

EXPLORING THE USE OF THE PHENOMENOLOGICAL APPROACH TO UNDERSTAND PAST EARTHQUAKE AND TSUNAMI EVENTS

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ABSTRACT

This work explores the use of qualitative research methods in communication, specifically phenomenological analysis, combined with technical background in geology, to understand how people give meaning to earthquake and tsunami events. The sources of data are from non-seismological observations of earthquake impacts, mostly documented descriptions of experiences of people, with archival video-documented interviews as the main tool. There is great potential for in-depth analysis of interviews of people who have experienced major events and have vividly described their lived experiences. The phenomenological approach focuses on analyzing and understanding the phenomena from the point of view of the resource persons for person-in-environment contexts based on past events and future expectations (Kitchin and Tate, 2013). This work attempts to use both descriptive and interpretative phenomenological analysis (DIPA) in understanding how people who went through the earthquake and tsunami experience understand, and make meaning of the disaster based on the analysis of their own descriptions. The significance of DIPA as a research methodology lies in its potential contributions to macro-seismic studies and risk communication. Analyzed vivid descriptions would fill in gaps in information on macro-seismic studies such as derived intensities based on descriptions of impacts on people and environment. Understanding "how people understand and ascribe meaning to such past events" will greatly contribute to risk communication planning.

Keywords: *earthquake, tsunami, phenomenological analysis, macro-seismic, risk communication*

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INTRODUCTION

Years of interacting with people about their experiences during major hazardous events such as earthquakes, which sometimes also result in tsunami occurrences, have made us researchers realize that there is a wealth of information that can be further studied for a deeper understanding of how people perceived and “understood” the hazardous event. For years the value of archival video- documented interviews of people who lived the experience, has been recognized, as a tool to mine “descriptions” of how people observed the event as it unfolded, mainly to fill in the gaps in terms of descriptions of the impacts of the event and its effect on people and the environment. Earlier works exploring the disaster accounts^[1] ^[2], also noted the beauty of the local language from the way “local” people described events that are of geologic significance.

This paper looks into the potential use and merits of the phenomenological approach as a research tool in understanding earthquake and tsunami events of the past. It is interested in reviewing archival materials, mostly video-documented interviews of living eye-witnesses and survivors who shared their experience. The approach involves not only examining these from a communication perspective but also transcending mere extraction of descriptions of different phenomena associated with earthquakes (such as ground shaking, ground rupture, liquefaction and actual tsunami), by focusing on the values of the individual’s experience^[3]. As a disaster research tool, the approach contributes to understanding past events better, whether to fill in gaps or expand information through significant descriptions, or validate against what is known; and beyond the disaster, it appreciates the informants’ lived experience – how they understand and communicate the disaster experience.

Phenomenology

Phenomenology is an inductive qualitative research approach from the philosophical views of Edmund Husserl (1859-1938). It focuses on the relation of the meaning of the individual’s experience to consciousness^[3]. In developing his descriptive phenomenology, Husserl focuses on the description of everyday conscious experiences^[3]. Martin Heidegger (1889-1976), Husserl’s student, developed interpretative phenomenology, which goes beyond description or core concepts of experience and seeks meanings embedded in these occurrences in focus^[3].

The phenomenological approach focuses on analyzing and understanding the phenomena from the point of view of resource persons^[4]. While *descriptive phenomenology* emphasizes the “pure” description of people’s experience, and is used to illuminate poorly understood aspects of experiences, the *interpretative / interpretive / hermeneutic* approach is used to examine contextual features of an experience in relation to other influences such as culture, gender, employment or well-being of people or groups experiencing the phenomenon^[5]. This allows researchers to arrive at a deeper understanding of the experience, so that they can derive the information which can address needs, in this case, in disaster risk reduction, specifically as risk communication.

Macro Seismic Studies

The term macro-seismic refers to those earthquake effects perceived without the aid of instruments. It describes any relatively large seismic event (capable of causing damage) and determines its intensity. Macro-seismic seismology is interested in the effects of what happened; on the other hand, instrumental seismology deals with what happened during the shaking. Macro seismic information can make definite and exact measurement of the impacts of the ground motion upon human-made structures, on humans, and on the ground, itself. Hence, efficient macro-seismic observations are important for both theoretical and practical needs^{[6][7]}.

