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Stress and Trauma Recovery of Elderly Post 2010 Merapi Eruption: a Case Study

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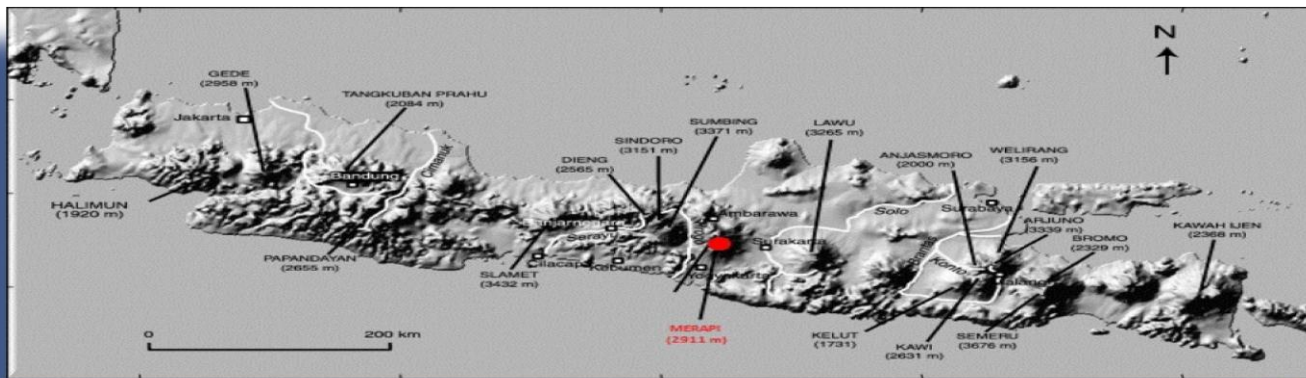
SurveyMETER

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The 2010 Mount Merapi Eruption

Mount Merapi is one of the volcanoes in Java Island, out of 130 active volcanoes in Indonesia. Mount Merapi eruption repeats every 4 years. The 2010 was the biggest eruption in the last 100 years.



Java Island, Indonesia

The first eruption was on 26 October 2010 continue its peak on 4 November 2010 with about 386 people died, 2,856 houses damaged, thousands hectares of forest and farm business heavily damaged and tens of sub villages destroyed.

The affected area located at four districts Magelang, Boyolali, Klaten and Sleman with 350,000 refugees. Total value of damage and losses are Rp 3.62 Trillions (USD 402 millions), in all sectors including housing, infrastructures, productive livelihood etc. The damage incurred not only physical damage but also mental and emotional downturn.

Recovery Efforts

During the October-November 2010 Mount Merapi eruption more than 180 non government organizations involved on early recovery program.



Mount Merapi from Treatment Area

One of the organization is Anand Ashram Foundation (Affiliated with United Nations) who conducted an intensive trauma and stress healing program (PPSTK) at a sub village located only 7 km from the Merapi.

The Therapy program was conducted for 10 weeks, with 5 times group therapy sessions, every two weeks. The therapy is the Self Empowerment Techniques created by Anand Krishna.

Objectives and Methods

Objectives

Examines mental health change of the elderly after the healing program by comparing the change before and after program, in treatment and control area.

Methods

A longitudinal data was collected prior the healing program in December 2010 as the baseline and the same respondents again interviewed post the healing program in March 2011. The mental health observed through PTSD check list and Center for Epidemiological studies Depression scale (CES-D). The difference and difference approach was applied in the analysis.

Self Empowerment Techniques Created by Anand Krishna (1)

- A series of exercises on how to manage stress and empower ourselves
- Holistic-- work in all layers of consciousness
- Group Therapy



*Anand Krishna (Wears Batik)
Observed the Healing Program on 30 January 2011*

Therapy:

- Abdominal Breathing (January 2, 2011)
- Self Empowerment with Love (January 16, 2011)
- Speedy Emotion Culturing Technique (January 30, 2011)
- Therapy to Free From Anxieties & Worries (February 13, 2011)
- Stretch to Relax Technique (February 27, 2011)

Self Empowerment Techniques Created by Anand Krishna (2)

