



**R**ESCUE

and  
**C**UIRE

**Disaster Nursing Experiences and  
Expertise Cultivation**

**The routine of nurses is to save lives and preserve health.**

**Are they capable of handling large scale disaster when it occurs?**

**Taiwan experienced, since the end of last year, Kaohsiung gas explosion, Yonghe fire, and Nangang air disaster, to dengue fever and dust explosion early summer.**

**The impermanence of life is all around us.**

**In response to the frequent disasters, disaster nursing is mandatory for all nurses.**

**A comprehensive training provides necessary capabilities in the time of need.**

**An extra effort, when a disaster comes, grant extra strength to save one more life.**



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We, Taipei Tzu Chi Hospital Nursing Department, had decided at the end of May 2015, the theme for this issue to be the disaster response capability of our nurses. The first draft of the survey was to be ready June 19. While the discussion was underway, a week later the largest public accident in the history of Taiwan caught everyone by surprise. It was the Formosa Fun Park Dust Explosion. The accident was a test for the entire staff of Taipei Tzu Chi Hospital. Fortunately under the care of our staff, by September, majority of the dust explosion survivors were discharged.

It came as a daunting realization, particularly in the recent years, that major catastrophes, both natural and artificial, national and international, have increased significantly in frequency and unpredictability. On July 31, 2014, Kaohsiung was hit with gas explosion; August 20, Ankeng gas explosion; and September 12 Yonghe fire. February 2015 we had TransAsia Airways crash in Taipei, and on April 25 a 7.9 earthquake shook Nepal. As the voluntary hospital staff dispatched to the disaster areas completed their two-month long relief mission, a dust explosion at the Formosa Fun Park sent shock waves throughout Taiwan, not to mention the Dengue fever in Southern

Taiwan that had been exhausting our staff since May. What we are dealing with has expanded into the domain of public health care. Impermanence is all around us.

In an age when CPR is widely taught, where automated external defibrillator (AED) is commonly seen in public area, what extra set of skills should we, as nursing professionals, should acquire? Are we truly prepared in the time of need?

### **40% Had Received Disaster or Emergency Response Training**

The survey recovered a total of 1,540 valid responses. Out of these respondents, 37.9%(583 respondents) have received national or international disaster nursing or emergency response training, the other 62.1% have not received any emergency response training. Reasons for the absence of training could be that these nurses were relatively new or only worked in the department of internal medicine, and that the nursing training in school did not include disaster nursing as its core curriculum. Nurses can only acquire disaster response care through training courses such as clinical continued education, mass casualty drill, and toxic disaster drill.

## Basic Statistics

Gender	Number	%
Male	47	3.1
Female	1,493	96.9
Total	1,540	100.0
Nursing Level	Number of People	%
N	556	36.1
N1	244	15.8
N2	527	34.2
N3	147	9.6
N4	66	4.3
Total	1,540	100.0
Job Title	Number of People	%
Registered nurse/nurse	1,238	80.4
Case manager	38	2.5
Deputy head nurse	42	2.7
Head nurse	68	4.4
Supervisor or higher	19	1.2
Nurse practitioner/senior RN	111	7.2
Other	24	1.6
Total	1,540	100.0
Department	Number	%
Internal Medicine	268	17.4
Surgical	263	17.1
Pediatrics	71	4.6
Gynecology and Obstetrics	63	4.1
ER/Acute Trauma	318	20.7
Functional Team	26	1.7
Hemodialysis	43	2.8
OR	113	7.3
Outpatient Clinic	172	11.2
Palliative Care	28	1.8
Administrative	62	4.0
Other	113	7.3
Total	1,540	100.0