A macro seismic study involves gathering information on how strongly an earthquake was felt in different places. When done rapidly and systematically, it improves situational awareness and, in turn, can contribute to efficient emergency response^[6]. Research on past events or revisits, when done systematically, improve understanding of the event and how people perceived the event at the time, and contribute to risk communication strategy.

Thus, the collection of these earthquake testimonies (qualitative descriptions of felt shaking) is essential for macro-seismic studies^[6].

In the Philippines, determining intensities is based on the locally-designed PHIVOLCS Earthquake Intensity Scale (PEIS) (**Table 1**). This modified scale takes its origins from the Rossi-Forrel Intensity Scale (RFI) of 1935 and adapted Modified Mercalli Intensity Scale (MMI) of 1956. The drafting of PEIS was started sometime in 1990 after the 16 July 1990 Luzon Earthquake, when it was realized that both RFI and MMI had descriptions that were not entirely applicable to the local setting. The draft was tested during the survey after the 1994 Mindoro Oriental Earthquake and Tsunami, and the PEIS was finalized in 1997. The PEIS uses three general categories (1) impacts on people's perceptions, (2) impacts on structures and objects, and (3) impacts on the natural environment^[8].

Table 1. PHIVOLCS Earthquake Intensity Scale (PEIS) - Friday, 09 May 2008 17:14
(http://www.phivolcs.dost.gov.ph/index.php?option=com_content&task=view&id=45&Itemid=100)

INTENSITY SCALE		DESCRIPTION
I	SCARCELY PERCEPTIBLE	<ul style="list-style-type: none">• Perceptible to people in favorable circumstances• Delicately-balanced objects are disturbed slightly• Still water in containers oscillates slightly
II	SLIGHTLY FELT	<ul style="list-style-type: none">• Felt by few individuals at rest indoors• Hanging objects swing slightly• Still water in containers oscillates noticeably
III	WEAK	<ul style="list-style-type: none">• Felt by many people indoors specially in upper floors of buildings.• Vibration is felt like the passing of a light truck.Dizziness and nausea are experienced by some people• Hanging objects swing moderately• Still water in containers oscillates moderately.

IV	MODERATELY STRONG	<ul style="list-style-type: none"> • Felt generally by people indoors and some people outdoors. Light sleepers are awakened. Vibration is felt like the passing of a heavy truck • Hanging objects swing considerably. Dinner plates, glasses, windows and doors rattle. Floors and walls of wood-framed buildings creak. Standing motor cars may rock slightly, • Water in containers oscillates strongly. • Rumbling sounds may sometimes be heard.
V	STRONG	<ul style="list-style-type: none"> • Generally felt by most people indoors and outdoors. Many sleeping people are awakened. Some are frightened; some run outdoors. Strong shaking and rocking are felt throughout the building. • Hanging objects swing violently. Dining utensils clatter and clink; some are broken. Small, light and unstable objects may fall or overturn. Liquids spill from filled open containers. Standing vehicles rock noticeably.

INTENSITY SCALE		DESCRIPTION
VI	VERY STRONG	<ul style="list-style-type: none"> • Many people are frightened; many run outdoors. Some people lose their balance. Motorists feel like driving with flat tires. • Heavy objects and furniture move or may be shifted. Small church bells may ring. Wall plaster may crack. Very old or poorly built houses and man-made structures are slightly damaged though well-built structures are not affected. • Limited rockfalls and rolling boulders occur in hilly to mountainous areas and escarpments. Trees are noticeably shaken.
VII	DESTRUCTIVE	<ul style="list-style-type: none"> • Most people are frightened and run outdoors. People find it difficult to stand in upper floors • Heavy objects and furniture overturn or topple. Big church bells may ring. Old or poorly built structures suffer considerable damage. Some well-built structures are slightly damaged. Some cracks may appear on dikes, fish ponds, road surfaces, or concrete hollow block walls. • Limited liquefaction, lateral spreading and landslides are observed. Trees are shaken strongly. (Liquefaction is a process by which loose saturated sand loses strength during an earthquake, and behaves like liquid).
VIII	VERY DESTRUCTIVE	<ul style="list-style-type: none"> • People are panicky. People find it difficult to stand even outdoors. • Many well-built buildings are considerably damaged. Concrete dikes and foundations of bridges are destroyed by ground settling or toppling. Railway

