trauma is termed *resilience*. A resilience perspective shifts the focus of disaster research from the pathological paradigm to the strengths paradigm, affirming that individuals, families, and communities have potential for survival and growth. This paradigm shift has serious implications for trauma research, practice, and policy. For instance, identifying the strengths and protective factors, as well as understanding how these factors contribute to positive adaptation or resilience in the context of adversity could result in developing cutting-edge prevention and intervention programs, and advancing theory and research pertaining to this field (Luthar et al., 2000). Furthermore, focusing on protective processes can lead to interventions that strengthen individual, family, and community coping skills and capacity.

The present research is organized as follows. In chapter one, I explain the construct of resilience, as a basic theoretical tenet, and its components; the rationale for why a bio-ecological model is required to capture the essence of the process of resilience among individuals exposed to a significant adversity; and why I have used post-traumatic growth as an indicator of resilience. The chapter also includes a statement of the problem, my study purpose, and the major research questions, followed by the significance of the study for the field of social work. In chapter 2, I review the available literature pertaining to the effect of individual, family, and community factors on the resilience of individuals

exposed to a natural disaster. In chapter 3, I state my research hypotheses, and the data and methods of the study. The fourth chapter describes the major quantitative and qualitative research findings. In the last section, I discuss the study's major findings in relation to previously published literature, major implications, and study limitations.

### Resilience: Delineating the Construct

The word *resilience* has its origin from the Latin word *resilio* meaning to “jump back” (Klein, Nicholls, & Thomalla, 2003). Most of the research shows that (Johnson & Wiechelt, 2004) the term resilience evolved from the works of Norman Garmezy, Emmy Werner, and Ruth Smith, though some researchers may dispute this argument (Batabyal, 1998). Today, the term has been used in a number of fields, particularly in natural hazards literature. In general and with particular reference to natural hazards, resilience is defined as the adaptive capacity of a social system—individual, community, or society—to reorganize and adapt effectively (United Nations International Strategy for Disaster Reduction, 2002). The emergence of the term resilience in disaster management has stimulated a new way of conceptualizing the impact of disasters, because the term implies strengthening something as opposed to decreasing something, which is the case when discussing disaster risk and vulnerability reduction (as cited in Manyena, 2006).

With reference to an individual exposed to a crisis, *resilience* refers to the capacity of the individual to bounce back from the crisis. Luthar et al. (2000) define resilience as the “dynamic process encompassing positive adaptation within the context of significant adversity” (p. 543). This definition of resilience implies three things: (a) Resilience is a dynamic process; (b) it is contextual in that it is manifested only within the

background of a significant adversity; and (c) successful adaptation follows the adversity. The adverse circumstances may range from socioeconomic disadvantages and poverty (Garmezy, 1991; Luthar, 1999; Owens & Shaw, 2003), parental mental illness (Masten & Coatsworth, 1998; Seifer, 2003), child maltreatment (Bolger & Patterson, 2003), and community violence (Gorman-Smith & Tolan, 2003; Luthar), to natural disasters (Ronan & Johnston, 2005).

This definition considers resilience a process, as opposed to other definitions that consider it a discrete personal attribute, for example, a trait or a set of traits such as ego-resiliency (Block & Block, 1980). When resilience is viewed as a trait, it does not necessarily presuppose exposure to adversity (Luthar et al., 2000). Further, this narrow view of resilience thwarts any attempt to understand the underlying dynamic process of positive adaptation by attributing it solely to a personality trait (Osher, Kendziora, VanDenBerg, & Dennis, 1999); and at the same time, individuals who do poorly during adversity are held personally responsible for their failure to adapt positively (Luthar & Zelazo, 2003; Osher et al.). With the advent of more research on resilience, researchers Luthar et al., in their study of children, concluded that resilience may emerge from other factors external to the child, such as family attributes and the characteristics of their social environment. Luthar and colleagues further argue that it is as important to study the underlying protective process of resilience rather than exploring just the protective factors contributing to resilience. This is essential for advancing research and practice in the area. In the present research, I adopt the process dimension of resilience, because it

has helped me understand the underlying factors as well as the underlying process that foster resilience among individuals faced with a significant adversity, namely a tsunami.

As mentioned before, the initial conception of resilience was based on an individualized framework. Even the pioneers in resilience research, in their early years, focused more on personal attributes of resilient children, such as autonomy or self-esteem (Masten & Garmezy, 1985). The term was initially used to refer to personality characteristics or traits of individuals that help them survive adversity. Such characteristics include good temperament, intelligence, or ability to form positive relationships (Osher et al., 1999); and optimism, hope, and extraversion (Tedeschi, Park, & Calhoun, 1998). Osher and colleagues give a very vivid description of the problems inherent in this individualized conception of resilience. They indicate that, according to this conception of resilience, individuals who possess these traits will “make it” when faced with significant adversity and will be regarded as “resilient,” whereas individuals who do not possess these traits will “never make it” in the wake of an adversity and will be labeled as “vulnerable” or “inept.” In addition, this conceptualization of resilience tends to take away the responsibility from family and the broader community and places the responsibility completely on the individual. Further, this approach will do little in addressing the family and social factors that cause, enable, and perpetuate the disadvantaged circumstances.

In response to this perspective, Riley and Masten (2005) present a developmental and ecological perspective on resilience to better understand the concept. This conception of resilience is based primarily on the seminal work of Bronfenbrenner (1979). With its

strong emphasis on the role of continual reciprocal interactions between the individual and his or her social milieu, the bio-ecological model provides a rich conceptual framework in understanding the dynamic process of resilience. In the next section, I explain the bio-ecological model of human development and the importance of perceiving resilience from the bio-ecological perspective.

### The Bio-Ecological Model of Human Development

The bio-ecological model of development (see Bronfenbrenner, 1979, 2005) is predicated on the idea that the person influences the context as much as the person is influenced by the context. According to this model, it is reasonable to postulate that there needs to be a continual reciprocal interaction between the person and his or her immediate environment on a daily basis in order to actualize the individual's full potential and adapt to a changing social environment (Bronfenbrenner & Ceci, 2005). In situations where there are not enough opportunities necessary for this interaction to take place, the individual's ability to attain his or her full potential is hampered. The model has significance for both the individual and society, because it acknowledges that every individual has potential and that potential can be fully realized only if provided with positive environments that foster interactions between the individual and his or her immediate environment.

To explain the model further, the bio-ecological model of human development is conceived as a set of embedded systems; the innermost system is the immediate environment of the developing person (e.g., family or peer group), which Bronfenbrenner (1979) refers to as the microsystem. At the next level, named the mesosystem, one will

find institutions and structures, such as the individual's social network, neighborhood, and religious groups where she or he participates actively. The outermost system, which Bronfenbrenner refers to as the macrosystem, encompasses the state and federal government, overarching ideologies, and policies that have an impact on the properties of the micro-and mesosystems. The bio-ecological model requires the researchers to look beyond single systems to the relationship that exists among the systems that have an impact on the development of human beings. In addition, this model provides the researcher with a scientific lens that assists in understanding the different settings in the individual's environment, the interconnections among those settings, and the opportunities or obstacles provided by these settings that promote or hinder individual growth and development. The ability of a system (individual) to perform effectively depends not only on its own capacity but also on the existence and nature of the interconnections among the individual, the family, and the neighborhood. For instance, the individual's ability to function optimally depends on external factors, such as support from immediate and extended families, a good network of friends and neighbors, the quality of social services available in the community, and also the safety of the neighborhood.

According to Riley and Masten (2005) and other pioneers in resilience research (Luther et al., 2000), resilience is best conceptualized as a dynamic developmental process, and the understanding of this dynamic process is enhanced by viewing the process from a bio-ecological framework (Riley & Masten). These researchers explain that each and every individual has assets and resources in themselves, in their family, in



their neighborhood, and in the larger community. There also exist both an interconnection and continuous interaction among these different systems that help people deal constructively with crisis situations and overcome them. Other prominent scholars in resilience research (Garmezy, 1985; Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003; Patterson, 2002) have also observed the significance of protective factors at the individual, family, and social level, in the wake of significant adversity. Therefore, it is difficult to conceptualize something like resilience as isolated from the individual's social ecology, which provides the individual with continual inputs to strengthen his or her capacity to overcome adverse events and circumstances. In addition, to advance resilience research, as Michael Ungar (2008) rightly puts it, the individual has to be viewed as situated in his or her social environment. Placing the construct of resilience in a social context helps to shift the focus of resilience research from *resilience as an outcome to resilience as a process*. Understanding the process of resilience is very much needed to understand the processes that prevent negative outcomes or promote positive growth (Riley & Masten, 2005). Therefore, in the present research project, resilience is conceptualized by this bio-ecological model, as explained by Bronfenbrenner and other researchers, in order to understand the interaction among individual, family, and community variables and the effect of this interaction on the resilience of individuals.

In any research, describing and delineating the indicators of resilience represent a complex process for several reasons. First, resilience is never directly measured. It is inferred, based on the direct measurement of an individual's positive adaptation or absence of illness or disease (Luthar & Zelazo, 2003). Second, the indicators of resilience

depend on the nature of the group studied and the nature of the adversity. For example, in a group of people affected by a natural disaster, the indicators of resilience may be the extent of post-traumatic growth (Jang, 2005); for school-age children, the indicator might be academic success or positive peer relationships (Wyman, 2003); and for adolescents at high familial risk for developing antisocial personality disorder, the indicator might be socially desirable behavior (Luthar et al., 2000). Even though some scholars (Polk, 1997; Tugade & Frederickson, 2004) have viewed resilience as the ability to transform traumatic experiences into positive personal growth, others (Tedeschi & Calhoun, 1995) argue that post-traumatic growth is transformative, whereas resilience is not. In another seminal work, Lepore and Revenson (2006) acknowledge that resilience may emerge from transformative processes and may manifest in post-traumatic growth. The authors note that resilience to future stressors may develop from the changes experienced by the individual in his or her cognitive, spiritual, and behavioral dimensions, while wrestling with past traumatic events. They further state that post-traumatic growth is one form of transformative experience or *reconfiguration*, in their own words, which means that traumatic experiences often result in the restructuring of individuals' fundamental schemas or belief system so that they can emerge more successfully and resourcefully, which would help them weather future threats. Therefore, post-traumatic growth can be regarded as one form of resilience. In the present study, consistent with the views of Lepore and Revenson and other researchers (Jang, 2005), I consider post-traumatic growth as one form of resilience and, in the next section, explore the emergence and development of the term in the trauma field.

### *Post-Traumatic Growth*

The term *post-traumatic growth* entered the trauma discourse in the mid 1990s following an article by Tedeschi and Calhoun (1996), published in the *Journal of Traumatic Stress*, which described the development of an inventory assessing positive outcomes following a traumatic event. Tedeschi and Calhoun (2004), in their earlier works, used terms such as *perceived benefits*, *positive aspects*, and *transformation of trauma* to describe the psychological growth that occurred among individuals shattered by major life crises. However, Tedeschi and Calhoun (2004) favored using post-traumatic growth over other labels for four major reasons: (a) It presupposes exposure to a significant major adversity; (b) it offers opportunities for transformative life changes; (c) it is experienced as an outcome or an ongoing process; and (d) it requires the shattering of fundamental schemas and, at times, co-exists with psychological distress. They argue that the individual exposed to crises not only survives, but also experiences major positive changes in some areas of development that surpass what was present before the struggle with crises occurred. This is exactly the point where Tedeschi and Calhoun (2004) draw the line between post-traumatic growth and the concept of resilience. They notice that, even though both the concepts presuppose exposure to a traumatic event, resilience refers to reverting to pre-trauma levels of functioning following a crisis, whereas post-traumatic growth refers to the positive change that occurred in the aftermath of a trauma, which goes far beyond just resisting or adapting to a trauma. Despite this conceptual difference, post-traumatic growth has been used in disaster studies as an indicator of resilience (Jang,

2005; Tedeschi & Calhoun, 1995), which is the practice I too have followed in my investigation.

The Post-Traumatic Growth Inventory (PTGI), developed by Tedeschi and Calhoun (1996), measures five domains of growth: greater appreciation of life; recognition of new possibilities; greater sense of personal strength; more intimate relationship with others; and spiritual change. The authors, in several of their seminal works (Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 2004), gave a detailed scholarly description of these various domains and how they manifest in the lives of individuals who experience crises. A greater and more in-depth appreciation for life is one of the central elements of growth experienced by individuals who have struggled with major challenges in their lives. Another concomitant growth people experience is a radical shift in the way they perceive their daily activities and priorities: For example, “little things such as a child’s smile and spending time with a toddler” (Tedeschi & Calhoun, 2004, p. 6) would be given increased significance after the crisis than how it was regarded before.

Some individuals who encountered challenging and distressing events in their life have reported initiating new activities, taking up new challenges, and embarking on a new and totally different career in life. For others, the crisis provides an opportunity to reevaluate and challenge their assumptions about themselves. The outcomes of such evaluations very often tend to be positive. As Calhoun and Tedeschi (2006) notice, “Encounter with a major life challenge can also include an increased sense that one has been tested, weighed in the balance, and found to be a person who has survived the worst, suggesting that one is indeed quite strong” (p. 5). Post-traumatic growth can also be seen

in the individual's changed perception of his or her relationship with other human beings. Survivors of a trauma often report a sense of increased compassion and greater connection with individuals in their environment, particularly with other survivors of a trauma (Calhoun & Tedeschi). Furthermore, individuals also experience a significant transformative experience in their spiritual domain after struggling with a significant adverse circumstance. The intensity and time frame of this transformative experience vary according to individuals and their respective cultures (Calhoun & Tedeschi).

#### Statement of the Problem

In spite of the abundance of research on understanding the prevalence and correlates of post-traumatic stress disorder (PTSD) in the aftermath of a disaster (Norris et al., 2002), there is a paucity of research on the extent, nature, and correlates of post-traumatic growth following a trauma, particularly in the developing world. In addition, most research on post-traumatic growth has focused on the resources found in individuals who have thrived on adversity (Moran & Shakespeare-Finch, 2003; Tedeschi et al., 1998).

An individual's basic beliefs about traumatic events, responses to the event, ways of adapting or non-adapting, and experience of positive growth are all determined by the culture in which he or she reside (Calhoun & Tedeschi, 2006; McMillen, 2004). Western cultures tend to emphasize the positive side of traumatic experiences more than other cultures do (Calhoun & Tedeschi), tend to attribute environmental events to themselves, and have greater motivation to take preventive measures against adverse external events (Solomon, Mikulincer, & Avitzur, 1988). Therefore, the extent and nature of post-

traumatic growth experienced by people may vary from culture to culture (Shakespeare-Finch & Copping, 2006). With this consideration in mind, it is of great importance to discover the extent of post-traumatic growth and the underlying factors that contribute to post-traumatic growth among individuals exposed to a massive trauma, such as the tsunami.

Furthermore, in disaster-related resilience research, the majority of studies (Jang, 2005; Linley & Joseph, 2004; Paton & Johnston, 2001) were confined to understanding the impact of social support networks and spirituality on the post-traumatic growth of survivors. Despite growing evidence (though not specifically in disaster literature) that family processes, such as family cohesion, communication, adaptability, warmth, and kinship network are related to positive outcomes among children and youth exposed to adversity (Cicchetti & Lynch, 1993; Gorman-Smith & Tolan, 1998; Pynoos, 1993; Calhoun & Tedeschi, 1998; Werner & Smith 1992), this area remains under-researched in the disaster field. Research (Walsh, 1998) indicates that individual resilience is best understood and enhanced in the context of family, because family processes, such as family cohesion and warmth, can buffer stress and promote recovery. Walsh further indicates that identifying and strengthening the key protective processes, which enable individuals and families to surmount obstacles, have serious implications for social work practice, research, and policy.

In addition, creating and fostering community strengths and resources, such as community cohesion, cooperation, and social networks, are significant in confronting emergency community problems (Ganor & Ben-Lavy, 2003). Recently, researchers have

begun focusing more on the resources that a community possesses—the degree of social capital that allowed the members in the community to act collectively to achieve common goals (Krishna, 2002; Krishna 2004; Krishna & Shrader, 2000). The effect of social capital on individual resilience is a missing area of research, particularly in the disaster field. Hence, the present research brings forth new knowledge pertaining to this dimension of resilience.

As explained in the literature review section, there is little or no information pertaining to the effects of individual-, family-, and community-level factors and their interaction on the resilience of adult survivors of a natural disaster. The present research is the first of this kind from a developing country, such as India, to explore the various factors that shape the resilience of adult individuals exposed to the tsunami natural disaster. Furthermore, to date, no qualitative studies have explored the subjective experience and coping skills of tsunami-affected individuals, families, and communities. This research attempts to fill that gap in the literature by trying to capture the subjective experiences of adult survivors of the tsunami through in-depth interviews.

#### Study Purpose and Research Questions

As explained in the ensuing discussion, the purpose of this study is to understand the effect of individual, family, and community factors on the resilience of individuals exposed to the tsunami natural disaster that struck the coastal areas of India in December 2004. The study uses of a concurrent mixed method design—both quantitative and qualitative (Creswell, 2003—to achieve the above objective.

Specifically, there are three sets of questions for the quantitative section of the study:

- Do individual factors, such as the self-efficacy and locus of control of the participants, have a significant effect on their resilience, after controlling for family and community factors? Does the effect of individual factors on the resilience of the individual vary according to the gender of the participants?
- Do family factors, such as family cohesion, flexibility, communication, family satisfaction, family size, and family type, have a significant effect on the resilience of the participants, after controlling for individual and community factors? Does the effect of family factors on resilience vary by the gender of the participants? Do family factors act as moderator in the relationship between individual factors and resilience?
- Does the social capital of the participants have a significant effect on the resilience of the participants, after controlling for individual and family factors? Does the effect of social capital on resilience vary by the gender of the participants? Does social capital have a moderating effect on the relationship between family factors and resilience?

The qualitative section of the study is guided by the following major research question: What are the adult survivors' subjective experiences of and perceptions about the resources that helped them survive the tsunami natural disaster? As is described in the following literature review section, almost no study has been conducted so far that explored the effects of individual, family, and community factors on the resilience of



adults exposed to a natural disaster. Furthermore, as of now, no research has looked into the subjective experiences of the adult survivors of the tsunami and also their perceptions about the various psychosocial resources that helped them survive the disaster. This study aims to fill this gap in the literature by investigating the role of several factors—at the individual, family, and community level—on the resilience of adult survivors of the tsunami natural disaster.

### Significance of the Study to the Field of Social Work

The present research is of paramount significance to the field of social work for several reasons. First, research shows that disasters differentially affect the most vulnerable groups, either because of their pre-disaster vulnerability status or due to the inadequacies of the disaster assistance programs that follows the disaster (Pomeroy, Ratner, Hall, Pimoljinda, & Vivekanandan, 2006). The primary goal of the social work profession is to enhance the well-being of individuals, groups, families, and communities, with particular emphasis on empowering people who are poor, disadvantaged, and oppressed (National Association of Social Workers, NASW, 1996). Accordingly, the present research has significance for social workers, because it emphasizes the increasing role of social workers in disaster situations, particularly in empowering vulnerable individuals and families either through direct practice or through effecting policy change through policy advocacy.

Secondly, unlike a minor trauma, a major disaster leaves its impact at varied levels of life in the community, requiring a set of responses that are often beyond its capacities. A major disaster destroys the set pattern of life in a community: It ruptures the existing social network, limits the livelihood options, disorganizes the family, raises the

level of stress, and significantly alters the socio-demographic characteristics of the community (Bolin, 1989). This calls for coordinated responses from within and outside the community to attend to the needs at all levels, ranging from psychological suffering of the individual survivors to economic and social well-being of the entire affected community. The present study provides social workers with empirical guidelines to design and provide evidence-based and culturally sensitive interventions in such situations, particularly for the poor fishermen communities in the coastal areas of India who bore the most brunt of the tsunami of 2004.

Third, the person-in-context concept has been an important element in social work practice, education, research, and policy for several decades (Payne, 2005). This concept is the central theme in the bio-ecological model of human development and is crucial for providing better insight into reasons for human behavior and relationships in any political, social, economic, and cultural context. In any disaster situation, no one would question the importance of understanding individual trauma in the broader social and economic milieu because understanding the social environment is critical in developing and providing effective services for the survivors. The present research is predicated upon this person-in-context model, and therefore, helps advance the social work knowledge base, specifically in regard to developing a theoretical understanding of individual, family, and community behavior during and after the disaster.

Fourth and last, in regard to social work education, the profession of social work needs to be seen as incorporating an understanding of environmental issues, such as natural disasters, because these extreme events affects the physical, social, economic, and

political life of human beings. This is important in order to maintain the relevance of the profession, particularly in the current global scenario, where environmental crisis, such as global warming, has been increasingly shown to be due to the unfettered invasion of human beings on their natural environment (McKinnon, 2008). Social workers should develop an understanding of the impact of human activities on their natural environment and vice versa, because it helps them deal with a myriad of problems, such as poverty, violence and conflict, displacement, and food crisis that emerge from such negative reciprocal interactions between individuals and their environment. The present research is the beginning of a long process that purports to affirm the role of the social work profession in the disaster management arena, by encouraging the profession to include this component in the social work curriculum in order to engage incipient social workers through theory and practice with the psychological, social, economical, and political consequences of natural disasters, particularly because of the adverse consequences of those issues in the lives of the vulnerable group with whom social workers serve in their day-to-day practice.

## CHAPTER 2: LITERATURE REVIEW

The efforts in the previous chapter to link the bio-ecological model of human development to post-traumatic growth explicated the importance of examining the role of individual, family, and community factors in enhancing post-traumatic growth. Guided by the same bio-ecological lens, the purpose of this literature review was to systematically analyze the variables and the processes that strengthen post-traumatic growth in individuals challenged by traumatic events. The above objective was accomplished first by providing a review of the available empirical evidence for the relationship between individual attributes and post-disaster psychosocial functioning. Second, I have empirically analyzed the available scholarly literature that has investigated the protective factors and processes within the family that have contributed to positive adaptation and growth in individuals exposed to adverse events and circumstances. Third, I have uncovered some of the protective roles community factors play in fostering individual and family resilience, with primary emphasis on examining the role of social capital in promoting positive growth among individuals exposed to adversity. Finally, based on the literature review and empirical analysis, I have ascertained the role of self-efficacy; locus of control; certain family processes, such as family cohesion and family adaptability; and social capital in enhancing post-traumatic growth among adults affected by trauma.

Although the above outline served as a rudimentary guide for searching and reviewing key journal articles, book chapters, and other documents relevant to the topic of my investigation, I further refined this review using the following search strings: personality traits, personal factors, self-efficacy, locus of control, perceived control, resilience, family process, family functioning, family cohesion, family adaptability, family communication, family resilience, natural disasters, tsunami, social work, social network, social capital, social support, community resilience, psychosocial resource, post-traumatic growth, post-traumatic stress disorder (PTSD), psychological distress, positive change, positive growth, and stress growth, alone and in combination with two or more search strings. For the purpose of this review, I specifically searched the following databases: Social Work Abstracts, PsychInfo, Academic Search Complete, and Web of Science.

The thousands of hits received from the original literature search were further narrowed and refined by focusing on the relationship between individual, family, and community factors, and post-traumatic growth, in the context of adversities and specifically in the context of natural disasters. The specific focus on natural disasters allowed for a substantial reduction in the literature available for later empirical analysis. The empirical analysis revealed evidence for the direct and indirect effects of individual, family, and community factors on post-disaster psychological functioning; and this evidence is discussed here.

A large body of literature (Ben, Feng-Ge, & Li-Ping, 2008; Benight & Harper, 2002; Brewin, Andrews, & Valentine, 2000; Chung, Dennis, Easthope, Werret, &

Farmer, 2005; Liao, Lee, Lee, & Huang, 2004; Liao et al., 2002; Sumer, Karanci, Berument, & Gunes, 2005) has identified a range of risk and protective factors associated with developing post-traumatic stress disorder following a natural disaster. One group of risk factors, found to increase the likelihood of PTSD, concern personal attributes, including neurotic personality traits (Ben et al.; Liao et al., 2004; Parslow, Jorm, & Christensen, 2006), age, gender, less-perceived coping self-efficacy (Benight & Harper; Sumer et al.), self-esteem, optimism, perceived control (Sumer et al.), and negative coping style (Ben et al.).

#### Personal Attributes and Psychological Functioning Following a Trauma

Research findings on the role of the survivor's gender in the prediction of PTSD are more or less consistent. In general, it appears that women are at risk for psychological distress. In a seminal review of over 121 samples consisting of 52,061 individual disaster survivors, Norris (2006) found that gender was one of the major risk factors for developing negative psychological outcomes. The author notes that women were twice as much at risk for developing PTSD as men in most of the samples. This review also revealed that the effects of gender were apparently greater within samples from the traditional culture.

In another similar review of over 160 samples of disaster survivors, Norris et al. (2002) found that females were more adversely affected by the disaster regardless of whether they were children, adolescents, or adults. Their review also revealed that middle-aged adults were more severely affected than younger and older adults. The

increased psychological distress among middle-aged adults is explained by the chronic stress and economic and social burden they experience following the disaster.

In another landmark study, conducted among a representative sample of Gaza settlers who had prolonged terrorist exposure, Hall et al. (2008) found that although being female and experiencing more psychosocial resource loss significantly predicted major depressive disorders, being older and experiencing greater psychosocial resource loss predicted PTSD.

Solomon, Gelkopf, and Bleich (2005) examined the gender differences in post-traumatic vulnerability in 250 Israeli men and 262 women in the face of the terror attacks that occurred during the Al-Aqsa Intifada, in addition to looking at the contribution of level of exposure, sense of safety, self-efficacy, and coping strategies. The study findings indicate that the odds of women developing post-traumatic stress symptoms are six times higher than those of men. The results also suggest that women's sense of safety, self-efficacy, and coping strategies are inferior to those of men.

Benight and Harper (2002) broaden the literature on the relationship between gender, age, coping efficacy, and PTSD. The authors investigated the role of age, gender, and coping self-efficacy in predicting PTSD, in addition to testing the mediating effects of coping self-efficacy between acute stress responses (ASR) and post-traumatic stress disorder at 1 year, following two disasters. They found that both gender (with women experiencing more PTSD symptoms) and coping self-efficacy were significant predictors of PTSD. Coping self-efficacy was found to mediate the link between ASR and PTSD.

Sumer et al. (2005) provide further support for the role of gender, coping self-efficacy, and personal resources in predicting post-disaster psychological distress. The authors studied 336 survivors of the 1999 Marmara earthquake in Turkey to examine the predictive power of gender, personal resources, severity of earthquake experience, and coping self-efficacy on general distress, intrusion, and avoidance symptoms. Results of the path analysis revealed that all the variables studied have direct effects on intrusion and general distress. The results further suggest that coping self-efficacy mediated the relationship between personal resources and general distress. The gender difference in psychological distress is explained by the negative life conditions of women and the stresses associated with their role as housewife.

In general, younger survivors are at risk for developing psychological problems following a traumatic experience. However, some studies have provided contradictory results. For example, Priebe et al. (2009) studied 1,680 adults affected by an earthquake in rural Italy and found that male gender and age significantly predicted lower rates of PTSD; those who were 55 and older had higher rates of PTSD than those who were under 55 years of age.

In addition to gender and age, the literature also calls attention to neurotic personality traits as an important risk factor for developing psychological distress. For instance, Chung and colleagues (2005) studied 148 community residents exposed to either a train crash or aircraft crash and a comparison group who had not been exposed to disasters to build a multiple causal model to describe the relationship among post-traumatic stress responses, and physical and psychological variables. The results of their



study reveal that there is a significant association between neuroticism, type of disaster, and death anxiety. They also found that personality factors interacted with coping styles in maintaining or generating post-traumatic stress disorder.

Certain personality characteristics provide valuable resources for survivors to better cope with stress. A comprehensive review (Norris, 2006) of disaster-related literature from the developed as well as developing world shows that, in a majority of the samples, post-disaster functioning was affected by the pre-disaster personality of the survivors. The review also shows that personal resources, such as self-efficacy, mastery, perceived control, self-esteem, hope, and optimism, are all significantly and positively related to the mental health of the survivors.

In another study with trauma survivors, Liao et al. (2002) claim that people who have a stable and calm personality tend to report lower levels of psychological distress. The authors indicate that individuals who score higher on “hardiness” are less likely to develop post-traumatic stress reactions; individuals with “HardiAttitudes,” such as commitment, control, and challenge, have the skills needed to turn adversity into opportunity (Maddi & Khoshaba, 2003). Furthermore, these protective factors have a strong buffering role and, therefore, moderate the link between stress and the emergence of psychological distress.

The person’s perceived social support and spirituality require important consideration when investigating the development of PTSD following natural disasters. A great deal of research has been conducted on the relationship between social support and psychological distress (see reviews by Kaniasty, 2005; Leavy, 1983; Norris, 2006; Sattler

et al., 2006; Solomon et al., 1988). Almost all the studies reviewed test the hypothesis that lack of or limited social support would increase the individual's susceptibility to psychological distress. For instance, in a study conducted among 253 college student and 83 adult El Salvador earthquake survivors, the authors (Sattler et al.) claim that being female, having low social support, and experiencing resource loss are associated with acute stress disorder symptoms and depression. Conversely, individuals who have a great deal of social support are less vulnerable to psychological disorders following stress; social support assists people cope better with the tragedy (Norris, Baker, Murphy, & Kaniasty, 2005).

Watanabe, Okumura, Chiu, and Wakai (2004) investigated the role of social support in depression among 54 displaced older Taiwanese adults, 6 and 12 months following the 1999 Taiwan earthquake. At 6 months, extended family support significantly predicted depressive symptoms. At 12 months, support from extended family and neighbors, and social participation were found to be related to lessening of depressive symptoms. The authors suggest the need for targeted interventions to promote social networks and social participation among displaced older adults.

Spirituality can also play a critical role in the management of trauma. Although empirical studies have shown a consistent link between spirituality and psychological growth (Cadell, Regehr, & Hemsworth, 2003), spiritual struggles may also lead to psychological distress (Pargament, Smith, Koenig, & Perez, 1998; Smith, Pargament, Brant, & Oliver, 2000). In a cross-sectional study of adults orphaned by the Tangshan earthquake in 1976, Ben et al. (2008) indicate that strong post-traumatic spiritual pain is

found to be associated with the presence of PTSD. In sum, the review suggests that those who have high levels of personal resources, better coping styles, rich social support, and high spirituality tend to report lower levels psychological distress.

In contrast to these views and the pathological paradigm are studies that looked into the role of personality traits and other personal resources in augmenting positive adaptation and growth among individuals challenged by adversity. In regard to personal attributes, personality traits, hardiness, self-efficacy, and coping styles have been implicated (Linley & Joseph, 2004; Paton et al., 2003). Several other studies reveal that extraversion (Val & Linley, 2006), recent intrusive rumination (Linley & Joseph, 2006; Taku, Calhoun, Cann, & Tedeschi, 2008), positive rumination and social support (Cryder et al., 2006), explanatory style (Ho, Chu, & Yiu, 2008), subjective well-being, and active coping (Wild & Paivio, 2003) were related to positive growth. Other studies (see review by Shaw, Joseph, & Linley, 2005) have shown a consistent link between religion, spirituality, and post-traumatic growth.

As mentioned before, personality traits have been consistently associated with post-traumatic growth. For example, Val and Linely (2006) studied the relationship between post-traumatic growth and gender, extraversion, and neuroticism among 153 Madrid residents following the March 11, 2004 Madrid train bombings. Although women reported higher levels of post-traumatic growth than men, the relationship was not found to be significant. The findings also revealed a positive association between extraversion and post-traumatic growth.

Few studies have examined the salutary effects of occupational death exposure, cognitive variables, and positive and negative changes. For example, Linley and Joseph (2006) examined occupational death exposure, death attitudes, subjective appraisals (the extent to which participants felt afraid, horrified or helpless when carrying out their job), intrusions (recurrent thoughts about the traumatic event), avoidance (attempts to avoid reminders about the event), and social support and their relationship with positive and negative changes (changes in outlook) in 56 disaster workers. They found that whereas intrusion and subjective appraisals were positively correlated with post-traumatic growth, subjective appraisal, avoidance, fear of death, and death avoidance attitudes correlated with negative changes.

In a study conducted among 71 bereaved Japanese students, Taku et al. (2008) examined the relationship between deliberate rumination, distress, and post-traumatic growth. The study findings revealed that students who engaged in more deliberate thinking about the event soon after a loss reported more post-traumatic growth. The study also found that post-traumatic growth and psychological distress can co-exist in the survivors of a major trauma.

In their comprehensive review of 39 studies that illustrated positive change following adversity, Linley and Joseph (2004) found a consistent link between post-traumatic growth and cognitive appraisal variables, optimism, positive affect, and problem-focused coping. In regard to cognitive appraisal variables, positive growth was predicted by perceived threat, harm, and controllability.

In another landmark study on personality and coping styles related to positive growth, Shakespeare-Finch (as cited in Paton, 2006) clearly described openness, extraversion, self-efficacy, optimism, and hope as significant predictors of post-traumatic growth among ambulance officers. The author further argues that coping acts as mediator between personality factors and growth.

