



# **Coping and Adaptation to Mass Casualty Incident of Health Care Professionals in Taiwan**

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# Background-Mass casualty incident

- **Mass casualty incident (MCI)** is an incident which generates more patients at one time than locally available resources can manage using routine procedures and it requires extraordinary assistance.


(World Health Organization, 2007)

**333**

code

More than 15 injured patients defines mass casualty  
Recalling health care professionals (HCPs) to the hospital  
or disaster area for emergency medical service

(Emergency Medical Services Act in Taiwan, 2013)



# Background- influence of HCPs involved in MCI

- **Stress**

- Unknown situation, overloaded sensory stimulation, Work responsibility, policy...

- **Positive attitude**

- Interview 160 EMT, 11 Nurse

(Johal & Mounsey, 2015; Huang, 2001)

- Improvement in relationships with others, try to learning more ability to help people

- **Mental health problem**

- **10-53% PTSD** (Beck, 2011; Berger et al, 2012)

- 1069 EMT involved in MCI

- Depression (15.8%), insomnia(14.6%), guilty (14.6%) (Huang, 2002)

- 300 doctors, nurse, paramedic involved earthquake

- Psychological symptoms(20.42%), burnout(48.51%) (Mattei et al., 2017)

# Knowledge gap



Coping and adaptation process?

# Research purpose

To explore and describe health care professionals' lived experiences of coping and adaptation processes in mass casualty incident.

# Methods

Research design

**Descriptive phenomenology**



Purposive &  
snowball sampling



Semi-structured  
Interview



Colaizzi's method

# Sampling and sample

- Sample: 13 people (physicians, nurses, emergency medical technicians)
- **Inclusion criteria**
  - Aged 20 years or older
  - Can communicate in Mandarin/Taiwanese
  - Health care professionals who experienced coping and adaptation to stress with their involvement in 333 code incident (more than 15 injury patient) in Taiwan
- **Screening question:**
  - Have you ever involved in mass casualty incident?
  - Did you feel stressed during or after the incident?
  - Did you do anything to help yourself to get through the stress?
- **Exclusion criteria**
  - People with acute-stage mental disorder who can't describe their experience

# Semi-structure Interview guide

01

Describe the MCI experience that you have involved.

02

What stress or dilemmas you have confronted in MCI?



03

How do you cope with the stress?