The Participants was Divided in to 4 Groups

1.Child



2.Youth

3.Adult



4.Elderly

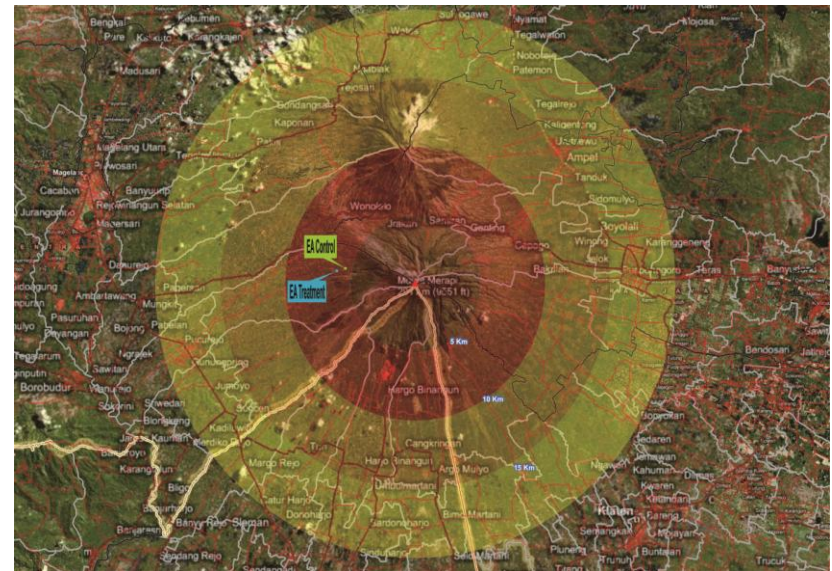
Study Location and Sample

Study Location

At two sub villages of a village located 6 - 7 km from the Merapi in Magelang district, Central Java, Indonesia. The sub village where Anand Ashram Foundation conducted Trauma Healing program is treatment area and the other sub-village is control area

All Sample

Interview were conducted to all individuals at the treatment and control area. Total sample was 585 persons, in which 289 persons located at treatment area and 296 persons located in control area



Mount Merapi Dangerous Zone within Radius of 20 km from the Summit (Update State November 4, 2010); Source BNPB

Sample of this presentation

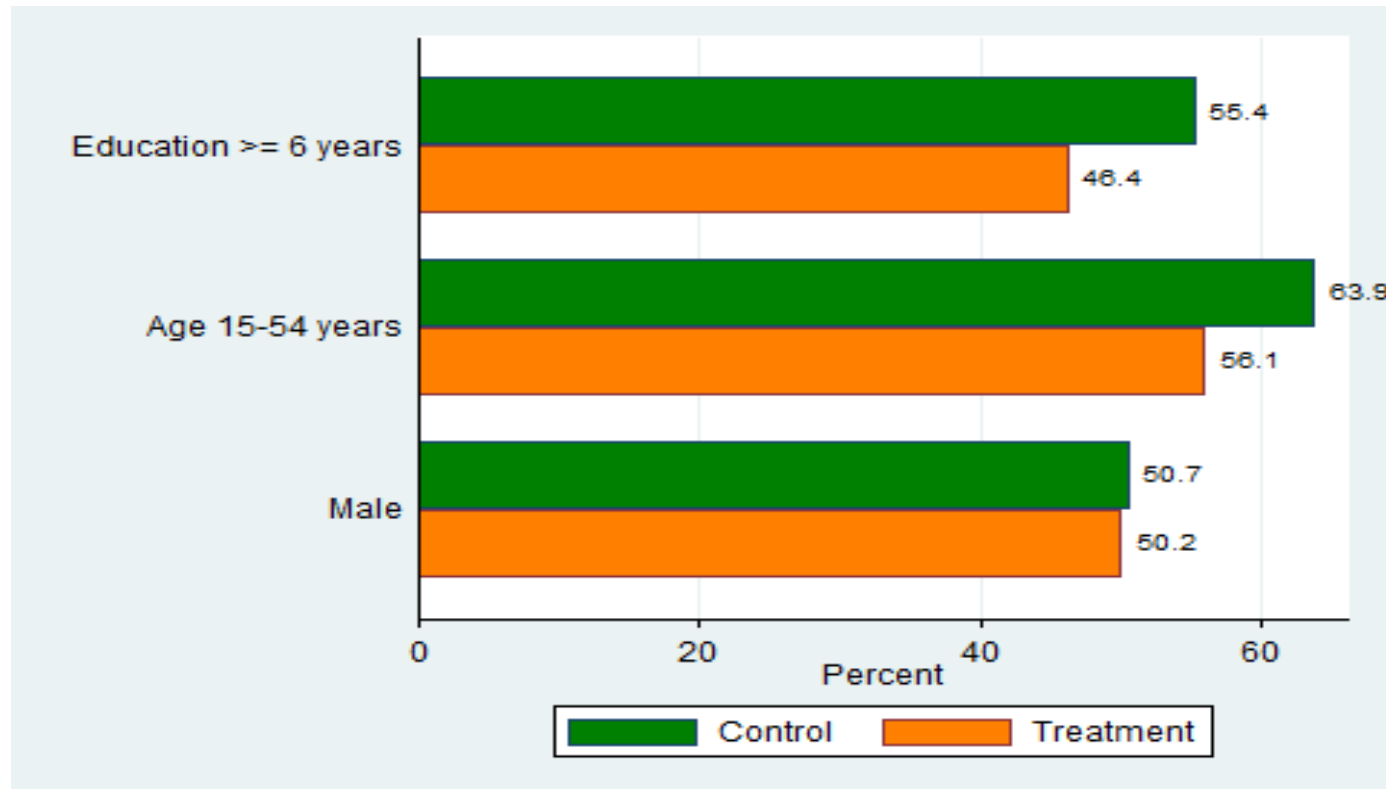
Individuals age 55 years or above at the treatment and control area.