		<p>tracks are bent or broken.</p> <ul style="list-style-type: none"> Liquefaction and lateral spreading cause man-made structures to sink, tilt or topple. Numerous landslides and rockfalls occur in mountainous and hilly areas. Boulders are thrown out from their positions particularly near the epicenter. Fissures and fault rupture may be observed. Trees are violently shaken. Water splashes or slops over dikes or banks of rivers.
IX	DEVASTATING	<ul style="list-style-type: none"> People are forcibly thrown to the ground. Many cry and shake with fear. Most buildings are totally damaged. Bridges and elevated concrete structures are toppled or destroyed. Numerous utility posts, towers and monuments are tilted, toppled or broken. Water and sewer pipes are bent, twisted or broken. River water splashes violently or slops over dikes and banks. Landslides and liquefaction with lateral spreading and sand boils are widespread. The ground is distorted into undulations. Trees are shaken very violently with some tipped or broken. Boulders are commonly thrown out.
X	COMPLETELY DEVASTATING	<ul style="list-style-type: none"> Practically all man-made structures are destroyed. Massive landslides and liquefaction, large scale subsidence and uplifting of landforms, and many ground fissures are observed. Changes in river courses and destructive seiches in lakes occur. Many trees are toppled, broken or uprooted.

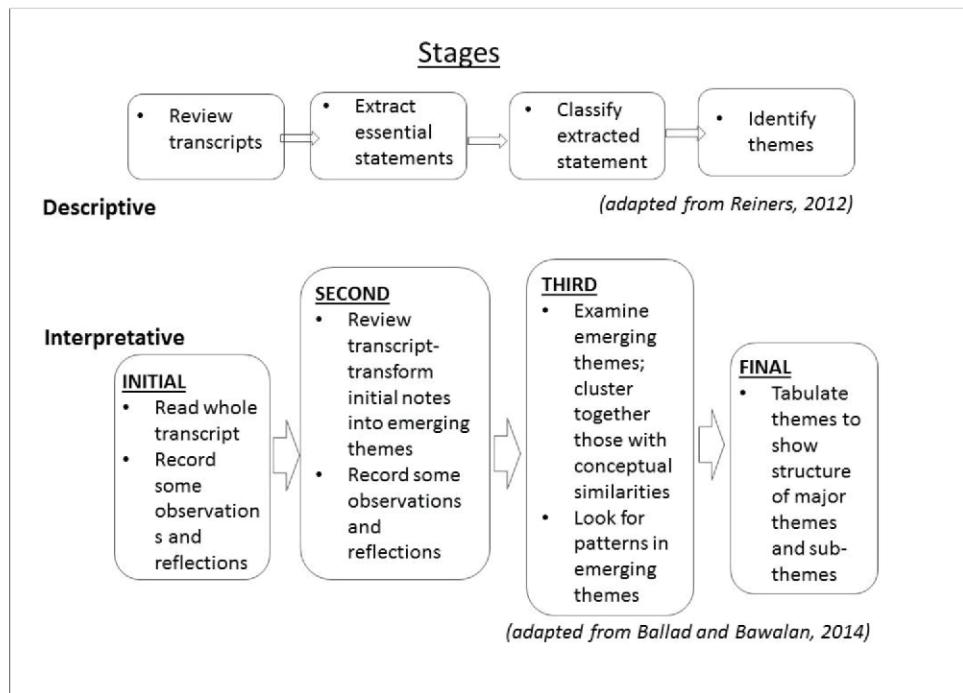
METHODS

For this paper, as an exploratory stage in adapting the descriptive and interpretative phenomenological approach, archived interviews that have been accumulated through the years were reviewed. Sampling from the 15 November 1994 Earthquake interviews was focused on. All were transcribed and read thoroughly. Published works on Interpretative Phenomenological Analysis (IPA) may have as few as one to as many as fifteen participants^[9] [12]. Three to four (3-4) significant interviews were eventually selected initially, based on: (1) their having had vivid descriptions of the phenomena (shaking and post-shaking), (2) having experienced being swept by the waves, and (3) in the process, were separated from their families.

