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計畫主持人：吳英璋

共同主持人：陳淑惠

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災後心理反應歷程與心理處置歷程之長期追蹤研究—

總計畫暨子計畫一：

兒童與青少年震災後心理反應長期追蹤研究(3/5)

主 持 人：吳英璋 國立台灣大學 心理學系

共同主持人：陳淑惠 國立台灣大學 心理學系

研究助理：林德慧、江柏均、【還有誰？請填上去】

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災後心理反應歷程與心理處置歷程之長期追蹤研究-子計畫一

兒童與青少年震災後心理反應長期追蹤研究

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主持人：吳英璋 國立台灣大學 心理學系

共同主持人：陳淑惠 國立台灣大學 心理學系

研究助理：林德慧、江柏均、【還有誰？請填上去】

中文摘要

本研究的目的是在探索 921 震災後重建區之兒童與青少年的災後心理反應。本報告為第三年計畫的成果，調查的目標地區仍延續前一年度的設計，以台中縣東勢鎮、南投縣埔里鎮及竹山鎮、嘉義縣大林鎮及民雄鄉、以及台南縣白河鎮等地區為標的區，研究對象則包括小學四、五、六年級與國中一、二、三年級的學生，男女大約各半，族樣本數為 $N = 4554$ 名。以「震災曝露指標 (EEIY; Earthquake Exposure Index for Youths)」與「災後症候群指標(UCLA-PTSD Index)」為主要的研究工具。研究資料初步分析結果顯示：「創傷曝露程度」與災後第四年的長期心理反應之嚴重性仍呈正相關；粗估的 PTSD 診斷之流行率亦隨「年級」與「性別」而有差異。據此

初步結果來看，本項追蹤研究的確值得繼續追蹤下去，以期能獲得更完整的兒童與青少年之災後心理反應狀況。

關鍵字：震災後心理反應；創傷曝露程度；長期追蹤研究；兒童與青少年

ABSTRACT

This study, as a part of a longitudinal prospective project, aims to investigate the range and severity of post-traumatic stress reactions displayed by children and adolescents residing near the epicenter, four years after the Taiwan 921 Earthquake and to examine the relations of these symptoms to developmental stages and objective features of trauma exposure.

Earthquake Exposure Index for Youths and Child Posttraumatic Stress Disorder Reaction Index were administered to 4554 children and adolescents from two heavily impacted townships near the epicenter and four highly threaten townships. Severity of posttraumatic stress reactions was found to vary by a “dose effect” of earthquake exposure. Variation in the prevalence of PTSD symptoms and cases were found across age and gender groups. It will be thus important to continue a longitudinal project with periodic screenings as well as relevant intervention programs.

Keywords: posttraumatic stress reaction, Chi-Chi Earthquake, exposure effect, children and adolescents

BACKGROUND

The devastating 1999 Taiwan Chi-Chi Earthquake struck the whole island country at near midnight of September 21, 1999, and especially hit both densely populated farms and the rugged rural mountain regions of central Taiwan, leaving a surprisingly high toll of deaths, injuries, and damage. Approximately 2,494 people lost their lives and over eleven thousand got injured. More than 106,159 houses and a great number of schools were either completely destroyed or damaged. Particularly distressed by the trauma were the children and adolescents of these regions. They have not only been

stunned by the fateful events such as personal and/or family injury, witnessing death of family, friends, and neighbors, as well as damages and collapses of houses, but have also been experiencing unfortunate adversities following the earthquake such as being “school-less” due to collapse of their schools, relocation and/or separation from family, and undesirable living conditions.

INTRODUCTION

Research on children’s and adolescents’ posttraumatic responses and PTSD has been less abundant and less systematic than research on adult survivors. Nevertheless, it has been documented to date that children and adolescents may experience full range of posttraumatic stress symptoms (e.g., Pynoos, Goenjian, & Tashjian, 1993). The level of trauma exposure appears to be strongly predictive to severity and course of posttraumatic stress reactions in children and adolescents in western samples (e.g., Green, 1991; Lonigan, Shannon, Taylor, Finch, & Sallee, 1994; Pynoos, Steinberg, & Goenjian, 1996) and our previous studies (i.e., Chen, Lin, Tseng, & Wu, 2002; Wu, 2003). Also, age and gender may yield variable effects on risk for PTSD symptoms and PYSD cases (e.g., Chen, et al., 2002; Green, Korol, Grace, et al., 1991; Korol, Green, & Gleser, 1999; Shaw, Applegate, & Schorr, 1996).