**Q1 | Have you received any disaster care or emergency response training (national/international)? ( N = 1,540 )**



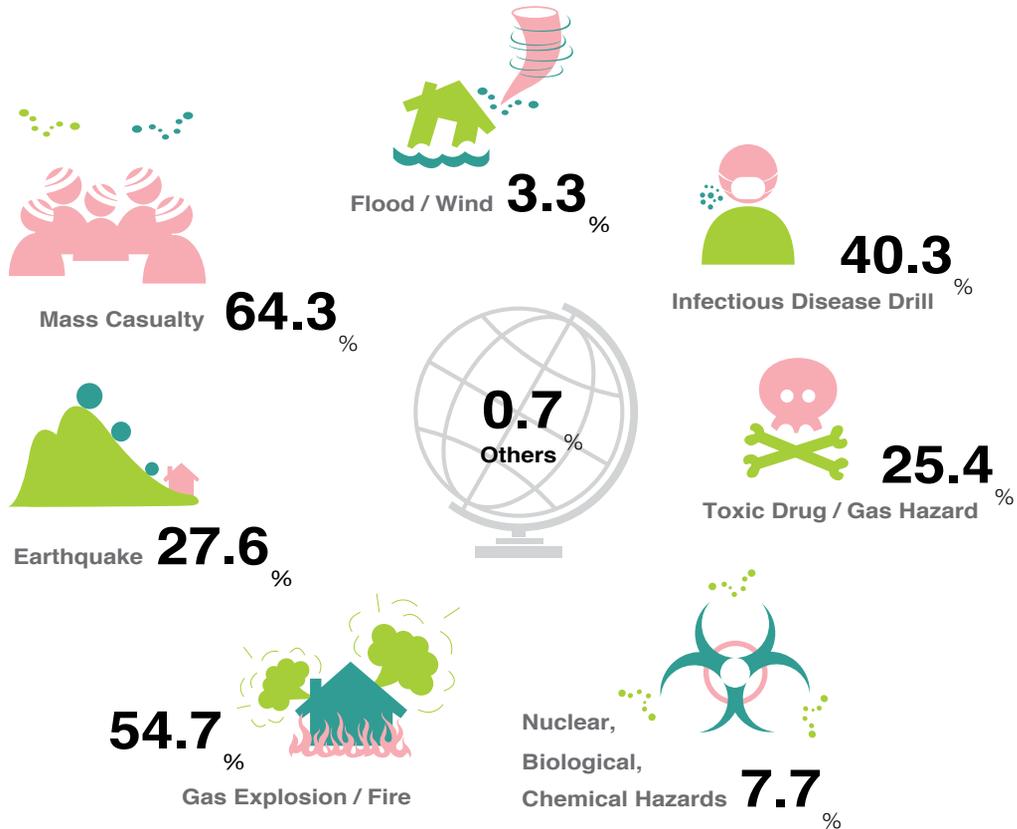
In a multiple choice, the question asked the respondents the kind of disaster nursing or emergency response training they had received, the first three choices from the 583 respondents out of the entire sample were as followed: Mass casualty 64.3%, gas explosion/fire 54.7%, and lastly earthquake and chemical/gas hazard.

Taipei Tzu Chi Hospital holds a variety of emergency response training annually, like fire response simulation that includes escaping from a smoked room, operating a fire extinguisher and emergency escape apparatus, in conjunction with a fire drill. Moreover, the emergency room runs a hospital-wide mass casualty drill every year.

When the Fuxing Airline crashed in February, our emergency room head nurse Fang-Ling was assisting on site. She soon realized that, despite the mass casualty drills, the opportunity to cooperate with fire department personnel on site is rare. She saw, at the crash site, how the well-trained firefighters divided into “search and rescue” and “treatment and evacuation”, and the scope, strategies, and equipment the fire departments deployed in a mass casualty situation. Fang-Ling brought her observation back to the hospital, with the hope to provide efficient and timely care to patients in a mass casualty incident. New infectious diseases have emerged rapidly in the last two years, such as Ebola in central Africa in 2014

# Q2

What type of disaster care or emergency response training did you receive? ( N = 583, multiple selection )



and MERS in Seoul in 2015. In response to the new imposing threat, Taipei Tzu Chi Hospital performs epidemic prevention training and simulation drills to ensure the safety for both our frontline staff and for our patients.

### 15% Had Disaster Nursing Experience, Mostly in Mass Casualty

When asked whether or not the respondents had personally participated in disaster nursing, out of the entire nursing staff, 86.2% claimed no, and 13.8% claimed yes. Among the latter, 12.7% had joined disaster nursing in Taiwan, 0.5% overseas, and 0.6% had experience both in Taiwan and overseas.

