



**Università di Modena e Reggio Emilia**

**Post-Traumatic Stress Disorder in  
children and adolescents after the  
2012 earthquakes in Emilia Romagna  
(Northern Italy).**

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# May 2012: two major earthquakes hit Emilia Romagna (Northern Italy). 18 municipalities and about 260.000 citizens were involved.

27 deaths, several hundreds of injured subjects, 15.000 homeless.

**Cross-sectional study** on Post Traumatic Stress Disorder (PTSD) prevalence in children and adolescents (9-14 ys) living in the Earthquake Area (EA) and in Extra Earthquake Areas (EEA) after one year from the event.

**CORRIERE DELLA SERA**  
 Lunedì 14 maggio 2012 Anno LVII - N. 18  
 Milano, Via Solferino 15 - Tel. 02 48001  
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**L'Emilia sfregiata dal terremoto**  
 Crollano torri, rocche e chiese. Sette morti, emergenza per gli sfollati  
 Tra le vittime quattro operai del turno di notte travolti in fabbrica

**LE FATALITÀ PREVEDIBILI**  
 di GIAN ANTONIO STELLA

**Oltre cento scosse, la più forte di 5,9 gradi Richter. Lo sciame continua. Paura al Nord da Milano a Venezia**

**Finalé Emilia anientata come L'Aquila**  
 di RITA CERREZI

**Radiografia di un disastro culturale**  
 di PAOLO CONTI

**Perché tremò la Pianura padana?**  
 di G. CAPRARA

**Il firmato dell'atterrimento di Brindisi. Sindaga nella scuola**  
 «Ha guardato le ragazze e ha premuto il pulsante»

**La, addobbato**  
 DOBBIAMO STARE INSIEME  
 di ROFFI SERGIENNI

**Smentite i Brindisi**  
 «C'è un crollo di un

## **Aims of the study:**

- to assess the prevalence of PTSD in children/adolescents
- to identify risk/protective factors to strengthen in future interventions.

## **Methods:**

- **UCLA-PTSD Index for DSM-IV (children/adolescents version)** 22 items assessing distress thoughts and avoidance reactions, each of them with a score. A global score  $> 37$  is the cut-off for diagnosis.
- **Strength and Difficulties Questionnaire (SDQ)**  
Five areas relate to child behaviour problems.
- **Traumatic/distressing exposure checklist**

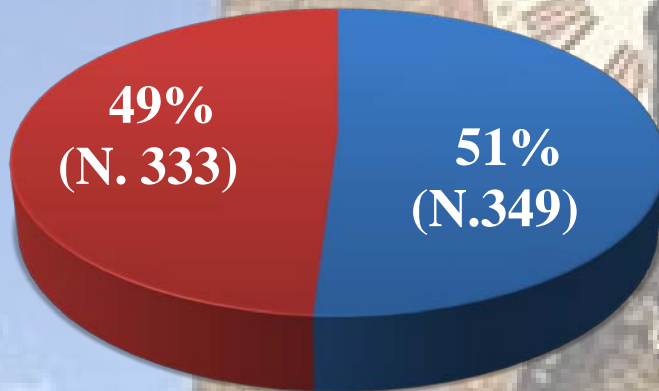
## Population and sample:

Children and adolescents (n. 682) living in earthquake area (EA, n.431) and in extra-earthquake areas (EEA, n.251)

Mean age: 11 years (Range: 8-14)

**Females**

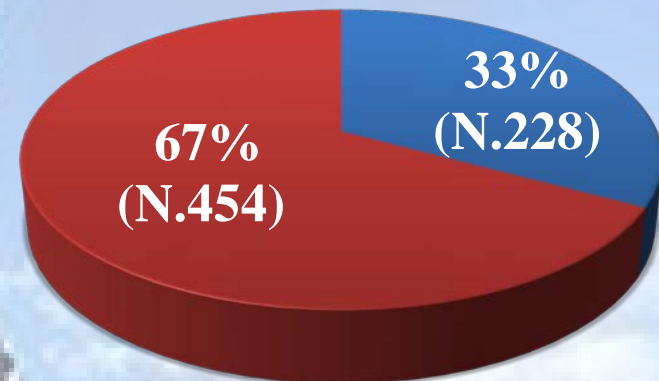
**Males**



**Education**

**Secondary school**

**Primary school**



<b>Results (checklist):</b>	<b>EEA</b>	<b>EA</b>	<b>p</b>
<b>DISTRESSING EVENTS RELATED TO THE EARTHQUAKE</b>			
<b>Was your family hit by the earthquake?</b>	34 (13.6%)	338 (79,3%)	<b>&lt;0.001</b>
<b>Did your family relocate in a different place?</b>	5 (2%)	233 (73,7%)	<b>&lt;0.001</b>
<b>Was your home unfit for use?</b>	0 (0%)	82 (19,1%)	<b>&lt;0.001</b>
<b>Did you suffer injuries?</b>	4 (1,6%)	18 (4,2%)	n.s.
<b>Did your family members suffer injuries?</b>	5 (2%)	60 (14%)	<b>&lt;0.001</b>
<b>Did some friends die?</b>	0 (0%)	49 (1,4%)	<b>&lt;0.001</b>
<b>Did some friends suffer injuries?</b>	18 (7,2%)	133 (30,9%)	<b>&lt;0.001</b>