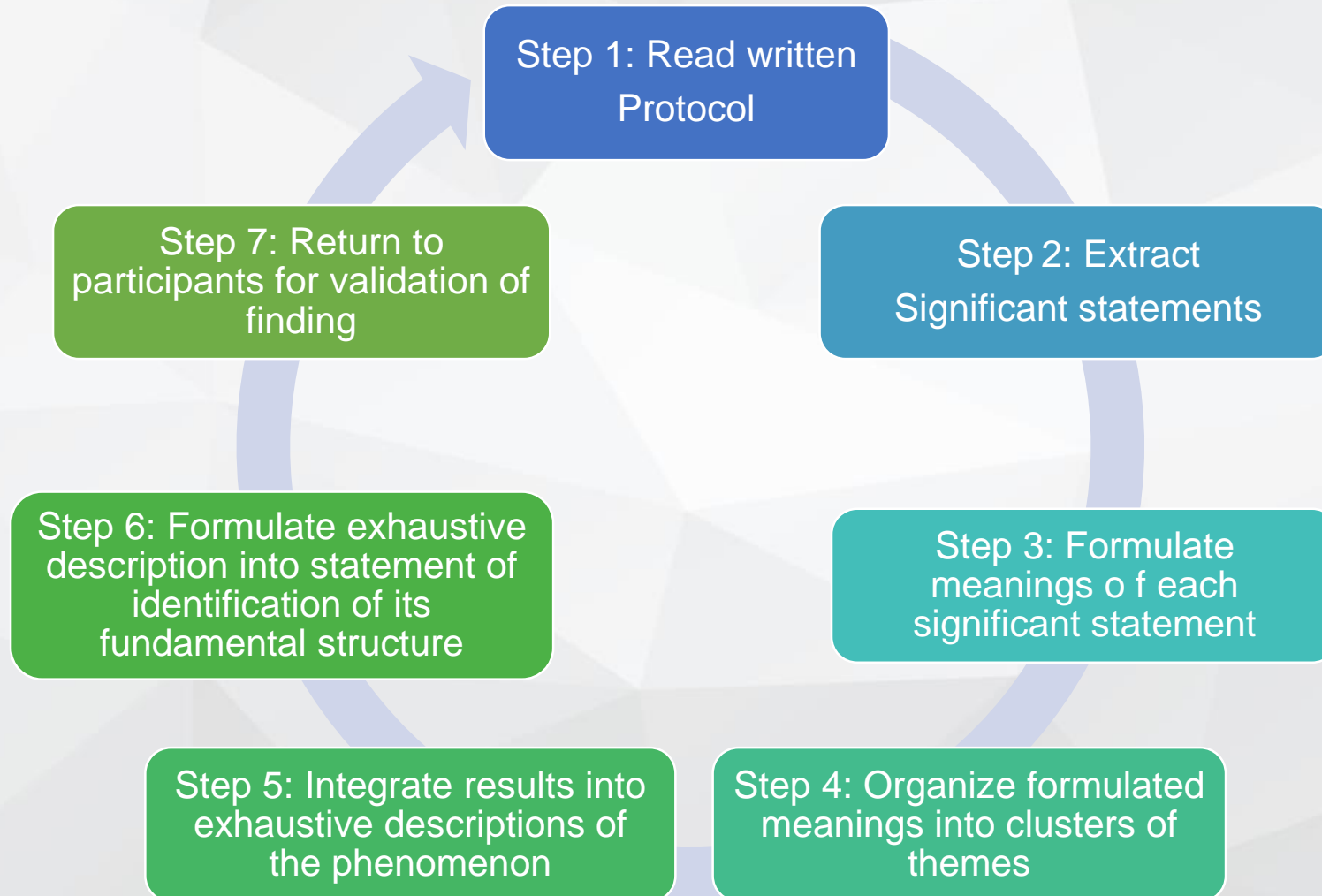
04

What do you think the influence or meaning to you after involving MCI?



# Data analysis

( Colaizzi , 1978 )



## Demographic data

n=13

	n (%)	Mean (SD)
<b>Sex</b>		
Male	7 (54%)	
Female	6 (46%)	
<b>Age (24-46 years)</b>		33.46 (7.01)
<b>Education level</b>		
College	1 (8%)	
Bachelor	9 (69%)	
Master	3 (23%)	
<b>Professionals</b>		
Emergency medical technicians	3 (24%)	
Nurse	7 (52%)	
Physician	3 (24%)	
<b>Years of working</b>		8.04 (5.32)
<b>Work unit</b>		
ER	9 (68%)	
PGY training	1 (8%)	
Branch of Fire Bureau	3 (24%)	
<b>Prior MCI experience within 5 years</b>		1 (0.99)

# Demographic data

n=13

	n (%)	Mean (SD)
<b>Involving MCI experience</b>	Per person time	
Bus overturned accident	4	
Earthquake	13	
Formosa color dust explosion	3	
Foodborne illness of junior high school students	2	
<b>MCI related training in school education</b>		
Yes	2 (15%)	
No	11 (85%)	
<b>MCI related training in working field</b>		
Yes	10 (77%)	
No	3 (23%)	
<b>Training is enough or not (1-5)</b>		
Not enough at all	2 (15%)	2.15 (0.77)
Not enough	8 (62%)	
No comment	2 (15%)	
Enough	1 (8%)	
Enough at all	0 (0%)	

# Results

6 themes, 15 meanings, 237 significant statement

01

**Prioritizing  
professionalism**

02

**Overwhelming  
re-exposure**

03

**Fight or flight**

04

**Discovering  
Post-traumatic symptoms**

05

**Self-regulation**

06

**Adaptation**

# »»» Prioritizing professionalism

- **Overcame the barriers to stay calm**

*“She was still trapped in the debris for a long time. Her right thigh was the only thing that she could be exposed .....emergency rescue team leader asked me to go inside the building and give her IV injection for keeping her vital sign stable... Gosh! It was already hard for me to perform the procedure in such a narrow space. Not to mention, you’ve been stared by her dead husband the whole time. You got to overcome barriers in this situation.” (EMT01)*

*“I thought I was just doing some help in this mass casualty incident...e.g. wound care or transporting patients. As a result, I was given the job of the rescue commander. .....I HAVE To stay calm to deal the situation as soon as possible.”(EMT07)*