When those who had disaster nursing experience were asked to

select the type of disaster nursing they had encountered, 62.0% wrote mass casualty, 35.2% gas explosion/fire, 29.1% earthquake, and 16.9% flood/wind. Some even engaged in biohazard, toxic chemical or gas disaster. Under the other options, some wrote tsunami, Taroko rockfall, and so on. In actuality, gas explosion, fire, wind disaster could also trigger the hospital's mass casualty incident protocol. The answer reveals the fact that most of our nursing colleagues who had disaster nursing experience engaged in disaster nursing in a hospital setting.

### **Emergency Care First, On-Site Risk Assessment Second**

When asked which skills were applied, 71.8% of the experienced respondents answered emergency care, 44.6% answered assisting/executing invasive medical procedures, 39.0% answered handling and administering medication in temporary aid station, 35.2% answered medivac, and 30.5% safety measures and precautions. Few wrote about the establishment of aid stations during international disaster relief or solacing disaster survivors.

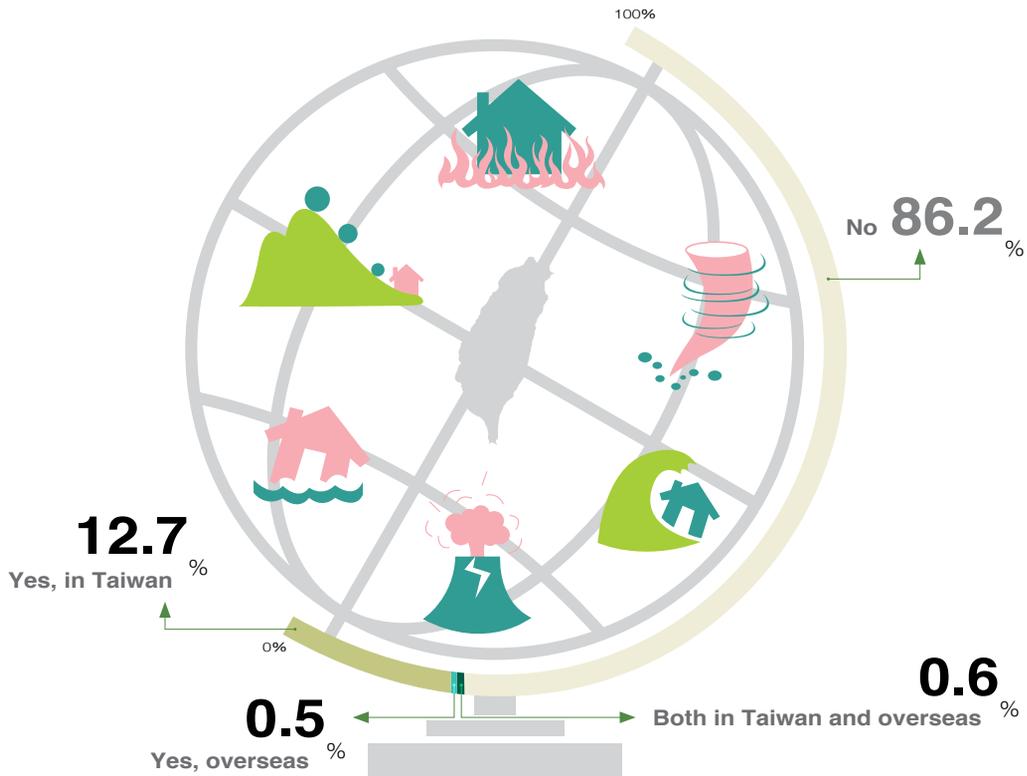
When these experienced respondents were asked the skills they deemed lacking the most, "emergency care" and "on-site risk assessment" both exceeded 50%. An

interpretation is that these respondents are not satisfied with their on-site responses and wish to improve. "Post-traumatic guidance and support" and "multidisciplinary capability" came second. Nurses are often required, in a hospital setting, to master their professional skill sets before learning how to communicate with patients and families. In a disaster area, though, grief counseling is almost mandatory for every medical professional involved in the relief mission, whether they are proficient or not. As for multidisciplinary capability, most likely the respondents hoped to know a little of everything to be helpful on-site.