All these empirical efforts were directed at describing the relationship between personality factors and post-traumatic stress reactions or personality factors and post-traumatic growth. Although the literature is still emerging and developing in regard to the influence of personal protective factors on post-traumatic growth, little empirical work has explored the impact of individual factors in conjunction with family and community factors in forging the resilience of individuals exposed to a natural disaster. Moreover, there is a paucity of literature, particularly from collectivistic cultures such as India, in regard to the role of self-efficacy and locus of control in predicting post-traumatic growth of survivors of a natural disaster. In addition, as research indicates, contextual factors alone could not explain why an individual succumbs to or thrives in crisis situations (Bartone, 2006), which makes it essential to explore personal resources as well to have a comprehensive knowledge of the post-disaster mental health and resilience of survivors.

In the present study, I look into the specific effects of personal attributes, such as self-efficacy and locus of control, on resilience of adults exposed to the tsunami natural disaster. In general, *self-efficacy* refers to one's ability to deal with challenging conditions in life. It is believed that people with a higher sense of self-efficacy will have better physical and mental health, and be better able to integrate themselves into society

(Bandura, 1997). Studying the role of self-efficacy in promoting positive adaptation is important for the following reasons (Benight & Bandura, 2004). First, the impact of unpredictable, unpreventable, and dangerous events, such as a natural disaster, often exceeds the normal coping capabilities of the individual, family, and community. Self-efficacy plays a key role in such debilitating circumstances by assisting the individual to manage his or her own functioning as well as exercise control over such events. Second, individuals with a high sense of self-efficacy adopt plans of action designed to change perilous environments to more constructive and useful ones. Stated simply, the extent of self-efficacy determines how individuals cope with the stressor. Third and last, cognitive behavioral theory states that an individual's thought process influences how he or she feels and behaves and therefore is crucial for maintaining emotional well-being in times of crisis.

*Locus of control* refers to people's perception about the sense of control—internal or external—they have over the events happening in their life. A person with external locus of control believes that his or her behavior is determined by fate or luck, whereas an individual with internal locus of control believes that his or her behavior is determined by self-determination and hard work (Rotter, 1966).

Most of the research (see review by Benzies & Mychasiuk, 2009; Solomon et al., 1988; Sumer et al., 2005) reviewed indicates that individuals having internal locus of control tend to do well in times of stress. For instance, following the 1999 earthquake in Turkey, Sumer and colleagues investigated the predictive power of personal resources, such as perceived control, self-esteem, optimism, severity of disaster experience, and

coping self-efficacy on general psychological distress. The findings suggest that although perceived control had only a direct effect on reducing distress, other personal resources, such as self-esteem and optimism, had both direct and indirect effects on decreasing psychological distress.

In another study, Solomon and colleagues (1988) examined the relationship between combat-related PTSD and locus of control, coping, and social support. The researchers found that individuals with more internal locus of control reported less PTSD intensity. The regression model, which included personal and social variables, explained around 22% of the variance of PTSD intensity.

Although lack of perceived control has been consistently shown to be linked with maladaptive behavior, the relationship is not left without criticism. For example, in a study that examined the influence of perceived pain control and pain benefit appraisals on positive adjustment among 54 rheumatoid arthritis survivors (Tennen et al., 1992), the authors found that individuals with severe pain and those who initially felt more perceived control over their pain experienced higher levels of emotional distress. The authors cite the mismatch between the original belief that pain could be controlled and the actual severity of the pain as the reason for the emergence of more emotional distress.

Examining the influence of locus of control on post-traumatic growth among the Indian survivors of the tsunami is important for the following reasons. First, most of the studies discussed here have been conducted in Western cultures that are predominantly individualistic, and very few studies have come out of Eastern collectivistic cultures such as India. Second, in India, people tend to believe that outcomes of life are beyond one's

own control and therefore are more inclined to have an external locus of control (Suar, Mandal, & Khuntia, 2002). This might adversely affect the recovery process, because internal locus of control has been implicated with faster recovery following any crisis. In light of this evidence, I hypothesize that locus of control will have a significant power in predicting post-traumatic growth.

#### Family Processes and Positive Adjustment in the Aftermath of a Trauma

Catastrophic events such as a natural disaster can unsettle the family homeostasis (Landau, 2007). Families may be devastated, the family structure may be destroyed, and members may struggle with adapting to the stressful situation. However, even in the wake of such unpredictable events, some families are able to pull together, readjust, adapt, and get on with their lives (Walsh, 1998, 2003). These families rally all their resources—from within and outside—to cope successfully with the negative impacts of the stressor. Key family processes, such as family flexibility, family adaptability, family beliefs, family problem-solving skills, and family communications, serve as important resources to draw upon in the context of such harrowing circumstances. Therefore, identifying and strengthening key family processes are crucial in enabling individuals and families to face and rebound from adversities.

There is a great body of existing literature that explains the resource loss the family experiences in times of perilous, uncontrollable, and unpredictable events such as a natural disaster, and their relationship with psychological distress among children and adolescents (Bokszczanin, 2008; Cohen, Berliner, & Mannarino, 2000). These studies claim that the demands such disasters place on families often exceed their normal



capacities, resulting in family conflicts, strained parental relationships, and a weak emotional climate, and eventually lead to psychological distress. For example, Bokszczanin evaluated the role of a range of family factors, such as parental support, family conflict, and overprotectiveness, in predicting PTSD among adolescent disaster survivors in Poland, 28 months after a devastating flood. Their findings suggest that all three family variables explained a significant amount of variance in the PTSD symptoms, above and beyond the influence of other variables such as gender and exposure to trauma. The study concluded that violent family environments after disasters may contribute to psychological distress of both adults and adolescents.

Exposure to traumatic events and family coping strategies might predispose adolescents and children for developing mental health problems. Vigil and Geary (2008) compared the relationship between family coping styles and adolescent psychological distress of a group of adolescents exposed to Hurricane Katrina who were living in a relocation camp with that of another group of unaffected adolescents. The Katrina-affected group reported higher scores in one of the dimensions of coping, namely the family's resource mobilizing strategy. Family's ability to seek professional help from outside was also found to be significantly related to lower self-esteem and higher psychological distress. Although the authors acknowledge the importance of community support in post-disaster adjustment, they suggest not to overlook some of the negative impacts of mobilizing community resources, because some of the strategies involved in the process of mobilizing community support might make the adolescent more vulnerable for psychological problems. Authors indicate that engagement with outside community

members during the process of seeking support might evoke memories of past trauma, make the adolescent vulnerability more explicit, and, in turn, add to the adolescent's psychological responses.

Researchers (Cicchetti & Lynch, 1993; Gorman-Smith & Tolan, 1998; Kliewer, Murrele, Mejia, Torres, & Angold, 2001; Pynoos, 1993) have explored the impact of family factors on the psychological well-being of children and youth exposed to violence. These studies show that lack of a cohesive and emotionally supportive family climate predisposes children and youth for problematic outcomes when exposed to violence. For instance, Kliewer et al. examined the association between protective effects of support from family versus friends and exposure to violence against a family member on internalizing symptoms, in 5,775 adolescents residing in Colombia, South America. Results of regression analysis revealed that family cohesion buffered the relationship between exposure to violence and the internalizing of symptoms; this relationship was found to be stronger for younger adolescents and girls.

Several other studies (Cohen et al., 2000; Hock, Hart, Kang, & Lutz, 2004; Huzziff & Ronan, 1999; Norris et al., 2002; Wickrama & Kaspar, 2007) have found that parents' distress following a disaster could make children more vulnerable to developing mental health problems. For instance, Wickrama and Kasper studied a group of adolescent tsunami survivors and their mothers in Sri Lanka to examine the influence of positive mother-child relationship and psychosocial resource loss on their PTSD and depressive symptoms. The authors found that psychosocial losses, including number of days displaced, social loss, family loss, and mother's depressive symptoms were

significantly predictive of adolescent depressive symptoms. Only family loss and mother's depressive symptoms significantly predicted PTSD symptoms in adolescents. In addition, the study results indicated that positive mother-child relationship mediated the relationship between tsunami exposure and symptoms of PTSD and depression.

The studies discussed above looked into the mental health problems of children and youth in addition to understanding the risk factors that made them more vulnerable. There is another body of scientific literature (Lazarus, 2004; Masten et al., 1999; Thomas & Menamparampil, 2005; see review by Benzies & Mychasiuk, 2009; Walsh, 1998, 2003) that has documented the protective roles of a range of family factors, such as family structure, family cohesion, supportive parent-child relationships, positive emotional climate in the family, parental warmth, and attention in buffering the detrimental impact of a crisis and promoting positive adaptation. For instance, Thomas and Menamparampil looked into the role of families and faith-based organizations in fostering the resilience of youth exposed to recurring violence among indigenous cultures in northeast India. The authors found that support from the family in terms of financial and emotional support helped them cope better with adversity. Apart from mentioning that 37 youth exposed to violence were interviewed, the study lacks methodological clarity.

Tuicomepee and Romano (2008), using a mixed methods approach, interviewed 400 adolescent 2004 tsunami survivors in Thailand to examine the impact on adolescent behavior problems of positive family functioning, such as problem-solving ability, communication, handling of family needs, affective responsiveness, affective

involvement, and family's behavioral control, in addition to conducting 40 in-depth interviews. The results suggest that positive family functioning was significantly related to adolescent behavior problems; adolescents with strong family functioning were less likely to develop behavior problems. The qualitative findings reveal that a youth's risk for developing psychological distress increased when there was increased family conflict and financial stress.

In another study conducted among 32 families before and after the September 11, 2001 (9/11) attacks on the World Trade Center, Lazarus (2004) found that higher-functioning families, as measured by scores on the Family Functioning Scale (FFS), used better adaptive coping methods following 9/11 and performed significantly better on the Family Hardiness Index. The author also found that family resiliency, as measured on the Family Hardiness Index, was positively associated with better post-disaster adjustment and coping strategies. In addition, the study revealed that knowledge of family history, conveyed to children through storytelling and family narratives, could contribute positively to better adjustment among children. However this study did not look into other family factors, such as family cohesion, flexibility, family communication, and problem solving, and their role in fostering resilience.

Masten et al. (1999) investigated the influence of IQ and parenting quality (a combination of warmth, expectations, and structure) on the course of adolescent competence in the context of severe adversities. Adolescent competence was defined as effective performance in three areas: academic achievement, conduct, and peer social competence. The study made use of data from a longitudinal study of 205 children whose

families were initially selected from a normative school population. Hierarchical regression analysis revealed that parenting quality was significantly predictive of conduct and social competence, in addition to gender and IQ. Results suggest that IQ and parenting quality are significant protective factors that assist children to adapt positively in the context of severe adversity.

Surprisingly, despite the growing evidence on the protective effects of families, little empirical work has been done to explore the role of families in regard to the positive growth of individuals, especially adults, affected by a natural disaster. As Ronan and Johnston (2005) note, one possible reason could be that disaster research tends to focus more on minimizing the damage and helping individuals cope better with adversity, and then restoring normalcy in their lives. As explained in the last section of this review, this is very true in developing countries such as India, where disaster research is still in its infancy. Despite the consistent and continuous emphasis on the importance of family processes, such as family's belief systems, organizational patterns, and communication and problem-solving skills, on individual resilience (see Walsh, 1998, 2003 for details), no systematic effort has been made, especially in the developing world, to explore how these family processes fostered resilience among adult survivors of natural disaster.

Studying the significance of family processes on adult resilience in developing countries is important for several other reasons. First, despite the growing impact of rapid urbanization, industrialization, and an ever-growing tendency to embrace Western culture, the traditional joint family and extended family system in India still remain the primary social force in the lives of a majority of Indians. It is this powerful collectivity

that provides its members with solace and support when an adversity such as a natural disaster strikes. Although nuclear family households—mother, father, children—as opposed to the more traditional extended family households, are growing in number and are very common in India, the nuclear family format does not prevent family members from maintaining close ties with their extended family members. It is through this social network that nuclear family households receive financial and emotional assistance in times of crisis. Despite this knowledge and understanding about the significance of Indian families in fostering positive adaptation among their individual members, no systematic effort has been made so far in understanding the role of families in fostering resilience among their members exposed to a disaster. The present research addresses the aforesaid issues by specifically examining the role of family cohesion, family flexibility, family communication, and family satisfaction in predicting post-traumatic growth.

*Family cohesion* is defined as “the emotional bonding that couple and family members have toward one another” (Olson & Gorall, 2003, p. 516). Cohesion in the family is manifested in the individual family member’s emotional bonding with others, decision-making capacity, the family boundaries, and coalitions. The five levels of family cohesion in the family range from extremely low (disengaged) to extremely high (enmeshed) cohesion or connectedness. *Family flexibility* is defined as the “amount of change in its leadership, role relationships, and relationship rules” (p. 519). The specific indicators of family flexibility are leadership, negotiating styles, role relationships, and relationship rules. The different levels of family flexibility range from extremely low (rigid) to overly flexible (chaotic). In their circumplex model of marital and family

systems, Olson and Gorall argue that families who fall in the balanced area of family cohesion and family flexibility tend to demonstrate optimal family functioning. Families who fall in the unbalanced area are characterized by either extreme emotional separateness or closeness, and this will prove problematic for individual members in the family. Based on the results of the empirical analysis, I hypothesize that families who fall in the balanced area of the circumplex model (higher cohesion and flexibility) are predictive of post-traumatic growth in adult survivors of a tsunami.

#### The Role of Social Capital in Disaster Response and Recovery

In addition to the key family processes discussed above, support in various forms from kinship and the social network also fosters resilience among individual members in the family (Olson & Gorall, 2003; Walsh, 2003), particularly in the context of adversity. This is especially true in Eastern families, where they have close ties with extended family members, relatives, and friends. These networks of resources provide the individual with support, avenues, and opportunities to process the distress socially (Lepore & Revenson, 2006). In addition, as previous research (Moore et al., 2004) indicates, there will be a strong collective spirit and mutual assistance in the period immediately following the disaster. In the subsequent phases, there will be a lack of concern on the part of fellow residents and other organizations for disaster survivors. This reveals the dynamic nature of social networks, and this dynamic process needs to be understood and explored in specific social, cultural, and political contexts in order to facilitate recovery. Therefore, to adequately capture the dynamics of post-disaster recovery, one needs to explore the resources the community possesses—its social

capital—to which individuals and families have access through their community networks.

*Social capital* refers to the resources that the community possesses to deal with emerging community problems effectively. It is defined as “features of social organization such as networks, norms, and social trust that facilitate cooperation and coordination for mutual benefit” (Putnam, 1995, p. 67). It is considered as capacity that enables members of the community to act together to achieve a common goal. As Anirudh Krishna (2004) notes, individuals or communities with low social capital will have lower achievement when compared to individuals and communities with higher social capital. The advantage of using social capital over social support networks in capturing community resources is that social capital includes a cognitive element related to norms, values, attitudes, and beliefs in addition to structural elements related to networks, roles, and rules (Krishna, 2002).

Several scholars (Mathbor, 2009; Pyles & Cross, 2008; Zakour, 2008) have looked into the role of social capital in fostering recovery following a disaster. Pyles and Cross examined the role of social capital in community recovery efforts in post-Katrina New Orleans. Approximately a year after the Katrina hurricane, the authors recruited 153 individuals from a predominantly African American neighborhood in New Orleans to understand two specific dimensions of social capital, namely civic engagement and social trust. The results reveal that the majority of participants expressed a very low level of social trust but high levels of neighborhood and political participation. The authors conclude that the extreme discrimination experienced by African Americans during post-



Katrina recovery efforts, particularly in the areas of housing, education, and employment, might have played a major role in the lower social trust among the survivors.

Effective utilization of social capital can mitigate the negative consequences of natural disasters. For instance, Mathbor (2009) examined the role of social networks, social cohesion, social interaction, and solidarity in preparing a community to face recurring disasters. By citing evidence from the locally developed successful Cyclone Preparedness Program (CPP) in Bangladesh, authors conclude that social workers can play an important role in building social capital in a disaster-afflicted community, which in turn will enhance community preparedness and help the community cope better with future disasters.

The role of organizational social capital in ensuring evacuation of survivors has also been studied in the disaster management field. For example, Zakour (2008) examined the influence of two social capital variables—the number of links organizations have to different types of organizations and client-centered service delivery capacity—on an organization’s evacuation capacity. The results suggest that both of these variables are significantly predictive of an organization’s evacuation capacity. However, emergency management organizations had much greater evacuation capacity than social service and health care organizations. The findings imply that changing the nature of relationships among disaster relief organizations can make the services more accessible to the people.

In addition to examining the organizational role of social capital, researchers have explored the role of social support in promoting positive adaptation. Norris et al. (2002), in their comprehensive review of the disaster literature, have identified that the

deteriorating and weakening of social resources, such as perceived social support, actual social support, and social connectedness, can make adults more vulnerable in the wake of a disaster. Other researchers (Huzziff & Ronan, 1999; Ronan & Johnston, 2005) have identified that reduced social support predicted more distressed functioning among youth exposed to adversity. Accessibility to social services, a strong community identity, a community's level of literacy, and sensibility and flexibility among its leaders were also regarded as community-level protective factors related to post-disaster recovery (Rosenfeld, Caye, Ayalon, & Lahad, 2005). Furthermore, meeting emergency community needs, such as food, shelter, and safe drinking water, enhance the community's and subsequently, individuals' and families' level of coping in the wake of a disaster.

In short, the above brief review shows how lack of community resources and support can mediate the effects of resourceful families on positive mental health when the individual meets with a crisis. Although the role of social capital in enhancing community recovery following an adversity has been implicated, the role of social capital in promoting post-traumatic growth of individuals is relatively an untouched area in trauma research. Research is very much required in a collectivistic culture such as India, where the network of human relations plays a major role in individual and family well-being. In this respect, the present research represents a pioneering effort to examine the effect of social capital on resilience of adults exposed to the tsunami natural disaster.

In any society, some groups are more vulnerable than others, when exposed to significant adversity such as a natural disaster. Prior research indicates that, in the wake of a disaster, women and children are the most vulnerable groups, based on several

biological, social, and cultural factors (Ghodse & Galea, 2006; Pittaway, Bartolomei, & Rees, 2007; Sekar, Bhadra, Jayakumar, Aravindraj, & Kishore Kumar, 2006; also see the earlier discussion on personal attributes and psychological functioning following a trauma). A comprehensive review of the disaster literature (Norris, 2006) indicates that the chances of women and girls developing post-traumatic stress reactions are much higher than those of men and boys, especially in developing countries. Two possible explanations are that women survivors tend to acknowledge and report their mental health problems (Cotton, Wright, Harris, Jorm, & McGorry, 2006), and they are psychologically more affected than men (Acierno, Rugiero, Kilpatrick, Resnick, & Galea, 2006).

Werner (2005), a distinguished scholar in resilience research, indicates that gender differences in response to adversity represent one of the under-researched areas in the social sciences. She, in her landmark study with children and adults on the Hawaiian island of Kauai, noted a gender difference in the factors that predicted successful adaptation. Not surprisingly, there is little understanding, especially from the developing world, regarding why there is a gender difference in post-disaster adjustment and positive adaptation. The present research addresses this issue.

#### Disaster Mental Health: Where Does India Stand?

A comprehensive review of disaster-related literature in India from 1981 to 2004 shows that survivors experienced a variety of mental health problems, including anxiety, depression, post-traumatic stress reaction, and attempted suicide (Diaz et al., 2004). The review also shows that a majority of the Indian experience in disaster research is related

to assessing psychological morbidity (Bada Math et al., 2006; Bhushan & Kumar, 2007; Kumar et al., 2007; Suar, Mandal, & Khuntia, 2002; Vijayakumar, Kannan, & Daniel, 2006; Vijayakumar, Kannan, Kumar, & Devarajan, 2006), providing psychosocial support to the survivors (Becker, 2007; Bharath et al., 2000; Kishore et al; 2000; Sekar et al; 2002; Vijayakumar, Thara, John, & Chellappa, 2006; World Health Organization [WHO], 2006), and assessing coping strategies (Karen, Wind, & Shankar, 2008).

Kumar et al. (2007) surveyed 314 adult tsunami survivors in the coastal areas of Tamilnadu, India to investigate the prevalence of gender differences in developing post-traumatic stress disorder. The results suggest that incidence of PTSD among survivors was 12.7%; men and women tend to report more sleep disturbance and recurring thoughts about the trauma. Results of the logistic regression analysis suggest that women, individuals with no household income, and those who experienced an injury during the tsunami are three times more likely to develop PTSD symptoms.

The initial psychiatric evaluation of the tsunami survivors in the Andaman and Nicobar Islands of India reveals that 5 to 8% of the survivors experienced significant mental health problems (Bada Math et al., 2006). The authors note that medical and para-medical staff were less aware about disaster mental health issues, indicating the need for providing more community awareness programs and empowering the community to take care of the mental health needs of the community.

Becker (2007) provides a detailed descriptive report of the community-based psychosocial support and care programs for the tsunami survivors in India. The author, based on her observations of the psychosocial support programs provided by National

Institute of Mental Health and Neurosciences in India, notes that the psychosocial support and care program provided essential mental health services to the survivors by imparting psychosocial care training to a group of teachers, social workers, psychiatric nurses, and community-level workers at the grassroots level. She further suggests that the model followed in India has implications for disaster interventions in developed and developing countries.

In a qualitative study to examine the cultural context of coping among the Indian survivors of the 2004 tsunami, Kayser et al. (2008) interviewed 10 emergency responders recruited through the purposive sampling method. Results of the qualitative data analysis revealed five common methods of coping: returning to routine, rebuilding family structures, communal sharing of resources, emotional expressing of grief to a supportive listener, and finding benefits from the disaster experience. The authors remind disaster service workers to take into account the cultural contexts of coping in order to provide effective service to the survivors.

As Ghodse and Galea (2006) indicated, although a majority of the tsunami-related services gave due respect to the local culture and context, it still remains doubtful that those efforts really empowered the local people and community. As Norris (2006) rightly put it, there is no literature available on how culture shapes the responses of survivors of disaster, especially in developing countries. Norris notes that the series of tsunami-related studies that came out soon after the incident were of questionable quality in terms of research methodology. It is now time to move beyond simply addressing physical relief and psychological impact to looking into the various bio-psychosocial factors and their

dynamic interaction that promote well-being among the survivors. Understanding the strengths and resources at various levels, such as those related to the individual, family, and community, will be critical in designing programs, interventions, and policies that help people prepare and cope better with future disasters.

In brief, as is evident in the literature review, a majority of the disaster-related studies were focused on describing the psychological impact of the disaster and understanding the risk factors that made the survivors vulnerable to developing mental health problems. Lack of empirical studies pertaining to the effect of individual, family, and community factors on fostering resilience among adult survivors of adversity signals the need for more empirical research in this area (Luthar et al., 2000; Werner, 2005). In addition, the few studies that have been conducted in the developing world lack methodological clarity and were carried out on small samples (Norris, 2006). Furthermore, the majority of the present body of literature is quantitative in nature, without sufficient representation of qualitative methodology in understanding the role of individual, family, and community factors in post-traumatic growth. Managing the social and psychological consequences of a massive traumatic event such as a natural disaster is beyond the control of the individual and even families. The state has a responsibility to intervene in such circumstances. This requires changes in existing policies and even the creating of new policies aimed at (a) enhancing disaster preparedness of vulnerable communities; (b) establishing specific and clear-cut roles for the federal and state governments, local bodies, and non-governmental organizations in the wake of a disaster; and (c) optimally managing resources. It is expected that the final results of this research

will inform social workers, other mental health professionals, and policy makers, subsequently leading to significant policy changes at the local, state, and federal level in dealing with a disaster.

## CHAPTER 3: DATA AND METHODS

This chapter gives an overview of the study methodology first by providing a description of the rationale for using a concurrent mixed methods design. Second, a detailed description of the phenomenological approach in qualitative research and survey method in quantitative research is provided. Third, a discussion of the sampling design and strategies used for the quantitative and qualitative research is provided, including sample recruitment and a summary description of the study sample. Fourth, a description of the measures and procedures used for data collection are provided, including the scales, questionnaires, and interview guide used for the study. Lastly, an outline of the quantitative and qualitative data analytic strategies and processes is discussed.

The purpose of this study is to understand the role of individual, family, and community factors on adult resilience of survivors of the tsunami natural disaster. The study makes use of a concurrent mixed method design (Creswell, 2003) to achieve the above objective. Before discussing the rationale for choosing this design, it is essential to discuss the evolution and growing acceptance of mixed methods research in the social sciences. Mixed methods design is an upshot of the paradigm “wars” between positivist tradition and constructivist tradition (Tashakkori & Teddlie, 2008). The positivist tradition epitomizes quantitative research and believes in the existence of a single objective reality that can be objectively measured. Other basic tenets of the positivist



tradition include the value-free nature of inquiry as well as the emphasis on causality and generality to particularity (Lincoln & Guba, 1985).

In contrast, the constructivist tradition espouses qualitative methods and claims its superiority over quantitative methods. Constructivists challenge all the basic tenets of the positivist tradition. For instance, as opposed to the positivist contention of the existence of single objective reality, constructivists believe in multiple realities and that those realities are socially constructed. Constructivists also assert that inquiry is value laden; the researcher's values influence the selection of the problem, and the theory and paradigm chosen for inquiry. Even the emphasis on causality is challenged by constructivists. According to them, because of the dynamic and reciprocal nature of objects and their interactions, it is impossible to differentiate causes and effects (Lincoln & Guba, 1985).

The tendency of researchers from these varied traditions to assert one philosophy's superiority over the other fueled the paradigm debate (see Tashakkori & Teddlie, 2008 for a detailed discussion on the topic). Although a few researchers from the positivist tradition called for a truce for the ongoing rivalry between the two, some of the ardent advocates of the constructivist tradition, such as Lincoln and Guba (1985), rejected their plea for reconciliation. These advocates argued that the two traditions and their underlying philosophies are inherently incompatible and, therefore, using these two traditions combined would inevitably lead to failure.

In the 1970s and 80s, in an effort to put an end to the ongoing tension between the two paradigms, some conscientious researchers, such as Howe (as cited in Tashakkori &

Teddlie, 2008; see Morgan, 2008 for detailed discussion), put forth an alternative paradigm called pragmatism. With its roots traced to American scholars, such as C. S. Pierce, William James, and John Dewey, pragmatism emphasizes the compatibility of quantitative and qualitative methods and, therefore, enables researchers to combine the two methods in their investigation. Morgan, a strong proponent of pragmatism, joined the debate by explaining the fallibility of strictly limiting oneself to either inductive or deductive research. Instead of depending on pure inductive/deductive logic, Morgan suggests, the researcher should rely on abductive logic, which allows the researcher to move back and forth between the inductive and deductive logic cycles. The abductive process will help researchers combine the two methods and make the best use of it; inductive results could be used to formulate the hypothesis for a quantitative research and vice versa. Reichardt and Rallis (1994) confirm the usefulness of mixed methods by stating that it is only by combining both traditions in research that the researcher can have a richer and fuller understanding of human nature and behavior; this design can also enhance the utilization of research in evaluation.

The past 15 years have witnessed the growth of mixed methods research in the social and behavioral sciences, particularly because of its growing recognition and application in research and also because of the rejection of the incompatibility thesis by prominent scholars in the field (Teddlie & Johnson, 2009). Now, mixed methods have become a separate methodological community that provides coherent and useful guidelines for researchers to design, collect, and analyze data, using both quantitative and qualitative methods, in order to provide an accurate and in-depth understanding of human

nature and behavior. Having discussed the evolution and institutionalization of mixed methods in social science research, I turn to a discussion of the rationale for combining the two methods in the present research.

Bryman (2008) explored the rationale for using the two methods combined in research projects by doing a content analysis of 232 social science articles that claimed employing mixed methods and which appeared in leading journals from 1994 to 2003. Bryman notes that using both the methods combined resulted in providing rich data as well as complimenting some of the findings of the quantitative survey using qualitative data. Although the reasons for integrating the two methods vary from study to study, the primary purpose of the integration should be, as Onwuegbuzie and Johnson (2008) suggest, to help find answers to the questions valued, find solutions to the problems encountered, and make meaningful changes in the lives of the people served.

Patton (2002), another notable scholar in the field, further elaborates on the use of multiple methods in research. By quoting Denzin on the significance of methodological triangulation, Patton urges investigators to employ multiple methods in their research to shed light on the diverse aspects of a reality under study. Patton further states, “ Studies that use only one method are more vulnerable to errors linked to that particular method than studies that use multiple methods in which different types of data provide cross-data validity checks” (p. 248). Other scholars (Creswell, Plano Clark, Gutmann, & Hanson, 2008) also suggest that mixed methods design is necessary to capture the complex nature of human behavior and social problems.

In the present study, I used the concurrent mixed methods design, which is one of the most well-known of the six mixed methods designs (Creswell et al., 2008). In general, there are several reasons why this method is preferred over other methods. First, in this design, qualitative and quantitative data collection takes place simultaneously, and one method compliments as well as compensates for the weaknesses of the other. Second, by combining both quantitative and qualitative methods, the researcher can collect broader and more in-depth information in a short interval of time. Third, when a researcher wants to converge and corroborate the results within a single research study using quantitative and qualitative research methods, concurrent mixed methods design is the best choice, because the design allows for the integration of the study findings from two methods during the interpretation phase of the research (Creswell et al.).

Mixed methods research is employed in my study for the following specific reasons. First, quantitative survey data collected from a large sample allows for a broader and greater understanding of the various factors at the individual, family, and community level that contribute to post-traumatic growth in survivors of a natural disaster such as a tsunami. In addition, results of the quantitative study generated from such large samples can be generalized to a larger population and context. Furthermore, the quantitative study results can be used to validate and expand the findings generated through the qualitative method. Second, the qualitative data collected provides rich and in-depth information about the coping, survival experiences, and psychological growth experienced by tsunami survivors, with particular emphasis on factors at the individual, family, and community level that helped their survival strategies. In addition, qualitative data provides a fuller

understanding of the disaster services available during and after the disaster, accessibility to such services, and obstacles people faced while accessing such services. Furthermore, qualitative interviews capture the experience of the people who were relocated, because the positive and negative experiences associated with relocation may influence their post-disaster adjustment. Lastly, the qualitative study results can be judiciously utilized to corroborate the outcomes of the quantitative research.

## Quantitative Research

### *Survey Research*

According to Bradburn and Sudman, surveys are the most widely used method of collecting data in the social sciences (as cited in Singleton & Straits, 2005). Surveys are used mostly for descriptive and explanatory purposes and can answer a wide array of questions that cannot possibly be answered by any other research designs. Singleton and Straits note that surveys provide detailed, extensive, and most importantly, accurate information about the population studied. The authors describe the three features that typify survey research: (a) collection of a large sample through the probability sampling method to make an accurate estimation of population characteristics, (b) use of questionnaires and interviews to obtain objective information systematically, and (c) numerical coding and either descriptive or explanatory analysis of data collected. Although there are many advantages of using a survey in comparison to other designs, certain disadvantages can also be found in association with survey design. The major weakness of survey design is that other than just describing the association between two variables, results of a survey are not that suitable for explaining a phenomenon compared

to experimental designs. Another major limitation is that surveys are susceptible to measurement errors, which might affect the study results adversely (Singleton & Straits). Despite these limitations, I have used survey design in this study because it was the best design available to answer the quantitative research questions, considering the resources and time constraint.

In the present study, I used a cross-sectional survey design to collect quantitative data from the survivors of the tsunami in order to understand the factors that contributed to the post-traumatic growth of the survivors. Cross-sectional survey design is used to collect data from a representative sample of a target study population within a short period of time (Singleton & Straits, 2005). The survey data were collected during the period starting from November 1, 2006 until February 28, 2007.

### *Hypotheses*

The quantitative research is intended to test the following sets of hypotheses:

#### Hypothesis I

1. Individual factors, such as self-efficacy and locus of control, are significantly redictive of the post-traumatic growth of adult survivors of the tsunami.
2. The relationship between individual factors and post-traumatic growth will vary by the gender of the participants.

#### Hypothesis II

1. Family factors, such as family cohesion, family flexibility, family communication, family satisfaction, family size, and household type, will be

significantly related to the post-traumatic growth of adult survivors of the tsunami.

2. The relationship between family factors and post-traumatic growth will vary by the gender of the participants.
3. Family factors will have a significant moderating effect on the relationship between individual factors and post-traumatic growth of the survivors of the tsunami.

### Hypothesis III

1. The social capital of the survivors is significantly predictive of the post-traumatic growth of the survivors of the tsunami.
2. The relationship between social capital and post-traumatic growth will vary by the gender of the participants.
3. Social capital will have a significant moderating effect on the relationship between family factors and post-traumatic growth of the adult survivors of the tsunami.

### *Unit of Analysis and Sampling Procedures*

The sample of individual tsunami survivors served as the unit of analysis for the present study. Individuals are considered as the unit of analysis when the study focus is on understanding individual behaviors and problems in a specific sociocultural context. In the present study, an exploration of the factors at the individual, family, and community level that contribute to post-traumatic growth served as the major rationale for choosing individuals as the unit of analysis.