Processing for Descriptive Phenomenology is more straightforward for this entails extracting direct quotes of descriptions from the subjects. For Descriptive and Interpretative Analysis and data processing, a combination of methods as described by Ballad and Bawalan (2014)^[10] and Reiners (2012)^[3] were used. During the review of transcriptions for analysis, at least 4 stages were identified, based on Ballad and Bawalan (2014)^[10]. **Figure 1**, Following Reiners (2012)^[3], for data analysis, Approach 2 which combines description and interpretation in uncovering thematic aspects of the experience was applied. In this Approach 2, the phenomena are identified and interpreted. For further analysis, the selective approach, in which only essential elements are extracted, was used.

What people thought beneath what is being stated was noted in order to come up with themes.

Figure 1. Schematic Diagram Showing the Stages of Data Process



CASE STUDY 1: MINDORO, 15 NOVEMBER 1994 EARTHQUAKE

On 15 November 1994, at 3:15 in the morning, a magnitude 7.1 earthquake occurred in Oriental Mindoro. The depth of the earthquake was determined between 7-12 kilometers and created a surface rupture from the then unrecognized Aglubang River Fault. The rupture on land of about 35 kilometers long which extended northwards immediately created tsunami waves with heights between 2-4 meters and inundated 13-250 meters of the coast affecting coastal communities of Calapan, Baco, Puerto Galera and San Teodoro. This event left great damage to property and injured hundreds of people and caused a death toll of 78^[11].

As part of an earlier documentation for a video feature, a search for survivors and eye-witnesses was conducted in 2006. This work will review these interviews not only to recapture original descriptions but also to search for experiential descriptions that could yield important information, especially the lived experience. A further step is to interpret the phenomena, based on descriptions, how this has affected or impacted the people who experienced the event. Excerpts extracted are quoted in this paper.

Descriptive Phenomenology

Descriptive Phenomenology (DP) emphasizes the pure description of people's experiences^[5]. Applied to this work, what is intended is to recapture the original descriptions as narrated, especially those referring to the earthquake phenomena, that would help determine and

contribute to understanding local intensities as well as descriptions that validate related-phenomena such as a tsunami. **Table 2** presents some excerpts of the interviews in which the ground shaking phenomena as well as signs of impending local tsunami were described.

What are significant here are the vivid descriptions of the shaking and what it does to the people and the surroundings. Using the PEIS (**Table 1**), the direct contribution of these excerpts are the use of the descriptions for determining intensities, by comparing these with the PEIS list and determining range of intensities from minimum to maximum. Common for ground shaking are descriptions of people being awakened by the shaking, finding it difficult to stand, and being frightened in different degrees (frightened people run outdoors, etc.) and heavy objects toppling.

Table 2. Descriptive Phenomenology- Extracted Passages for Macro Seismic Determination of Local Intensities and Validation of Observed Signs During the Occurrence of a Tsunami

1	FROM	GROUND SHAKING	NOTES/ COMMENTS/ POSSIBLE PEIS EQUIVALENT
1.1	MD-ME1994	<i>"Eh, very weak shaking, then it became stronger and stronger. Then the waters followed. Yes, we were asleep, and were awakened by the strong shaking and some of our stuff inside fell. Our cabinet toppled. Our ref also toppled. Eh, we just sat. My wife and I were in our room. Our children were in the other room. They could not leave their room."</i>	Min IV- light sleepers are awakened; Max V- many sleeping people awakened; Max VII- People find it difficult to stand in upper floors Max VII- Heavy objects and furniture topple
1.2	EC-ME1994	<i>"It was almost three in the morning. It shook, then it became stronger and stronger. We were awakened, and we panicked. We went out, then walked away (from the sea), then the waves reached us."</i>	VI- Many people are frightened, many run outdoors - timing suggests rapid sequence of events - not enough time
1.3	ND-ME1994	<i>Yes, we were awakened. I said, "Aba, earthquake". I stood up. I told them, "Wake up, wake up," I said to my children. Eh, they asked, "Why, mother, why?" I was shaking. My children were crying. I sat up, "Don't stand up" I said "you might fall." so, they did not stand up... it was shaking for a while.</i>	Min IV-awakened; Max VI- people find it difficult to stand in upper floors
1.4	ET-ME1994	<i>We were awakened. But before that earthquake, the sea was beautiful and calm. We did not think...the moon was bright. Nothing, when it started to shake, we held on to each other, we did not stand because of the strong shaking."</i>	Min IV- awakened; Max VII – people find it difficult to stand in upper floors