When nurses saw on the news other nurses saving lives, they are inevitably curious about the intricate details such as the exact symptoms of the patient, or how the nurses became involved? Then they would imagine, "what if this happened to me? How would I proceed?" Perhaps some are ready to act in the case of emergency, while others ponder and hesitate.

Every clinical nurse must be proficient in the protocols and skills of advanced life support (ALS). In emergency units, advanced cardiovascular life support (ACLS) and intensive care training is a must. The emergency room continuing education program arranges multiple revisions of role assignments and process in mass casualty event every year, from tabletop exercises to understand the

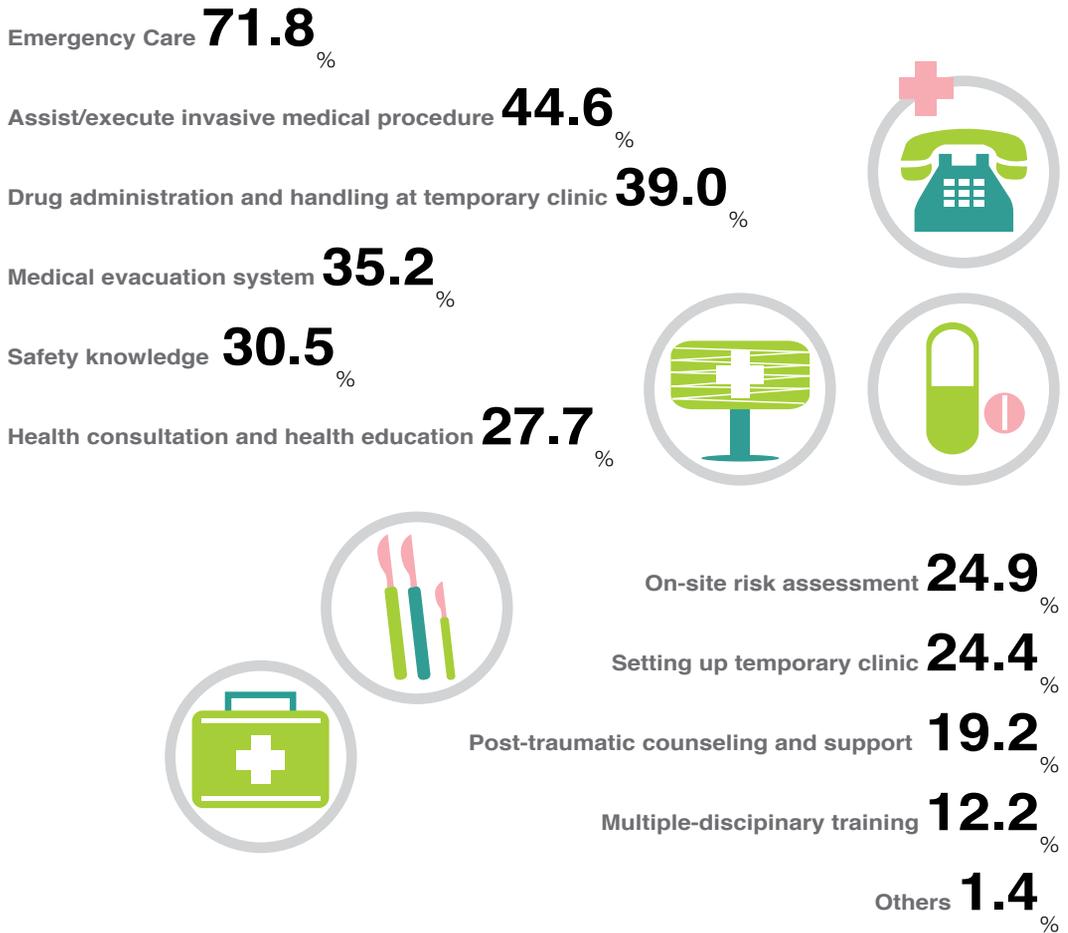
**Q3** | Have you participated in disaster care?  
( N = 1,540 )