The target population for the present study consisted of adults in the age group of 18 to 55 from Kerala, India, who were exposed to the tsunami natural disaster in the year 2004. In Kerala, approximately 176 people died, 2,500 people were injured, 15,000 houses were either partially damaged or completely destroyed, thousands of families were displaced, and around 400,000 people were affected by the tsunami of 2004 (M. Rajeev, Tsunami Project Manager, personal communication, April 21, 2006).

Almost all the samples were recruited from the tsunami-affected coastal villages in the Karunagappally taluk in the Kollam district. In the Karunagappally taluk, the villages of Azheekkal, Sraikkadu, Parayakkadavu, and Alappad were severely hit by the tsunami of 2004; 131 people died in this panchayath, including 64 children and 44 women. Approximately 15,000 were injured and 4,600 houses were partially damaged or completely destroyed in these four villages. These villages were home to around 25,000 individuals, the majority of whom were fishermen. Many of them lost their fishing crafts, such as motorized boats, traditional crafts, and fishing nets. The estimated economic loss for the fishing sector was 1,402 million Indian rupees.

The study made use of a non-probability purposive sampling method to collect the required sample size from these four villages as well as from the two neighboring villages of Pattathilkkadavu and Varavila, where displaced families were relocated. Purposive sampling was used primarily because of the logistical and ethical issues involved in generating a sampling frame within the time frame of the study. Originally, the target was to recruit 300 or more participants to ensure adequate power, considering the number of independent variables. As investigator, I contacted the various social service agencies and



the local government offices in the tsunami-affected locality, in addition to churches and temples. After attaining permission from each of these agencies, flyers for study recruitment were distributed (see Appendix I). The flyers contained direct telephone contact information with which the interested participants could contact either me and/or the four trained Master of Social Work (MSW) graduates from India, who were hired and trained by me to conduct the interviews. The MSW graduates were trained to read the consent form to the participants, administer the questionnaire, and make appropriate referrals when needed.

During the initial phone conversation or personal contact, the interested participants were made aware of the objectives and utilities of the study. The participants were also made aware of the risk factors associated with participating in the study, as well as that the participation was voluntary and they had the right to withdraw from the study at any point in time. Participants were also informed that study results would be used for academic, research, and publication purposes. Participants who required emergency health care or counseling services were referred to appropriate human service agencies. Full confidentiality was assured, and informed consent was obtained before the commencement of the study (see Appendix G). Before the interview, each participant was given time to go through the consent form and ask any questions or clarifications. A copy of each signed consent form was kept in a separate secure file, and the participant retained one. All the respondents who participated in the study received an incentive of Rs. 50. The number of participants recruited for this study was 301.

## *Measures*

The study made use of the following instruments to measure the dependent and independent variables: (a) a personal socio-demographic schedule, (b) the Post-Traumatic Growth Inventory, (c) the General Self-Efficacy Scale, (d) the Internal Control Index, (e) the Family Adaptability and Cohesion Evaluation Scales, and (f) a questionnaire for measuring social capital (see Appendix F). All these instruments were translated into the regional language (Malayalam) and were translated back to English according to instrument translation guidelines. The translation was carried out by professional experts who were proficient in both English and Malayalam and had prior English-Malayalam-English translation experience. The instruments were further validated by a professor of social work who was familiar with the measures.

### *Personal and Socio-Demographic Schedule*

For the purpose of this study, I developed a personal and socio-demographic schedule to collect personal information, such as age, gender, marital status, education, occupation, income, and religion; family information, such as family size and household type; and degree of loss experienced (see Appendix A).

### *Post-Traumatic Growth Inventory*

The study made use of the Post-Traumatic Growth Inventory (PTGI, Tedeschi & Calhoun, 1995, 1996) to assess the positive growth reported by the individuals exposed to the disaster. *Post-traumatic growth* is considered an indicator of the level of resilience of the adult survivors of the tsunami. For the purpose of the present study, I used the 21-item version of this questionnaire, which has a high internal consistency ( $\alpha = .90$ ).

The instrument has moderate test-retest reliability ( $r = .71$ ). Although the scale was developed for individualistic cultures, it has been used in collectivistic cultures also (Jang, 2005). The 21 items are rated on a 6-point Likert scale, grouped into five factors: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life (see Appendix B). Cronbach's alpha for the present study was 0.79.

#### *The General Self-Efficacy Scale*

The self-efficacy of the participants was measured using the General Self-Efficacy Scale (see Appendix C), developed by Schwarzer and Jerusalem (1993). This scale was originally developed in German by Jerusalem and Schwarzer in 1981. In the original scale there were 20 items, and later it was reduced to 10 items. It has been used in numerous research projects, where it typically yielded internal consistencies between  $\alpha = .75$  and  $.91$ . The 10 self-efficacy items were adapted to 29 languages (including Hindi) and cultures, including collectivistic cultures, such as Chinese, Indonesian, Japanese, and Indian. Cronbach's alpha for the scale in the present study was 0.89.

#### *The Internal Control Index*

To measure the locus of control of the participants, the Internal Control Index (ICI; Duttweiler, 1984), a 28-item instrument, was used (see Appendix D). Each item is scored on a 5-point scale from A (*rarely*) to E (*usually*). The scale has garnered high internal consistency ( $\alpha = .84$ ). A higher score indicates higher internal locus of control. To date, there is no literature available on whether the instrument is useful in collectivistic cultures. In the present study, Cronbach's alpha was 0.74.

### *The Family Adaptability and Cohesion Evaluation Scale*

To measure family cohesion and flexibility, I used the Family Adaptability and Cohesion Evaluation Scales (FACES IV). FACES IV consists of a self-administered, 42-item questionnaire that assesses family cohesion and flexibility, based on the circumplex model (Olson, Gorall, & Tiesel, 2006). These scales include two balanced (balanced cohesion and balanced flexibility) and four unbalanced scales (low and high extremes of the two dimensions, referred to as *disengaged* and *enmeshed* for the cohesion dimension, and *rigid* and *chaotic* for the flexibility dimension) of 7 items each. For the balanced scale, the higher the score, the more positive the family; and for the unbalanced scale, the higher the score, the more problematic the family. The scale has demonstrated moderate reliability and validity. In addition to the above 6 scales, the questionnaire consists of two other scales of 10 items each, used to measure family communication, and family satisfaction (see Appendix E). In the present study, Cronbach's alphas for the family cohesion, family communication, and family satisfaction scales were 0.61, 0.80, and 0.82 respectively.

### *Social Capital Questionnaire*

To measure social capital, a 6-item questionnaire (Krishna, 2002), developed and field tested in Rajasthan, India, was used (see Appendix F). Questions were asked in the following areas: membership in labor-sharing groups (coded "yes" or "no"); dealing with crop disease (responses ranged from "everyone would deal with the problem individually," scored 1, to "the entire village would act together," scored 5); Dealing with natural disasters (responses ranged from "no one", scored 1, to "the entire village

collectively,” scored 5); public spiritedness (responses ranged from “such a thing is not possible,” scored 1, to “such a thing happens quite frequently in this village,” scored 3; solidarity (responses ranged from “no one,” scored 1, to “anyone from the village,” scored 4; and trust (a score of 1 if respondents answered that they own and farm the land themselves, and a score of 2 if they want to own and farm the land collectively). This measure of social capital is specifically designed to explore the informal networks that are very common in the rural villages of India. It also attempts to capture the structural and cognitive elements of the construct, social capital.

#### *Data Analysis*

The study made use of the Statistical Package for the Social Sciences (SPSS) for data entry and analysis. All the data analytical procedures, including data entry, coding, modifying, and analyzing, were carried out by me, as the investigator. Descriptive analysis, independent sample *t*-test, bivariate correlation, and hierarchical regression analysis were conducted to describe the data and test the study hypotheses.

Before the statistical analysis, the data were screened for missing values and multivariate normality. In the present study, only less than 3% of the cases were missing for the dependent variable, and therefore I did not replace any of the missing values. Subsequently, I examined whether the regression model met all the assumptions of multiple regression analysis: linearity, homoscedasticity, independence of residuals, and normality of residuals (Cohen, Cohen, West, Aiken, 2003). Separate scatter plots were constructed for the residuals against each independent variable and against the predicted value of the dependent variable to test the assumption of linearity. The scatter diagram

showed that the relationships approximate linearity in addition to meeting the assumption of homoscedasticity. Inspection of the scatter plot of case ID against the residuals showed that the assumption of independence of residuals is met. Construction of a normal Q-Q plot of residuals showed that the plot approximates a straight line, proving normality of residuals. In addition, I plotted a histogram superimposed by a normal curve, which again confirmed that the normality assumption is met. In order to rule out issues of multicollinearity, I computed bivariate correlational analysis among predictor variables. An examination of the variance inflation factor (VIF) revealed no problems of multicollinearity.

#### *Detection of Extreme Values and Outliers*

Subsequently, I examined the extreme values on the independent and dependent variables using three different regression diagnostics: leverage, discrepancy, and influence statistics (Cohen et al, 2003). First, the centered leverage values were plotted against case ID to determine the extremity on the independent variables. The scatter diagram revealed that one data point was lying beyond the cutoff value (cutoff value = 0.11, three times the mean leverage value 0.039). After removing the single outlier, I computed regression coefficients again to see the change in adjusted R-square. There was no appreciable change in the value of R-square, signifying that the extreme data points as identified by the centered leverage statistics were not exerting an undue influence in the regression analysis. Second, I plotted case ID against Cook's distance to find out the most influential outliers. The scatter diagram revealed that all the values were below the cutoff value ( $<1$ ). Third, studentized deleted residuals were plotted against case ID to examine

the discrepancy between the predicted and observed value of the dependent variable. The scatter plot showed that there were no cases that stood far out from the majority cases (all the data points were below  $\pm 4$ ). In short, the use of regression diagnostics clearly demonstrated that there were no outliers in the sample which exerted an undue influence on the study results. Therefore, it was decided to keep the original data set for the final analysis.

#### *Selection of Predictor Variables*

Initially, based on previous research and literature review, 3 demographic factors (age, gender, religion, and employment), 2 personal attributes (locus of control and self-efficacy), 6 family factors (family cohesion, family flexibility, family size, family type, family communication, and family satisfaction) and 6 community-level factors (membership in labor-sharing groups, dealing with crop disease, dealing with natural disasters, trust, public spiritedness, and solidarity) were selected as the independent variables. However, in order to select the predictors to include in the hierarchical regression analysis, correlational analyses were conducted between the independent variables and the dependent variables. Based on the results of the correlational analysis, 10 variables were retained to include in the regression model: gender, employment, religion, locus of control, self-efficacy, family cohesion, family flexibility, family communication, family type, and the social capital variable related to dealing with natural disasters.

A series of descriptive statistics were computed to illustrate the participants' socio-demographic profile; extent of post-traumatic growth; social capital; self-efficacy

and locus of control; and level of family cohesion, flexibility, communication, and satisfaction. For instance, all categorical variables (gender, marital status, occupation, income, education, religion, severity of loss, and household type) were described using frequencies and percentages. All interval level variables (age, family size) were described using means, standard deviations, and range.

### *Hierarchical Regression Analysis*

First, in order to compute the interaction term, all the continuous variables were centered and then standardized (Cohen et al., 2003). In order to test the various hypotheses of the present study, I used statistical tests such as hierarchical regression analysis. In hierarchical regression analysis, the independent variables are grouped into sets depending on their relative importance in predicting the outcome variable (Cohen). The primary reason for grouping the variables into different sets is to examine the effect of each set on the outcome variable after statistically controlling for the effects of other sets of variables that are included in the study. Subsequently, each set of variables are entered in a predetermined hierarchical order, and upon the addition of each new set the  $R^2$  or increment in  $R^2$  is determined. The change in  $R^2$  indicates the unique variance in the outcome variable contributed by the newly added set. This technique is particularly helpful when the investigator wants to ensure that the effects attributed to the major variables of interest are not really due to socio-demographic differences such as age, level of education, income, or employment status.

The hierarchical regression model included four sets of variables: socio-demographic, individual, family, and social capital. All the above sets of variables were



entered in the regression model in the above mentioned specific sequence, resulting in 4 regression models. The first regression model examined the role of socio-demographic variables in predicting post-traumatic growth. The second regression model examined the effect of individual factors on posttraumatic growth after controlling for other variables. The third regression model examined the contributive role of family factors in explaining posttraumatic growth, after controlling for other variables. The fourth regression model investigated the role of social capital variable in predicting posttraumatic growth. Interaction terms were computed and included in the model, if required. Only the main and interaction effects that were found significant in the above analyses were included in the final regression model to identify the best regression model that fit the data.

## Qualitative Research

### *Phenomenological Approach in Qualitative Research*

The word *phenomenon* has its origin from the Greek word *phaenesthai*, meaning to “flare up, to show itself, to appear” (Moustakas, 1994, p. 26). Research shows (Kockelmans as cited in Moustakas) that although the term *phenomenology* initially appeared in the works of the major philosopher, Kant, it became a major theme in philosophical discourse only after Hegel and the publishing of his seminal works, particularly *The Phenomenology of the Spirit*. Husserl, and later Heidegger, his student and successor, developed and refined the concept and transformed it into a rigorous philosophical science aimed at advancing scientific knowledge by making objective sense of subjective sensory experience.

According to Moustakas (1994), the phenomenon is the basis of science, because it presents itself to consciousness through one's sensory experience, ready to be described, explained, and interpreted. The phenomenological approach attempts to make sense of the essence of this sensory experience in an attempt to develop a worldview of the people's experience of the phenomenon, generating new knowledge and advancing science. Patton (2002) validates Moustakas by stating that the focus of the phenomenological approach in social science research is to make sense of the lived experience of individuals and groups who have experienced the phenomenon. The phenomenological approach captures the *essence* of this lived experience, first through in-depth interviews of individuals and groups who have experienced the phenomenon, and later by systematically analyzing the descriptive or narrative data collected. Following a critical analysis of Merleau-Ponty and Husserl's works, Dahlberg (2006) put forth the argument that essences are neither a derivative of a researcher's interpretation of the phenomena nor is it something that is embodied in the subject or object ready to illuminate. Rather, essences are structures or meanings that are revealed during the continuous interaction between the researcher and the object, during the process of inquiry (Dahlberg). Dahlberg agrees with Patton and Moustakas in that investigators using the phenomenological approach to study a particular phenomenon search for essences that are ingrained in the descriptive interviews or stories that they collect. More specifically, Patton (2002) describes the overarching question that guides the phenomenological approach: What are the meaning, structure, and essence of the lived experience of this phenomenon for this person or group of people? Finding the answer to

this question is the central theme of any phenomenological study, including the present research.

### *Research Question and Interview Guide Questions*

The qualitative section of my research is intended to capture the subjective experience of adult tsunami survivors. In addition to augmenting the findings of the quantitative research, the qualitative data can also be used to voice the experiences of adult survivors of the tsunami, and the meaning of those experiences to them. I used a phenomenological approach to capture the participants' subjective experience. There are two major reasons for selecting this approach. First, one of the assumptions underlying the phenomenological approach is that, as Patton (2002) points out, "there is an essence or essences to shared experiences" (p. 106). A phenomenological approach guides the investigator to capture the essence of shared experience. Second, "Perception is regarded as the primary source of knowledge, the source that cannot be doubted" (Moustakas, 1994, p. 52). Thus, understanding the perceptions and experiences of adult survivors of the tsunami is an invaluable source of knowledge. Specifically, the research was guided by the following major research question:

- What are your subjective experiences of and perceptions about the resources that helped you survive the tsunami natural disaster?

An interview guide was prepared to capture the subjective experience of survivors of the tsunami, while providing structure to my interviews. According to Patton (2002), the interview guide helps the inquirer in following the same basic lines of inquiry for all the participants. In addition, an interview guide is useful to stay focused and to specify

the boundaries of inquiry. The interview guide developed for this study focused on the following major themes: tsunami survival experience, strengths and resources that helped people successfully/unsuccessfully survive the tsunami, and the obstacles the survivors encountered while accessing services and resources. This guide contained the following specific open-ended questions:

1. What are your subjective experiences of surviving the tsunami natural disaster? (Emphasis was placed on exploring both successful and unsuccessful survival experiences.)
2. What helped you to survive the tsunami? (Emphasis was placed on exploring the personal, family, and community resources and support that helped the participants survive.)
3. What are the problems and obstacles that you faced in accessing the various resources?

The questions listed above served to give a tentative structure to the interview. Additional follow-up questions and prompts were used to elicit deeper meanings of the issues discussed during the interview.

### *Methods*

#### *Unit of Analysis and Sampling Procedures*

Individuals served as the unit of analysis for the qualitative study. One of the major assumptions of phenomenological research is that understanding the essences of the experiences of a small number of participants can shed light on the experiences shared by many others who have experienced the same phenomenon. The individual

interviews focused on the meaning of the survival experiences of each individual survivor. This served as the sole rationale for selecting individuals as the unit of analysis. I used the “criterion” sampling method, as described by Creswell (1998, p. 118), to recruit the required number of participants. According to him, this method of sampling works well for a phenomenological study, wherein all the participants are selected, based on the major criteria of having experienced the phenomenon being studied. The phenomenon that was the focus of the present study was the individual’s tsunami survival experience.

The sample for the qualitative portion of the present study includes 8 adults recruited from the tsunami affected villages of Azheekkal, Sraikkadu, Parayakkadavu, and Alappad, and from the villages of Pattathilkkadavu and Varavila where displaced families were relocated. I made every effort to integrate heterogeneity into the sample, recruited through criterion sampling. For instance, I recruited individuals from villages that were most severely affected, moderately affected, and least affected. In addition, I conducted in-depth interviews with individuals who lived in temporary shelters, relocated areas, and in their original renovated homes. I also made efforts to include men and women in the sample to capture their varying perspectives on the tsunami survival experience. Moreover, I looked for *illuminative cases* (Patton, 2002) who could provide rich information and from whom I could learn the most.

Initially, I contacted a social worker who had been working with the tsunami survivors ever since the tsunami hit the Alappad village in 2004. He was the project manager in one of the community-based organization’s tsunami recovery and

reconstruction projects. He had extensive contacts in the community and was very well aware of the community dynamics as well as the individuals and families who were severely affected by the disaster. He served as key informant for my qualitative study. As Lincoln and Guba (1985) point out, *key informants* are in a position to provide “inside” information about the specific characteristics of the local culture, beliefs, and practices. In addition, key informants are helpful in the investigator’s effort to be immersed in the local culture immediately. The key informant identified the probable cases for the qualitative interview and explained to them the objectives and utilities of the study, the duration of the interview, the questions they would be asked, and the incentives provided for participation. The interested respondents were given my contact number and address, and they subsequently contacted me directly, either via phone or in person. All the interviews were conducted in the participants’ own homes to ensure confidentiality and to avoid discomfort to them.

#### *Data Collection*

All the participants were informed about the purpose of the study and how the information collected from them would be used, after which they were invited to participate in the study. They were informed that their participation was voluntary, and they could withdraw from the study at any time. It was also explained to the participants that the data collected would be kept confidential and would be used only for academic, research, and publication purposes. The participants were given an opportunity to ask questions about their concerns regarding the research process, purpose, risks involved, and confidentiality. All the participants were asked to review the informed consent form

before the interview (see Appendix H). They were given enough time to clarify any queries related to consent. One copy of the signed consent form was given to the participant and another copy was kept with me, as investigator. The participants were also asked to complete a brief demographic schedule, which was used to gather information pertaining to their name, age, gender, ethnicity/caste, religion, education, occupation, income, and degree of loss.

*Researcher's presuppositions.* The “setting aside” of the researcher’s assumptions about the object of study is one of the important methodologies used in phenomenological research. Bracketing presuppositions or, in other words, practicing the epoche is key to capturing the participants’ real life-world (Ashworth, 1996; Moustakas, 1994). Phenomenological research believes that presuppositions intruding in the investigator’s reflection regarding the data collection and analytical process might distort the real everyday experiences of the people and hence need to be put aside. Ashworth (1996) indicates that phenomenological researchers must set aside their basic presuppositions that are based on their knowledge of previous theories, personal experiences, and beliefs that influences a specific methodological choice. In the following section, first I discuss some of my personal beliefs and attitudes about the phenomenon I investigated and the theoretical and methodological lens I adopted to perceive the phenomenon. Later I explain some deliberate strategies I used to bracket those presuppositions derived from my personal knowledge, beliefs, and experiences.

In 2006, when I began thinking of working with the tsunami survivors in India, the first thing that crossed my mind was that I was an “insider” researcher (although I

was not present in India when the tsunami occurred); therefore the data collection process would not involve cumbersome procedures, because I was going to study a group of people from my own home country and from my own “culture.” The basic assumption behind this conviction was that I knew the people, their language, their lifestyle, and also was aware of the supportive families, relationships, and other network systems in which they were embedded. Subsequently, and of course after realizing the basic philosophies underlying phenomenological research, I realized that my belief system would subvert entry to the life-world of my research participants and that it would not be possible to investigate those life-worlds in their own terms without putting those preconceived notions out of play. Bracketing such presuppositions during the investigative process was an immense struggle for me throughout the data collection and analysis process. I had to constantly remind myself when such judgements and preconceived ideas emerged and re-emerged, as the data collection and analysis progressed. In addition, I challenged and confronted myself that every individual’s experience is unique; I really had to be attentive and keep my senses alert in order not to distort the experiences of my research participants. Moreover, during the entire data collection and analysis phase of my research project, I had to repeat to myself that the people of the fishermen community I was investigating live close to and are dependent on the sea and that they have been enduring hardships associated with their vocation, which is predominantly fishing. They also have to battle the vicissitudes of weather, such as storm surges, floods, and cyclones, which I never encountered in my lifetime. These constant reminders served to win my



battle against my presuppositions that otherwise would have blocked my entry to the everyday life experiences of my research participants.

Second, for Husserl (1931) and others, *bracketing* entails setting aside the presuppositions arising from the sciences of objective reality. Husserl believed that theories and findings relevant to the phenomenon of investigation will only distort the description of the meanings people give to the phenomenon. In my study, it was not possible to set aside all my presuppositions about the “causal” factors related to the phenomenon, because of the requirements of the research design I employed—a design both quantitative and qualitative—that required me to look at the various theories (e.g., bio-ecological theory) and variables at various levels (e.g., individual-, family-, and community-level variables) related to the psychological experience of trauma survivors. However, in the present phenomenological research, it was neither my objective nor my intention to explain the life-world of the people or to find out the specific relationship between variables, but rather to describe, in its own terms, the essence of the meanings that the participants shared.

One of the strategies I employed to suspend this presupposition related to causal factors was to keep the quantitative and qualitative data collection and analysis as two separate processes guided by two distinct methodologies; although in the interpretive phase, I made use of the findings from both methodologies to complement each other. Second, once I completed transcribing the data, I provided the participants with the raw transcribed data to ensure that the raw data represented their true story and that I had not added or deleted key themes from their description of their life-world. Third, while

listening to the audio files, reading the transcripts, and analysing the data, I constantly reminded myself that the primary objective of all these steps was to describe the essences of the participants' experiences of the phenomenon rather than to explain the experiences of the people.

*In-depth interviews.* Patton (2002) notes that in-depth interviews help to successfully capture other persons' perspectives on the topic or question. In the phenomenological approach, long, in-depth interviews are used to collect rich data on the topic (Moustakas, 1994). According to Moustakas, the phenomenological interviews are highly informal, make use of open-ended questions, and encourage the participants to actively participate in the interview process. Furthermore, the interviewer creates a warm emotional climate where the participants can feel safe and secure in order to provide a detailed and vivid description of their experience of the phenomenon.

In the present study, I conducted in-depth interviews with a total of 8 participants recruited from the 6 study sites in the Alappad panchayath. The interviews lasted for 1 to 1½ hours. Additional follow-up interviews were conducted with four cases. All the participants were paid an incentive of Rs. 50 after their participation. After reading the informed consent, one of the key-informant-identified participants declined to participate because he was afraid that the interview process would evoke in him previous traumatic memories of the tsunami incident. I conducted the interviews in Malayalam (the regional language). In addition to establishing immediate rapport between the participants and me, the use of native language made participants feel extremely comfortable when they started describing their "every day lived world." The interviews were very descriptive and

all the participants felt that the topic was of significance to them particularly because of the terrific experience all of them have had during and after the tsunami.

After obtaining consent, all the interviews were audio-recorded and later transcribed for analysis. Each participant was identified by a letter code in the respective transcribed data files. The transcribed data was translated into English, using the help of experts in the field of Malayalam-English translation. The transcribed and original data were kept secure in a separate file, and copies of the transcribed data was used for data analysis.

*Credibility and trustworthiness.* In addition to the steps discussed above, several other methods were employed to improve the credibility and trustworthiness of my study. First and most important, I specifically looked for the degree of compatibility in the findings generated through quantitative and qualitative methods and the extent to which the consistency and compatibility revealed the credibility of the study. Patton (2002) refers to this method of improving the credibility as methods triangulation. This does not mean that the different methods should yield the same results. If there are discrepancies in findings across different methods, those findings can be illuminative as well, and should be considered an opportunity to explore in depth the link between the investigative method chosen and the phenomenon (Patton).

Second, as discussed in the sampling section, in my study sample I included cases that were diverse and information rich in order to provide for maximum variance in the data obtained through the in-depth interviews. In addition, in discussing the study's findings, I took extra caution not to generalize the present findings to other contexts and

people, thus adhering to one of the key principles in qualitative analysis, reporting the results in their proper contexts (Patton, 2002).

Third, during the data analytic process, in order to validate my themes, I checked for the explicit presence of the major themes against the raw transcribed data as well as audio files. I verified the compatibility of the major themes and meaning units if they were not explicitly expressed. The meaning units and themes that did not meet the above two criteria were deleted from the list of meaning units and themes.

Fourth and last, in contrast to quantitative research, which uses standardized scales and questionnaires to collect data, qualitative research employs the researcher as the major instrument of data collection. Therefore, researcher qualifications, previous training, and prior experience affect the credibility of the study methods and results (Patton, 2002). As a qualitative inquirer, I have undergone training in various methods of qualitative inquiry during my post-master's and Ph.D. education. In addition, I have independently conducted and was part of multiple qualitative research projects, which sharpened my skills in qualitative data collection and analysis. In brief, the qualitative research training and prior experiences I have had and my own role as an insider researcher contributed a great deal in improving the credibility and dependability of the study.

#### *Data Analysis*

The data collected were analyzed manually using the modified form of the Van Kaam method of analysis of phenomenological data (Moustakas, 1994). This method of analysis assumes that interview transcripts or narratives serve as the basic data source for

phenomenological analysis. This method of phenomenological data analysis involves the following steps:

1. Initially, after getting a general sense of and feel for the data by reading the data multiple times, the researcher lists all the expressions relevant to the experience by a procedure called *horizontalization*. It is important that, during horizontalization, the researcher gives equal credit to all the statements, because every statement holds an equal value in contributing to the comprehensive understanding of the phenomenon.
2. The purpose of the second step is to find out the *invariant constituents*. What this means is that each expression extracted in the previous phase is tested for its relevance to the phenomenon and its possibility for being labelled. The expressions that withstand the test are selected as the horizons or invariant constituents of the experience. Expressions that are overlapping, vague, and did not withstand the test are eliminated.
3. In the third step, all the invariant constituents that have similar properties are labelled under a single theme. These labelled themes are regarded as the core of the phenomenon.
4. The purpose of the next step is validating the invariant constituents against the raw data using two criteria: (a) the explicit presence of the invariant constituents in the raw data, and (b) the compatibility of the invariant constituents if they are not explicitly expressed. The invariant constituents and

labels that do not meet these two criteria are deleted from the list of invariant constituents and labels.

5. In the final step, the investigator synthesizes all the relevant experiences and themes, thus constructing a textural and structural description for each participant as well as a composite textural-structural description for the whole group.

My analysis followed the basic steps outlined by Moustakas (1994). In this analysis, I gave importance to transcribed data as well as audio files. Initially, before actually beginning the data analysis, I listened several times to the audio records of all 8 interviews to gain a sense of the context that gave meaning to the verbal expressions of the respondents. Listening to the interviews informed me about the varying emotional state of the participants as they described their excruciating experiences of surviving the tsunami, which otherwise would have been hard to obtain from the transcribed files. Subsequently, I read the transcribed files multiple times and also switched back and forth between the transcribed data and audio recordings to find out the contextual meaning of the meaning units before finally constructing the textural-structural descriptions for each participant and for the whole.

## CHAPTER 4. FINDINGS OF THE QUANTITATIVE AND QUALITATIVE DATA

This chapter is divided into two sections. The first section focuses on the findings of the quantitative data. In this section, I initially present the results of the descriptive statistical analyses, including correlations among variables, in order to provide a comprehensive view of the socio-demographic characteristics of the sample. Subsequently, I present the results of the various hypotheses tests I conducted, using hierarchical regression analyses. The second section of this chapter focuses on explicating the major themes identified in the qualitative data, which were substantiated by providing thick descriptions culled from the original raw data.

### Quantitative Data

A total of 301 participants were surveyed for this study. All participants met the study eligibility criteria. They were in the age group of 18 to 55 years and were present when the tsunami disaster struck their coastal villages in 2004. All the participants were recruited from the tsunami-affected villages in the Alappad panchayath in Kerala, India in order to ensure that they had witnessed or were affected by the tsunami disaster. Approximately 1 to 12 cases were missing for each of the socio-demographic variables and are not presented in the tables. Tables 1 and 2 describe the socio-demographic characteristics of the study sample. As depicted in Table 1, age of the participants ranged from 18 to 55 years, with a mean age of 35.11 ( $SD = 10.09$ ). The mean family size was 4.2 ( $SD = 1.09$ ), with a minimum value of 2 and maximum value of 9.

Table 1

*Socio-Demographic Characteristics: Age and Family Size*

Socio-Demographic Characteristics	<i>N</i>	Range	Mean	<i>SD</i>
Age	298	37	35.11	10.09
Family Size	294	7	4.20	1.09

As shown in Table 2, among the 301 participants, 53.8% were female ( $n = 162$ ) and 45.8% were male ( $n = 138$ ). In regard to education, a majority of the participants had a high school education or less (74.8%); 20.3% had college education or more; and 4% were illiterate, which meant they did not know how to read and write. Almost three quarters of the sample were married (78.7%); 18.9% reported that they were never married; and the remaining (1.3%) were widowed, divorced, or separated.

In regard to occupation, 48.5% ( $n = 146$ ) reported that they were unemployed, although the majority among this category were housewives who were in charge of the child care and management of household duties. Of the remaining 51.5%, 42.5% ( $n = 128$ ) reported that they were either engaged in skilled or unskilled work; 3.7% were students; and 3.7% were professionally employed. About 85.4% ( $n = 257$ ) of the participants reported that their families were in the low-income group; 12.6% ( $n = 38$ ) reported that they came from middle-income families; and only 1% ( $n = 3$ ) reported that they belonged to the high-income category.

In the present study, *nuclear family* refers to families that comprise a father, mother, and children. *Extended family* refers to families where parents of one of the



spouses live with the nuclear family in the same house. *Joint family* refers to families where two or more generations of families live within the same household. As shown in Table 2, a majority of the participants interviewed (77.4%) belonged to nuclear families, 18.6% were from extended families, and 3.3% were from joint families. In regard to the participants' religious affiliation, 91.7% ( $n = 276$ ) reported that they practiced Hinduism, whereas 7.6% ( $n = 23$ ) reported they practiced Christianity.

Table 2

*Other Socio-Demographic Characteristics of the Sample*

Socio-Demographic Characteristics	N	%
<b>Gender</b>		
Male	138	45.8
Female	162	53.8
Total	300	99.7
<b>Education</b>		
Illiterate	12	4.0
High school and less	225	74.8
College and above	61	20.3
Total	298	99.0
<b>Marital Status</b>		
Never married	57	18.9
Married	237	78.7
Other	4	1.3
Total	298	99.0
<b>Occupation</b>		
Skilled worker	121	40.2
Unskilled worker	7	2.3
Professionals	11	3.7
Students	11	3.7
Unemployed	146	48.5
Total	296	98.3

Income			
	Low	257	85.4
	Middle	38	12.6
	High	3	1.0
Total		298	99.0
<hr/>			
Family Type			
	Nuclear	233	77.4
	Extended	56	18.6
	Joint	10	3.3
Total		299	99.3
<hr/>			
Religion			
	Hindu	276	91.7
	Christian	23	7.6
Total		299	99.3
<hr/>			
Severity of Loss			
	Severe	85	28.2
	Moderate	105	34.9
	Low	99	32.9
Total		289	96.0
<hr/>			

The reported mean scores of all five subscales for the participants in the present study are presented in Table 3. Because there was no cutoff score reported by the authors of the Post-Traumatic Growth Inventory, any score greater than zero on any of the subscales indicates post-traumatic growth. The mean total score was 57.76 for the present study sample.