Similar to adults' PTSD, the common posttraumatic reactions to disaster in western children and adolescents reported by existent studies include: 1) sleep problems such as insomnia, nightmares, fear of being alone in the dark and sleeping alone, and sleepwalking; 2) loss of capacity to learn, impaired concentration, and memory impairment; 3) intrusive images and thoughts triggered by trauma-related environment and often associated with intense anxiety; 4) repeating trauma-related play and games; 5) panic attacks; 6) fear of trauma reminders; 7) separation anxiety; 8) hypervigilance to dangers; decreased self-efficacy and sense of insecurity; 9) loss of derived pleasure from regular activities; 10) anger, irritability, and aggressive behaviors; and 11) depression, guilt and hopelessness (Orlee, 1993).

The profiles of symptom presentation appeared somewhat different in Taiwanese youths during a short period after the Earthquake (i.e., Chao & Wu, 2000; Chen, et al., 2002; Soong, Lee, et al., 2000). These existing studies of Taiwanese youths were all conducted around three months to one year after the earthquake. Yet to be answered is the question whether or not the symptom manifestations of children and adolescents sustain over a longer period of time.

Lacking previous research on

longitudinal profile of post-disaster psychological reactions of youths in Taiwan constitutes a prime motive for the current study. In this paper, the authors primarily present a large-scale investigation, conducted four years after the 921 Earthquake, inspecting the range and severity of chronic post-traumatic stress reactions displayed by children and adolescents residing near the epicenter so as to plausibly give a database for future research and intervention plan in Taiwan.

METHOD

Subjects:

In present study, we have assessed on a large sample of four thousand five hundred and fifty-five children and adolescents from 4th to 9th grade of fifteen elementary and junior high schools located in Tung-Hsih township of Tai-Chung County, Pu-Li township and Jhu-Shan township of Nan-Tou County, Da-Lin township and Min-Shong village of Chia-Yi County, and Bai-He township of Tai-Nan County after the fourth anniversary of the 921 Earthquake. Of all, approximately 52% were males and 48% were females. There were 54% of the subjects recruited from the most severely damaged areas near the epicenter, i.e., Tung-Hsih and Pu-Li townships.

Measures:

1. ***UCLA PTSD Index for Adolescent, Taiwan version.*** The self-report UCLA PTSD Index for DSM-IV, Revision 1, Adolescent Version (Pynoos, et al., 1996), includes:

A) **Past Trauma Experience Survey (PTES):** consisting of 13 items to evaluate the incidence of past trauma experiences, including earthquake, traffic accidents, war, fighting, gun-shot, and so on. It was rated as 0-*NO* or 1-*YES*.

B) **Checklist of PTSD Symptoms (CPTSD):** consisting of 22 items to assess posttraumatic stress symptoms. It was rated on a 5-point Likert scale ranging from 0-*None* to 4-*Most of the time*. The authors have conducted psychometric examinations of the scale and reported elsewhere (Lin, 2001; Chen, et al., 2002). Via principal component factor analysis with obliminal rotation, the CPTSD yielded two meaningful factors, i.e., *Reexperiencing / avoidance symptoms* and *numbness / maladaptive symptoms*. The internal consistency Cronbach's α were .91, .88, and .82, for the total scale, factor of reexperiencing/avoidance symptoms, and factor of numbness/maladaptive symptoms, respectively.

2. ***Earthquake Exposure Index for Youths (EEIY).*** The self-report

10-item EEIY was modified from the Earthquake Exposure Index (Chen, Lin, Hung, & Tseng, 2000; Chen, et al., 2002) with additional youth-relevant items to assess the extent of exposure to the earthquake.

Procedures:

The data were collected during November and December of 2002, around 4 years after of the 921 Earthquake. With the support from the school principals and teachers and after a passive consent procedure, the self-report measures were given to the students in their usual classrooms. All responses were guaranteed as anonymous.

RESULTS:

1. Exposure Characteristics of the Sample

As shown in Table 1, there were about 5.2% of students still living separately with their family. Regarding their current dwelling, most children and adolescents have a relatively more secure place to stay. More specifically, about 72% were currently living in their original houses and around 23% have moved to a newly built or rented house. However, there were still 0.8% children and adolescents were still living in container houses. Regarding their school settings, about 48% of students studied at their original

and intact school and 51% at a rebuilt school. However, there were still about 0.5% students reporting that they were studying in container classroom.