**The type of disaster care participated:( N = 213, multiple selection )**

Gas Explosion/Fire	35.2%	Mass Casualty	62.0%
Flood/Wind	16.9%	Infectious Disease Drill	8.0%
Earthquake	29.1%	Toxic Drug/Gas Hazard	8.5%
Nuclear, Biological, Chemical Hazards	2.3%	Others	1.4%

## Q4 | During the disaster care you participated in, which skills were practiced? ( N = 213, multiple selection )



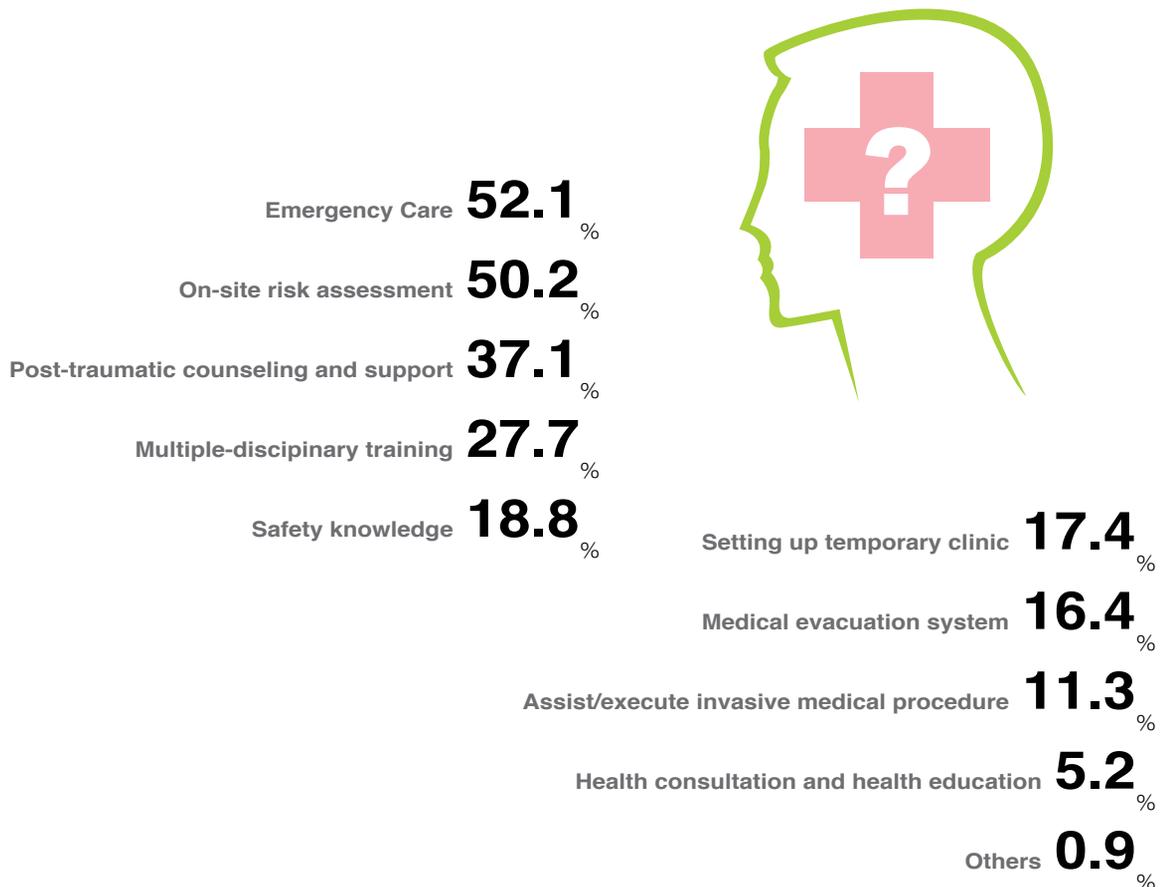
locations of light, medium, and severe injury areas and assigned roles of each staff. Finally, practice with patient-actors in a mass casualty drill that closely resembles a real life scenario. Despite

the annual trainings that simulate potential scenarios, a real life event is the ultimate test that exposes the flaws and vulnerabilities in staff training and response.