Table 3

*Means, Standard Deviations, and Ranges for Post-Traumatic Growth Inventory and Five Subscales*

Subscale	Range	Mean	SD
Relating to Others	27	24.80	4.817

New Possibilities	24	10.47	4.490
Personal Strength	19	8.73	3.360
Spiritual Change	10	5.36	2.900
Appreciation of Life	14	8.38	2.790
Post-Traumatic Growth Inventory	72	57.76	12.410

---

*Note.*  $N = 301$

*Intercorrelations Between Socio-Demographic Characteristics and Post-Traumatic Growth*

To examine the intercorrelations among sample characteristics and post-traumatic growth, Pearson's product-moment correlations were calculated (see Table 4). The demographic variable, occupation, was collapsed into two categories prior to the correlational and regression analysis on account of the small number of cases in some of the original categories. Before conducting the correlational analyses, all the categorical variables were recoded using dummy variables. For example, for the variable, gender, females were considered as the reference group and coded as 0; males were coded as 1. Similarly, other variables, such as education, religion, and employment, were also dummy coded.

Table 4 presents the results of the correlations computed. It should be noted that all the correlations were low in value. Post-traumatic growth was positively associated with gender ( $r = 0.183, p < .01$ ), which meant that male participants reported higher rates of post-traumatic growth than female participants. Table 4 also shows that post-traumatic growth was positively correlated with religion ( $r = 0.155, p < .01$ ), which meant that participants who practiced a Christian religious belief system tended to report higher rates

of post-traumatic growth than those who practiced a Hindu religious system. In addition, post-traumatic growth was found to be significantly and positively associated with employment status ( $r = 0.232, p < .01$ ). This implied that participants who were employed reported higher rates of post-traumatic growth than participants who were unemployed.

Table 4

*Intercorrelations Among Sample Characteristics and Post-Traumatic Growth*

Variables	1	2	3	4	5	6	7	8	9
1. Age		-.042	.237**	.228**	.092	.069	.060	-.040	-0.890
2. Gender (1 = male)		-	-.052	.071	.188**	.797**	-.226**	.145*	.183**
3. Education E1			-	-.360	-.059	-.022	0.170	.095	-.083
4. Education E2				-	.106	.116*	.145*	-.088	.023
5. Religion (1 = Christian)					-	.146*	-.050	-.090	.155**
6. Employment (1 = employed)						-	-.179**	.130*	.232**
7. Severity of Loss SL1 (1 = severe)							-	-.488**	.115
8. Severity of Loss SL2 (1 = moderate)								-	-.029
9. Post-Traumatic Growth									-

*Note.* E1= illiterate vs. non-illiterate; E2= high school and less vs. non-high school and less; Severity of Loss SL1 = severe loss vs. others; Severity of Loss SL2 = moderate loss vs. others  
 \*\* $p < .01$ , \* $p .05$ .

In addition, there were significant positive relationships between age and education E1 ( $r = 0.237, p < .01$ ), and education E2 ( $r = 0.228, p < .01$ ). A simple one-way analysis of variance indicated that there were significant mean differences in age among illiterate, high school and less, and college-educated participants ( $F = 29.828, df = 2, p < .01$ ). Participants who were illiterate were older ( $M = 46.66, SD = 9.15$ ) than

participants who had high school and less education ( $M = 36.37, SD = 9.7$ ), and participants who had college education or more ( $M = 27.96, SD = 7.17$ ).

Table 4 further shows that there was a significant positive association between gender and religion ( $r = 0.188, p < .01$ ), which meant that the male participants interviewed practiced the Christian religious faith more often than the female participants. There was also a significant association between gender and employment status ( $r = 0.797, p < .01$ ), which meant male participants had significantly higher employment rates than female participants. Employment was also found to be associated with religion ( $r = 0.146, p < .05$ ), which meant participants who had Christian religious faith had higher employment rates than their counterparts.

Severity of loss SL1 was negatively associated with gender ( $r = -.226, p < .01$ ), which meant participants who were female reported more severity of loss than participants who were male. With regard to education, participants who had a high school education and less experienced more severe loss than the rest of the participants ( $r = .145, p < .05$ ). Severity of loss SL1 was significantly and negatively correlated with employment ( $r = -.179, p < .01$ ), which meant unemployed participants experienced more severe loss than employed participants. In addition, severity of loss SL2 was also significantly correlated with gender ( $r = .145, p < .05$ ), which meant men reported more moderate loss than women participants. Employment was also significantly associated with severity of loss SL2 ( $r = .130, p < .05$ ), which meant employed people reported more moderate loss than unemployed people.

*Intercorrelations Among Sample Characteristics and Individual Factors*

The intercorrelations among sample characteristics and individual factors, such as locus of control and self-efficacy, are presented in Table 5. As depicted in Table 5, there was a significant positive association between gender and locus of control ( $r = 0.151, p < .01$ ), which meant males reported higher internal locus of control than females. Education was found to be significantly associated with locus of control ( $r = -0.117, p < .05$ ). One-way analysis of variance indicated that there were significant mean differences in locus of control among participants who were illiterate, who had high school education and less, and who had college education or more ( $F = 4.60, df = 2, p < .05$ ). Participants who were college educated had higher internal locus of control ( $M = 92.81, SD = 10.21$ ) than participants who were illiterate ( $M = 84.41, SD = 12.78$ ) and who had high school education or less ( $M = 88.19, SD = 12.17$ ). Furthermore, there was a significant positive relationship between employment status and locus of control of the participants ( $r = 0.187, p < .01$ ). This implied that participants who were employed had higher internal locus of control than participants who were unemployed.

Table 5

*Intercorrelations Among Sample Characteristics and Individual Factors*

Variables	1	2	3	4	5	6	7	8
1. Age	-	-.042	.237**	.228**	.092	.069	-.570	-0.189**
2. Gender		-	-.052	.071	.188**	.797**	.151**	0.127*
3. Education E1			-	-.360	-.059	-.022	-.078	-0.115*
4. Education E2				-	.106	.116*	-.117*	-0.123*
5. Religion					-	.146*	.084	0.021

6. Employment	-	.187**	0.190**
7. Locus of Control	-		0.649**
8. Self-Efficacy			-

---

*Note.* E1= illiterate vs. non-illiterate; E2= high school and less vs. non-high school and less; \*\* $p < .01$ , \* $p < .05$ .

Self-efficacy was also found to be negatively associated with age ( $r = -0.189, p < .01$ ). The negative relationship implied that as participants' age increased, their sense of self-efficacy tended to decrease. There was a significant positive association between gender and self-efficacy ( $r = 0.127, p < .05$ ), which meant male participants reported higher self-efficacy than female participants. Self-efficacy was negatively correlated with education E1 ( $r = -0.115, p < .05$ ) and E2 (-0.123), which meant participants who had college education and above reported higher levels of self-efficacy than those who were illiterate and those who had high school or less education. Self-efficacy and locus of control were positively correlated ( $r = 0.649, p < .01$ ), which meant participants with higher internal locus of control reported higher levels of self-efficacy. In addition, employment status was significantly correlated with participants' self-efficacy ( $r = 0.190, p < .01$ ). This implied that participants who were employed reported higher self-efficacy than those who were unemployed.

#### *Intercorrelations Among Sample Characteristics and Family Factors*

Table 6 shows the intercorrelations between sample characteristics and family factors, such as family cohesion, family flexibility, family communication, family satisfaction, family size, and family type. As depicted in Table 6, the two family factors that were significantly associated with gender were family cohesion ( $r = -.159, p < .01$ )

and family size ( $r = .237, p < .01$ ). The negative correlation between family cohesion and gender indicated that women reported a higher level of family cohesion than men. With regard to family size and gender, the average family size was significantly higher for men ( $M = 4.45, SD = 1.01$ ) than for women ( $M = 3.95, SD = 1.09$ ).

Table 6

*Intercorrelations Among Sample Characteristics and Family Factors*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	-	-.042	.237*	.228**	.092	.069	.042	.039	.031	-.015	-.059	.060	.007
2. Gender			-.052	.071	.188**	.797**	.247**	-.063	-.134	-.159**	-.001	-.022	-.097
3. Education E1				-.360	-.059	-.022	.151*	.033	.151*	-.135	-.098	-.060	-.120*
4. Education E2					.106	.116*	-.046	.034	-.111	-.053	-.072	-.101	-.055
5. Religion						.146*	.043	-.042	-.054	-.105	.047	-.015	.070
6. Employment							.195**	.029	-.064	-.144*	-.040	.010	-.040
7. Family Size								.424**	.327*	.056	.066	-.003	.014
8. Family Type FT1									-.0890	.072	.029	.085	.069
9. Family Type FT2										-.061	-.090	-.107	.014
10. Family Cohesion											.497**	.572*	.469**
11. Family Flexibility												.439**	.308**
12. Family Communication													.551**
13. Family Satisfaction													

Note. E1= illiterate vs. non-illiterate; E2 = high school and less vs. non-high school and less; \*\* $p < .01$ , \* $p < .05$ .

Education was significantly associated with family satisfaction ( $r = -.120, p < .05$ ). A simple one-way of analysis of variance between education and family satisfaction revealed that participants who had college education and above reported higher levels of



family satisfaction ( $M = 39.14$ ,  $SD = 4.62$ ) than participants who were illiterate ( $M = 35.33$ ,  $SD = 4.41$ ). Employment status was significantly associated with family size ( $r = .195$ ,  $p < .01$ ). This implies that bigger families tended to have more employed people than smaller families. Employment status was also correlated with family cohesion ( $r = -.144$ ,  $p < .05$ ). The negative sign indicates that participants who were unemployed reported higher levels of family cohesion than participants who were employed. In regard to family size and family type, joint families ( $M = 6.1$ ,  $SD = 1.66$ ) and extended families ( $M = 5.16$ ,  $SD = .876$ ) had a significantly higher family size than nuclear families ( $M = 3.88$ ,  $SD = .871$ ). In addition, individuals with higher levels of family cohesion reported higher levels of family flexibility ( $r = 0.497$ ,  $p < .01$ ), family communication ( $r = .572$ ,  $p < .01$ ), and family satisfaction ( $r = .469$ ,  $p < .01$ ). Individuals with higher family flexibility scores reported a significantly higher level of family communication ( $r = .439$ ,  $p < .01$ ) and family satisfaction ( $r = .308$ ,  $p < .01$ ). Furthermore, individuals who reported higher level of family communication also reported higher levels of family satisfaction ( $r = .551$ ,  $p < .01$ ).

#### *Intercorrelations Among Sample Characteristics and Social Capital Variables*

The intercorrelations between sample characteristics and social capital variables are presented in Table 7. As shown in the Table 7, membership in labor-sharing groups was significantly associated with age ( $r = .122$ ,  $p < .05$ ) and gender ( $r = .361$ ,  $p < .01$ ). This implies that among the study participants, older participants and men reported more participation in labor-sharing group than their counterparts. Gender was found to be significantly correlated with dealing with natural disasters ( $r = -.150$ ,  $p < .01$ ), which

meant that women felt more than men that at times of severe calamities, villagers should come together and assist each other. In addition, men reported higher level of public spiritedness ( $r = .178, p < .01$ ), and higher solidarity ( $r = .199, p < .01$ ) than women.

**Table 7**  
*Intercorrelations Among Sample Characteristics and Social Capital Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	-	-.042	.237**	.228**	.092	.069	.122*	-.045	.036	.103	-.082	-.010
2. Gender (1=male)		-	-.052	.071	.188**	.797**	.361**	.020	-.150**	.013	.178**	.199**
3. Education E1			-	-.360	-.059	-.022	-.041	-.014	-.001	-.014	.047	.125*
4. Education E2				-	.106	.116*	.175**	.033	-.093	-.032	-.059	-.020
5. Religion					-	.146*	.037	.007	-.031	-.083	.017	.127*
6. Employment						-	.555**	.011	-.117*	.005	.167**	.133*
7. Membership in Labor-Sharing Groups							-	.075	-.018	.062	.060	-.111
8. Dealing With Crop Disease								-	.062	.034	.022	.009
9. Dealing With Natural Disasters									-	.186**	-.102	-.150**
10. Trust										-	-.061	-.095
11. Public Spiritedness											-	.213
12. Solidarity												-

*Note.* E1= illiterate vs. non-illiterate; E2= high school and less vs. non-high school and less; \*\* $p < .01$ , \* $p < .05$ .

With regard to education, participants who were illiterate reported higher levels of solidarity than participants who had a high school education and less ( $r = .125, p < .05$ ).

In addition, participants who had high school and less education reported more participation in labor-sharing groups ( $r = .175, p < .01$ ) than the rest of the participants.

Religion was also found to be associated with the social capital variable, solidarity.

Participants who reported practicing a Christian religious faith reported higher level of solidarity than their Hindu counterparts ( $r = .127, p < .05$ ).

Participants who were employed reported higher participation in labor-sharing groups ( $r = .555, p < .01$ ), higher public spiritedness ( $r = .167, p < .05$ ), and more solidarity ( $r = .133, p < .05$ ). Participants who were unemployed felt more that, at times of severe calamities, villagers should come together and assist each other ( $r = -.117, p < .05$ ) than did their employed counter parts. Participants who reported higher trust in their fellow villagers also reported that villagers need to come together and assist each other in times of calamities ( $r = .186, p < .01$ ).

*Intercorrelations Between Individual Factors and Post-Traumatic Growth*

The intercorrelations between post-traumatic growth and individual factors, such as locus of control and self-efficacy, are presented in Table 8. As illustrated in Table 8, the average post-traumatic growth score was 57.76 ( $SD = 12.41$ ), self-efficacy was 27.79 ( $SD = 5.96$ ), and locus of control was 88.99 ( $SD = 11.92$ ).

Table 8

*Intercorrelations Between Individual Factors and Post-Traumatic Growth*

Predictor Variables	1	2	3
1. Locus of Control	-	.649**	.169**
2. Self-Efficacy		-	.170**
3. Post-Traumatic Growth			-
Mean	88.99	27.79	57.76
<i>SD</i>	11.92	5.96	12.41

*Note.* \*\*  $p < .01$ .

As showed in Table 8, there was a significant positive association between locus of control and self-efficacy ( $r = .649, p < .01$ ). This implies that individuals with a higher internal locus of control reported higher levels of self-efficacy. There was also a significant positive correlation between locus of control and post-traumatic growth ( $r = .169, p < .01$ ), and self-efficacy and post-traumatic growth ( $r = .170, p < .01$ ). The positive nature of the relationship indicates that individuals with a higher internal locus of control and higher self-efficacy tended to report higher levels of post-traumatic growth.

*Intercorrelations Among Family Factors and Post-Traumatic Growth*

Table 9 presents the intercorrelations between family factors, such as family cohesion, family flexibility, family communication, family satisfaction, family size, family type, and post-traumatic growth.

Table 9  
*Intercorrelations Among Family Factors and Post-Traumatic Growth*

Family Variables	1	2	3	4	5	6	7	8
1. Family Cohesion	-	.497**	.572**	.469**	.056	.072	.061	.177**
2. Family Flexibility		-	.439	.308**	.066	.029	-.090	.226**
3. Family Communication			-	.551**	-.003	.085	-.107	.260**
4. Family Satisfaction				-	.014	.069	.014	.108
5. Family Size					-	.424**	.327**	.012
6. Family Type Extended vs. Non-Extended						-	.089	.048
7. Family Type Joint vs. Non-Joint							-	-.177**
8. Post-Traumatic Growth								-
Mean	29.96	25.71	39.18	38.04	4.20	.187	.033	57.76
SD	3.21	2.88	5.18	4.67	1.09	.39	.18	12.41

Note. \*\* $p < .01$

As depicted in Table 9, there was a significant positive correlation between post-traumatic growth and family cohesion ( $r = .177, p < .01$ ) and post-traumatic growth and family flexibility ( $r = .226, p < .01$ ). This indicates that individuals from cohesive and flexible families reported higher levels of post-traumatic growth than individuals who were from less cohesive and flexible families. In addition, individuals from nuclear and extended families tended to report higher levels of post-traumatic growth than individuals from joint families ( $r = -.177, p < .01$ ).

*Intercorrelations Between Post-Traumatic Growth and Social Capital Variables*

The intercorrelations between post-traumatic growth and social capital variables are presented in Table 10.

Table 10

*Intercorrelations Between Post-Traumatic Growth and Social Capital Variables*

Variables	1	2	3	4	5	6	7
1. Membership in Labor-Sharing Groups	-	.075	-.018	.062	.060	-.111	.093
2. Dealing With Crop Disease		-	.062	.034	.022	.009	.059
3. Dealing With Natural Disasters			-	.186**	-.102	-.150**	-.131*
4. Trust				-	-.061	-.095	-.053
5. Public Spiritedness					-	.213**	.099
6. Solidarity						-	.079
7. Post-Traumatic Growth -							
Mean	.6811	4.24	3.92	1.53	1.43	2.72	57.76

<i>SD</i>	.466	.985	.907	.499	.611	.715	12.41
-----------	------	------	------	------	------	------	-------

---

*Note.* \*\* $p < .01$ ; \* $p < .05$ .

As shown in Table 10, the only social capital variable that was significantly correlated with post-traumatic growth was dealing with natural disasters ( $r = -.131, p < .05$ ). The negative relationship implies that the more participants felt the need for more village collectivity in dealing with natural disasters, the less the post-traumatic growth of the participants.

#### *Hierarchical Regression Analyses and Hypotheses Tests*

In order to test the various hypotheses of the present study, I used hierarchical regression analysis. In hierarchical regression analysis, the independent variables are grouped into sets, depending on their relative importance in predicting the outcome variable (Cohen, Cohen, West, & Aiken, 2003). The primary reason for grouping the variables into different sets is to examine the effect of each set on the outcome variable, after statistically controlling for the effects of other sets of variables that are included in the study. Subsequently, each set of variables is entered in a predetermined hierarchical order, and upon the addition of each new set, the  $R^2$  or increment in  $R^2$  is determined. The change in  $R^2$  indicates the unique variance in the outcome variable contributed by the newly added set. This technique is particularly helpful when the investigator wants to ensure that the effects attributed to the major variables of interest are not really due to socio-demographic differences, such as age, level of education, income, or employment status.

In the present study, based on the results of correlational analyses between the independent variables and the outcome variable, post-traumatic growth, I have retained a group of socio-demographic variables (gender, employment, and religion), individual level variables (locus of control and self-efficacy), family-level variables (family cohesion, family flexibility, family type, and family communication), and one social capital variable (dealing with natural disasters) that were shown to be associated with the dependent variable, post-traumatic growth. Therefore, the hierarchical regression analysis included four sets of variables: socio-demographic, individual, family, and social capital. All the above sets of variables were entered in the regression model in the above-mentioned specific sequence, resulting in four regression models.

The first regression model examined the variance in post-traumatic growth, explained by the set of socio-demographic variables. Subsequently, in the second regression model, I introduced the individual-level variables into the regression model to see whether the addition of individual-level variables would significantly improve the first model. In addition, this model tested the first set of hypotheses. In the third model, all four family variables were added to the previous model to figure out whether the family variables contributed significantly in predicting post-traumatic growth, after controlling for other variables. The third model also helped to test the second set of hypotheses. In Model 4, I introduced the lone social capital variable to assess how much this newly introduced variable added to the previous model in explaining the variance in post-traumatic growth. The fourth model helped in testing the third set of hypotheses.

### *The Regression Models and Hypotheses Test Results*

The omnibus F test in each model reveals that all the regression models were significant at the .001 level (see Table 11). As shown in Table 11, Model 1 explained 7.7% of the variance in the dependent variable, post-traumatic growth. Two socio-demographic variables (employment and religion) were found to be significant predictors of post-traumatic growth. The only socio-demographic variable that was non-significant was gender. Employment (.254) was found to be significant at the .01 level. This implies that, on average, one would expect that the post-traumatic growth (measured on a 6-point scale) experienced by employed participants would be 6.430 units higher than that of the unemployed participants, while all other variables are held constant. In addition, religion (.141) was also found to be a significant predictor at the .05 level. One would expect that participants practicing the Christian religious faith would experience a 5.658-unit increase in post-traumatic growth (measured on a 6-point scale) compared to participants practicing the Hindu religion, when all other variables remain the same.

- *Hypotheses I*

1. Individual factors, such as self-efficacy and locus of control, are significant predictors of the post-traumatic growth of adult survivors of the tsunami.
2. The relationship between individual factors and post-traumatic growth will vary by the gender of the participants

In Model 2, two individual-level variables, locus of control and self-efficacy, were added to the previous model in order to examine their respective power in predicting post-traumatic growth over and above the socio-demographic variables.



Table 11

*Regression of Post-Traumatic Growth on Socio-Demographic, Individual, Family, and Community Variables*

	Model 1	Model 2	Model 3	Model 4
	$F = 8.067$	$F = 5.913$	$F = 8.229$	$F = 7.825$
	$df = 3$	$df = 5$	$df = 9$	$df = 10$
	Sig. <.001	Sig. <.001	Sig. <.001	Sig. <.001
Predictor Variables	B (Beta)	B (Beta)	B (Beta)	B (Beta)
Employment	6.430(.258)**	5.658(.227)*	6.740(.270)**	6.690(.268)**
Religion	6.685(.141)*	6.422(.136)*	6.201(.131)*	6.187(.131)*
Gender	-1.215(-.049)	-1.070(.043)	-2.187(-.088)	-2.535(-.101)
Self-efficacy		.171(.082)	.142(.068)	.155(.074)
Locus of Control		.063(.060)	.038(.036)	.046(.044)
Family Cohesion			.001(.000)	.041(.040)
Family Flexibility			.715(.162)*	.704(.159)*
Family Communication			.451(.187)**	.429(.178)**
Family Type FT2			-9.260(-.135)*	-8.936(-.130)
Dealing With Natural Disasters				-1.384(-.101)*
Model $R^2$	.077	.093	.206	.216
$R^2$ change		.016	.113***	.010

Note.  $N = 301$ , B = unstandardized coefficient, Beta = standardized coefficient; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ .

As depicted in Table 11, Model 2 accounted for 9.3% of the variance in the outcome variable post-traumatic growth. The omnibus F test shows that the model was

significant at the .001 level. However, the increment in the value of  $R^2$  (1.6%) from the first model was not found to be significant. The only variables that were found to be predictive of post-traumatic growth were the socio-demographic variables, religion and employment. The individual-level variables, self-efficacy (beta = .082) and locus of control (beta = .060), were found to be not significantly predictive of post-traumatic growth, after controlling for socio-demographic variables. Therefore, the first hypothesis in the Hypotheses I set was not supported. Because there were no main effects of gender and individual factors on post-traumatic growth, the second hypothesis in the Hypotheses I set—the association between individual factors and post-traumatic growth will vary by the gender of the participants—was also not supported. As Cohen et al. (2003) recommends, before including or excluding the interaction term in the model, the investigator should test whether the independent variable significantly predicts the dependent variable. If the variable is not statistically significant, it is dropped from the model.

- *Hypotheses II*

1. Family factors, such as family cohesion, family flexibility, family communication, family satisfaction, family size, and family type, will be significantly related to the post-traumatic growth of adult survivors of the tsunami.
2. The relationship between family factors and post-traumatic growth will vary by the gender of the participants.

3. Family factors will have a significant moderating effect on the relationship between individual factors and post-traumatic growth of the survivors of the tsunami.

In Model 3, four family-related variables (family cohesion, family flexibility, family communication, and family type) were added to the previous model in order to examine the power of all those variables in predicting post-traumatic growth. It should be noted that family satisfaction and family size were not included in the model on account of their non-significant correlation with post-traumatic growth. The omnibus F test shows that the model was significant at the .001 level. As shown in Table 11, Model 3 accounted for 20.6% of the variance in post-traumatic growth. It was also observed that there was a substantial increment in the value  $R^2$  (11.3%) from the previous model. The two socio-demographic variables were still significantly predictive of post-traumatic growth. Standardized coefficients of the family-level variables indicate that family communication (.187), family flexibility (.162), and family type (-.135) were predictive of post-traumatic growth. This finding supports the first hypothesis in the second set of hypotheses. With regard to family communication, for a one-unit change in family communication from *strongly disagree* to *strongly agree*, one would expect a .451-unit increase in post-traumatic growth, measured on a 6-point scale after holding all other variables constant. In regard to family flexibility, for a one-unit change in family flexibility from *strongly disagree* to *strongly agree*, one would expect a .751-unit change in post-traumatic growth, measured on a 6-point scale after controlling for other variables. Family type was dummy coded earlier, with nuclear family as the reference

group coded as 0, and joint family coded as 1. For a unit change (from 0 to 1) in family type, one would expect a 9.260-unit decrease in post-traumatic growth, measured on a 6-point scale after controlling for all other variables. Because gender was not a significant predictor of post-traumatic growth, the second hypothesis in the second hypotheses set—the relationship between family factors and post-traumatic growth will vary by the gender of the participants—was not supported. In addition, because none of the individual-level variables was significantly predictive of post-traumatic growth, as mentioned before, there was no meaning in testing the moderating effects of family factors on the relationship between individual factors and post-traumatic growth.

- *Hypotheses III:*

1. The social capital of the survivors is significantly predictive of the post-traumatic growth of the survivors of the tsunami.
2. The relationship between social capital and post-traumatic growth will vary by the gender of the participants.
3. Social capital will have a significant moderating effect on the relationship between family factors and post-traumatic growth of the adult survivors of the tsunami.

In order to examine the role of social capital in predicting post-traumatic growth over and above other variables, the social capital variable was introduced into Model 4, the final regression model. The omnibus F test shows that the model was significant at the .001 level. However, as shown in Table 11, there was no significant increment in the value of  $R^2$  (1%), after introducing the social capital variable into the model. The

standardized coefficient (-.101) implies that the social capital variable was not significantly predictive of post-traumatic growth, above and beyond other variables. Thus the first hypothesis of the Hypotheses III set—social capital is significantly predictive of post-traumatic growth, was not supported. Because there were no main effects of gender and social capital on post-traumatic growth—an interaction involving the above two variables was not used to explain any more significant variance in the dependent variable.

#### *Summary of the Quantitative Research*

Using a survey research design, I interviewed 301 tsunami survivors from India to investigate the role of a set of individual, family, and community factors in predicting the post-traumatic growth of the participants. I hypothesized that locus of control, self-efficacy, family cohesion, family flexibility, family communication, family satisfaction, family type, family size, and social capital would significantly predict post-traumatic growth. In addition, I hypothesized that the relationship between the above variables and post-traumatic growth would vary by the gender of the participants. I also hypothesized that the family factors would act as moderators in the relationship between individual factors and post-traumatic growth. Social capital variables were also hypothesized to moderate the relationship between family factors and post-traumatic growth.

Descriptive statistical analyses were conducted to describe the sample characteristics. Correlational analyses were performed to examine the significance of association between post-traumatic growth and the socio-demographic, individual, family, and social capital variables. Based on the findings of the correlational analyses, three socio-demographic variables (employment status, religion, and gender), two

individual level variables (locus of control and self-efficacy), four family-level variables (family cohesion, family flexibility, family communication, and family type), and one social capital variable (dealing with natural disasters) were retained to include in the hierarchical regression analysis. Therefore, the hierarchical regression analysis included four sets of variables: socio-demographic, individual, family, and social capital. All the above sets of variables were entered in the regression model in the above-mentioned specific sequence, resulting in four regression models.

Results of the hierarchical regression analyses revealed that all four regression models were significant at the .001 level. There was no significant change in the value of  $R^2$  (1.6%) when individual factors were added to the first model. Addition of the family variables improved the previous model by 11.3%. However, the addition of the social capital variable into Model 3 did not significantly increase the value of  $R^2$  (1%), which meant that addition of the social capital variable did not significantly improve the previous model. Among the three models, Model 3, which included the socio-demographic, individual, and family-level variables, was the most parsimonious and accounted for around 20.6% of the variance in post-traumatic growth. The specific predictors of post-traumatic growth, identified by the hierarchical regression analyses, were employment, religion, family flexibility, family communication, and family type. Gender, locus of control, self-efficacy, and social capital variables were not found to be significantly predictive of post-traumatic growth. The hierarchical regression analysis supported the hypothesis that family flexibility, family communication, and family type would significantly predict post-traumatic growth, after controlling for other variables.

The research hypotheses specifying that individual factors and social capital would significantly predict post-traumatic growth, after controlling for other variables, were not supported. In addition, the hypotheses specifying that gender would moderate the relationship between post-traumatic growth and individual, family, and community factors were not supported. The hypotheses that family factors would moderate the relationship between individual factors and post-traumatic growth were also not supported. Similarly, the hypotheses specifying that social capital variable would moderate the relationship between family factors and post-traumatic growth were not supported.

#### Qualitative Research Findings

The general literature related to surviving a traumatic experience indicated that the experience is severely emotional, traumatic, and salient in the lives of the people who experienced and witnessed it. Literature also revealed that survivors discuss the horrific experience they have been through, the loss they experienced, the meaning of their loss, the benefits that they accrued, and what their own life has been like after the traumatic experience. The sharing of their experiences provides an avenue for a third person, who has not had that experience, to gain access to the lived experiences of the survivors. The descriptions provided in this chapter, consistent with the general literature, certainly reveal that the participants in the present study had been through a series of sufferings, particularly in the physical, emotional, psychological, social, spiritual, political, and economic spheres of life, during and after the tsunami disaster. It was also evidenced that, for most of the survivors, the tsunami survival experience gave rise to an infinite number

of possible opportunities, ranging from the ability of seeing life through a renewed lens to taking up serious challenges outside of their routine everyday life practices. In the next section, I give a socio-demographic summary of the participants I interviewed for the purpose of this narrative phenomenological inquiry. Subsequently, I provide a detailed description of the core experiences of the tsunami survivors, with specific focus on their experience of surviving the tsunami, the resources that they thought helped them survive the tsunami experience, and the obstacles they faced on their road to recovery.

#### *Socio-Demographic Characteristics of the Study Sample*

I conducted in-depth interviews with 8 tsunami survivors recruited from Alappad village in Kerala, India, which had been shattered by the tsunami of 2004. The tsunami hit hardest in wards one through six in the Alappad panchayath, where almost all residents fled by foot, buses, and ferry services to the mainland. All 8 participants met the study eligibility criteria of “having experienced the tsunami” and living in one of these six wards when the tsunami hit the coastal area of Alappad. Almost all of them were from a poor fisherman community. Of the 8 participants, 3 were male and 5 were female. The participants’ ages ranges from 36 to 54 years, with the mean age being 37.5 years. Only 2 of the 8 participants had completed their pre-university degree, and the remaining 6 had completed either middle school or high school. Seven of the 8 participants were presently married, and the remaining one was a widow. Of the 8 participants, 7 practiced the Hindu religion and the eighth participant was of the Christian faith. Five of the participants belonged to nuclear families, whereas the remaining 3 were from extended families. Of the 5 female participants, 2 were housewives, one ran a home-based-restaurant, one ran a



stationary shop; and one was in charge of a recreation center constructed for traumatized tsunami child survivors. Two of the male participants were fishermen and one was a daily laborer.

Almost all the participants were personally affected by the tsunami, with consequent severe loss in terms of death of one or more immediate family members; personal injuries to oneself or someone else in the family; housing, livelihood, and property damage; economic loss; and other untoward outcomes. All of them lost their housing and were displaced for awhile, with the majority living in cramped temporary shelters for approximately 6 months to 2 years. Three of the study participants were uprooted from their ancestral land and were relocated to a new place away from the sea and, at the time of the interview, were struggling to find some alternative vocation and livelihood to make ends meet. All the participants had lost all or most of their fishing crafts, nets, and gears.

#### *The Phenomenon of Surviving the Tsunami*

The role of narratives in fostering recovery following a traumatic event has been widely documented. For example, in developing a constructive narrative perspective on resilience and post-traumatic growth, Meichenbaum (2006) notes the role of narratives in understanding and determining the individuals, families, and groups' response to traumatic events. The author indicates that individuals who are feeling victimized, dwelling in the past, and continually searching for "meaning" with no clear answers to their "why" questions are prone to have chronic psychological distress. On the other hand, individuals who engage in positive thinking, who seek to find benefits from their

traumatic experience, and who establish new priorities and goals following the event are shown to experience positive growth and change. The thematic description that follows suggests that this certainly was the case with many of the participants whom I interviewed for my study. Although I hold the view that a systematic analysis of the narratives of a small number of cases, carefully selected from the population who experienced the traumatic event, can be illuminative, I would like to insert a word of caution here, that my participants' experience may not necessarily be reflective of the experiences of many others who survived the same traumatic event or similar others in India or other parts of the world.

After analyzing the digital files and verbatim transcripts of the 8 participants who survived the tsunami, I have come up with a list of themes and invariant constituents, using the modified form of Van Kaam's method of phenomenological analysis. Accordingly, all the major themes and invariant constituents that constitute each theme are presented next. Unless otherwise specified, all the themes and invariant constituents described here were present in the verbatim transcriptions of all the study participants.

#### *Subjective Experience of Encountering Killer Waves*

The theme *subjective experience of encountering killer waves* included descriptions of individuals' perceptions of their pre-tsunami vulnerability, their horrific experience of battling and surviving the killer waves, and the terror of helplessly witnessing their near and dear ones and material resources being washed away by the giant waves (see Table 12).