2		TSUNAMI -	observation of natural signs
2.1	EC-ME 1994	<i>As we were able to get out, we heard this roaring. It turned out to be the waves coming. Yes, the roaring. The roaring of the waves. We did not know back then that these were the waves. It was roaring.</i>	Roar or rumbling sound that immediately followed the strong ground shaking
2.2.	EC-ME 1994	<i>Then there was another wave coming. There were three big waves that I really saw. When I looked up, I was swept and moved. Then there was another wave. The third one, it was almost it had started to subside.</i>	Describes at most 3 waves that he experienced
2.3.	ND-1994	<i>Ay, when the shaking stopped. My husband said, "Well, lie down again, as it is over," that is what he said. I said, "No, no, no it is not finished yet." Because I could hear the rumbling from the sea. I said, "No, it is not, it's roaring". I opened the window. My husband said, "No, go back to sleep, as that is just the wind." "Just the wind" I said. "it's a tornado?" that is what I said. I opened the window, and it was really roaring. It was like the sound of whistling. I opened the window. I saw if. Far into the horizon, the sea, it was really dark. And it was because it was the incoming waves. Yes, the water had started coming back.</i>	Roaring sound from the sea that was immediately heard after the strong shaking and observed the waves as it came back.
2.4	ET-ME1994	<i>When the shaking stopped, it was immediately followed by a very loud roaring. So, I told my husband, "Let us go down, maybe it is still another earthquake, our house might collapse." That instant that we got down to the ground, we were not able to move from that spot where we stood.</i>	Roar or rumbling sound that immediately followed the strong ground shaking- and then felt the onslaught of the waves- telling us there is not enough time

Interpretative Phenomenology

Unlike the Descriptive Phenomenology Approach (which is confined to the basic description), Interpretative Phenomenology Approach, goes further to examine the narrated stories based on the interviews in context, to have a deeper understanding of the experience from the point of view of the narrator^[5]. After a review of the transcribed interviews, three major themes were identified: survival - feeling of one swept away by tsunami waves; feeling of loss and helplessness - being separated from one's family; and how these events have influenced their decisions in life: impact of tsunami and loss of family members.

Experiences of Being Swept Away by Tsunami Waves and Surviving This

What does one experience when actually swept away by big waves of tsunami? A survivor (ET-ME1994) who was caught by the waves and was swept away gives a very detailed account of her experience.

"When the shaking stopped, it was immediately followed by a very loud roaring. So, I told my husband, "Let us go down, maybe it is still another earthquake, our house might collapse." That instant that we got down to the ground, we were not able to move from that spot where we stood. But one of my children, my second, as soon as we got to the ground, he ran. The waves have arrived. We were able to get down from the house, maybe that is why- if we were trapped inside the house all of us would have probably been killed. Because, my husband- I did not even know where he drifted. I could see the dark waves- it was very near. The moon was bright, eh. Then I felt the waters. I was already on the ground when I saw the waves, overcoming the roof of our house-with white color. I fell to the ground, I think the house fell on me. I was not able to stand up anymore. I fell together with my two small children. I was not able to move anymore. Ah, I only felt, like there is this warm water squirting from the ground, underneath. Maybe I lost consciousness. I only felt, I was already under water. It was like I was losing consciousness when I fell. I could not run anymore. Just as soon as we got to the ground, the bulk of the wave was already there. The only thing I was able to hear that my husband uttered was "There's water- "he did not even say "Waves". I said, "Oh my God, our banca"- as we have a small boat. That's all that I was able to sat. There was no time to hold. Even if you try to run, there was not much that can be done.

When I regained my consciousness, I think I was still submerged underwater, I wanted to go up to the surface, I said, "Dear Lord, I am going to die." I have swallowed water. I tried to float, I could hear sounds, gurgling sounds, maybe my children... then we were washed over to some place far. I was like- I was not swimming, but I was just being washed up by the waves someplace. Then I felt something to hold on to, I held on to it... I held on and the water was this deep. Then that's when I opened my eyes. I could see water all over. Those who survived- we emerged. One by one we all emerged. my underwear was gone. But my clothes were this length, long enough. One by one, we started walking out. I remember, it was almost dawn, there was no help that arrived. We left around nine in the morning.