Nurses proficient in emergency nursing are veterans in disaster nursing, a field they specialize in. Taking Yonghe fire in September 2014 as an example, patients with darkened face and were gasping for air were transferred to the emergency room shortly after the heads up from the fire department. Although the number of patients did not meet the

minimum requirement for mass casualty incident protocol, our triage nurse Yu-Ting on graveyard shift immediately transport the patients to severe and medium injury area according to the severity of their injuries. The emergency staff on standby proceed to assess and treat the patients with the airway, breathing, circulation, disability,

**Q5 | With disaster care experience, what education, training or drills do you think the nursing staff lack or need the most? ( N = 213, multiple selection )**



exposure (ABCDE) approach, exactly how they were trained.

### **Help Saving Life Carved the Nursing Profession Meaningful**

How do these disaster nursing experienced nurses feel after the incident? The answers were mostly positive, as 64.3% responded “saving lives is meaningful”, 58.7% responded “more appreciative and content with the present”, 41.3% said “humans are truly trivial”, 40.8% said “becoming more hopeful after discovering the ample love in the world”, and 39.0% believed that “to have studied nursing is the best”. While 16.4% of the respondents had acute stress syndrome in the midst of the disaster nursing, and had experienced anxiety, crying, stress, and insomnia.

On July 28, 2015, a mass stabbing spree took place in the Zhongshan Metro Station, Taipei. Emergency nurse Yuan-Ting who was at the scene witnessed several passengers wounded by the attacker. Despite the fear of being harmed, she raised the courage, stopped the bleeding and dressed the wounds of the injured, and evacuated only after all the wounded passengers were escorted off the scene. “Weren’t you scared?” Her colleagues asked her. She responded that the only thing on her mind was that she was a nurse, and nurse cares for the wounded. To help

others with the skills one has acquired is both wonderful and meaningful, she thought in retrospect.

When examining the Formosa Fun Park dust explosion, Taipei Tzu Chi Hospital received 13 severe burn patients immediately after the incident and initiated mass casualty incident protocol. Once the secondary support was activated, hundreds of on-leave staff returned to their post. In two-and-half hours, patient wound dressing, testing, intubation, and transfers to the intensive care unit were completed. The nurses present at the time were inspired by the seamless collaboration of the entire hospital staff and, after all the patients had been transferred to the ICU, volunteered to use their off-hours or vacation time to dress the patients’ wounds. By studying nursing, they had the opportunity to contribute a little to these young survivors in their darkest moments, and that was meaningful, they said.

As for new staff who arrived only last year, caring for severe burn patient with less than a year experience behind their back truly tested their physical and psychological endurance. Fortunately, the department directors and senior nurses were there to provide timely assistance and guidance to the new comers. Everyone in the department would gather together after work to discuss on procedures to improve

**Q6 | How do you feel after a disaster care?**  
( N = 213, multiple selection )

Aid in rescue makes life meaningful **64.3** %  
 Content, treasure the moment **58.7** %  
 Humans are small **41.3** %



Hopeful for knowing so many generous people out there **40.8** %  
 Studying nursing is magnificent **39.0** %  
 Have acute pressure syndrome **16.4** %  
 Others **0.9** %

or executions to refine. Some of the new nurses were so concerned with these burn patients that they dropped their vacation and returned to work. Two months went by, none of the staff left their post. The incident, instead of breaking us, pulled us closer than ever. We grew stronger as a team. Perhaps the age similarity has prompted the young nurses to think about the impermanence of life.

Rather than a unique skill sets

exclusive to emergency nurses, disaster nursing is a discipline where any nurse could train and be proficient in. From pre-impact, impact to post-impact, the training for each stage of the disaster is open to all nurses who wish to acquire the response capabilities in the wake of disasters. Nurses are humans. It is impossible to trained in every discipline. A little more preparation, though, could very well save a life when disasters strike.