Total sample was 92 persons, in which 52 persons located at treatment area and 40 persons located in control area

Sample Characteristics (1)

Gender, Age and Education of All Sample

- The total population and gender distribution in the treatment and control area are almost the same.
- Control area has slightly more productive age persons and better education



Sample Characteristics (2)

Gender, Education and Economic Status of the Elderly

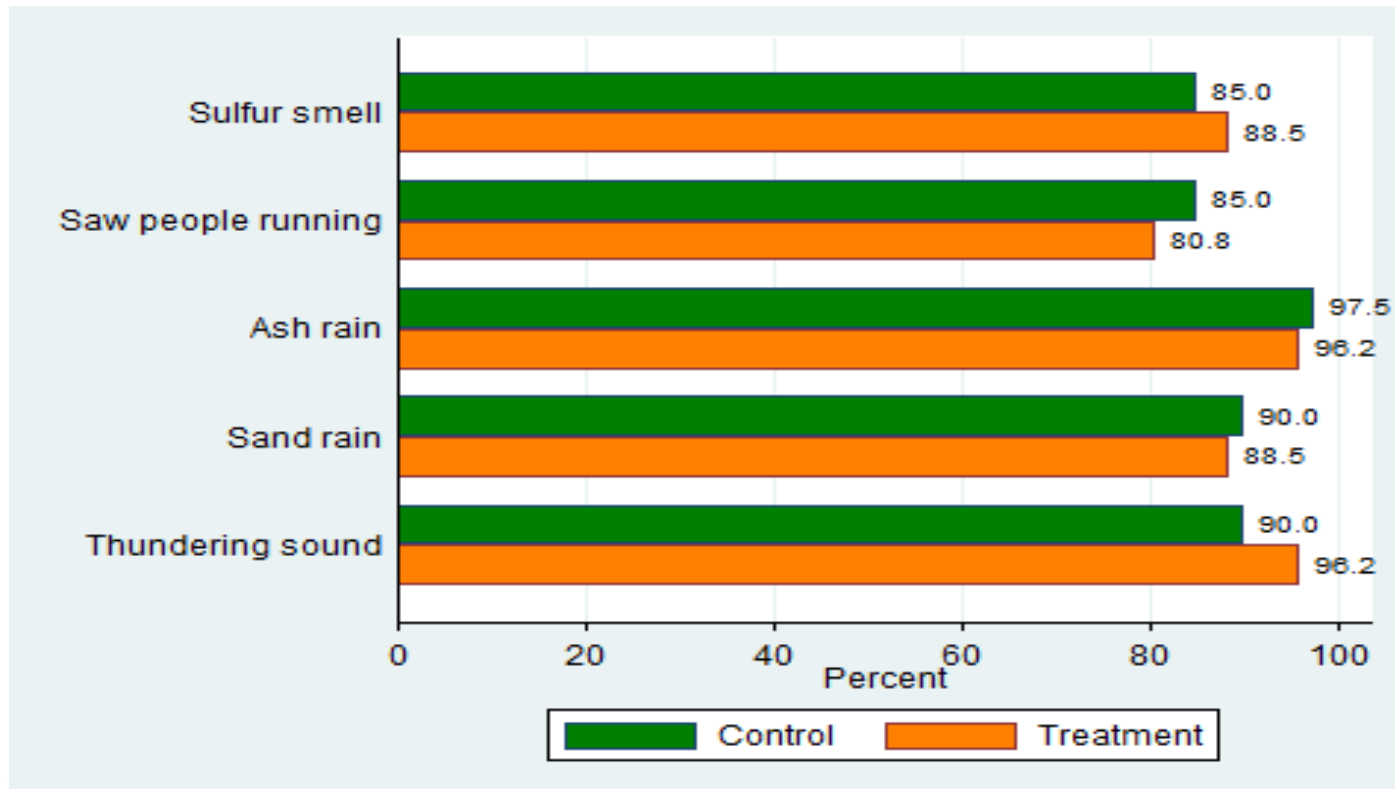
- Gender distribution of the elderly in the treatment & control area are almost same
- Control area has slightly more elderly lives in poor family but has better education and working