- **Hidden their emotions to handle**

*“We must hide our emotions! If we expressed our personal emotions, there would be NO WAY to control the whole situation. We must preserved our professional attitude, and we couldn’t show our own feelings in this urgent incident. We must hide it for sure, so that we can handle the whole thing well and rationally.”(DR02)*

# »»» Overwhelming re-exposure

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- **Social media exposure**

*“The news of earthquake had been reported on TV all over again and again. ...It is that.... The overly exaggerative scene broadcast by the social media..... which I think caused all these stressors afterward.”(NR10)*

- **Earthquake aftershock exposure**

*“It’s not the same as previous earthquakes, because usually it shock not so frequently. .... But at that time, I told you, our mobile phones kept alarming ALL NIGHT LONG. And ALL the aftershocks were like magnitude 4 or even bigger. And the ground just shacked like every 10 to 30 minutes.....I was very afraid and shocked during that period.”*  
(NR10)

# »»» Fight or flight

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- **Talk to colleagues**

*“I think it’s still possible for everyone to have a drink and talk about it. I think this is a good way to relief my pressure.” (EMT01)*

*“Like me, I am a person who loves to talk, so I have been talking all the time, KEEP TALKING, KEEP TALKING. Ah, this is another way to relief pressure.” (NR10)*

- **Debriefing with team member**

*“After we came back from the scene, I thought debriefing with other members was a good way to adapt from stress. ....You could share your feelings and found an idea to solve your problems.” (NR08)*

- **Time heals everything**

*“I felt that I was very optimistic and no needs to ask someone for help.....The time heals everything.” (NR09)*

# »»» Discovering post-traumatic symptoms

- **Intrusive symptoms**

“Once you are alone, or mission completed, you till would keep thinking of it. There’s NO WAY for you to suppress it.” (EMT01)

“Never! You could never sleep tight. You had all the vision of the casualty at the frontline. Buildings collapsed, patients’ face dying, and wounds bleeding, these all came to my mind.” (NR11)

- **Arousal and reactive**

“Anyway, the aftershock was terrible. I remembered that I came back to had dinner with my colleagues, then he was cutting a steak on table. I thought it was an earthquake....” (EMT01)

“Sometimes it was too dark in my room or someone closed door in a loudly sound, and I’ll think about something might happen again.” (NR09)

- **Avoidance**

“At that time, I hope I can avoid ALL scenarios that involve ANY kind of critical intervention, since I can get emotionally engaged. Like the atmosphere of the family while resuscitating the patient.” (EMT07)



# Self-regulation with helpless

- **Others couldn't help you**

"Try to find time to adapt your mood, and then do some exercise by yourself...Your colleagues probably can't help you." (DR02)

"I try to cope the stress myself, because I think my colleagues couldn't anything to me." (NR09)

- **Concerning about job, fear to speak out**

"I didn't want to speak out....People might think that you are sick, or... something like. Perhaps you are not suitable for disaster relief in the future anymore. I think I had a lot of concerns, so I tried to cope stress myself." (EMT01)

*"I would not talk to my family about my emotions of difficulties. Because I think they already know the job is very dangerous, so I don't want them to worry about me. Moreover, they might be against me to do my job."* (EMT01, 08) (DR02)

# »»» Adaptation

- **Positive attitude**

“We have pressure, but we will grow. I don’t think pressure is a complete negative energy.” (NR08)

“Frankly, I do think and appreciate it as a great learning experience. I want to strive for more MCI training, and to promote my knowledge and skills in MCI response.....to help more people in the future. ” (EMT01)

- **Quit involving MCI**

“I feel disappointed to the systems. The previous training was useless. If I have a choice, I don’t want to have any involvement in mass casualty incident again.”(EMT07)

- **Need one’s help**

“I don't think we need special treatment, but I think that at least I can have someone can talk to. Or someone can point out the stress I was having now..... we might not know we are under a stress and how to deal with the stress.” (EMT01)

“I need someone to tell me what situation or stress might face during the mass casualty incident. ....and what coping strategies I can use to adapt to stress. ” (NR10)

# Conclusion

- Training not only focus on knowledge and skill, but also provide coping and adaptation strategies
- Pay more attention on HCPs' needs and psychological impacts
- Someone could identify their stress and understand their feelings



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