

**Sigma's 30th International Nursing Research Congress**  
**The Bouncing Effect of Long-Term Psychological Resilience Among Burn Survivors in a Three-Year Follow-Up Study**

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**Purpose:**

The study investigated the burn survivors' long-term psychological response and resilience toward a mass burn casualty of the Formosa Color Dust Explosion in Taiwan during the three-year integrated service period in 2015-2018. The aims of this study were two-folds. Firstly we aimed to describe the three-year follow-up data focusing on the psychological conditions of the burn cohort of the explosion event. Secondly we attempted to interpret fluctuations of the psychological resilience in the three-year observations.

**Methods:**

Longitudinal observations with questionnaire interview were employed in this study. Among the 484 burn survivors out of 499 victims, periodical telephone contact with 4-wave follow-ups were administered by trained interviewers during Nov. 2015-Jun. 2018. Demographic, medical and psychosocial information were collected consistently in the four waves among the respondents. Four hundred survivors received psychiatric assessment in designated hospitals in Dec. 2016.

**Results:**

The response rates of the four interviews were 65.1, 74.2, 76.9, and 78.5 percent, respectively. The burn survivors were mean-aged  $23.1 \pm 8.7$  years old and characteristic of 2-3 degree of burn over 50% of area. The 4-wave respondents consisted of similar backgrounds of gender, age and total body surface area. The resilience feature in coping with the long-term stress in the first two years of recovery was salient. While the respondents presented with decreasing trend of mental distress or other stress-related symptoms such as anxiety and post-traumatic symptoms in the 3-year period, substance use including hypnotics and alcohol consumptions slightly increased at the final wave. The bounced anxiety and stress-related stress symptoms with the concurrent trend of increasing substance use were of attention.

**Conclusion:**

Young burn survivors may recover in both psychological and physical conditions with family support and psychological resilience in the first two years, yet longer term post-traumatic mental distress arising in the process of community reintegration should draw much attention to healthcare providers and family members.

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## Keywords:

Disaster nursing, psychological resilience and psychosocial assessment

## References:

Jang, M.H., Park, J., Chong, M.K., & Sok, S.R. (2017). Factors influencing resilience of burn patients in South Korea. *Journal of Nursing Scholarship*, 49, 478-486.

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## Abstract Summary:

A cohort of young burn survivors' long-term psychological resilience toward a mass burn casualty in the well-known Formosa Color Dust Explosion in Taiwan was presented. The results highlighted the importance of early prevention and detection of mental health fluctuations toward delayed psychological responses after two years of major traumatic events.

## Content Outline:

Introduction:

1. Among all disasters, burn wounds are the ones with the most severe and long-lasting physical and psychological consequences.
2. On the night of June 27, 2015, a load of flammable cornstarch-based powder exploded midair and caused 499 burn victims, mostly young people aged under 25. The event, also known as the "Formosa Fun Park Powder Explosion" wounded 484 people and killed 15 lives within 6 months.
3. The study aimed to describe the three-year follow-up data focusing on the psychological conditions of the burn cohort of the Explosion and to interpret fluctuations of the psychological resilience in the three-year observations.

Main points

1. Within the three-year follow-up period, the respondents showed a decreasing trend of nearly all psychopathological indicators; yet it is noticeable that at the final interview in the third year a flaring up of percentages among all items of psychopathology was of attention, indicating a delayed bouncing effect after two years of the burn.

2. The participants' positive support from socio-interpersonal and family relations kept accumulating across the three years after the trauma given continuous suffering of physical pain and psychological challenges in the long term.
3. Law and rehabilitation service needs prioritized at baseline, yet mental health service needs were relatively less-perceived and non-significant across the four interviews in the three-year follow-up period. The long-term post-traumatic effect of delayed psychological response should not be neglected given initial resilience toward the stress of burn.

#### Conclusion

The psychological resilience was presented in the young burn survivors' recovery process for up to two years, yet longer term post-traumatic mental distress arising in the process of community reintegration should draw much attention to healthcare providers and family members. Early prevention and detection of mental health fluctuations is needed for severe burn survivors even after two years of major traumatic events.

#### First Primary Presenting Author

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**Author Summary:** Professor Wu was graduated from the PhD program of King's College London in 2009. With master background in Community Health Nursing, she expanded her post-doc study in community mental health research. Being the vice CEO of the Taiwan Suicide Prevention center during 2015-2017, she is currently the consultant and chief editor of the Newsletter published by the Center. The study of presentation was one of the government projects that she performed recently.

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