Sample Characteristics (3)

Exposure to Merapi Eruption

- Exposure of the elderly to the stressor is high, 85-97 percent of the elderly reported that they hear thundering sound, feel sand rain, ash rain and sulfur smell



Participation in Trauma Healing

- Participate in trauma healing:
82.35 %
- Mean number of participation:
3.78 times
- Ever practice therapy :
62.75%
- Practice 5-7 times per week
57.7%



Results (1)

The difference in difference of the change in treatment and control area indicated that:
The intensive Trauma Healing program has influence on reducing: (1) Feeling as future is short; (2) too cautious, worry; (3) Feeling very upset

PSTD Symptoms	Difference (After - Before Program)		Program Effect = Difference in Difference
	Control	Treatment	(Treatment – Control)
Feeling as future is short	0.0	-26.6***	-26.6**
Becoming too cautious, worry	-17.8**	-33.5***	-15.8
Feeling very upset when something reminds of Merapi eruption	-19.7**	-32.9***	-13.1
Difficulty to concentrate	-6.9	-17.2**	-10.4
Anxious	-13.9**	-22.4***	-8.5
Feeling Merapi is about to erupt again	-7.7*	-15.3**	-7.6

*** significant at < 0.01, ** significant at 0.05 , * significant at 0.10

Results (2)

- The program has good influence on increased of self confidence including: felt as good as other people (58%), enjoyed life (37%) and hopeful about the future(31%)

CES-Depression Scale	Difference (After - Before Program)		Program Effect = Difference in Difference
	Control	Treatment	(Treatment – Control)
Felt as good as other people	-48.7***	9.2	58.0***
Enjoyed life	-34.3***	2.7	37.0***
Hopeful about the future	-32.5***	-1.1	31.4***
Felt lonely	2.4	-12.9	-15.3
Loss appetite	-7.5	-19.2**	-11.7
Can not start anything	-2.9	-13.7**	-10.8

*** significant at < 0.01, ** significant at 0.05

Conclusion



Self Empowerment Techniques created by Anand Krishna has positive effect on mental health recovery of the elderly in post 2010 Merapi eruption. The benefit of the program is not only in reducing post traumatic disorder and managing stress but also empower elderly through increasing self confidence.

As a group therapy, Self Empowerment Techniques have bigger opportunity to serve disaster survivors with trauma relief program. Indonesia is disaster-prone region, therefore these techniques could be widely used to full fill the demand on responses to mental trauma in the aftermath of disasters in Indonesia.

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