Table 12

*Subjective Experience of Encountering “Killer” Waves*

Subjective Experience
1. Preparedness
2. The near “death” experience
3. Resource loss

*Preparedness.* Alappad is a small 17.5-kilometer land strip sandwiched between the Arabian Sea to the west and a lake to the east. The fisherman community living in this geographical area was used to the monsoon floods, frequent storm surges, and cyclones that often struck them. However, most of the participants reported that they were not aware of the term *tsunami* or what tsunami meant, nor were they or their community adequately prepared to face the debilitating impact of such killer waves. One female participant described in detail how unprepared they were when the tsunami struck:

These storm surges occur during *midhunam* and *karkkidakam* [Malayalam calendar months]. During these 2 months, we won't go for work [fishing]. But this thing, tsunami, we haven't heard... haven't seen something like this before. We had plenty time. I was having meals with my daughter. There was enough time to escape, if we were aware this is a problematic thing...we would have reached a safe place...we weren't fortunate...we lost our two kids.

As mentioned before, Alappad was a small strip of land sandwiched between the sea and a lake. This land strip was connected to the mainland by a small bridge, which was the only evacuation route in case of emergency. The participants were aware of this.

One female participant described this situation:

Initially, the lake swelled...the lake is east to this shop... sea in the west. The water in the lake swelled three-four times and then receded. Then, within me, an inner fear crept up. I was frightened something is going to happen...I went and had a look at the sea. Sea was calm and quiet. Then,

I thought if all this water comes from the east and sea in the west...where and how would I escape from this catastrophe?

Many of the participants expressed their worries about being so close to the sea. In some parts of the village, the sea is as close as 50 meters to the residential areas. Many of the *balawadis* (child-care centers) and schools are also close to the sea. Participants perceived the extreme danger that was lurking there, as can be noticed in the following narrative of one of the female participants:

It was a Sunday...all holidays...Christmas holidays. All were at home. But, if it weren't Christmas holidays, many kids would have died. All the *balawadis* were close to the sea. It [the fact that the tsunami happened on a holiday] was a blessing! Otherwise all the kids would have died. Kids would die and their mothers too, because when they see the sea advancing, mothers would run to pick their kids up. Then they all will die...because it was Sunday and holiday time, a big tragedy has been averted.

Although there were enough buses and ferries in the area, none of these services was prepared to evacuate the public in an emergency situation such as a major disaster. As I later describe, the need for preparedness was one of the major recommendations the participants put forth to improve disaster services in the area. The tsunami made people realize how unsafe it would be to have schools and *balawadis* near the sea without any essential emergency preparedness measures. Schools in such areas have decided to incorporate disaster preparedness in their curriculum to an effort to empower children and their families.

*The near "death" experience.* Because there was no serious warning from the emergency department about the impending danger, many of the participants were unprepared for the traumatic event. They did not know what to do, where and how to escape, and were not aware of any evacuation strategies or safe place for shelter when the

tsunami hit. All the participants got trapped and swept away by the huge tsunami waves. Survivors, even at the deepest levels of their psyche, were aware that they were fortunate to have a second chance to live this life fully. This awareness was expressed, in the thick description below, by one of the participants who was almost drowned and lost her grandson whom she had raised for 7 years:

I was standing there [home]. I heard a horrendous sound followed by the big sea. I can't see the earth or sky. So huge was the sea! I screamed, all of us are going to die...I was holding my grandson, then. The rushing sea water swept us away with a tremendous force downstream toward the lake. In the next moment, I realized I lost hold of my grandson. I was screaming, "God... I can't see the land or sea." The lake got bigger than the sea. I couldn't get hold of anything to hang on, except water...I was breathless...foggy everywhere...can't see anything...I was in a whirlwind...I drank lot of water... gradually drowned. I don't remember anything after.

The woman was rescued by a group of people who saw her lying 2 miles away near the lake, seriously injured. She refused to go to the hospital, but instead kept searching for her lost grandson. Her husband was severely disabled by the tsunami. At the time of the interview, her husband was resting after having multiple surgeries to rectify his abdominal injuries, and she was providing care for him. The woman strongly believed that it was God's will that she was saved in order to take care of her family and disabled husband.

Another woman discussed her heroic effort of rescuing herself and her 15-year-old daughter from the tsunami waves. She, her husband, and her daughter were at home when the giant waves lashed at their house with an incredible force. The house crumbled, and her husband got buried under the rubble. She describes how she won her battle against the killer waves and how she saved her daughter:

We were all at home. My husband thought my daughter called him from outside the home...he just went outside...I too followed him... I don't know what happened next. It [waves] came like a huge mountain and engulfed me and daughter and rolled us over and over banged at the wall. The wall crumbled and the waves and swept us away to the seashore. When I looked up, I saw my daughter gradually drifting down. I got hold of a coconut tree and reached out and grabbed her hair and pulled her up. It was a long battle against the waves. My leg was broken. She was injured everywhere...it lasted for over three minutes...I didn't give up, I was still holding her in my right hand...was screaming please help, please help. The waves containing debris lashed at us. Waves swirled huge rocks at us... I thought my daughter was gone...she wasn't talking...Only after everything was over, someone came and rescued us.

All this time, the woman thought her husband was safe. The rescuers immediately rushed both of them to the hospital; and only in the evening, she was told that her husband had died in the tsunami. She told me that it was primarily with the help of a community-level worker (a local volunteer trained by professionals in providing basic mental health services) that she managed to survive the loss of her husband. After the tsunami, her priorities changed. Her husband's goal was to educate their children and marry the daughter to a nice gentleman. Two years after the tsunami, when I interviewed this woman, her daughter's marriage was fixed and her son was studying for a technical diploma course. She took up the challenge, despite having no job and serious troubles with her in-laws over compensation provided by the government for the survivors of the dead.

*Resource loss.* Various types of resource loss were reported by the participants. This includes loss of housing, property deeds, fishing crafts and nets, livestock, furniture, jewelry, and household utensils. As I mentioned before, the fishermen folks are relatively poor when compared with others. All the assets were of immense value to them, because

those assets were the outcome of many years of hardship and savings. In fact, as evident in the participants' narratives, many people got swept away by the waves primarily because they went out of their houses to retrieve their lost furniture, utensils, and livestock. One female participant, who was running a small stationary store near the sea shore, described how she lost all her stationeries in the tsunami, in addition to several copper utensils that had a "special" meaning for her:

I just returned from the market, arranged everything in the store. All those items were worth 2000 rupees. It was then tsunami hit...I was drifted away by the flood toward the sea. I had three wooden beds. I lost all of them. I lost all the stationeries. I had several copper utensils handed over to me by my parents. It was precious...I was thinking to give it as dowry for my daughter. I didn't get any of them; all of them were swept away by the tsunami.

*Subjective Experience During the Rescue and Relief Phase*

The theme *subjective experience during the rescue and relief phase* included descriptions of individuals' experience of dealing with the chaos that immediately followed the tsunami, their psychological state, their dealing with rumors, and their experience at the temporary shelters and relief camps (see Table 13).

Table 13

*Subjective Experience During the Rescue and Relief Phase*

Subjective Experience
1. Dealing with utter chaos
2. Psychological reaction
3. Dealing with rumors
4. Experience at the temporary shelter or relief camps

*Dealing with utter chaos.* Absolute mayhem followed the tsunami. Victims were trapped under crumbled buildings and houses, dead bodies lay scattered everywhere, able-bodied survivors were searching for their missing family members, and many others were looking for signs of life or calling for help. The moving water had swept away people as far as three miles. Even though cataclysmic events such as this would normally require highly organized and systematic rescue operations, this was missing in the Alappad panchayath. However, typical of any disaster and so in this tsunami, it was the local villagers who performed the majority of the rescue operations. Despite the inherent risk involved in the rescue operations, these initial responders—many of them being adult males—did their best to rescue people by getting the survivors onto the ferry or bus services and moved to the temporary relief camps (primarily schools, temples, and churches on the mainland) and the injured to the nearby hospitals. Many lives were saved in this process. One male participant, who lost his 17-year-old daughter, described the pandemonium following the tsunami:

We were near the lake. The flood lasted for only 10 to 15 minutes.... immediately we rushed to our homes... saw only collapsed houses everywhere. All were searching for their relatives. Did you see my family members? Did you see your family? ...We rushed back to the lake and started rescuing people. Five to 10 boats were there...the rescued people were shifted to the east. Many of them sustained severe injuries. Nobody knew what happened...somebody said all had been swept away, this that....Even a brave-hearted can't withstand the scene. Everything was demolished. Everything was lost. Then, asking for kids, brothers, wives...searching for them...many of us didn't know death has occurred in our family. Nobody could confirm what exactly happened.

Another participant described the situation at the nearby hospital where she was taken after sustaining severe bodily injuries. She was fortunate to find her husband



admitted to the same hospital with injuries. She told me that the hospital staff did their best to serve the people with the limited resources they had. Because it was a Sunday, there was only one resident medical officer, and all the specialists were absent from the scene.

Three, four kids—they were of my son's age—told me, “Your head is bleeding. We will take you to the hospital.”...I wasn't able to walk. They carried me to a place where bus service was available and took me to Star [hospital name]. The hospital was crowded by villagers. One kid told me, “Your husband is in the third floor.” I rushed to the third floor to see my husband, lying down in critical condition with urethral obstruction and swollen belly. There was only one doctor. No main doctors. I was told to take the husband to a medical college. I ran down and started searching for my son...10 to12 children's dead bodies were laid down there in a row... I wasn't even aware they were all dead. My niece was also lying down among that pile of dead bodies. I saw many crying....Others were examined for life and then dumped into the pile of dead bodies, whoever is dead. I was running in and out mad, screaming and searching for my kid...nobody answered me.

The participants indicated that all the hospitals were flooded with victims. None of the hospitals had enough doctors, paramedical staff, and resources to deal with such a huge influx of patients. The fact that the tsunami occurred on a Sunday added to the problem, because many medical staff were on leave. This shows how unprepared the medical system was in facing a huge emergency such as this.

*Psychological reaction.* It was an absolutely devastating atmosphere in the Alappad panchayath and in the nearby villages and hospitals after the tsunami. Nobody had ever seen anything like this before, and therefore they were unprepared. Because it was an unexpected event, the psychosocial impact was beyond anyone's comprehension. Participants reported feeling intense terror immediately after the tsunami. Many of them reported being hopeless and helpless over the kind of loss they had. One female

participant directly witnessed tsunami waves taking away her only two daughters, whose bodies were later found in the evening near the lake. She described how she felt when she realized she had lost her girls:

When I lost my children, I thought I should not live for another second. I wanted to join them. Because, what happened to me is horrific. They were the “link” in my life. I lost my children who I loved more than my own life. Their death will be a huge loss... until my death...there is no meaning for me now living this life.

This respondent was totally devastated by the loss of her children, who were 13 and 15 years of age at the time of their death. She was admitted to a nearby mental health center for over 2 weeks in order to be treated for her psychological distress. She was in treatment for her depression for over 9 months, after which she discontinued her treatment. She told me that it was with the help of a community-level worker and with the support from some of the community volunteers that she recovered from her depression. At the time of the interview, she still had not come to terms with the loss of her children, as is evident in the above quote.

*Dealing with rumors.* Survivors of any disaster will have to deal with rumors and hearsay. Misleading information during and after the disaster can further upset the already fragile and distressed disaster community. Rumors could negatively affect rescue and relief operations and might result in wasting the time and resources of the relief agencies. Even in Alappad, when people were in the relief camps, rumors spread about another impending tsunami, resulting in absolute mayhem. Many of the participants gave reports similar to that of the following participant:

We were taken to the Prayar school [a relief camp]...they offered us water and food. We didn't feel like having anything. We weren't in such a

psychological state to eat or drink. When we were sitting there, someone shouted, “Look the next tsunami is coming, this would leave only after wiping out this place”...immediately buses and jeeps were lined up to move people to Ochira temple [a faraway place]. It was people coming from the west who spread the rumor. But, nothing like that happened.

*Experience at the relief camps and temporary shelters.* Participants had both negative and positive experiences at the relief camps and temporary shelters. Immediately after the tsunami, all the residents of the Alappad panchayath were evacuated to the relief camps, temporarily set up on the mainland. Some of the schools, colleges, churches, and temples were opened up to house the evacuees. Families who had lost any of their family members or relatives were housed in a camp operated by the military. They were taken excellent care of by the military officers. One male participant who was in the military camp described in detail the experience he had at the camp”:

Madras regiment opened two camps in Valiyakulangara [a place near Alappad]. We were moved to either of these camps. We received excellent protection there. All our needs, foods, everything they handled exceedingly well. Because our mental state was like that. They brought television for us. They were very positive in their approach. They were very disciplined. Even if we did some mistakes, they forgave us and looked after us well. Only then we realized military officers are loving and compassionate people.

Similar was the experience at all the relief camps, although some people felt that it was not like home. At home, participants could work when they wanted to work and sleep when they want to sleep, whereas at the camp, they had to follow a strict routine. Almost all the participants felt the need to get back to their own home at the earliest as soon as possible. The relief camps were closed approximately 3 weeks after the tsunami. Because all my participants had lost their houses, they had to live in a temporary shelter for a minimum of 6 months to a maximum 2 years. All the participants had a very

negative experience at the temporary shelters. These shelters were constructed to house people temporarily. However, because the government and other nonprofit organizations did not keep their promise of “housing for all tsunami victims,” people are still living in shelters. One of the female participants I interviewed has been living in a shelter for 2 years. She described her shelter experience:

We were told, “You will have to live here only for 6 months. Within 6 months we will provide housing for all. We don’t have house even after 2 years! This place was constructed with 6 months insurance. It’s two years now. When it rains, rust from these tin sheets fall in boiled water, rice, and rice water. Now, if you ask me for a glass of water, I can give only water with rust. It’s leaking everywhere. When it pours, we have to keep buckets everywhere inside to keep this becoming wet. If it’s hot outside, you can’t sit inside for more than 10 minutes....It’s suffocating. Suffocating means suffocating till death. When it rains, we die by drinking rain water, when it’s scorching weather, we die out of heat; at night it’s mosquitoes...I am fed up with my life in here

Another male participant described his one year in temporary shelter as follows:

I was in the shelter for 1 year. There is only just one room. Narrow room made of tin sheet. It heats up during summer. It was like living in a federal prison. We lived there for 1 year. Government gave us just 1000 rupees every month and that too irregularly.

There were six families still housed in temporary shelters at the time of my interviews with them. It is interesting to note that their shelter experience made them engage in one or more social action strategies aimed at alleviating their sufferings. For instance, when a team of civil servants visited the shelter, these families made them sit inside the shelter for almost half an hour. They made the district collector and minister stay inside and asked them how they felt. In addition, during the second anniversary of the tsunami, on December 26, 2006, all these families, including the families of the deceased, staged a non-violent protest against the government and other nonprofit

organizations to bring their attention to the economic, social, and housing needs of tsunami survivors.

### *Subjective Experience During Recovery*

Recovery was a long process for many of the participants. Most of the participants have still not experienced “full” recovery from the debilitating effects of tsunami. For many of them, the 2 years after the tsunami represented a period of intense suffering, although some of the participants regarded the tsunami as *Mahalakshmi* (the Hindu goddess of prosperity). For the former group, the loss of their family member and the resulting trauma exceeded their coping levels and capacities; these participants believed the lost lives could never be compensated for. They felt that they had been persecuted and ridiculed by the government and public in the name of the tsunami. For the latter group, the tsunami brought them prosperity, such as housing, money, property, and business. The themes and descriptions that follow (see Table 14) illustrate the recovery process as experienced by my study participants.

Table 14

### *Subjective Experience During Recovery Process*

Subjective Experience
1. Change in attitude toward the sea
2. Feeling “tensed”
3. Recovery strategies employed
4. Positive change and growth
5. Relocation experience

*Change in attitude toward the sea.* The fisherman community is totally dependent on the sea for its survival. Moreover, these people are used to cyclones, floods, storm surges, high tide, and loss of life when fishing. However, none of these extreme events had ever disrupted their life as much as the tsunami had. All the participants reported that they had not seen anything like this in their entire lifetime. For all of them, the sea had been their mother prior to the tsunami. As the mother looks after her children, the sea would look after the fisherman community. This unshakeable belief about Mother Sea is altered now. They no longer believe that the sea is secure and safe. Because this disaster occurred unexpectedly, they are afraid that a tsunami like this can happen anytime in the future. One female participant who lost her child reported about her change in attitude toward the sea:

I still feel tense at heart. Why this happened to me? We used to tell, “Mother Sea will not deceive us.” We believed that. We are still depressed...Mother Sea did this to her children living in the seashore. I don’t feel like looking at the sea or going to the sea even now. We still feel...not fear...kind of detest...the thought that we lived here for these many years and this happened to us...its disheartening.

The male participants were concerned about the safety of the place. One of the participants described the danger inherent in living in a place like this:

It’s only 50 meters with the sea and the lake. If we live within this 50 meters and anything like this happen, are we safe? All are concerned about the security of life. For people like us, we live here just because we had to live here. If we were financially well off, we would have moved to some other place.

Participants reported that they witnessed a sea resource crunch more than at anytime before. Based on their 2 years of post-tsunami fishing experience, they think they can no longer survive with the “catch” they are getting. Because of this, many

fisherman families are in severe debt. Because they do not have the skills or education to practice an alternative vocation, they continue living in this growing cycle of debt and poverty.

*Feeling “tensed.”* In the interview with my study participants, most of the participants reported that they were feeling somewhat “tensed,” even 2 years after the tsunami. Because the interview was in Malayalam (native language), I asked them to clarify what they meant by feeling tensed. Their response indicates that feeling tensed was a bio-psychosocial situation reflecting the deleterious impact that the tsunami had on their bio-psychosocial life. Because of this tensed state, they were no longer able to function optimally in their biological, psychological, and social life. One participant reported what she meant by feeling tensed:

Now, I cannot do any work. After this tsunami, my body is like totally crumbled...there is no obvious disability...but, I am feeling tired always....I lost my kid, I am in this condition, my breadwinner husband is disabled and is in bed...and in pain. I am feeling tensed always.

It was with the support of nonprofit workers, volunteers, and community-level workers that these participants managed to deal with their anxieties and stresses. Supportive counseling provided by community-level workers was very much appreciated by the study participants. These community-level workers spent time with their clients and provided them with emotional support and sometimes even made referrals to appropriate agencies for material or financial aid.

*Recovery strategies employed.* Although initially, many of the participants were not in a position to come to terms with their psychosocial loss, at a later stage, the majority of them were able to successfully deal with their losses by employing a wide

array of recovery strategies. These diverse recovery strategies, in their descending order of prevalence in the narrative, include (a) believing in God, (b) using social comparison, (c) setting priorities for the present and future, (d) making one's voice and fellow survivors' voices heard, and (e) finding meaning in the loss. The following section describes each of these subthemes in detail.

- *Believing in God.* In any culture, religion or God plays a key role in influencing one's response to a traumatic event. In the case of Alappad, the majority of people were either Hindu or Christian. Although the extent and nature of their religious belief before and after the tsunami varied, for most, religion still played a significant role in helping them cope better with the crisis. One male participant reported the spiritual nature of the people in Alappad village in the following description:

This place is a believers' place. In this place, even if one says he is a hard-core communist, even before going for a party meeting, he would first take bath in a pond, go to the nearest temple, worship God and then, only, attend the meeting. This place is such a place. They believe in God. Belief means immoderate belief!

This immense faith in God helped many of the participants deal with the aftermath of the tsunami. One female participant described how belief in God helped her deal with her trauma:

I am having memory problems now. Severe memory problems after the tsunami. I was very tensed. No other woman would have survived, if they were in my position. In all these circumstances, god has given me the strength to withstand the storms...with God's strength, I am what I am now.



However, there was one exception. One of the participants I interviewed, a Hindu, was a firm believer in God before the tsunami. She lost her only two children in the tsunami. She described to me her current attitude towards God and religion in the following quote:

Me, my kids, and family believed equally in the gods of every religion. During Christmas it is my kids who make the crib first. I encouraged them to do that. Similarly, we loved our brothers...our neighbors...we never had any problems with anyone. Then I believe, since I believed in God, without God's knowledge nothing would happen. I lost my precious two kids. God didn't even give me one of them back. I haven't been to any temple since then... The gods I believed in, the gods my children believed in, didn't help us then.

- *Using social comparison.* In all eight narratives, my study participants compared themselves with other survivors. They compared themselves with other well-off survivors as well as with other not-so-well-off survivors. I felt that the comparison with not-so-well-off survivors did work positively for the study participants. One of the participants who lost his child reported:

The real truth is now I have lost only one of my children. In my neighborhood, there are people who lost three of their kids. They are also living. This is the first point to understand our loss. This can help us withstand things. He lost three. We have lost only one. We have at least one more. Now, we have the option to raise him and live. This mental state helped me get control over my life.

In contrast, some of the participants engaged in negative comparisons with their fellow survivors. This was especially true when it came to relief and compensation from government and other agencies. One participant described the "injustice" involved in relief distribution:

I lost my nets and fishing crafts. We were in the camp. We never came back to search for the lost items. We were in such emotional state. This happened to my friends too. What actually happened was, the real tsunami victims didn't get any of these benefits, and the ones who didn't lose anything received huge relief aid. Government gave 2 lakhs rupees for the ones who lost a family member. I got only 2 lakh rupees. But, there are people here who received, 5, 8, and 10 lakhs. They didn't lose anything. They are undeserving.

- *Setting priorities for the present and future.* Setting priorities and goals to be accomplished in the future helped many of the participants in their recovery process. Most of the participants, instead of worrying about their loss in the past, decided to keep themselves focused on certain set goals and objectives. It should be noted that some of these goals were related to their own families, their neighbors, and others who had been through situations such as theirs. One male participant described his present and future goals, and plans to accomplish these goals as follows:

I also started a men's self-help group. It's going to be really hard to survive just from sea... even for the coming generation. With self-help groups, we can get aid from panchayath and start some income generating programs... a means without depending on sea.

One of the female participants had endured a series of losses prior to and during the tsunami. Her husband died of cancer 5 years ago. She was the only caregiver for him when he was undergoing treatment. She worked as a daily laborer in a cashew factory and supported him. The only support she received was from her father. Her father was a fisherman. One year before the tsunami, her father died in the sea. She did not even get to see his dead body. In the tsunami, she lost her only home and all the utensils and furniture. She was thoroughly

devastated by her losses. Despite this, she set clear goals for herself and for her two children in regard to their education and development. She related her plans for her children as follows:

Sahayi [name of a nonprofit organization] built a shed for me. They provided me with a kitchen set. I started this job [she started a home-based restaurant]....My children, they are good at studies. Son is in 10<sup>th</sup>, daughter in her undergraduate program. They want to study. Then, my goal is to help them study...I don't care about my health condition....Their study. Help them reach a position in future....I am willing to sacrifice anything just for that.

- *Making one's voice and other fellow survivors' voices heard.* Making one's voice and other fellow survivors' voices heard was crucial for successful recovery following the disaster. This advocacy strategy was particularly helpful in improving conditions at the shelters and availing medical assistance, housing, other relief aid, and therapeutic services for oneself and others who were in need of such services. Although both men and women participants engaged in such social action strategies, it was primarily the men who were involved in these actions. One of the male participants reported his involvement in such strategies:

It was the non-profit organizations that gave us food, cloth, and shelter for the first one-and-a-half years. Then, we joined them. I am one of them who visited others in similar conditions and shared their things and sorrows. I advocated on their behalf. They got 10,000, 50,000 and 60,000 rupees because of me. I wasn't concerned about myself. I intelligently helped others get it.

- *Finding meaning in loss.* Finding meaning in one's traumatic experiences, rather than being taken over by the adverse circumstances is key to adapting to post-trauma changes. Participants who grasped the significance of their loss were better able to adapt to the changed situation and were compassionate toward

others, whereas participants who failed to find meaning or were still searching for meaning in their loss were in a more troubled emotional state than others. One of the female participants described how she came to understand her loss:

God has given me strength to work. In this situation, if I too become a sick patient, would this family be like this? It won't be. If both of us were sick, what would we do? In that [tsunami] situation, I escaped without even touched by it. I know that was God's plan. It was his plan to look after my ailing, disabled husband. He was in such a critical condition, then.

Whereas another female participant who lost her husband was still searching for meaning in the loss she had experienced by tsunami. She had suicidal ideation, mood swings, and was ruminating over her loss.

I am still worried about my husband's loss. That is the only thought I am having. When I see my children doing something, when I see other children with their father, I think about him. We have no one. I lost my husband at my very young age. Why this happened? Why this happened to me?

Most of the participants expressed their belief that the loss they experienced was because of fate and/or God's will. They found asylum in such beliefs, which helped them navigate successfully through the crisis.

*Positive change and growth.* Dealing with trauma sometimes results in positive change and growth among trauma survivors. Evidence shows that the extent of this growth depends on the severity of the stressors. Almost all the participants I interviewed expressed some kind of growth in their psychological, social, occupational, and spiritual life. Many participants reported that they had taken on new challenges in their lives, such as taking up a new career, forming an income-generating program, and starting a business. Almost all of them reported feeling more compassionate toward others after

having experienced the trauma. Others reported increased confidence and competency in facing future challenges.

- *Compassion for others.* One of the most prevalent positive changes participants reported having experienced was increased compassion for others. One female participant, who was running the recreation center, described her compassion for others who might experience a future disaster, such the tsunami, as follows:

When I was in the relief camps, I thought I have seen this kind of stuff only in TVs and newspapers. Now, I am also a victim of it. This concerns me. This should never happen to anyone at anytime in future. Now, I am reading about this Mullaperiyar dam [a dam in Kerala which has been found to have structural deficiencies and leaks]. I thought, Oh my God! They [government] will address this only after the disaster has occurred. They discuss this they discuss that...but are not solving the problem. Then, my sorrow is the people over there would have to suffer the way we have suffered...This has become a serious concern for me now. I feel for them, because I have experienced this. I pray God this should not happen to them

Another female participant who had had a series of losses prior to and during the tsunami reported her future plans for others who had been through similar situations. She had lost her home and all her assets in the tsunami.

I have a goal now. Because there are others who have sorrows, who are suffering from disasters like this and the way I have suffered. I want to help them out. Build homes for people who don't have homes. Then, other difficulties in life. I want to help them in such difficulties the way I can. That's what I tell my children too. When we are well off, help others who have sorrows as much as we can. I make my son do that now. When someone who lost their kid come and ask for help, I send my son to help them out. I want to do things like that.

- *Taking up new challenges.* The emergence of new possibilities and avenues for growth follows a disaster. Some of these new opportunities result from an increase in post-disaster community development programs; reconstruction

works, particularly housing; and new career opportunities available at the relocated places. One male participant, who lost two of his children, as well as housing and property, took up a new career after being relocated to a place far from the sea.

After being relocated to this place, several nonprofit organizations came to me asked whether I need boats and nets. I refused. Instead, I asked for a bicycle and a box. I decided to sell fish, instead of going to fishing, because going to sea was hard from this place. It is far from here. They gave me 6 bicycles and box. They said I could rent it out and make more money. I am doing that now...selling fish and renting bicycles.

Three female participants reported they had taken up new careers following the tsunami. One of them initially volunteered to be in charge of a recreation center for children. Later, the nonprofit organization that set up the recreation center started paying her for her work. Another woman started a home-based restaurant with the relief aid that she got from government and nonprofit organizations. Another woman started a stationary shop in the relocated place, although she was finding it hard to survive just from that income.

- *Increased self-confidence.* Participants reported having increased confidence in themselves after being challenged by the tsunami disaster. All the male participants reported that this increased competence may be attributed to their profession (fishing) as well as to the tsunami. They felt that if they could endure 10 to 15 years of fishing, and now this tsunami, then they could face anything in the future. One male participant who lost his two children and father, described how confident he now was in facing future adversities:

Now, this tsunami... I lost two children and my father. They were my everything. Tsunami took them away right in front of my eyes. I tried to save my children, but I couldn't. But, I saved my wife's life after a long struggle. I am confident I could face any challenges in future.

*Relocation experience.* Even though the housing programs, particularly in the relocated area during the post-tsunami reconstruction phase, had a significant positive effect on asset building and home ownership among the tsunami survivors, the social impact of relocation on survivors required much more deliberation. In Alappad, the government promised several "homeless" families new homes and land at a place distant from the sea and away from their kith and kin. They were not made aware that this could result in their having to adapt to an entirely new neighborhood, give up or experience difficulties in continuing their traditional vocation, rupture their social network, experience discrimination from the local people in the relocated area, and live in precarious conditions with no water or transportation services. One female participant expressed her experience in the relocated village.

We came here, built a new house. Here there is no bus service. If we want to go to our old place, if we want to go to the town, if we want to go to the highway to catch the bus, we have to pay Rs. 25 for the rickshaw. To go to the old place it will be 50 rupees! No bus service, we won't be knowing whatever things that happen in our old place. Moreover, here there is no unity...to organize a *kudumbashree* or to form a *prayer group*...no one is willing. Everyone prefers to stay inside their homes.

In the relocated places, the local community was not as welcoming as they should have been towards the relocated people. Members of the community were fearful that integration of the fishermen community into the local culture might water down their "main-stream" culture. This was one serious issue raised by the participants.

*Resources at the Individual, Family, and Community Level That Helped Participants Survive the Tsunami*

Table 15 describes the various resources at the individual, family, and community level that helped the participants deal with the tsunami disaster. The resources at the personal level included a sense of control and spirituality. Resources at the family level included mutual support among the family members as well as support from extended families. Community-level resources included the emergency response from the hospitals, support from local and neighboring villagers, support from non-profit organizations, support from religious organizations, mental health services at the grass root level, and self-help groups. In the next section I describe each sub-theme, substantiated by thick descriptions culled from the raw data.

Table 15

*Resources at the Personal, Family, and Community Level*

Personal Resources
1. A sense of competence
2. Spirituality
Family Resources
1. Mutual family support
2. Support from extended families
Community Resources
1. Support from local and neighboring villagers
2. Support from non-profit and religious organizations
3. Mental health services at the grass root level
4. Self-Help Groups



*Personal resources.* The resources at the personal level included a sense of competence and spirituality.

- *A sense of competence.* All the male participants reported that it was a sense of competence that helped them survive the tsunami catastrophe. They explained the inherent dangers involved in the fishing vocation. There are many risks associated with fishing. Every year at least 10 to 20 fishermen die in Alappad village because of storms, wild winds, or cyclones. Many of them use *Kattamarams* (traditional boats) to go into the deep sea without protective gear. Nobody can predict whether they would return safely. It is this highly unpredictable nature of fishing and their ability to deal with this unpredictability that participants felt made them able to come out of the tsunami aftermath relatively unscathed.

Others say my mind is as solid as a rock. Because, fishing is my livelihood. This field has risks associated with it. Accidents can happen anytime. Everyday I cannot guarantee that I would return from sea alive. That life...it has made me strong... When tsunami struck and I lost everything, I thought what happened has happened, now let us focus on what is next.

- *Spirituality.* All the participants, male and female, were highly spiritual prior to the tsunami. Although, some of the participants reported a fleeting decrease in spirituality (decreased belief in God) immediately after the tsunami, all the participants, except one, felt that it was this strong religious belief that helped them deal with the negative impacts of the tsunami disaster. The father of one of the female participants died sometime not long before the tsunami. Then, in the tsunami, she lost her husband, and she and her daughter were severely injured.

She explained the extent of her spirituality before and after the tsunami as follows:

I have immense faith in God. Before, I had more faith...If I have 100 rupees, I give 15 to 50 rupees to temple. I observed every fast. There was slight decrease, then [immediately after the tsunami]. Because everyday I prayed for my husband's long-life. God didn't grant me that. Now, again, every morning I started going to God [temple], weep in front of her. I tell her all my sorrows. When I cry in front of her, I feel almost half relieved.

*Family resources.* Resources at the family level included mutual support among the family members as well as support from extended families.

- *Mutual family support.* Support from their families served as a great source of support for the participants in withstanding the storms of the tsunami. After the tsunami, even though every member in the family was affected, the less affected took care of the remaining other members. They supported each other emotionally at the peak of the crisis. In one family, the participant's son was away staying with their extended families. She lost her husband, and was severely injured. Her son, who had just turned 17 at the time of the interview, took care of them at the relief camps and in their newly build home. She related how her son had provided emotional support for her throughout those next 2 years:

I wasn't willing to go back to my original place. I didn't have the strength to see that place. That's where I lost my husband. Then the relief agencies said, they will build a house for me in the east. When I agreed, my son said, "This is my *achan's* [dad's] property. I will not go anywhere from here." He told me, "Amma [mother], we will stay here, our *achan's* spirit is here. No matter what, we should stay here." It's only because of that, we are staying here. He [son] was very supportive and strong.

- *Support from extended family.* Although there were exceptions, extended families also offered immense support to most of the participants in surviving the tragedy. Extended families pitched in immediately to conduct funerals for their deceased relatives as per their religious beliefs and practices, provided support for their injured family members, stayed with them at the hospital, provided day care for kids when parents were admitted to the hospital, visited the survivors regularly at the relief camps and/or temporary shelters, and provided financial and other material help when needed. One male participant described how his and his wife's extended family jumped in when his wife plunged into depression after losing their two children.