Table 1. Exposure Characteristics of Subjects						
	Elementary Students (N = 2528)		Junior High Students (N = 2026)		Whole Sample (N = 4554)	
	N	%	N	%	N	%
<u>Separation from family?</u>						
Never	1976	82.6%	1668	85.5%	3664	83.9%
Once separated, but have reunited	305	12.8%	170	8.7%	475	10.9%
Still separated from family	111	4.6%	113	5.8%	224	5.2%
<u>Current dwelling?</u>						
Original house	1741	70%	1472	73.6%	3213	71.6%
Rebuilt house	269	10.8%	207	10.4%	476	10.6%
Container house	23	0.9%	12	0.6%	35	0.8%
Relative's house	91	3.7%	76	3.8%	167	3.7%
New rental house	298	12%	199	10%	497	11.1%
New house	27	1.1%	13	0.7%	40	0.9%
Others	39	1.6%	20	1.0%	59	1.3%
<u>Current School Classroom?</u>						
Original school	968	38.8%	1198	59.9%	2166	48.2%
Container classroom	13	0.5%	9	0.5%	22	0.5%
Rebuilt school	1510	60.5%	790	39.5%	2300	51.2%
Others	4	0.2%	2	0.1%	6	0.1%

2. Age and Gender Effects for Posttraumatic Stress Reactions

Means and standard deviations for PTSD total and subscales by age and gender groups are listed in Table 2. The summary of ANOVA results are presented as well. The results indicate that PTSD total yielded an interaction effect of age and gender. Younger

boys manifested more PTSD symptoms as a whole, followed by girls of both elementary school and junior high school, and males of junior high school had fewest symptoms. The numbness/maladaptive symptom cluster also yielded an interaction effect of age and gender, with similar pattern. Differently, the reexperiencing/

avoidance symptom cluster did not show sex or gender. any main effect nor interaction effect of

Table 2. Summary of ANOVA Results of PTSD Symptoms by Age and Gender

	Elementary Students		Junior High Students		ANOVA
	Mean	S.D.	Mean	S.D.	
PTSD Total					
Male	23.24	16.14	20.29	13.22	AxS*
Female	22.84	14.83	22.14	14.22	
Reexperiencing/avoidance symptoms					
Male	13.53	9.28	11.55	7.53	ns
Female	13.99	8.89	12.98	8.38	
Numbness/maladaptive symptoms					
Male	8.26	6.87	7.17	5.70	AxS**
Female	7.54	6.08	7.60	5.75	

Note. * $p < .05$ ** $p < .01$ *** $p < .001$
A is main effect for age;
S is main effect for gender;
AxS means interaction of age and gender.

CONCLUSION and DISCUSSION:

Consistent with previous studies (e.g., Chen, et al., 2002; Lonigan, et al., 1994; McFarlane, 1987; Shore, et al., 1986; Pynoos, et al., 1996; Wu, 2003), severity of posttraumatic stress reactions was also found to carry a “dose effect” of earthquake exposure in this study. Furthermore, existing literature is not yet conclusive about age and gender effects on the vulnerability of children and adolescents following a natural disaster. Variation in the prevalence of PTSD symptoms was found across age

and gender groups in this study conducted 4 years after the 1999 Chi-Chi Earthquake. More specifically, prevalence of PTSD symptoms of each cluster vary across age and gender groups. Symptoms on the cluster B (reexperiencing) and D (hypervigilance) may be more liable over time and thus more susceptible to change. It could reach to a normally acceptable extent at the fourth year after the traumatic event. On the other hand, symptoms of cluster C (numbness) may need more time to cultivate. Thus, the discrepancy related to age and gender may become more

apparent in cluster C (numbness) and some maladaptive symptoms at the later stage along the posttraumatic process.

Moreover, as younger male children and adolescents presented more PTSD symptoms in general and numbness/maladaptive symptoms in specific at this later stage of posttraumatic process, it may call more professional attention to their vulnerability following a natural disaster. Finally, given that age and gender display variable effects on developing post-traumatic symptoms, it may suggest a need to implement a broad disaster recovery project with periodic screenings as well as stage-, age-, and gender- appropriate mental health programs.

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