I could hardly breathe. I did not feel anything until when I finally regained my consciousness... that's when I slowly started to feel again. We waited until they brought us to Wawa to go to a hospital. I just saw other people, other survivors when we all stood up... My children? No, I did not see them anymore. I requested my sister-in-law to try find them as I was to be brought to the hospital, and they knew. I asked them to take care of my children. My daughter, she was found on the 9th day. The oldest one who lived, we were brought together to the hospital. Only the two of us were left behind. My husband was not found at all. He was the only one who went missing and his body could not be found." - ET-ME1994

Experience of Being Separated from Family and Feeling of Loss and Helplessness

Of the three accounts, one (ET-ME1994) almost lost her entire family except for the eldest child (2 children died and husband perished; his body was never recovered). The two others (ND-ME1994 and EC-ME 1994) were lucky enough that members of their family all survived. The following excerpts describe being swept by the waves and losing grip of the other members of the family, in the process, being separated from them. The excerpts describe the feeling of loss and helplessness that followed. The common thought running in their minds is being the only one left alive and the ordeal of looking for members of the family that took hours. For the case of ET-ME1994, it was looking for and recovering bodies of loved ones which extended to days after the event. Indescribable fear even years after is something that is expressed by ET-ME1994.

"Nothing, the nipa area was like a desert, it was flattened. I could never explain my experience. There is still fear until now. I still carry with me this misfortune of my family. So I could never fully explain this fear. My husband and my three children. Only my eldest child survived, we were both hospitalized. Yes, that one survived. The only one left with me is my oldest child, because of the roof. When the roof came, he did not know what happened to them. So, I say this child of mine is lucky. He was spared. I thought I was the only one left." - ET-ME1994

Two survivors (ND-ME1994 and EC-ME1994) had clear descriptions of fear and loss they felt upon realizing that their families were separated by the waves.

"So, when we saw that dark horizon, I told my children, "Stand up, get downstairs, get downstairs," so we all went downstairs. That moment we reached the ground, we were hit by the big wave. It was tall, higher than the house. The waves brought us to the coconut field area. We were separated. We were scattered.

I had with me my youngest child, the other two, my youngest was aged two, the others were six and eight. We were separated from each other. The waves brought them towards the school, while we were washed over towards the church. We were scattered. When the water slowly receded. I said, "My children are gone, where are my children?" So, I was frantically screaming. I was calling out their names, "Riza, my child, where are you?" "My son, where are you?" It took a long time. They were missing for a long time. I looked for them for like an hour. Dawn was breaking. My youngest... I did not let go, I really held on tight and clutched her to make sure I did not lose my grip of her.

Because, as I realized the two others were already lost, they were holding on to my dress when we were swept away... They were gone. When the waves hit us, they were holding on to the hem of my dress. When we were hit by the waters, they were swept away. I walked. When I reached the school, I heard, "Mother, we are here." One was trapped under a huge wood. It was so good that he did not die. After I found them, we went to the house of my mother-in-law. It was so good that my husband was safe as well. He was unconscious for a long time. He was swept by the waters. But, we were not pulled back into the sea." - ND-ME1994

For this experience, the woman's (ND-ME1994) family (3 children) was immediately swept away by the tsunami waves. As soon as they reached the ground, the tsunami hit, and so she lost grip of her 2 other children. In this narration of experience, one can feel the helplessness and desperation of the mother losing sight of her children. When the water receded, she shouted "my children are gone, where are my children," so she was frantically screaming. She even narrated how tightly she held on to ensure she did not lose grip of her youngest child when the waters swept them, for in her mind she already lost the other two (2).