My mother's family was emotionally distant from us. My father's relatives and wife's relatives, they came here immediately...they took care of my wife. They stayed with her when she underwent re-canalization. They took good care of us with the best of their abilities. They helped us financially too.

*Community resources.* Community-level resources included the support from local and neighboring villagers, support from non-profit organizations, support from religious organizations, mental health services at the grass root level, and self-help groups.

- *Support from local and neighboring villagers.* Typical of any disaster, in Alappad, it was the local and neighboring villagers who immediately rushed to the scene and evacuated the residents to safe places, took the injured to hospitals, rescued the survivors, ran the relief camps and community kitchens, and conducted mass funerals of the deceased. This was very much evident in Alappad, where there

was not any organized evacuation, rescue, and relief system. It is their unconditional time and effort that reduced the casualties of the tsunami to a great extent. One female participant described how she was rescued by the neighboring villagers after she had been swept away by the tsunami waves for over 2 miles:

When I opened my eyes, I was lying down on sand. Lying down alone. There wasn't any *saree* [a traditional Indian dress that women wear], just skirt and blouse....When I looked up, I saw two gentlemen running towards me from far. When they came close to me, they knew I am alive. They hold me by hand and asked, "Can you walk?" I couldn't walk. I was kind of paralyzed. They picked me up....got me in the boat and landed me safely in a home in the east. They gave me a *saree* and a skirt...and took me to the hospital.

- *Support from nonprofit and religious organizations.* Nonprofit organizations have a key role in enhancing post-disaster adjustment. They have enormous resources and experienced staff in providing disaster services. Although many of the participants praised the work of nonprofit organizations during the initial rescue and relief phase, many of them were extremely critical of the services of these organizations in the recovery phase, specifically regarding the way they provided housing and relief aid as well as the way they phased out their services. One participant in the relocated village explained the extent of help she received from nonprofit and religious organizations:

QSS [a Christian nonprofit organization] gave us 40,000 rupees. We made this extension [the room where she runs her stationary shop] using that money. Help Age India also gave us some money. That we used for my husband's treatment. QSS also gave us 3 months rent. They also gave us household utensils, some clothes, though old, and some furniture. Because of their help, we didn't have to buy anything other than two beds.

Nonprofit organizations trained local volunteers in providing basic mental health services. They created recreation centers for children, women, and elderly; took the villagers on picnics; provided them with emergency kits; trained youth in providing emergency services; ran a community kitchen for almost 3 weeks following the tsunami; constructed homes for the displaced; organized resources and places for funerals; and provided material and financial aid for the needy.

Two years after the tsunami, when I was there doing my data collection, one locally based religious organization opened a huge bridge to the public that linked the Alappad village with the mainland. Now there are two evacuation routes by land if an emergency occurs in Alappad.

- *Mental health services at the grassroots level.* As I mentioned before, several nonprofit organizations and social work institutions jointly recruited and trained local volunteers, particularly women and youth, to provide basic services to the disaster-affected community. Although they were trained according to a medical model, the services provided by these grassroots-level workers were greatly appreciated by all the study participants. All the participants reported that they were what they were now just because of the time, effort, and advice from the grassroots-level community volunteers. One female participant explained how the community-level worker helped her overcome her psychological distress:

All my support system was lost. My house was destroyed. I started asking myself, "Where would this take us? How would I handle this?" Nobody was capable of consoling the other. That was the situation....I thought who I have to lean on... I was mentally devastated. Then, this kid, Rajani, came. Very nice kid. Very nice means extremely nice. That was that kid. She helped me grow this

far. I am severely indebted to her....I cannot forget her in my lifetime.

Very similar was the experience of several other participants. Even male participants reported that sharing and counseling with the community-level workers really helped them recover quickly.

- *Self-help groups.* A majority of the participants, particularly women, were members of a self-help group. As I mentioned before, even some of the men, after the tsunami, decided to form a self-help group to start up some income-generating programs in Alappad village. These self-help groups become avenues for education, training, and personal and community empowerment. One of the male participants, who was an active member of the self-help group, described how the formation of the self-help group benefited the community:

A couple days before KRD [a locally based manpower training agency] provided training for us. Their goal was to train us in practicing alternative vocations....They asked our interests. We said, "Teach our new generation something that is beneficial for them...like computer...JCB operation...some specialty education and training." They accepted our request. With the district collector as the chair, we formed a committee. They have accepted 15 applications from Alappad panchayath. They agreed that within 3 months, they will do the needful.

In addition, women self-help groups empowered women personally, financially, socially, and politically. Self-help groups also strengthened women's role in the family and society. Now many women know how to go to a bank and open an account, how to speak to an officer, and how to manage accounts and keep ledgers. They also participated in massive social action programs during the

tsunami anniversary to bring their issues to the public and the government. Such things were unheard of in Alappad village prior to the tsunami.

### *Obstacles on the Road to Recovery*

For many of the participants, recovery from the tsunami disaster was a long and tedious process. Although some of the participants were still struggling to grasp the meaning of their loss at the time of the interview, for the rest, it took almost 1½ to 2 years to get back to routine life. In Table 16, I present some of the major obstacles that were hindering the participants' psychological, social, and economic recovery. In the section following, I provide a detailed description of the major themes, with evidence provided from the participants' narratives.

Table 16

### *Obstacles to Recovery*

#### Obstacles on the Road to Recovery

1. Economic Hardships
  - a. Financial hardships associated with caring for a disabled or injured family member
  - b. Skill deficits and lack of employment opportunities
2. Accessing Government Aid/Resources
  - a. Bureaucratic delay
  - b. Fraudulent use of relief and housing aid
3. Cultural Issues to Recovery
  - a. Destruction of cultural heritage
  - b. Neglect of cultural norms while providing relief

*Economic hardships.* For the participants, economic hardships resulted from the financial hardships associated with caring for a disabled or injured family member and lack of skills and employment opportunities.

- *Financial hardships associated with caring for a disabled or injured family member.* The economic impact of the tsunami on the fisherman community of Alappad was very severe and devastating. This community was impacted severely by the disaster, because they had the fewest resources and literally no insurance; whatever resources its people had, such as boats, nets, and other gear, were either lost or destroyed by the disaster. Moreover, the hardships associated with caring for the severely injured or disabled family member added to their financial woes. Most of the participants reported that the tsunami disaster exacerbated the already existing disease conditions of themselves or their family members. With fishing no longer viable and no other opportunities for employment, participants felt it extremely difficult to make ends meet after the tsunami. One female participant related how she struggled to take care of her severely disabled husband with the limited resources she had:

We stayed at the hospital for 3 months...his pelvis bones were fractured...they inserted steel rods to make it work. He also had urethral obstruction which required a surgery. We took him to another hospital. We stayed there for another 4 months...we didn't have house. No house, need to buy medicine, had to take insulin. Government gave us 35,000 rupees. It wasn't enough to pay the surgery cost...we spent money to go everywhere...to collector, to minister...they said they will do something but we didn't get anything...He cannot work, I was in the hospital, son studying...I felt helpless.



Moreover, many of the participants had outstanding loans on the boats and other gear destroyed by the tsunami. Many a time, to repay the loans, they depended on money lenders whose interest rates were extremely high compared to those of an average bank, making them financially more vulnerable.

- *Skill deficits and lack of employment opportunities.* Most of the participants felt they lacked the education and skills that were required to take up any vocation other than fishing. In the relocated community, where people encountered difficulty in pursuing their traditional vocation, due either to the viability of continuing it or limited accessibility to the resources, this skill deficit adversely affected the economic condition of the individual, family, and whole community. One of the female participants, who lost her husband in the tsunami, reported how precarious and uncertain her future was after the tsunami.

One nonprofit organization gave me 10,000 rupees, few sacks of rice, and stationeries...they asked me to run a stationary shop. I sold them to people. They took it on credit...said, "We will pay cash later." Then, I didn't have skills to do business. If I ask the money back, they will say I am this, I am that. So I didn't ask. It was a flop...Now I think, if I had a job, which I could do it from home...a sewing machine or a cow...that would have ameliorated much of my sufferings...economic and others. Now, I have to pay for my son's education...I can't afford it. My girl's marriage is almost fixed...I have to give her dowry...I don't know how I am going to handle all of these now.

Relocation hit the women more adversely than any other group in this village, because it dismantled several well-established self-help groups and micro-credit systems that had existed in the pre-disaster coastal community; the primary

beneficiaries of these programs were women. One woman participant explained how difficult it was for her to form a self-help group in the relocated village:

Eight of us together formed a unit [self-help group]. Seven of us are from this compound. Only one from outside. Then, we took a loan from the co-operative bank for 10,000 rupees. Just to start some business. But, others don't have the guts to do it. We got money. Everyone is doing their stuff with the money. Nobody wants to move as a unit or do something collectively. With the money they have got, everyone did their own stuff. Everyone is paying money back to the bank. But, to move as a unit, none of us are specialized in any job. That's the most difficult part of it.

Participants felt that they needed more input in this area in order to develop sustainable programs and subsequently deal with their hardships.

*Accessing government aid and resources.* Bureaucratic delay and fraudulent use of relief aid and compensation were the two major obstacles in accessing government aid and resources.

- *Bureaucratic delay.* All the participants felt that there was a bureaucratic delay in accessing disaster emergency services and relief aid from the government. The primary reason for the delay was there was not any coordination among national and international relief agencies and federal, state, and local governments. Even the civil servants were insensitive to the needs of survivors during the recovery phase. One of the participants living in temporary shelter reported her experience in accessing compensation from government:

Six of us go together. There are 6 of us who are in this situation [no home]. We have properties on the east side. Then, Collector told that housing will be provided to people who have properties in the east. Three months after the tsunami, we filed an application at the *taluk* [local government office]. They [*taluk* officers] kept that application there for 7 months. Seventh month they sent the

application to Kollam [district government office]. They didn't consider our application. They kept it there for a while. Meanwhile, everyone who applied got their house. We thought it will come today it will come tomorrow. For 2 years, our application was kept in files there [Kollam]. Finally we went to the collector. He gave us a report. We took that report to the nonprofit who constructed houses for everyone. The nonprofit send us back to the collector... by then, they also started having problems with the government.

All the participants reported that they were the scapegoats of the fight between government and nonprofit organizations. Nonprofit organizations and religious organizations had their own agenda for helping people. The ruling communist party had their own hidden agendas. Because of the ongoing fight between the government and nonprofit organizations, many survivors did not receive the timely assistance and support that they very much needed during the recovery phase.

- *Fraudulent use of relief aid and compensation.* As I discussed above, many deserving survivors were still living in the temporary shelters. They did not get their housing aid. However there were several other households who had not experienced any housing damage or other severe loss who got two and even more houses, just because they acted immediately, using their political clout.

Participants who did not have anyone to speak for them were ignored and neglected in the recovery phase. One participant, who did volunteer work with nonprofits, described the fraudulent use relief aid that he observed:

Here there are people, who didn't lose anything in tsunami who got several lakhs of rupees. They are all undeserving people because they didn't lose anything. They, then, said, "We lost this, we lost that," immediately applied for relief aid, and the government,

without much in-depth inquiry, immediately passed their application. Some of them even got three, four houses in their names. We were in the shelters. We didn't know what we lost. Nobody filed application for us....We didn't get anything except the 2 lakh compensation for the dead family member.

*Cultural issues to recovery.* The destruction of cultural heritage and neglecting cultural norms while providing relief services impeded the disaster recovery process.

- *Destruction of cultural heritage.* The destruction of any cultural heritage has serious implications for post-disaster recovery. As I mentioned before, the people in Alappad village were highly religious. It is their belief in their gods and goddesses that helped them pull together after the tsunami. However, all the participants except one Christian participant reported that neither the nonprofit organizations nor the government did anything to rebuild the major temple in Alappad, which had been completely destroyed by the tsunami. One participant explained how significant temple was for the people of Alappad:

The real truth is...the one who lost everything is this temple. This temple, this is the worship place for 10 to 600 families. No organizations, no government had given any benefits to this temple. Now, we collect money from each family. Every family have to give 2000 rupees. If there is an employed member in the family, that family gives one month salary of that person. Even after collecting money, the temple still remains unfinished. The next generation will have to pay back the debt of constructing this temple by working hard. The temple authorities asked government for relief. They didn't give anything. This is an evidence for their neglect.

In addition to the temple, several other local neighborhood assemblies were destroyed by the tsunami. It is the neighborhood assemblies that usually take care of the emergency needs of the families that fall under their jurisdiction.

Participants felt that government and other organizations had done nothing to reorganize those neighborhood assemblies for the well-being of the community.

- *Neglecting cultural norms while providing relief.* Although relief, in terms of clothes and food, was pouring in immediately after the tsunami, most of those relief supplies were not congruent with the cultural norms of the afflicted community. Many female participants felt that the dress materials that they received were not culturally appropriate; and because of this, they had to wait until their relatives brought them clothes that matched their cultural norms. One female participant related her difficulty in wearing Western style clothes while in the relief camp:

For 7 days, me and my girl wore the same dress that we wearing when tsunami hit. We didn't have any other dress. So many people brought dress for us, that we can't wear. It didn't match our need. My girl wears only skirt and blouse. When they brought other dresses, she didn't wear it. My children wore the same dress for 7 days without any other dress to change. There was nothing that fits my son, nothing that fits my daughter, and no *saree* or blouse for me.

#### *Recommendations to Improve Disaster Services*

*Better preparedness.* Table 17 includes the recommendations provided by the participants to improve the disaster services in the Alappad village. All the participants felt that they needed to be better prepared to face another disaster. They reported that if they had been informed about the impending danger, they could have saved their lost family members, relatives, or neighbors and minimized disability and property damage. They expressed the need for a warning signal as well as preventive efforts to mitigate the

impact of any such disaster. One male participant suggested how the government could mitigate the impact of any future catastrophe:

The life here at Alappad is highly insecure. Just like the life of a military officer...no safety. What government can do is, the people who live here need to be moved to a safe place in a way that is acceptable for the people. Then, in order to minimize the impact of another tsunami, they should construct sea walls with *pulimuttu* (a part of the sea wall projecting into the deep sea). This could be preventative, can reduce the impact of tsunami. If they don't construct a sea wall, in future, this village will not exist.

Table 17

*Recommendations for Improving Disaster Services*

Recommendations
<ol style="list-style-type: none"><li>1. Preparedness</li><li>2. Coordinated service delivery system</li></ol>

*Coordinated disaster service delivery system.* Most of the participants felt that it was because of the lack of a systematic and organized disaster relief and response system that so many people died in the tsunami. Had there been coordination among emergency services, hospitals, police, government, various organizations, and local citizens much of the tragedy could have been averted. In the words of one participant,

Next time a disaster occurs...we should rectify past mistakes. Then, even if its collector, minister, whoever it is, they should come and directly observe who is affected by the tragedy, who has lost stuff. They should observe it directly and then only provide help...not just dump some things on someone and allowing them to provide unrestrained help only for their cliques...that practice need to be curbed. There should be a coordinated service between people, government, and agencies. Then only we can identify and help the real, deserving people.

Many participants recommended that government and relief agencies should involve the neighborhood assemblies actively in the recovery and rehabilitation process. Because they are the ones who are close to and accessible to the community and are truly representative of the local people, they should be given an active role in the relief distribution, housing aid, and other post-disaster development efforts.

### *The Composite Textural-Structural Synthesis*

The final step of the modified form of Van Kaam's method of phenomenological analysis requires the researcher to provide a composite synthesis of the meanings, essences, and experiences of the study participants. Moustakas (1994) refers to this process as developing a composite "textural-structural" synthesis of the experiences of the participants. This involves describing the nature of *what* is experienced (textural description) and *how* the phenomenon is experienced (structural description) by the individual. In the following section, I provide the textural-structural synthesis of the experience of my 8 study participants.

The phenomenon of surviving the tsunami was characterized by three distinctive phases of survival: the subjective experience when they encountered the killer waves; the subjective experience in the rescue and relief phase; and the subjective experience during the recovery phase. In all these phases, participants' experiences were unique and revealing.

The subjective experience of surviving the tsunami was a long, intense, and treacherous battle for all my study participants. Unprepared to face such a disaster, participants were left to fend for themselves, family members, and valuable possessions

that had special meanings for them when the killer waves lashed at their coastal village. Once they knew they were alone in their battle for survival, the participants, who were committed and dedicated, put everything into this battle to protect their family, fellow survivors, and their valuable assets. During this process, participants discovered their own inner strengths; personal, familial, and community resources; and the need for future preparedness.

Survivors, even at the deepest levels their psyche, were aware that they were fortunate to have a second chance to live their life fully. The “terror” of encountering the near “death” experience and helplessly watching the killer waves take away their dear ones was, at the same time, deeply painful as well as illuminating for my participants. Participants found themselves being “tense,” “helpless” and “hopeless.” This experience became deeply painful, because they did not know why this had happened to them, despite their being the children of “Mother Sea.” It was illuminating because they knew there was an “inner strength” in them that assisted them in winning their battle against the tsunami waves. My participants felt that this inner strength was an outcome of their relationship with the god and the goddesses they believed in, trusted, and worshipped during their whole life. In spite of their precarious situation and with zero assistance from “others,” they mobilized all the resources they had to rebuild their temple and its structures, the symbols of their god, as a token of their appreciation to their god for saving them, their village, and averting a much bigger disaster.

The life at the relief camps and temporary shelters evoked both positive and negative feelings in survivors. The experience was positive because participants felt



“protected” in the relief camps. They realized there were “loving” and “compassionate” people out there who understood their “needs,” respected their “dignity,” and accepted them as “what they are.” The experience was negative because they did not feel it was like “being at home.” In the camps, they were forced to follow a “rigid routine,” they had to stand in line to have food, and had nothing to do other than listening to “fellow survivors” and “visitors.” They felt as if they were housed in a “federal prison.” They craved to get back to their “normal life.” In order to speed up their transition from shelter to home, they engaged in social action. Participants and their fellow survivors made the civil servants “live” in their shelter for sometime to make them feel what life was like inside the shelter, with the hope that this strategy would make civil servants more sensitive toward the “needs” and “rights” of survivors.

For all my study participants, recovery was a long process. For many of them, it took almost 2 years to “come to terms” with their losses, whereas some of them were still struggling to find the “meaning” in their loss. For all participants, the change and search process involved finding meaning in their suffering, believing in God, comparing oneself and one’s situation with others, and setting priorities for the present and future. During this reflective process, all the participants experienced an increase in “compassion” for fellow survivors and for others, who were in similar conditions. Participants began to extend a helping hand to other fellow survivors who were “left out” in the recovery process. They engaged in advocacy strategies and even gave up benefits, in order to make relief aid available to all deserving survivors.

Although the tsunami did upset the homeostasis of the family and the community in which they lived, participants took it as a challenge and transformed the challenge into opportunities and avenues for empowering themselves personally, socially, politically, and economically. Women took jobs outside their homes, such as running a restaurant, starting a stationary business, and becoming the supervisor of a recreation center. Men became members of self-help groups in an effort to find an alternative livelihood. Both men and women engaged in social action strategies to make their voices heard and shake the insensitive political system. Participants were hopeful about their future and had set short-term and long-term goals and priorities specifically centered on their children's education, career, and spiritual life.

Although all the participants still experienced psychological distress, for many of them, it was just a fleeting state of mind that they had learned to control. Some of them were still living in the past, had intermittent "flash" memories of the past traumatic event where they saw things or images that were reminiscent of the trauma, and had an ongoing feeling of "tension" and "tiredness," even after 2 years. As a beginning step in taking control over their lives, they started sharing their grief with community-level workers, volunteers, and extended family members. The real challenge that lies ahead of them is to find an answer to the question: "Why did this happen to me?"

Three of my study participants had to deal with the experience of relocation. Initially they were bewildered because they felt they were uprooted from their ancestral home, excluded from the privileges they had enjoyed during their life near the sea, and socially isolated at the new place. To combat social isolation and financial hardships

associated with relocation, all 3 participants began reaching out to the local community. Although the initial response was not promising, because the local people preferred to “stay at home,” they continued their effort to become integrated into the local community using several strategies, such as forming prayer groups, self-help groups, income-generating programs, and organizing people to address everyday life issues. In an effort to maintain their fisherman identity while simultaneously becoming integrated into the local community, all the participants traveled back and forth between their ancestral home and the relocated place. This gave them a sense of comfort and solace, which made the transition to the new place much easier.

All the participants felt they were touched positively by the assistance of community-level workers and relief agencies. Participants reported they were what they now were just because of the timely and unconditional emotional support provided by these community healers. By providing opportunities to participate in funerals, carry out the rituals for their deceased family member, and by organizing community prayer groups in order to remember the dead, nonprofit and religious organizations promoted culturally relevant healing practices.

Although, there was strong evidence of community cohesion and solidarity during the response and relief phase of the tsunami, towards the recovery phase, one could observe evidence of that cohesion and solidarity gradually fading away. During the later stages, participants were furious about the agencies that were discriminatory toward the “real” victims of the tsunami. Participants including women who lost their family members and did not have a home, staged non-violent protests during the second tsunami

anniversary to publicize the discriminatory practices of relief agencies and the government, although they did not receive much support from other fellow villagers. They felt they were the scapegoats of the conflict between an insensitive government and relief agencies with ulterior motives. Participants felt that by having a strong spiritual and personal strength, support from their own and extended families, assistance from disaster-relief agencies, and by engaging in social action strategies, one could successfully deal with the aftermath of a disaster. In addition, all the study participants suggested that the key to successful disaster recovery was to identify the real survivors with the help of local neighborhood associations and provide them with housing, as well as social, economic, and political opportunity.

## CHAPTER 5: DISCUSSION

This study used a concurrent mixed methods design to provide a better and in-depth understanding of the roles of individual, family, and community factors in helping the survivors cope with the tsunami experience and predicting their post-traumatic growth among adults who were affected by the tsunami of December 26, 2004. This study also sought to capture the subjective experiences of surviving the tsunami. Based on the findings from the quantitative and qualitative data analysis, this study added new empirical knowledge about the factors that contributed to post-traumatic growth among adult survivors of a disaster. In addition, this study revealed many recovery strategies employed by these survivors to adapt to the changed condition following a disaster.

In this final chapter, I first summarize the socio-demographic profile of the study sample, and then focus my discussion on the relationship between socio-demographic characteristics and post-traumatic growth and the factors at the individual, family, and community level that contributed to post-traumatic growth. Lastly, I describe the study implications as they pertain to social work practice, research, education, and policy.

### Socio-Demographic Profile of the Sample

A total of 301 participants were surveyed from the tsunami-affected villages in Alappad in India. In addition, in-depth qualitative interviews were conducted with eight tsunami survivors from the same villages.

The participants in this study included more females (53.8%) than males. This finding was largely consistent with the Kerala state population demographics but inconsistent with the national census data. According to the Census of India (2001), Kerala state has the highest female sex ratio, 1,038 females to 1,000 males, whereas for India as a whole the ratio is 933:1,000. Another reason for having more females in the sample could be due to the fact that the surveys were administered during the daytime when women were more available at home than men, who were more likely to be at work. In regard to education, 94% of the participants were literate, which is consistent with the state average (90.9%) and much higher than the national average (64.8%).

With regard to employment status, 43% of the participants were employed, which was consistent with the national average (39.1%). Compared to the state average (19%) and national average (2.3%), only 7.6% of the participants were Christian and the remaining 92% were Hindu. This was also true for the qualitative interview sample wherein 1 of the 8 participants was Hindu. This could be because Alappad, and particularly the fisherman community living in Alappad village, consisted of a Hindu-dominated population. The average family size (4.2) of the sample was lower than the national and state average (5.0) (Census of India, 2001) and higher than that which was found (3.7) in other studies (e.g., Khanna, Sudha, & Rajan, 2009). It was also interesting to note that 77% of the individuals interviewed for the quantitative survey were from nuclear families, 18% were from extended families, and 3% were from joint families which include multiple generations living in the family.

## The Extent and Nature of Post-Traumatic Growth

This study used the Post-traumatic Growth Inventory Scale to measure the extent and nature of post-traumatic growth across five dimensions: relating to others, new possibilities, personal strength, spirituality, and appreciation of life. Each dimension was measured by a subscale. Overall, I find that the participants of this study are similar to those in other studies on most dimensions, but they appeared to have a stronger connection with and compassion for others after experiencing the tsunami as well as a higher prevalence of spirituality than those in other studies.

Specifically, the mean score for each dimension and the total scale in the present study were as follows: relating to others ( $M = 24.8$ ); new possibilities ( $M = 10.47$ ); personal strength ( $M = 8.73$ ); spirituality ( $M = 5.36$ ); appreciation of life ( $M = 8.38$ ); and total scale ( $M = 57.76$ ). These results are largely similar to the findings from several previous studies in Western cultures (Jaarsma, Pool, Sanderman, & Ranchor, 2006; Linley, Andrews, & Joseph, 2007; Taku et al., 2008; Tedeschi & Calhoun, 1996) as well as in Eastern collectivistic cultures (Jang, 2005).

The participants in the present study appeared to have a stronger connection with and compassion for others after experiencing the tsunami in comparison to those in other studies, as indicated by their higher mean score on the subscale, relating to others. This result was congruent with the findings of my qualitative research, where all the participants felt an increased compassion for and desire to help others who are in similar situations. Similarly, compared to previous research, the mean score on the subscale, spiritual change, was also higher in my study (5.36) than in other studies. For example,

Linley et al. (2007) reported a spiritual change mean score of 2.29 and Jaarsma et al. (2006) reported a mean score of 2.55. This finding was also in line with the outcome of my qualitative research, which indicated the higher prevalence of spirituality and belief in God across my qualitative study sample.

### Factors Contributing to Post-Traumatic Growth

The main hypothesis of my study was that individual, family, and community factors would significantly contribute to post-traumatic growth among survivors of the tsunami. Based on the findings of the correlational analyses, three socio-demographic variables (employment status, religion, and gender), two individual level variables (locus of control and self-efficacy), four family level variables (family cohesion, family flexibility, family communication, and family type), and one social capital variable (dealing with natural disasters) were selected to include in the regression model. The dependent variable in the study was post-traumatic growth, as measured by the total score on the Post-Traumatic Growth Inventory Scale.

Among the four regression models, the model which included the socio-demographic, individual, and family level variables was the most parsimonious and accounted for around 20.6% of the variance in post-traumatic growth. The specific predictors of post-traumatic growth, identified by the hierarchical regression analyses, were employment, religion, family flexibility, family communication, and family type. The hierarchical regression analysis supported the hypothesis that family flexibility, family communication, and family type would significantly predict post-traumatic growth, after controlling for other variables. Neither social capital nor individual factors



were significant predictors of post-traumatic growth, after taking into account the influence of other factors. In addition, the hypotheses stipulating that gender would moderate the relationship between post-traumatic growth and individual, family, and community factors were also not supported.

Therefore, the quantitative results of the study converge on two main conclusions: (a) socio-demographic characteristics, employment and religion, are associated with post-traumatic growth, and (b) individuals with strong family attributes tended to report higher post-traumatic growth. These findings add to the growing evidence suggesting that socio-economic, spiritual, and family resources serve as strong protective factors when individuals are challenged by an adversity. In addition, to my knowledge this is the first study of its kind that examined the association between individual, family, and community factors and post-traumatic growth. However, it should be noted that this cross-sectional study was conducted among people of a predominantly low socio-economic fisherman community, who were recruited through the purposive sampling method. In addition, one of the questionnaires (FACES IV) used for this study had low reliability ( $\alpha = .61$ ). Based on the above two criticisms, my study can only provide tentative findings about the role of individual, family, and community factors on post-traumatic growth.

#### *Employment as a Resource for Post-Traumatic Growth*

Results of the hierarchical regression analysis suggested that employment seems to be a valuable resource for fostering post-traumatic growth. This indicates that job security and steady income create conditions that are facilitative of post-traumatic

growth. This finding is consistent with other studies that reported a positive linkage between employment or income and post-traumatic growth (Salo, Quota, & Punamaki, 2005; Updegraff, Taylor, Kemeny, & Wyatt, 2002), and resource loss and psychological distress (Sattler et al. 2006). Integrating this finding within the framework of Bronfenbrenner's (2005) bio-ecological model, I suggest that tsunami survivors' perception of psychological growth following a traumatic event may be determined not only by personal and family attributes but also by the socio-economic resources, such as the income, employment, housing, and education available to them in their larger social environment. Individuals with greater socio-economic resources would have tried to protect and build their existing resources and mobilized such resources effectively at the time of the tsunami to effect higher positive change and growth (Hobfoll, 1989). Individual survivors with fewer resources experience lesser positive growth. The results of my qualitative research also suggested that participants required opportunities for a steady employment in order to enhance their recovery from the traumatic event.

#### *Religious Belief and Post-Traumatic Growth*

The findings of this study also suggest that religious belief, and particularly belief in Christianity, was favorable for developing positive changes following the tsunami. Individuals who believed in the Hindu religion reported less positive change than who believed in Christianity. However, this result should be interpreted with caution. One of the central themes in the Hindu religious belief system is the law of *karma*, which implies that every thought or action an individual performs has its consequences in the present or in the next life (Kinsley, 1993). The present conditions and circumstances of an

individual are the result of his or her past deeds. If individuals experience precarious circumstances in the present, they are the result of punishment from God for the unrighteous deeds they had committed in the past. Similarly, if individuals have done righteous things in their past, they will have a better life in their future re-birth. The less post-traumatic growth experienced by the Hindu study participants may be attributed to this negative coping style, that the tsunami was a punishment from God for their past deeds and that they cannot do much to deal with it. The law of karma also states that, if an individual commits unrighteous things in the past, he or she will be born into a lower social order in their future re-birth as a way of punishment from God (Devaraja, 1969). It may be a coincidence that a majority of the tsunami survivors were from the lower socioeconomic strata, and the feeling about their current position of being lower in the social order may have reinforced their belief that the tsunami was a punishment from God. In contrast, the Christian belief system generally helps survivors find meaning in their suffering. The famous *Sermon on the Mount* and the belief that there is “joy in suffering” and “one will be positively rewarded for his or her suffering in heaven” may all have contributed to the positive coping among individuals who practiced the Christian belief system.

The present study findings were congruent with other studies (Pargament et al., 1998), which found that positive religious coping was correlated with post-traumatic growth, and negative religious coping was associated with poor psychological functioning (Ano & Vasconcelles, 2005). The qualitative findings also revealed that religious belief was a critical factor in surviving the tsunami experience. Although there

were similar studies that have shown positive association between religious belief, spirituality, and post-traumatic growth (Laufer & Solomon, 2006; Linley & Joseph, 2004; Pargament et al., 2000), there have not been many studies that examined the specific aspects of a religion that promotes positive change following adversity. Whereas this finding only provides preliminary evidence of the relationship between Christian religious belief and post-traumatic growth, further research is needed to examine specific aspects of Christianity that are related to post-traumatic growth.

#### *Family Resources and Post-Traumatic Growth*

The findings of hierarchical regression analyses also suggested that family type, family communication, and family flexibility were positively associated with post-traumatic growth. Nuclear and extended families experienced more post-traumatic growth than did the joint families. One possible explanation is that smaller families tend to experience lesser resource constraints than bigger families, resulting in lower stress and higher post-traumatic growth. Families with fewer personal, familial, and social resources are deeply impacted by trauma, and they find it hard to mobilize the resources in times of stress, resulting in greater distress. This finding is consistent with Hobfoll's (1989) resources theory as well as findings from other studies (Werner & Smith, 1992).

As expected, the findings for family flexibility indicated a unique link with post-traumatic growth, after other variables were controlled for. This indicates the powerful influence of family resources to mitigate the impact of a crisis and promote positive adjustment. In collectivistic cultures such as that of India, families play a critical role in enhancing individual well-being. Families share their resources, assist each other

emotionally and financially, and face challenges together in times of stressful events. As Olson and Derain (2006) indicate, balanced and flexible families accept crisis as a challenge, use better coping strategies, mobilize resources to help each other, and grow together by working through the crisis. The qualitative study findings also revealed that family members searched for and rescued their missing relatives regardless of the risks involved, provided emotional and financial support for each other, and worked through the crisis together. This finding was consistent with previous studies about the positive and supportive role of family resources in positive adjustment among children exposed to adversity (Lazarus, 2004; Masten et al., 1999; Tuicomepee & Romano, 2008). However, the findings of this study need to be received with caution. Because the instrument used to assess family flexibility was developed for Western individualistic cultures and yielded low reliability ( $\alpha = .61$ ) in the present study.

Results of this study in regard to family communication indicate the distinctive role that communication can play in enhancing positive change in individuals challenged by adversity. Resourceful families with effective communication, supportive emotional climate, problem-solving skills, and who are accepting of other members' points of view and feelings serve as a fertile ground for enhancing post-traumatic growth. Most importantly, in order to experience positive growth, families will have to work through the losses, emotions, and cognitions experienced following the traumatic event (Kliwer et al., 2001). This ability to work through the crisis involves talking with people who are supportive and receptive; and in most situations, this involves one's own close family members. Family members validate each other's feelings and help each other to make

sense of his or her traumatic experience to result in positive adjustment. This finding is supported in several other studies (Kliewer et al., 2001; Moos & Moos, 1994; Silver, Boon, & Stones, 1983; Yates & Masten, 2004), although these studies are not specifically related to adult trauma survivors. The qualitative findings also suggested that, following tsunami, participants and their families shared their experiences and resources, worked through their losses, and made sense of their traumatic experiences. In the process, they felt an increased sense of compassion and need for helping others who are in similar situations.

### Implications

The ever-increasing frequency of natural and technological disasters, the ongoing struggle to deal with the adverse impacts, and the inability of relief organizations and government to develop and implement sustainable programs to reduce individual, family, and community risks and vulnerabilities for future disasters raise many challenges and opportunities for social workers and other professionals engaged in disaster service and social development, particularly in poor countries around the globe where resources are scarce, and power and opportunities are concentrated in the hands of just a few. In this context, the present research is of serious significance to the field of social work practice, social work research and education, and social policy.

#### *Implications for Social Work Practice*

This section addresses some of the ways in which social workers can use the quantitative and qualitative research findings of this study to facilitate positive change in individuals and families affected by a trauma. The quantitative findings suggest that

employment, religious belief, and family resources contributed positively to post-traumatic growth. Having a steady employment and income are key to withstanding future traumatic events. Therefore, social workers working with disaster survivors can assist them in developing the skills and education required to attain stable employment. In addition, social workers can assist nonprofit agencies and governments to design and develop programs that can generate employment in the community. Social workers should take a leading role in involving local residents in the community re-building and reconstruction efforts instead of recruiting people from outside, so that the people of the local community are actively involved in the recovery programs, these programs are developed based on their needs, and in the process, the people are brought back to their normal routine life. This was one of the issues that came up during the qualitative interviews. Participants felt that they were housed in a federal prison when they were in the relief camps, and they immediately wanted to get back to their normal life.

In regard to the relationship between religious beliefs and post-traumatic growth, social workers working with trauma survivors need to be aware of and sensitive to the specific religious beliefs and practices of their clients. Because research consistently shows that religious belief is associated with positive changes (e.g., Linley and Joseph, 2004), social workers must help and selectively engage their clients to choose appropriate and positive religious coping strategies in order to facilitate positive growth and change. In addition, social workers can facilitate coordination among the local people, relief organizations, and government in order to rebuild any religious or cultural heritage that has been destroyed by the disaster. This is key to individual and community recovery.

One of the major findings of this study was the significant role of families in promoting positive change among individuals affected by a trauma. Social workers working with individuals and families afflicted by a trauma must make every effort to identify the strengths and resources in each family, enhance positive communication among family members, and provide support to families in their process of adapting to the changed circumstances following a disaster. This will help families transform their negative experience into positive growth and change.

Findings of the qualitative research indicate that the situation at the relocated place was precarious for all the individuals. Social workers, with their knowledge of issues related to displacement and relocation, must take every step to empower the individuals and families listed for relocation and prepare them to deal with the anticipated consequences of relocation, such as finding employment or getting integrated into the local community. In addition, social workers must work with relief organizations and make them aware of the negative consequences of phasing out their services immediately after the disaster. International non-governmental organizations (INGOs) can have a potential role in this situation. INGOs, or a small team of representatives from INGOS could stay in the community for a potentially longer period (for instance, 2 to 4 years) in order to help the local community to coordinate and evaluate the disaster recovery programs, bring in their expertise in areas where the local community lacks the skills or knowledge, encourage as much local participation as possible in the coordination and evaluation efforts, and in the long run, empower the local community to take over the disaster recovery programs and services in order to make it a sustainable endeavor.



The findings of the qualitative research also indicated that individuals who were able to make sense of their traumatic experience were more likely to experience growth and positive change than those who were not able to figure out the meaning of their experience. Social work practitioners working with trauma survivors can take responsibility to facilitate this meaning-making process and assist individuals discover their inner strengths and resources to facilitate post-traumatic growth.

#### *Implications for Social Work Research and Education*

By investigating the role of individual, family, and community factors in post-traumatic growth, this study has opened the door for ongoing research about the various factors that are contributive to positive adjustment in individuals exposed to a trauma. Although the role of personal resources in fostering positive growth has been studied extensively in previous studies and in various cultures, the role of family factors or various community resources has been ignored in trauma research. Future studies need to address research questions that try to capture the perceived as well as actual familial and social resources, in addition to the personal resources, across diverse populations and cultures. In addition, future research should look into the interaction between the factors at the individual, family, and community level that may influence post-traumatic growth in survivors affected by adverse events.

Even though the present study shed light on the role of religious beliefs in promoting post-traumatic growth, the study did not specifically investigate the particular aspects of a religious belief system that are contributive to post-traumatic growth. Future

studies should look into the different aspects of a religious belief system and which aspect of the belief is associated with which aspect of positive growth.

Because there were no culturally relevant, reliable, and valid measures available, I had to use measures that were developed and standardized in Western cultures in the present study. Future research may address this issue by developing and validating instruments that are culturally sensitive and reliable.

The person-in-context concept has been an important element in the social work practice, education, research, and policy for several decades (Payne, 2005). This concept is the central theme in the bio-ecological model of human development and is crucial for providing better insight into reasons for human behavior and relationships in any political, social, economic, and cultural context. Even in the disaster context, this model would provide useful insights into the interaction among various factors at the micro and macro level that have an influence on post-traumatic growth. More studies based on the bio-ecological model of human behavior need to be conducted in the future and among diverse populations in order to understand the factors that contribute to positive change and growth.

Lastly, in regard to social work education, the profession of social work needs to incorporate an understanding of natural disasters as it affects the physical, social, economic, and political life of human beings. As indicated by McKinnon (2008), this would help social workers deal with the myriad of problems, such as poverty, violence and conflict, displacement, and food crisis, that emerge from negative reciprocal interactions between individuals and their environment. In order to accomplish this goal,

social work schools must include a disaster management component in the social work curriculum to engage incipient social workers through theory and practice with the psychological, social, economical, and political consequences of natural disasters.

### *Implications for Social Policy*

Managing the social and psychological consequences of a massive traumatic event, such as a natural disaster, often exceeds the capabilities of the individual, family, and community systems. The state has a responsibility to intervene in such circumstances. This requires changes in existing policies and even the creating of new policies aimed at (a) enhancing the disaster preparedness of vulnerable communities; (b) establishing specific and clear-cut roles for the federal and state governments as well as local bodies; (c) creating a monitoring and evaluation system that coordinates and evaluates the activities of non-governmental organizations in the wake of a disaster; and (d) optimally managing resources.

The qualitative findings of the present study suggested that participants felt insecure and unsafe about their life near the sea. They are primarily concerned about the community's preparedness to face future disasters. In Alappad, many of the schools and day care centers are close to the sea. Because the community does not have an evacuation or disaster-preparedness plan in place, villagers are worried about the consequences if another disaster occurs in their village. The state and federal government should create policies that empower the local government and communities to implement disaster-preparedness and response plan that are culturally sensitive and based on local knowledge and available resources.

In the qualitative research, many participants felt there was a need to coordinate the relief and recovery activities of the various nonprofit and religious organizations that are providing disaster services. These organizations and the government failed to identify the true survivors and prevent fraudulent use of relief aid and grants. Policy changes need to be effected that aims at involving the local community (e.g., neighborhood assemblies) with the government and other relief organizations in order to identify the true survivors of the disaster.

Lastly, as Bolin (1985) suggested, economic recovery is an essential precondition for emotional recovery. Economic recovery can be achieved only if policies are enacted to provide opportunities for employment for the disaster-afflicted communities. For instance, the government and even relief agencies can create policies that require contractors who are involved in reconstruction efforts to hire local people in their reconstruction projects. This serves the dual purpose of providing employment to the survivors as well as helping them to get back to their normal life. In addition, due to the questionable viability of fishing as a vocation and the apparent lack of other vocational skills in communities such as these, it is imperative that other income-generating mechanisms be considered. Considering the geographical conditions of Kerala and the fisherman community's innate need to be close to the sea, the cultivation of fish, shellfish, oysters, decorative fish, shrimp, and even seaweed are explorable vocations. Social workers interested in policy practice must work with state and local governments to create policies that can help the fisherman community to explore these various livelihood options and receive the necessary training and skills. Further more, policies

need to be enacted that mandate non-governmental organizations and community-based organizations carrying out these activities priority access to the governmental disaster recovery funds.

## Strengths and Limitations of the Study

### *Study Strengths*

The major strength of the study was the utilization of concurrent mixed methods design in order to understand the various factors that contribute to post-traumatic growth among the survivors of the tsunami. The quantitative survey data collected from a large sample allows for a broader understanding of the factors that contribute to positive growth in survivors of the tsunami. It also improves the generalizability of the study. In addition to providing a fuller and in-depth understanding of the tsunami survivors' experience of tsunami, qualitative findings helped to verify the findings derived from the quantitative study and better interpret the results and their implications.

Another major strength of the present study was that the relatively large sample size ( $N = 301$ ) in the quantitative section of my research has ensured adequate statistical power. In addition, the study has met all the assumptions for conducting multiple regression analysis, and the missing data was negligible (less than 2%). The measures that are used in the present study had acceptable reliability (.74 to .89), except for FACES IV (.61). In addition, the study used four sets of predictor variables in the hierarchical regression analysis to identify the model that best predicts post-traumatic growth after controlling for other variables.

The use of the phenomenological approach to capture the subjective experience of tsunami survivors was a major strength of the present study. By conducting in-depth interviews with eight tsunami survivors, the phenomenological approach yielded rich and meaningful data that helped to understand the essence of the participants' experience of surviving the tsunami. I have used several strategies (maximum variation sampling, member checking, bracketing presuppositions, etc.) to improve the study's credibility and trustworthiness. In addition, my own familiarity with the local culture and language helped me to establish rapport with the participants easily, which enabled my participants to share their experiences without much hesitation or ambivalence.

#### *Study Limitations*

In spite of the major strengths of my research, the study has several limitations. First, one of the major limitations of the present study was the use of the purposive sampling method in recruiting the participants for the quantitative research. Second, the sample studied consisted of low-income adult fishermen living in the coastal areas of Kerala. This sample was not representative of the population of Kerala or the population of India. The above two limitations have limited the generalizability of the study findings. Third, all the instruments used in the present study, except the measure for social capital, were developed and standardized in the Western culture. Thus, even though some of the instruments had acceptable reliability, the study results have to be received with caution. Fourth, because my objective was to examine the contribution of a specific set of variables in explaining post-traumatic growth, it was not possible in the present research design to include all the relevant variables that are shown to have

significant association with post-traumatic growth. This might explain the reason for the low variance in the dependent variable explained by the 10 predictor variables. Lastly, all the qualitative interviews were conducted in the local language (Malayalam). Hence, some words might have lost their original meaning when translated into English.

### Conclusion

In spite of the abundance of research on understanding the prevalence and correlates of Post-Traumatic Stress Disorder (PTSD) in the aftermath of a disaster (Norris et al., 2002), there is a paucity of research on the extent, nature, and correlates of post-traumatic growth following a trauma, particularly in the developing world. The purpose of this study was to make new contributions to this body of literature by investigating the effect of individual, family, and community factors on the posttraumatic growth of individuals exposed to the tsunami natural disaster that struck the coastal areas of India in December 2004, using a concurrent mixed method design.

I interviewed 301 participants for my quantitative research and 8 participants for my qualitative research. The analysis of the quantitative data, using hierarchical regression analysis, revealed that religion, employment, family flexibility, family communication, and family type were the significant predictors of post-traumatic growth. Neither individual factors nor social capital were predictive of post-traumatic growth. In addition to verifying and complementing the findings of the quantitative research, the results of the qualitative study provided valuable insights into the nature of the subjective experience of tsunami survivors, particularly in the response, relief, and recovery phase.

The themes derived from the qualitative data clearly illuminated the recovery strategies employed by the tsunami survivors.

The findings of this study have implications for social work practice, education, research, and policy. In regard to social work practice, the present study has pointed to a new area of practice for social workers. With the knowledge generated by this study, social workers can design and implement culturally sensitive and evidence-based intervention programs aimed at addressing the needs of disaster survivors. In regard to social work research, the study is the beginning of a long process toward understanding the dynamic process that underlies the construct, post-traumatic growth. I am hopeful that the study results will help social work practitioners and policy makers to make changes to address the needs of disaster survivors efficiently and effectively.



## REFERENCES

- Acierno, R., Ruggiero, K. J., Kilpatrick, D.G., Resnick, H. S., & Galea, S. (2006). Risk and protective factors for psychopathology among older versus younger adults after the 2004 Florida hurricanes. *The American Journal of Geriatric Psychiatry*, *14*(12), 1051-1059.
- Al-nazer, F., & Sandman, M. M. A. (2000). Evaluating resiliency patterns using the ER89: A case study from Kuwait. *Social Behavior and Personality*, *28*(5), 505-514.
- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, *61*, 461-480.
- Bada Math, S., Girimaji, S. C., Benegal, V., Uday Kumar, G. S., Hamza, A., & Nagaraja, D. (2006). Tsunami: Psychosocial aspects of Andaman and Nicobar Islands. Assessment and intervention in the early phase. *International Review of Psychiatry*, *18*(3), 233-239.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bartone, P. T. (2006). Vulnerability, trauma, and war: Toward understanding Abu Ghraib Iraqi prisoner abuse. In J. M. Violanti & D. Paton (Eds.), *Who gets PTSD?: Issues of post-traumatic stress vulnerability* (pp. 99-112). Springfield, IL: Charles C. Thomas.
- Batabyal, A. A. (1998). The concept of resilience: Retrospect and prospect. *Environment and Development Economics*, *3*(2), 235-239.

- Becker, S. M. (2007). Psychosocial care for adult and child survivors of the tsunami disaster in India. *Journal of Child & Adolescent Psychiatric Nursing, 20*(3), 148-155.
- Ben, Z., Feng-Ge, Z., & Li-Ping, W. (2008). A cross-sectional study on the current prevalence of post-traumatic stress disorder in adults orphaned by Tangshan earthquake in 1976. *Chinese Mental Health Journal, 22*(6), 469-473.
- Benight, C. C., & Bandura, A. (2004). Social cognitive theory of post-traumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy, 42*, 1129-1148.
- Benight, C. C., & Harper, M. L. (2002). Coping self-efficacy perceptions as a mediator between acute stress response and long-term distress following natural disasters. *Journal of Traumatic Stress, 15*(3), 177-186.
- Benzies, K., & Mychasiuk, R. (2008). Fostering family resiliency: a review of the key protective factors. *Child and Family Social Work, 14*, 103-114.
- Bharat, S., Chandrashekar, C. R., Kishore Kumar, K. V., Chowdhary, P., Parthasarathy, R., Girimaji, S., et al. (2000). *Psychosocial care for individuals* (Information Manual 1). Bangalore: India: Books for Change.
- Bhushan, B., & Kumar, J. S. (2007). Emotional distress and post-traumatic stress in children surviving the 2004 tsunami. *Journal of Loss and Trauma, 12*, 245-257.
- Block, J. H., & Block, J. (1980). The role of ego-control and ego resiliency in the organization of behavior. In W. A. Collins (Ed.), *Minnesota Symposium on Child Psychology* (Vol. 13, pp. 39-101). Hillsdale, NJ: Erlbaum.

- Bokszczanin, A. (2008). Parental support, family conflict, and overprotectiveness: Predicting PTSD symptom levels of adolescents 28 months after a natural disaster. *Anxiety, Stress & Coping, 21*, 325-335.
- Bolger, K. E., & Patterson, C. J. (2003). Sequelae of child maltreatment: Vulnerability and resilience. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 156-181). Cambridge, UK: Cambridge University Press.
- Bolin, R. (1985). Disasters and long-term recovery policy: A focus on housing and families. *Policy Studies Review, 4*(4), 709-715.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for Post-Traumatic Stress Disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*(5), 748-766.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (2005). The bio-ecological theory of human development. In U. Bronfenbrenner (Ed.), *Making human beings human: Bio-ecological perspectives on human development* (pp. 3-15). Thousand Oaks, CA: Sage.
- Bronfenbrenner, U., & Ceci, S. J. (2005). Heredity, environment, and the question “how”: A first approximation. In U. Bronfenbrenner (Ed.), *Making human beings human: Bio-ecological perspectives on human development* (pp. 174-184). Thousand Oaks, CA: Sage.

- Bryman, A. (2008). Integrating quantitative and qualitative research: How is it done? In V. L. Plano Clark, & J. W. Creswell (Eds.), *The mixed methods reader* (pp. 253-270). Thousand Oaks, CA: Sage.
- Cadell, S., Regehr, C., & Hemsworth, D. (2003). Factors contributing to post-traumatic growth: A proposed structural equation model. *American Journal of Orthopsychiatry*, 73, 279-287.
- Calhoun, L. G., & Tedeschi, R. G. (1998). Post-traumatic growth: Future directions. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Post-traumatic growth: Positive changes in the aftermath of crisis* (pp. 215-238). Mahwah, NJ: Lawrence Erlbaum.
- Calhoun, L. G., & Tedeschi, R. G. (2006). The foundations of post-traumatic growth: An expanded framework. In L.G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of post-traumatic growth: Research and practice* (pp. 3-23). Mahwah, NJ: Lawrence Erlbaum.
- Census of India. (2001) *Provisional population totals: India*. New Delhi, India: Office of the Registrar General.
- Chung, M. C., Dennis, I., Easthope, Y., Werret, J., & Farmer, S. (2005). A multiple-indicator multiple-cause model for post-traumatic stress reactions: Personality, coping, and maladjustment. *Psychosomatic Medicine*, 67(2), 251-259.
- Cicchetti, D., & Lynch, M. (1993). Toward an ecological/transactional model of community violence and child maltreatment: Consequences for children's development. *Psychiatry*, 56, 96-118.

- Cohen, J. A., Berliner, L., & Mannarino, A. P. (2000). Treating traumatized children: A research review and synthesis. *Trauma, Violence, and Abuse: A Review Journal*, 1, 29-46.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3<sup>rd</sup> ed.). Mahwah, NJ: Lawrence Erlbaum.
- Cotton, S. M., Wright, A., Harris, M. G., Jorm, A. F., & McGorry, P. D. (2006). Influence of gender on mental health literacy in young Australians. *Australian and New Zealand Journal of Psychiatry*, 40, 790–796.
- Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2008). Advanced mixed methods research designs. In V. L. Plano Clark & J. W. Creswell (Eds.), *The mixed methods reader* (pp. 159-196). Los Angeles: Sage.
- Cryder, C. H., Kilmer, R. P., Tedeschi, R. G., & Calhoun, L. G. (2006). An exploratory study of post-traumatic growth in children following a natural disaster. *American Journal of Orthopsychiatry*, 76(1), 65-69.
- Davis, C. G., & Mckearney, J. M. (2003). How do people grow from their experience with trauma or loss? *Journal of Social and Clinical Psychology*, 22(5), 477-492.

- Davis, C. G., Wohl, M. J. A., & Verberg, N. (2007). Profiles of post-traumatic growth following an unjust loss. *Death Studies, 31*, 693-712.
- Devaraja, N. K. (1969). *Hinduism and Christianity* [Brahmananda Keshab Chandra Sen Memorial Lectures on Comparative Religion, delivered at Calcutta University]. New York: Asia Publishing House.
- Diaz, P. J., Lakshminarayana, R., & Bordoloi, S. (2004, May 22). Psychological support in events of mass destruction: Challenges and lessons. *Economic and Political Weekly*.
- Duttweiler, P. C. (1984). The internal control index: A newly developed measure of locus of control. *Educational and Psychological Measurement, 44*(2), 209-221.
- Ferren, P. M. (1999). Comparing perceived self-efficacy among adolescent Bosnian and refugees with and without post-traumatic stress disorder. *Journal of Traumatic Stress, 12*(3), 405-420.
- Ganor, M., & Ben-Lavy, Y. (2003). Community resilience: Lessons derived from Gilo under fire. *Journal of Jewish Communal Service, Winter/Spring*, 105-108.
- Garnezy, N. (1985). Stress-resistant children: The search for protective factors. In J. E. Stevenson (Ed.), *Recent research in developmental psychopathology: Journal of Child Psychology and Psychiatry Book* (Supplement 4, pp. 213-233). Oxford: Pergamon Press.
- Garnezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. *Pediatrics, 20*, 459-466.

- Garnezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development, 55*, 97-111.
- Ghodse, H., & Galea, S. (2006). Tsunami: Understanding mental health consequences and the unprecedented response. *International Review of Psychiatry, 18*(3), 289-297.
- Glicklen, M. D. (2006). *Learning from resilient people: Lessons we can apply to counseling and psychotherapy*. Thousand Oaks, CA: Sage.
- Gorman-Smith, D., & Tolan, P. H. (1998). The role of exposure to community violence and developmental problems among inner-city youth. *Development and Psychopathology, 10*, 101-116.
- Gorman-Smith, D., & Tolan, P. H. (2003). Positive adaptation among youth exposed to community violence. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 392-413). Cambridge, UK: Cambridge University Press.
- Gorman-Smith, D., Tolan, P., & Henry, D. (2005). Promoting resilience in the inner city: Families as a venue for protection, support, and opportunity. In R. D. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, and communities: Linking context to practice and policy* (pp. 137-156). New York: Kluwer Academic/Plenum.
- Hall, B. J., Hobfoll, S. E., Palmieri, P. A., Canetti-Nisim, D. Shapira, O., Johnson, R. J., et al. (2008). The psychological impact of impending forced settler disengagement

- in Gaza: Trauma and post-traumatic growth. *Journal of Traumatic Stress*, 21(1), 22-29.
- Ho, S. M. Y., Chu, K. W., & Yiu, J. (2008). The relationship between explanatory style and post-traumatic growth after bereavement in a non-clinical sample. *Death Studies*, 32, 461-478.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513-524.
- Hock, E., Hart, M., Kang, M. J., & Lutz, W. J. (2004). Predicting children's reactions to terrorist attacks: The importance of self-reports and pre-existing characteristics. *American Journal of Orthopsychiatry*, 74, 253-262.
- Huzziff, C. A., & Ronan, K. R. (1999). Prediction of children's coping following a natural disaster—the Mount Ruapehu eruptions: A prospective study. *Australasian Journal of Disaster & Trauma Studies*, 3(1). Retrieved on July 15, 2007, from <http://www.massey.ac.nz/~trauma/>
- Jaarsma, T., Pool, G., Sanderman, R., & Ranchor, A. (2006). Psychometric properties of the Dutch version of the post-traumatic growth inventory among cancer patients. *Psycho-Oncology*, 15(10), 911-920. Retrieved on June 18, 2009, doi:10.1002/pon.1026
- Jang, L. (2005). *The 921 earthquake: A study of the effects of Taiwanese cultural factors on resilience*. Unpublished doctoral dissertation, University of Denver, Graduate School of Social Work, Colorado.



- Johnson, J. L., & Wiechelt, S. A. (2004). Introduction to the special issue on resilience. *Substance Use & Misuse*, 39(5, December), 657 – 670.
- Kaniasty, K. (2005). Social support and traumatic stress. *PTSD Research Quarterly*, 16(2). Retrieved on January 15, 2009, from [http://www.ncptsd.va.gov/ncmain/nc\\_archives/rsch\\_qtly/V16N2.pdf?opm=1&rr=rr220&srt=d&echorr=true](http://www.ncptsd.va.gov/ncmain/nc_archives/rsch_qtly/V16N2.pdf?opm=1&rr=rr220&srt=d&echorr=true) (no page number listed in the online journal)
- Karen, K., Wind, L., & Shankar, R. A. (2008). Disaster relief within a collectivistic context: Supporting resilience after the tsunami in South India. *Journal of Social Service Research*, 34(3), 87-98.
- Kayser, K., Wind, L., Shankar, R. A. (2008). Disaster relief within a collectivistic context: Supporting resilience after the tsunami in South India. *Journal of Social Service Research*, 34(3), 87-98.
- Khanna, S., Sudha, S., & Rajan, S. (2009). Family-building strategies in urban India: Converging demographic trends in two culturally distinct communities. *Contemporary South Asia*, 17(2, June), 141-158. Retrieved on June 18, 2009, from doi:10.1080/09584930902870800
- Kinsley, D. R. (1993). *Hinduism: A cultural perspective* (2<sup>nd</sup> ed.). Englewood Cliffs, NJ: Prentice Hall.
- Kishore Kumar, K. V., Chandrashekar, C. R., Chowdhary, P., Parthasarathy, R., Girimaji, S., Sekar, K., et al. (2000). *Psychosocial care for community-level helpers: Super cyclone* (Information Manual 2) Bangalore: Books for Change.

- Klein, R. J. K, Nicholls, R. J., & Thomalla, F. (2003). Resilience to natural hazards: How useful is this concept? *Global Environmental Change Part B: Environmental Hazards*, 5(1-2), 35-45.
- Kliewer, W., Murrelle, L., Mejia, R., de G, Y. T., & Angold, A. (2001). Exposure to violence against a family member and internalizing symptoms in Colombian adolescents: The protective effects of family support. *Journal of Consulting and Clinical Psychology*, 69(6), 971-982.
- Krishna, A. (2002). *Active social capital: Tracing the roots of development and democracy*. New York: Columbia University Press.
- Krishna, A. (2004). Understanding, measuring and utilizing social capital: Clarifying concepts and presenting a field application from India. *Agricultural Systems*, 82(3), 291-305.
- Krishna, A., & Shrader, E. (2000). *Cross-cultural measures of social capital: A tool and results from India and Panama*. (Social Capital Initiative Working Paper Series). Washington DC: The World Bank.
- Kumar, M. S., Murhekar, M. V., Hutin, Y., Subramanian, T., Ramachandran, V., & Gupte, M. D. (2007). Prevalence of post-traumatic stress disorder in a coastal fishing village in Tamil Nadu, India, after the December 2004 tsunami. *American Journal of Public Health*, 97(1), 99-101.
- Landau, J. (2007). Enhancing resilience: Families and communities as agents for change. *Family Process*, 46(3), 351-365.

- Laufer, A., & Solomon, Z. (2006). Post-traumatic symptoms and post-traumatic growth among Israeli youth exposed to terror incidents. *Journal of Social and Clinical Psychology, 25*(4), 429-447.
- Lazarus, A. (2004). *Relationships among indicators of child and family resilience and adjustment following the September 11, 2001 tragedy* (Working Paper No. 36). The Emory Center for Myth and Ritual in American Life. Retrieved on August 12, 2006, from [http://www.marial.emory.edu/pdfs/Lazarus\\_36\\_04.pdf](http://www.marial.emory.edu/pdfs/Lazarus_36_04.pdf)
- Leavy, R. L. (1983). Social support and psychological disorder: A review. *Journal of Community Psychology, 11*, 321.
- Lepore, S., & Revenson, T. (2006). Relationships between post-traumatic growth and resilience: Recovery, resistance, and reconfiguration. In L.G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of post-traumatic growth: Research and practice* (pp. 24-46). Mahwah, NJ: Lawrence Erlbaum.
- Liao, S., Lee, M., Lee, Y., & Huang, T. (2004). Hyperleptinemia in subjects with persistent partial post-traumatic stress disorder after a major earthquake. *Psychosomatic Medicine, 66*, 23-28.
- Liao, S. C., Lee, M., Lee, Y., Weng, T., Shih, F., & Ma, M. H.M. (2002). Association of psychological distress with psychological factors in rescue workers within two months after a major earthquake. *Journal of the Formosan Medical Association, 101*, 169-176.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

- Linley, P. A. (2003). Positive adaptation to trauma: wisdom as both process and outcome. *Journal of Traumatic Stress, 16*(6), 601-610.
- Linley, P. A., Andrews, L., & Joseph, S. (2007). Confirmatory factor analysis of the Post-Traumatic Growth Inventory. *Journal of Loss and Trauma, 12*, 321-332.
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17*(1), 11-21.
- Linley, P. A., & Joseph, S. (2006). The positive and negative effects of disaster work: A preliminary investigation. *Journal of Loss and Trauma, 11*, 229-245.
- Luthar, S. S. (1999). *Poverty and children's adjustment*. Newbury Park, CA: Sage.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543-562.
- Luthar, S. S., & Zelazo, L. B. (2003). Research on resilience: An integrative review. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 510-549). Cambridge, UK: Cambridge University Press.
- Maddi, S. R., & Khoshaba, D. M. (2003). Hardiness training for resiliency and leadership. In D. Paton, C. Psychol, J. M. Violanti, & L. M. Smith (Eds.), *Promoting capabilities to manage post-traumatic stress* (pp. 43-58). Springfield, IL: Charles C. Thomas.
- Maguen, S., Vogt, D. S., King, L. A., King, D. W., & Litz, B. T. (2006). Post-traumatic growth among Gulf War 1 veterans: The predictive role of deployment-related

- experiences and background characteristics. *Journal of Loss and Trauma*, *11*, 373-388.
- Manyena, S. B. (2006). The concept of resilience revisited. *Disasters*, *30*(4), 433-450.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227-238.
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from successful children. *American Psychologist*, *53*, 205-220.
- Masten, A. S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B. Lahey & A. Kazdin (Eds.), *Advances in clinical child psychology* (Vol. 8, pp. 1-52). New York: Plenum Press.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology*, *11*, 143-169.
- Mathbor, G. M. (2009). Enhancement of community preparedness for natural disasters. *International Social Work*, *50*(3), 357-369.
- McKinnon, J. (2008). Exploring the nexus between social work and the environment. *Australian Social Work*, *61*(3), 256-268.
- McMillen, J. (2004). Post-traumatic growth: What's it all about? *Psychological Inquiry*, *15*, 48-52.

- Meichenbaum, D. (2006). Resilience and post-traumatic growth: A constructive narrative perspective. In L.G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of post-traumatic growth: Research and practice* (pp. 355-367). Mahwah, NJ: Lawrence Erlbaum.
- Moore, S., Daniel, M., Linnan, L., Campbel, M., Benedict, S., & Meier, A. (2004). After hurricane Floyd passed: Investigating the social determinants of disaster preparedness and recovery. *Family & Community Health, 27*(3), 204-217.
- Moos, R. H., & Moos, B. S. (1994). *Family Environment Scale manual* (3<sup>rd</sup> ed.). Palo Alto, CA: Consulting Psychologists Press.
- Moran, C., & Shakespeare-Finch, J. (2003). A trait approach to post-trauma vulnerability and growth. In D. Paton, C. Psychol, J. M. Violanti, & L. M. Smith (Eds.), *Promoting capabilities to manage post-traumatic stress* (pp. 27-42). Springfield, IL: Charles C. Thomas.
- Morgan, D. L. (2008). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methos. In V. L. Plano Clark & J. W. Creswell (2008). *The mixed methods reader* (pp. 27-65). Los Angeles: Sage.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- National Association of Social Workers. (1996). *Code of ethics of the National Association of Social Workers*. Retrieved on January 26, 2009, from <http://www.socialworkers.org/pubs/code/code.asp>

- Norris, F. H. (2006). *Psychosocial consequences of natural disasters in developing countries: What does past research tell us about the potential effects of the 2004 tsunami?* National Center for Post-Traumatic Stress Disorder. Retrieved on July, 26, 2006, from [http://www.ncptsd.va.gov/facts/disasters/fs\\_tsunami\\_research.html](http://www.ncptsd.va.gov/facts/disasters/fs_tsunami_research.html).
- Norris, F. H., Baker, C. K., Murphy, A. D., & Kaniasty, K. (2005). Social support mobilization and deterioration after Mexico's 1999 flood: Effects of context, gender, and time. *American Journal of Community Psychology, 36*(1/2), 15-28.
- Norris, F. H., Friedman, M., Watson, P., Byrne, C., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak, part 1: An empirical review of the empirical literature, 1981-2001. *Psychiatry, 65*, 207-239.
- Olson, D. H. & J. DeFrain. (2006). *Marriages and families: Intimacy, diversity and strengths*. New York: McGraw-Hill Higher Education.
- Olson, D. H., & Gorall, D. M. (2003). Circumplex model of marital and family systems. In F. Walsh (Ed.), *Normal family processes: Growing diversity and complexity* (3<sup>rd</sup> ed., pp. 514-548). New York: Guilford Press.
- Olson, D. H., Gorall, D. M., & Tiesel, J. W. (2006). *FACES IV Package* (Administration manual). Minneapolis, MN: Life Innovations.
- Olsson, C.A., Bond, L., Burns, J. M., Vella-Brodrick, D. A., & Sawyer, S. M. (2003). Adolescent resilience: A concept analysis. *Journal of Adolescence, 26*, 1-11.