"It was around three in the morning. We were awakened. We were able to walk away a little before the waves reached us. After the shaking, the waves followed. We were swept/thrown away far. My family was separated. Yes, the roaring. The roaring of the waves. We did not know back then that these were the waves. It was roaring. I said, "Let us get out", because it was roaring. We went out as it was roaring we went away from the shore. We have not even gone too far, we were only a few steps, and it was there. Our family was still able to get out of the house. I have two children, they were still small. One is eight and the other is six. We did not think it was the water. We only realized what it was when it was there already. We saw it, we really saw it. Aahh, it was high, higher than that tree over there. It was dark. We were brought far away by the waves, maybe around two hundred meters from our house. We got scattered. I thought back then, I was the only one alive. When the waves hit, my wife was holding the (my children), I was just anticipating, waiting what was that roaring... Then I said, "Waves". they just ran... They were caught by the waves somewhere near the bridge. My whole family was swept by the waters. I woke up in the nipa field. There were no more waves. Ay, my family was nowhere. I started looking for them. I thought they were all dead. It was morning already, I started looking for them when I regained consciousness. It was already morning when I found them. My wife was naked. She became naked as her clothes got caught in the nipas. My children had wounds all over/ in different parts of their bodies. I had a wound on my leg. One of my children got caught in the tree. Good thing the tree did not pin him down. If not, it could have killed my child. They were all together, my wife and my children, It was still dark when I started looking for them. I kept on shouting. there was nobody to help us. We were all doing our own search. We were trying to search on our own. As we were almost wiped out, there was nobody around. I was thinking to myself, "I am the only one alive here." There was just silence, I kept on shouting and shouting, eh. Yes, I had injuries, this was almost cut off (pointing to his leg). I saw how they (wife and children) were swept away. When I saw the waves, I ducked, and when I looked back, they were already swept far away." - EC-ME1994

This man also described the experience of being separated from his wife and children when the waves arrived. "My whole family was swept by the water." Regaining his consciousness, he realized he was separated from his family, and even thought that "all of them were dead" and how he still tried desperately to find his family. The feeling of helplessness is reflected in the description "there is nobody to help us" as he called out so many times, yet there was only deafening silence, making him think that he was "the only one alive".

1.1.1. How the impact of a tsunami and loss of family members have influenced their decision to move away permanently from the coastal areas

What had the experience brought out in the interviewees? It was not only the visible physical impact but the psychological as well. The survivors also gave reasons as to why they decided to relocate and live away from the coast. After being put in a situation wherein they almost lost their entire family, the safety of the family became the most compelling reason for the decision. ET-ME1994 mentioned, "We do not want a place near the sea." She was also the one who mentioned "*I could never explain my experience. There is still fear until now. I still carry with me this misfortune of my family. So, I could never fully explain this fear.*"

"After that, we did not go back. We do not want a place near the sea. We selected from several sites, and we were brought here (Tabon-tabon)." - ET-ME1994

"We were at the evacuation site for more than two months. Before, we lived very close to the sea. Eh, they did not want us to live there anymore. That we should stay here. If the tsunami did not happen, ay maybe we will not think of moving. If it did not happen, then we will still be there, because they probably will not give as houses, had it not happened." - ND-ME1994

"Because we already experienced it. What is good about it is that, we are now far from the sea. We always remember what happened to us there. Before, we did not actually want it here. What we want is for a place where they will say is a safe place. But when we arrived here, it's been built. This is farther now. We do not think anymore of living there, not anymore. We do not anymore. Thirty-nine of ours died. Uncles, nieces and nephews, aunts. "-EC-ME1994

CONCLUSIONS

Phenomenology is the study and description of phenomena^[12]. In current application as research approach and practice in other fields (social science, psychology, etc.) it involves studying a small number of subjects (for this case, interviewees) through extensive and prolonged engagement to develop patterns and relationships of meanings^[12]. Published works on Interpretative Phenomenological Analysis (IPA) may have as few as one to as many as fifteen participants^[9] as the focus is more on depth of understanding not breadth, as such the richness and meaningfulness of data collected is what matters^[9]. For this case, as applied to disaster studies and potential use in risk communication, four full interviews were selected for this exploratory application.

Going back to the two important aspects, this work attempts to look at and explore how earthquake and tsunami as phenomena are understood and communicated by the victims. Potential use in the future will look at these extracted descriptions in the same manner by which ordinary people communicate and describe a phenomenon they experienced and being able to refer to these in planning risk communication.

The possible contribution of Descriptive Phenomenological Analysis (DP)'s to macro seismic research is clearly in terms of usefulness to determine intensities. In purely descriptive, there is direct application in determining PEIS. It is fairly straightforward, relating extracted descriptions of what was experienced with regards to the PEIS scale as shown in **Table 2**.

Going deeper and further than using interviews as generic data collection tool, the analysis of full transcripts of interviews provided insights of people's lived experience by putting this in the context of their background.

The combination of Descriptive and Interpretative Phenomenological Analysis (DIPA) is what this work has tried to undertake. For this particular case study, three major themes have been identified: survival - feeling of one swept away by tsunami; loss and helplessness and the feeling of being separated from one's family; and how this event influenced their decisions on relocation.

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