- Onwuegbuzie, A. J., & Johnson, R. B. (2008). The validity issue in mixed research. In V. L. Plano Clark & J. W. Creswell (2008). *The mixed methods reader* (pp. 273-298). Los Angeles: Sage.
- Osher, D., Kendziora, K. T., VanDenBerg, J., & Dennis, K. (1999). Beyond individual resilience. *Reaching Today's Youth*, 3(4), 2-4.
- Owens, E. B., & Shaw, D. S. (2003). Poverty and early childhood adjustment. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 267-292). Cambridge, UK: Cambridge University Press.
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion*, 37, 710-24.
- Pargament, K. I., Koenig, H. G., & Perez, L. (2000). The many methods of religious coping: Initial development and validation of the RCOPE. *Journal of Clinical Psychology*, 56, 193-207.
- Parslow, R. A., Jorm, A. F., & Christensen, H. (2006). Associations of pre-trauma attributes and trauma exposure with screening positive for PTSD: Analysis of a community-based study of 2,085 young adults. *Psychological Medicine*, 36, 387-395.
- Paton, D. (2006). Post-traumatic growth in disaster and emergency work. In L.G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of post-traumatic growth: Research and practice* (pp. 225-247). Mahwah, NJ: Lawrence Erlbaum.



- Paton, D., & Johnston, D. (2001). Disasters and communities: Vulnerability, resilience and preparedness. *Disaster Prevention and Management, 10*, 270-277.
- Paton, D., Violanti, J. M., & Smith, L. M. (Eds.). (2003). *Promoting capabilities to manage post-traumatic stress: Perspectives on resilience*. Springfield, IL: Charles C. Thomas.
- Patterson, J. M. (2002). Understanding family resilience. *Journal of Clinical Psychology, 58*, 233-246.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.
- Payne, M. (2005). *Modern social work theory*. Basingstoke, Hampshire, United Kingdom: Macmillan Palgrave.
- Pittaway, E., Bartolomei, L., & Rees, S. (2007). Gendered dimensions of the 2004 tsunami and a potential social work response in post-disaster situations. *International Social Work, 50*(3), 307-319.
- Plano Clark, V. L., & Creswell, J. W. (2008). *The mixed methods reader*. Los Angeles: Sage.
- Polk, L. V. (1997). Toward a middle-range theory of resilience. *ANS Advances in Nursing Science, 19*(3), 1-13.
- Pomeroy, R. S., Ratner, B. D., Hall S. J., Pimoljinda, J., & Vivekanandan, V. (2006). Coping with disaster: Rehabilitating coastal livelihoods and communities. *Marine Policy, 30*, 786-793.

- Priebe, M., Grappasonni, I., Mari, M., Dewey, M., Petrelli, F., & Costa, A. (2009). Post-traumatic stress disorder six months after an earthquake: Findings from a community sample in a rural region in Italy. *Social Psychiatry and Psychiatric Epidemiology*, *44*(5), 393-397.
- Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65-78.
- Pyles, L., & Cross, T. (2008). Community revitalization in post-Katrina New Orleans: A critical analysis of social capital in an African American neighborhood. *Journal of community Practice*, *16*(4), 383-401.
- Pynoos, R. S. (1993). Traumatic stress and development psychopathology in children and adolescents. In J. M. Oldham, M. B. Riba, & A. Tasman (Eds.), *Review of psychiatry* (Vol. 12, pp. 205-237). Washington, DC: American Psychiatric Press.
- Pynoos, R. S., Goenjian, A. K., Tashjian, M., Karakashian, M., Manjikian, R., Manoukian, G., et al. (1993). Post-traumatic stress reactions in children after the 1988 Armenian earthquake. *British Journal of Psychiatry*, *163*, 239-247.
- Riley, J. R., & Masten, A. S. (2005). Resilience in context. In R. D. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, and communities: Linking context to practice and policy* (pp. 13-25). New York: Kluwer Academic/Plenum.
- Ronan, K. R., & Johnston, D. M. (2005). *Promoting community resilience in disasters: The role for schools, youth, and families*. Springer, NY: Springer Science & Business Media.

- Rosati, M. J. (2006). Effectively addressing the mid- and long-term needs of young people affected by the tsunami in Aceh: An on-site assessment. *International Review of Psychiatry, 18*(3), 265-269.
- Rosenfeld, L. B., Caye, J. S., Ayalon, O., & Lahad, M. (2005). *When their world falls apart: Helping families and children manage the effects of disasters*. Washington, DC: NASW Press.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*(1), whole No. 609, 1-28.
- Salo, J. A., Quota, S., & Punamaki, R. (2005). Adult attachment, post-traumatic growth and negative emotions among former political prisoners. *Anxiety, Stress, and Coping, 18*(4), 361-378.
- Sattler, D. N., de Alvarado, A. M.G. M., de Castro, N. B., Van Male, R., Zetino, A. M., & Vega, R. (2006). El Salvador earthquakes: Relationships among acute stress disorder symptoms, depression, traumatic event exposure, and resource loss. *Journal of Traumatic Stress, 19*(6), 879-893.
- Schwarzer, R., & Jerusalem, M., (1993). The General Self-efficacy Scale. Retrieved on June 28, 2006, from <http://userpage.fu-berlin.de/~health/engscal.htm>.
- Seifer, R. (2003). Young children with mentally ill parents: Resilient developmental systems. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 29-49). Cambridge, UK: Cambridge University Press.

- Sekar, K., Bhadra, S., Jayakumar, C., Aravindraj, E., & Kishore Kumar, K. V. (2006). Women and disaster. *Indian Journal for the Practicing Doctor*, 3(1), 1-7.
- Retrieved on August 27, 2006, from <http://www.indmedica.com/journals.php?journalid=3&issueid=74&articleid=957&action=article>
- Sekar, K., Sen Dave, A., Bhadra, S., Rajashekar, G. P., Kishore Kumar, K. V., & Srinivasa Murthy, R.(2002). *Riots: Psychosocial care by community-level helpers and survivors*. Bangalore: Books for Change.
- Shakespeare-Finch, J., & Copping, A. (2006). A grounded theory approach to understanding cultural differences in post-traumatic growth. *Journal of Loss and Trauma*, 11, 355-371.
- Shaw, A., Joseph, S., & Linley, & P. A. (2005). Religion, spirituality, and post-traumatic growth: A systematic review. *Mental Health, Religion & Culture*, 8(1), 1-11.
- Silver R. L., Boon, C., & Stones, M. H. (1983). Searching for meaning in misfortune: Making sense of incest. *Journal of Social Issues*, 39, 81-101.
- Smith, B. W., & Freedy, J. R. (2000). Psychosocial resource loss as a mediator of the effects of flood exposure on psychological distress and symptoms. *Journal of Traumatic Stress*, 13(2), 349-357.
- Smith, B. W., Pargament, K. I., Brant, C., & Oliver, J. M. (2000). Noah revisited: Religious coping by church members and the impact of the 1993 midwest flood. *Journal of Community Psychology*, 28, 169-186.

- Solomon, Z., Gelkopf, M., & Bleich, A. (2005). Is terror gender-blind? Gender differences in reaction to terror events. *Social Psychiatry and Psychiatric Epidemiology, 40*(12), 947-954.
- Solomon, Z., Mikulincer, M., & Avitzur, E. (1988). Coping, locus of control, social support, and combat-related post-traumatic stress disorder: A prospective study. *Journal of Personality and Social Psychology, 55*(2), 279-285.
- Suar, D., Mandal, M. K., & Khuntia, R. (2002). Supercyclone in Orissa: An assessment of psychological status of survivors. *Journal of Traumatic Stress, 15*(4), 313-319.
- Sumer, N., Karanci, A. N., Berument, S. K., & Gunes, H. (2005). Personal resources, coping self-efficacy, and quake exposure as predictors of psychological distress following the 1999 earthquake in Turkey. *Journal of Traumatic Stress, 18*(4), 331-342.
- Taku, K., Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2008). The role of rumination in the coexistence of distress and post-traumatic growth among bereaved Japanese university students. *Death Studies, 32*, 428-444.
- Taku, K., Cann, A., Calhoun, L. G., & Tedeschi, R. G. (2008). The factor structure of the Post-Traumatic Growth Inventory: A comparison of five models using confirmatory factor analysis. *Journal of Traumatic Stress, 21*(2), 158-164.
- Tashakkori, A., & Teddlie, C. (2008). Introduction to mixed method and mixed model studies in the social and behavioral sciences. In V. L. Plano Clark & J. W. Creswell (2008). *The mixed methods reader* (pp. 7-26). Los Angeles: Sage.

- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The Post-Traumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455-471.
- Tedeschi, R. G., & Calhoun, L. G. (2004). Post-traumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry, 15*, 1-18.
- Tedeschi, R. G., & Calhoun, L. G. (2008). Beyond the concept of recovery: Growth and the experience of loss. *Death Studies, 32*, 27-39.
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998). *Post-traumatic growth: Positive changes in the aftermath of crisis*. Mahwah, NJ: Lawrence Erlbaum.
- Tennen, H., Affleck, G., Urrows, S., Higgins, P., & Mendola, R. (1992). Perceiving control, constructing benefits, and daily processes in rheumatoid arthritis. *Canadian Journal of Behavioral Science, 24*, 186-203.
- Thomas, J., & Menampampil, G. (2005). Resilient youth in northeast India: The role of faith-based organizations in communities affected by violence. In M. Ungar (Ed.), *Handbook for working with children and youth: Pathways to resilience across cultures and contexts* (pp. 329-341). Thousand Oaks, CA: Sage.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*(2), 320-333.

- Tuicomepee, A., & Romano, J. L. (2008). Thai adolescent survivors 1 year after the 2004 tsunami: A mixed methods study. *Journal of Counseling Psychology, 55*(3), 308-320.
- Ungar, M. (2008). Putting resilience theory into action: Five principles for intervention. In L. Leibenberg & M. Ungar (Eds.), *Resilience in action: Working with youth across cultures and contexts* (pp. 17-36). Toronto: University of Toronto Press.
- United Nations International Strategy for Disaster Reduction (UNISDR). (2002). *Natural disasters and sustainable development: Understanding the link between development, environment and natural disasters* (Background document for the World Summit on Sustainable Development [WSSD]). Retrieved on January 10, 2008, from <http://www.un.org/jsummit/html/documents/backgrounddocs/unisdr%20report.pdf>
- United Nations International Strategy for Disaster Reduction. (2005, March). *Platform for the promotion of early warning* [Newsletter]. Retrieved on June 25, 2006, from [www.unisdr.org/ppew/newsletter/ppew-01-2005.pdf](http://www.unisdr.org/ppew/newsletter/ppew-01-2005.pdf)
- Updegraff, J. A., Taylor, S. E., Kemeny, M. E., & Wyatt, G. E. (2002). Positive and negative effects of HIV infection in women with low socioeconomic resources. *Personality and Social Psychology Bulletin, 28*, 382-394

- Val, E. B., & Linley, P. A. (2006). Post-traumatic growth, positive changes, and negative changes in Madrid residents following the March 11, 2004, Madrid train bombings. *Journal of Loss and Trauma, 11*, 409-424.
- Varda, D. M., Forgette, R., Banks, D., & Contractor, N. (2009). Social network methodology in the study of disasters: Issues and insights prompted by post-Katrina research. *Population Research and Policy Review, 28*, 11-29.
- Vigil, J. M., & Geary, D. C. (2008). A preliminary investigation of family coping styles and psychological well-being among adolescent survivors of hurricane Katrina. *Journal of Family Psychology, 22*(1), 176-180.
- Vijayakumar, L., Kannan, G. K., & Daniel, S. J. (2006). Mental health status in children exposed to tsunami. *International Review of Psychiatry, 18*(6), 507-513.
- Vijayakumar, L., Kannan, G. K., Kumar, B. G., & Devarajan, P. (2006). Do all children need intervention after exposure to tsunami? *International Review of Psychiatry, 18*(6), 515-522.
- Vijayakumar, L., Thara, R., John, S., & Chellappa, S. (2006). Psychosocial interventions after tsunami in Tamilnadu, India. *International Review of Psychiatry, 18*(3), 225-231.
- Walsh, F. (1998). *Strengthening family resilience*. New York: Guilford Press.
- Walsh, F. (2003). Family resilience: Strengths forged through adversity. In F. Walsh (Ed.), *Normal family processes: Growing diversity and complexity* (3<sup>rd</sup> ed., pp. 399-423). New York: Guilford Press.



- Watanabe, C., Okumura, J., Chiu, T., & Wakai, S. (2004). Social support and depressive symptoms among displaced older adults following the 1999 Taiwan earthquake. *Journal of Traumatic Stress, 17*(1), 63-67.
- Werner, E. E. (2005). Resilience: Past, present, and future. In R. D. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, and communities: Linking context to practice and policy* (pp. 3-12). New York: Kluwer Academic/Plenum.
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.
- Wickrama, K.A.S., & Kaspar, V. (2007). Family context of mental health risk in tsunami-exposed adolescents: Findings from a pilot study in Sri Lanka. *Social Science & Medicine, 64*, 713–723.
- Wild, N. D., & Paivio, S. C. (2003). Psychological adjustment, coping, and emotion regulation as predictors of post-traumatic growth. *Journal of Aggression, Maltreatment & Trauma, 8*(4), 97-122.
- World Health Organization. (2006). Report of the psychosocial support programme in tsunami-affected populations in India. *International Review of Psychiatry, 18*(3), 299-308.
- Wyman, P. A. (2003). Emerging perspectives on context specificity of children's adaptation and resilience: Evidence from a decade of research with urban children in adversity. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the*

*context of childhood adversities* (pp. 293-317). Cambridge, UK: Cambridge University Press.

Yates, T. M., & Masten, A. S. (2004). Fostering the future: Resilience theory and the practice of positive psychology. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 521-539). Hoboken, NJ: Wiley.

Zakour, M. J. (2008). Social capital and increased organizational capacity for evacuation in natural disasters. *Social Development Issues*, 30(1), 13-28.

## APPENDIX A

### Personal and Socio-Demographic Schedule

Age:

Gender: M/F

Marital Status: (a) Never Married (b) Married (c) others (specify):

Education: (a) No formal education (b) Less than high school (c) College or higher.

Occupation: (a) Unskilled worker (b) Skilled worker (c) Professional (d) Business  
(e) Other

Income: (a) Lower (b) Middle (c) Upper

Religion: (a) Hindu (b) Christian (c) Muslim (d) Other

Family Size:

Household Type: (a) Nuclear (b) Extended (c) Joint

Degree of Loss: (a) Loss due to death of immediate family member or relatives; (b) Loss due to damage/destruction of properties; (c) Lost housing and displaced d) other (specify):

## APPENDIX B

### The Post-Traumatic Growth Inventory

Indicate for the statement below the degree to which the change reflected in the question is true in your life as a result of your crisis, using the following scale.

- 0 = I did not experience this change as a result of my crisis.
- 1 = I experienced this change to a very small degree as a result of my crisis.
- 2 = I experienced this change to a small degree as a result of my crisis.
- 3 = I experienced this change to a moderate degree as a result of my crisis.
- 4 = I experienced this change to a great degree as a result of my crisis.
- 5 = I experienced this change to a very great degree as a result of my crisis.

1. I changed my priorities about what is important in life.
2. I have a greater appreciation for the value of my own life.
3. I developed new interests.
4. I have a greater feeling of self-reliance.
5. I have a better understanding of spiritual matters.
6. I more clearly see that I can count on people in times of trouble.
7. I established a new path for my life.
8. I have a greater sense of closeness with others.
9. I am more willing to express my emotions.
10. I know better that I can handle difficulties.
11. I am able to do better things with my life.
12. I am better able to accept the way things work out.
13. I can better appreciate each day.
14. New opportunities are available which wouldn't have been otherwise.
15. I have more compassion for others.
16. I put more effort into my relationships.
17. I am more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I better accept needing others.

## APPENDIX C

### General Self-Efficacy Scale

Response: 1 = *Not at all true* 2 = *Hardly true* 3 = *Moderately true* 4 = *Exactly true*

- 1) I can always manage to solve difficult problems if I try hard enough.
- 2) If someone opposes me, I can find means and ways to get what I want.
- 3) It is easy for me to stick to my aims and accomplish my goals.
- 4) I am confident that I could deal efficiently with unexpected events.
- 5) Thanks to my resourcefulness, I know how to handle unforeseen situations.
- 6) I can solve most problems if I invest the necessary effort.
- 7) I can remain calm when facing difficulties because I can rely on my coping abilities.
- 8) When I am confronted with a problem, I can usually find several solutions.
- 9) If I am in trouble, I can usually think of something to do.
- 10) No matter what comes my way, I'm usually able to handle it.

## APPENDIX D

### Locus of Control

Please read each statement. Where there is a blank, decide what your normal or usual attitude, feeling, or behavior would be:

A = *rarely* (less than 10% of the time)

B = *occasionally* (about 30% of the time)

C = Sometimes (about half of the time)

D = *frequently* (about 70% of the time)

E = *usually* (more than 90% of the time)

Of course, there are always unusual situations in which this would not be the case, but think of what you would do or feel in most normal situations.

Write the letter that describes your usual attitude or behavior in the space provided on the response sheet.

1. When faced with a problem I \_\_\_\_ try to forget it
2. I \_\_\_\_\_ need frequent encouragement from others for me to keep working at a difficult task.
3. I \_\_\_\_\_ Like jobs where I can make decisions and be responsible for my own work.
4. I \_\_\_\_\_ change my opinion when someone I admire disagrees with me
5. If I want something I \_\_\_\_\_ work hard to get it
6. I \_\_\_\_\_ prefer to learn the facts about something from someone else rather than have to dig them out for myself.

7. I \_\_\_\_ will accept jobs that require me to supervise others.
8. I \_\_\_\_ have a hard time saying “no” when someone tries to sell me something I don’t want.
9. I \_\_\_\_ like to have a say in any decisions made by any group I am in.
10. I \_\_\_\_ consider the different sides of an issue before making any decisions.
11. What other people think \_\_\_\_ has a great influence on my behavior.
12. Whenever something good happens to me I \_\_\_\_ feel it is because I have earned it.
13. I \_\_\_\_ enjoy in a position of leadership
14. I \_\_\_\_ need someone else to praise my work before I am satisfied with what I have done.
15. I \_\_\_\_ am sure enough of my opinions to try and influence others.
16. When something is going to affect me I \_\_\_\_ learn as much about it as I can.
17. I \_\_\_\_ decide to do things on the spur of the moment.
18. For me, knowing I’ve done something well is \_\_\_\_ more important than being praised by someone else.
19. I \_\_\_\_ let other people’s demands keep me from doing things I want to do.
20. I \_\_\_\_ stick to my opinions when someone disagrees with me
21. I \_\_\_\_ do what I feel like doing not what other people think I ought to do.
22. I \_\_\_\_ get discouraged when doing something that takes a long time to achieve results.
23. When part of a group I \_\_\_\_ prefer to let other people make all the decisions
24. When I have a problem I \_\_\_\_ follow the advice of friends or relatives.

25. I \_\_\_\_\_ enjoy trying to do difficult tasks more than I enjoy trying to do easy tasks
26. I \_\_\_\_ prefer situations where I can depend on someone else's ability rather than just my own.
27. Having someone important tell me I did a good job is \_\_\_\_\_ more important to me than feeling I've done a good job
28. When I am involved in something I \_\_\_\_\_ try to find out all I can about what is going on even when someone else is in charge.



## APPENDIX E

### FACES IV

#### **Directions to Family Members:**

1. *All family members over the age 12 can complete FACES IV.*
2. *Family members should complete the instrument independently, not consulting or discussing their responses until they have been completed.*
3. *Fill in the corresponding **number** in the space on the provided answer sheet.*

*1 = strongly disagree 2 = generally disagree 3 = undecided 4 = generally agree 5 = strongly agree*

1. Family members are involved in each others lives.
2. Our family tries new ways of dealing with problems.
3. We get along better with people outside our family than inside.
4. We spend too much time together.
5. There are strict consequences for breaking the rules in our family.
6. We never seem to get organized in our family.
7. Family members feel very close to each other.
8. Parents equally share leadership in our family.
9. Family members seem to avoid contact with each other when at home.
10. Family members feel pressured to spend most free time together.
11. There are clear consequences when a family member does something wrong.
12. It is hard to know who the leader is in our family.
13. Family members are supportive of each other during difficult times.
14. Discipline is fair in our family.
15. Family members know very little about the friends of other family members.
16. Family members are too dependent on each other.
17. Our family has a rule for almost every possible situation.
18. Things do not get done in our family.
19. Family members consult other family members on important decisions.
20. My family is able to adjust to change when necessary.
21. Family members are on their own when there is a problem to be solved.
22. Family members have little need for friends outside the family.
23. Our family is highly organized.
24. It is unclear who is responsible for things (chores, activities) in our family.
25. Family members like to spend some of their free time with each other.
26. We shift household responsibilities from person to person.
27. Our family seldom does things together.
28. We feel too connected to each other.

29. Our family becomes frustrated when there is a change in our plans or routines.
30. There is no leadership in our family.
31. Although family members have individual interests, they still participate in family activities.
32. We have clear rules and roles in our family.
33. Family members seldom depend on each other.
34. We resent family members doing things outside the family.
35. It is important to follow the rules in our family.
36. Our family has a hard time keeping track of who does various household tasks.
37. Our family has a good balance of separateness and closeness.
38. When problems arise, we compromise.
39. Family members mainly operate independently.
40. Family members feel guilty if they want to spend time away from the family.
41. Once a decision is made, it is very difficult to modify that decision.
42. Our family feels hectic and disorganized.
43. Family members are satisfied with how they communicate with each other.
44. Family members are very good listeners.
45. Family members express affection to each other.
46. Family members are able to ask each other for what they want.
47. Family members can calmly discuss problems with each other.
48. Family members discuss their ideas and beliefs with each other.
49. When family members ask questions of each other, they get honest answers.
50. Family members try to understand each other's feelings
51. When angry, family members seldom say negative things about each other.
52. Family members express their true feelings to each other.

1 = *Very Dissatisfied* 2 = *Somewhat Dissatisfied* 3 = *Generally Satisfied*  
 4 = *Very Satisfied* 5 = *Extremely Satisfied*

**How satisfied are you with:**

53. The degree of closeness between family members.
54. Your family's ability to cope with stress.
55. Your family's ability to be flexible.
56. Your family's ability to share positive experiences.
57. The quality of communication between family members.
58. Your family's ability to resolve conflicts.
59. The amount of time you spend together as a family.
60. The way problems are discussed.
61. The fairness of criticism in your family.
62. Family members concern for each other.

## APPENDIX F

### Social Capital

Six questionnaire items used for constructing a scale for measuring social capital:

#### **Structural Social Capital**

##### *Membership in labor-sharing groups*

1. Are you a member of labor group in a village i.e. do you work often with the same group, sharing the work that is done either on your own fields, on some public works, or for some private employer?

Yes [1]

No [0]

##### *Dealing with crop disease*

2. If there were a problem that affected the entire village or neighborhood, for instance (Rural: "Crop Disease;" Urban: "violence"), who do you think would work together to deal with the situation?

Each person/household would deal with the problem individually [1]

Neighbors among themselves [2]

Local government municipal political leaders [3]

All community leaders acting together [4]

The entire village/neighborhood [5]

##### *Dealing with natural disasters*

3. At times of severe calamity or distress, villagers often come together to assist each other. Suppose there as some calamity in this village requiring immediate help from the government e.g. Flood or fire, who in this village do you think would approach the government for help? The range of responses was as follows:

No one [1]

Government employees posted in the village [2]

Some political leaders of the village [3]

A committee of villagers [4]

The entire village collectively [5]

## **Cognitive Social Capital**

### ***Trust***

4. Suppose a friend of yours in the village faced the following alternatives: which one would he or she prefer?
- a. To own and farm 10 bighas of land entirely by themselves [1]
  - b. To own and farm 25 bighas of land jointly with one other person [2]

### ***Public spiritedness***

5. Is it possible to conceive of a village leader who puts aside his own welfare and that of his family to be concerned mainly with the welfare of village society?
- Such a thing is not possible [1]
  - It is sometimes possible [2]
  - Such a thing happens quite frequently in this village [3]

### ***Solidarity***

6. Some children of the village tend to stray from the correct path, for example, they are disrespectful to elders, they disobey their parents, are mischievous etc. Who in this village feels it right to correct other people's children?
- No one [1]
  - Only close relatives [2]
  - Relatives and neighbors [3]
  - Anyone from the village [4]

## APPENDIX G

### **Informed Consent Form for The Effects of Individual, Family, and Community Factors on Adult Resilience: A Study on the Tsunami Survivors of 12/26 (Questionnaire)**

You are invited to participate in a study that will examine the effects of individual, family, and community factors on resilience of adult individuals who have survived the natural disaster tsunami. This study was approved by the University of Denver's Institutional Review Board for the protection of human subjects in research on 10/10/2006. You have been identified as a person who experienced the tsunami and are considered a resource person who can help to inform the social work profession about the successful and unsuccessful experiences of surviving tsunami. This study is being conducted to fulfill the requirements of a doctoral degree in social work. The study is conducted by Johny Augustine, M.Phil. Results of the study will be used to inform professionals and policy makers who are concerned with natural disasters. Johny Augustine can be reached at 001-[303-733-7045](tel:303-733-7045)/[0467-2-269258](tel:303-733-7045)/[jaugusti@du.edu](mailto:jaugusti@du.edu). This research project is supervised by Dr. Lynn Parker, Associate professor, Graduate School of Social Work, University of Denver, CO, 80208. The supervisor can be reached at 001-303-871-3676 /[Martha.Parker@du.edu](mailto:Martha.Parker@du.edu) .

Participation in this study should take about ninety to hundred and twenty minutes of your time for a face to face interview which will be held at a place of your convenience. Participation in this study will involve responding to a set of questions related to your personal, family, and community resources that have helped you survive tsunami, as well as the personal growth experienced by participants subsequent to experiencing tsunami. Your participation is strictly voluntary. We respect your right to refuse to answer any questions you do not wish to answer. Refusal to participate or withdrawal from participating during the course of this study will involve no penalty or loss of benefits to which you are otherwise entitled.

There are benefits to participating in this study. This study will provide you with an opportunity to share the unique experiences of having utilized your resources to survive tsunami. Your participation may also result in improving the quality of social work services and other disaster related services in India and other countries. If you would like a copy of the results of the study, the researcher will be happy to provide one for you. You will also receive a compensation of fifty Indian rupees (Rs. 50) for your participation in the project regardless of whether you withdraw your participation after initial consent.

The potential risk of participating in this study is anticipated to be minimal. However, some of the questions may cause some discomfort to you in terms of reliving the past

experiences of coping with and surviving tsunamis. If, however, you experience any discomfort you may discontinue your participation at any time. In such cases, the researcher will arrange for free mental health services from the family counseling center and the mental health department of the district hospital operating in your locality to take care of your mental health needs.

Your responses will be audio taped and kept strictly confidential. The information collected from you will be kept in a locked file. Only the researcher/and/or his academic instructor will have access to the original records. The records would only be available for educational and research purposes for this project only. In addition, when the investigator reports or publishes information, it will be reported/published for the entire group of participants, never for any one individual.

If you have any concerns or complaints about how you were treated during this study, please contact Susan Sadler, [303-871-3454](tel:303-871-3454)/[ssadler@du.edu](mailto:ssadler@du.edu), Chair, Institutional Review Board for the protection of Human Subjects, or Sylk Sotto-Santiago, Office of Sponsored Programs at 303-871-4052 or write to either at the University of Denver, Office of Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121.

I have read and understood the foregoing descriptions of the research project. I have asked for and received a satisfactory explanation of any language that I did not fully understand. I understand that there are two exceptions to the promise of confidentiality. If information is revealed concerning suicide, homicide or child abuse and neglect, it may be required by law that this be reported to proper authorities. In addition, should any information contained in this study be the subject of a court order or lawful subpoena, the University of Denver may not be able to avoid compliance with the order or subpoena.

I agree to participate in this study, and I understand that I may withdraw my consent at any time. I have received a copy of this consent form.

Signature \_\_\_\_\_

date\_\_\_\_\_

\_\_\_\_\_ I agree to be audio taped

\_\_\_\_\_ I do not agree to be audio taped

Signature \_\_\_\_\_

date\_\_\_\_\_

## APPENDIX H

### **Informed Consent Form for The Effects of Individual, Family, and Community Factors on Adult Resilience: A Study on the Tsunami Survivors of 12/26 (In-depth Interview)**

You are invited to participate in a study that will examine the effects of individual, family, and community factors on resilience of adult individuals who have survived the natural disaster tsunami. This study was approved by the University of Denver's Institutional Review Board for the protection of human subjects in research on 10/10/2006. You have been identified as a person who experienced the tsunami and are considered a resource person who can help to inform the social work profession about the successful and unsuccessful experiences of surviving tsunami. This study is being conducted to fulfill the requirements of a doctoral degree in social work. The study is conducted by Johny Augustine, M.Phil. Results of the study will be used to inform professionals and policy makers who are concerned with natural disasters. Johny Augustine can be reached at 001-[303-733-7045](tel:303-733-7045)/[0467-2-269258](tel:0467-2-269258)/[jaugusti@du.edu](mailto:jaugusti@du.edu). This research project is supervised by Dr. Lynn Parker, Associate professor, Graduate School of Social Work, University of Denver, CO, 80208. The supervisor can be reached at 001-303-871-3676 /[Martha.Parker@du.edu](mailto:Martha.Parker@du.edu) .

Participation in this study should take about ninety to hundred and twenty minutes of your time for a face to face interview which will be held at a place of your convenience. Participation in this study will involve responding to a set of questions related to your personal, family, and community resources that have helped you survive tsunami, as well as the personal growth experienced by participants subsequent to experiencing tsunami. Your participation is strictly voluntary. We respect your right to refuse to answer any questions you do not wish to answer. Refusal to participate or withdrawal from participating during the course of this study will involve no penalty or loss of benefits to which you are otherwise entitled.

There are benefits to participating in this study. This study will provide you with an opportunity to share the unique experiences of having utilized your resources to survive tsunami. Your participation may also result in improving the quality of social work services and other disaster related services in India and other countries. If you would like a copy of the results of the study, the researcher will be happy to provide one for you. You will also receive a compensation of fifty Indian rupees (Rs. 50) for your participation in the project regardless of whether you withdraw your participation after initial consent.

The potential risk of participating in this study is anticipated to be minimal. However, some of the questions may cause some discomfort to you in terms of reliving the past experiences of coping with and surviving tsunami. If, however, you experience any

discomfort you may discontinue your participation at any time. In such cases, the researcher will arrange for free mental health services from the family counseling center and the mental health department of the district hospital operating in your locality to take care of your mental health needs.

Your responses will be audio taped and kept strictly confidential. The information collected from you will be kept in a locked file. Only the researcher/and/or his academic instructor will have access to the original records. The records would only be available for educational and research purposes for this project only. In addition, when the investigator reports or publishes information, it will be reported/published for the entire group of participants, never for any one individual.

If you have any concerns or complaints about how you were treated during this study, please contact Susan Sadler, [303-871-3454/ssadler@du.edu](mailto:303-871-3454/ssadler@du.edu), Chair, Institutional Review Board for the protection of Human Subjects, or Sylk Sotto-Santiago, Office of Sponsored Programs at 303-871-4052 or write to either at the University of Denver, Office of Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121.

I have read and understood the foregoing descriptions of the research project. I have asked for and received a satisfactory explanation of any language that I did not fully understand. I understand that there are two exceptions to the promise of confidentiality. If information is revealed concerning suicide, homicide or child abuse and neglect, it may be required by law that this be reported to proper authorities. In addition, should any information contained in this study be the subject of a court order or lawful subpoena, the University of Denver may not be able to avoid compliance with the order or subpoena.

I agree to participate in this study, and I understand that I may withdraw my consent at any time. I have received a copy of this consent form.

Signature \_\_\_\_\_

date\_\_\_\_\_

\_\_\_\_\_ I agree to be audio taped

\_\_\_\_\_ I do not agree to be audio taped

Signature \_\_\_\_\_

date\_\_\_\_\_



## APPENDIX I

### FLYER

Come Participate in a Tsunami Research Project !!!

You are invited to participate in a research project\* that will examine the effects of individual, family, and community factors on resilience of adults exposed to the natural disaster tsunami.

Your experiences and personal stories of surviving the tsunami are valuable and can help others who have had similar experiences. Your experiences will also contribute towards the improvement of disaster relief services and programs in India and in other countries.

Your participation is strictly voluntary. Your responses will be kept strictly confidential. Only the researcher/and/or his academic instructor will have access to original records. You may refuse to participate or withdraw from participation in this study at any time. Your participation or refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled from other tsunami relief programs and services.

If you are interested please contact Mr. Johny Augustine on or before 10/10/2007. Johny Augustine can be reached at the following phone number or address:

**Phone number:** Res:[0467-2-269258](tel:0467-2-269258)

[Cell: 9961557878](tel:9961557878)

[Email: jaugusti@du.edu.](mailto:jaugusti@du.edu)

**Address: Johny Augustine**

**Apartment No. C**

**Sreerag Studio.**

**Near Taluk Hospital**

**Karunagappalli Post.**

**Kollam (District), Kerala State.**

**PIN: 690518.**

\*This research project was approved by the University of Denver's Institutional Review Board for the protection of human subjects in research on \_\_\_10/10/2006\_\_\_\_\_.