# Results (Checklist):

	EEA	EA	p
<b>DISTRESSING EVENTS NOT RELATED TO THE EARTHQUAKE</b>			
Did you transfer from another place?	2 (0,8%)	14 (3,3%)	<b>0.041</b>
Did a family member suffer for a serious illness?	48 (19,1%)	52 (12,1%)	<b>&lt;0.05</b>
Did your parents divorce?	9 (3,6%)	15 (3,5%)	n.s.
Did a family member die?	58 (23,1%)	69 (16%)	<b>&lt;0.05</b>
Did a serious accident occur to a family member?	15 (6%)	27 (6,3%)	n.s.
Had you been admitted to the hospital?	17 (6,8%)	40 (9,3%)	n.s.
Did a serious accident occur to you?	4 (1,6%)	7 (1,6%)	n.s.

# Results UCLA Test Index:



**PTSD in EA subjects:**

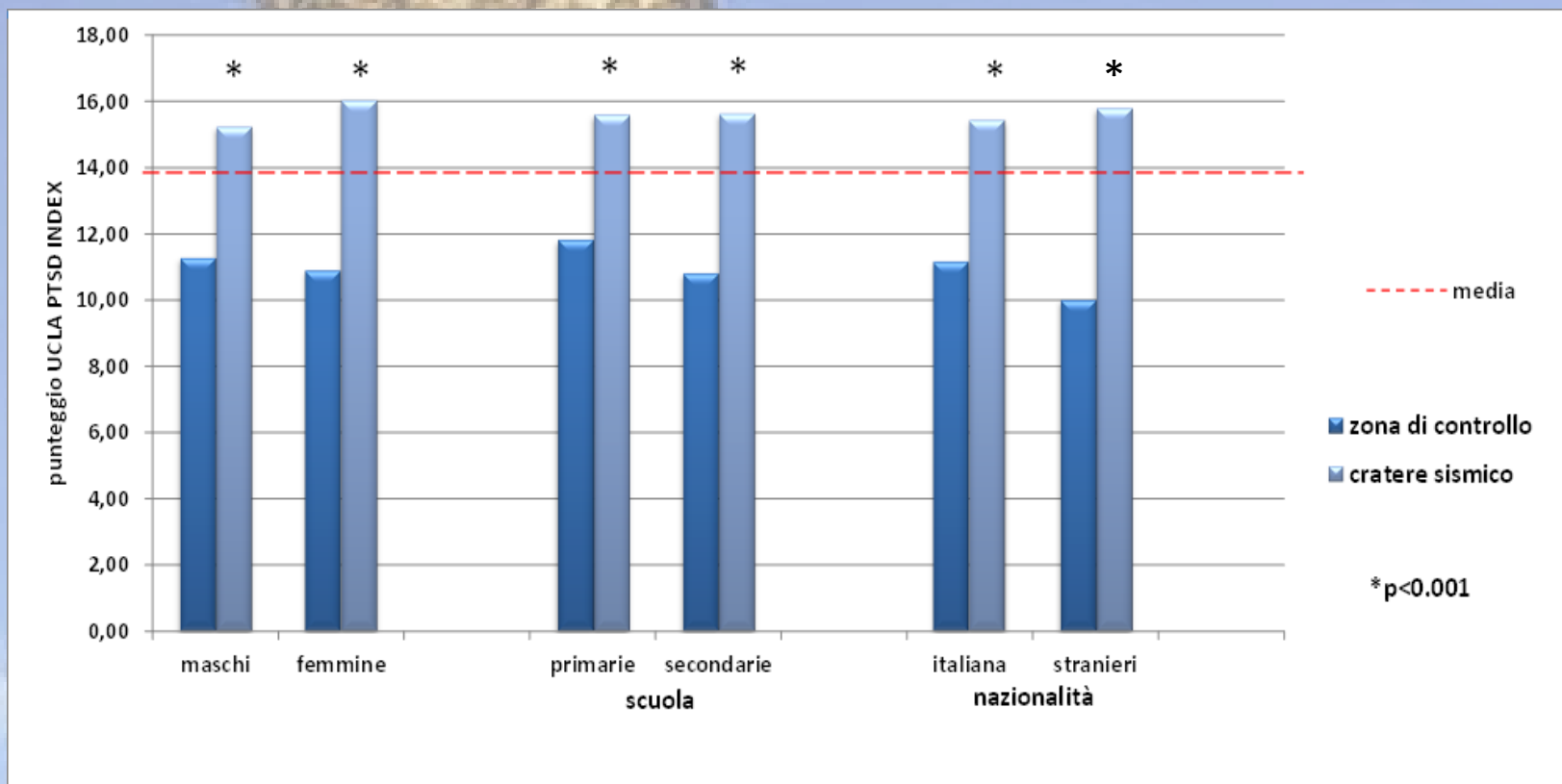
**8 (2%)**

females 2.3% vs males 1.4%

**PTSD in EEA subjects:**

**1 (0.4%)**

# Results UCLA Test Index:

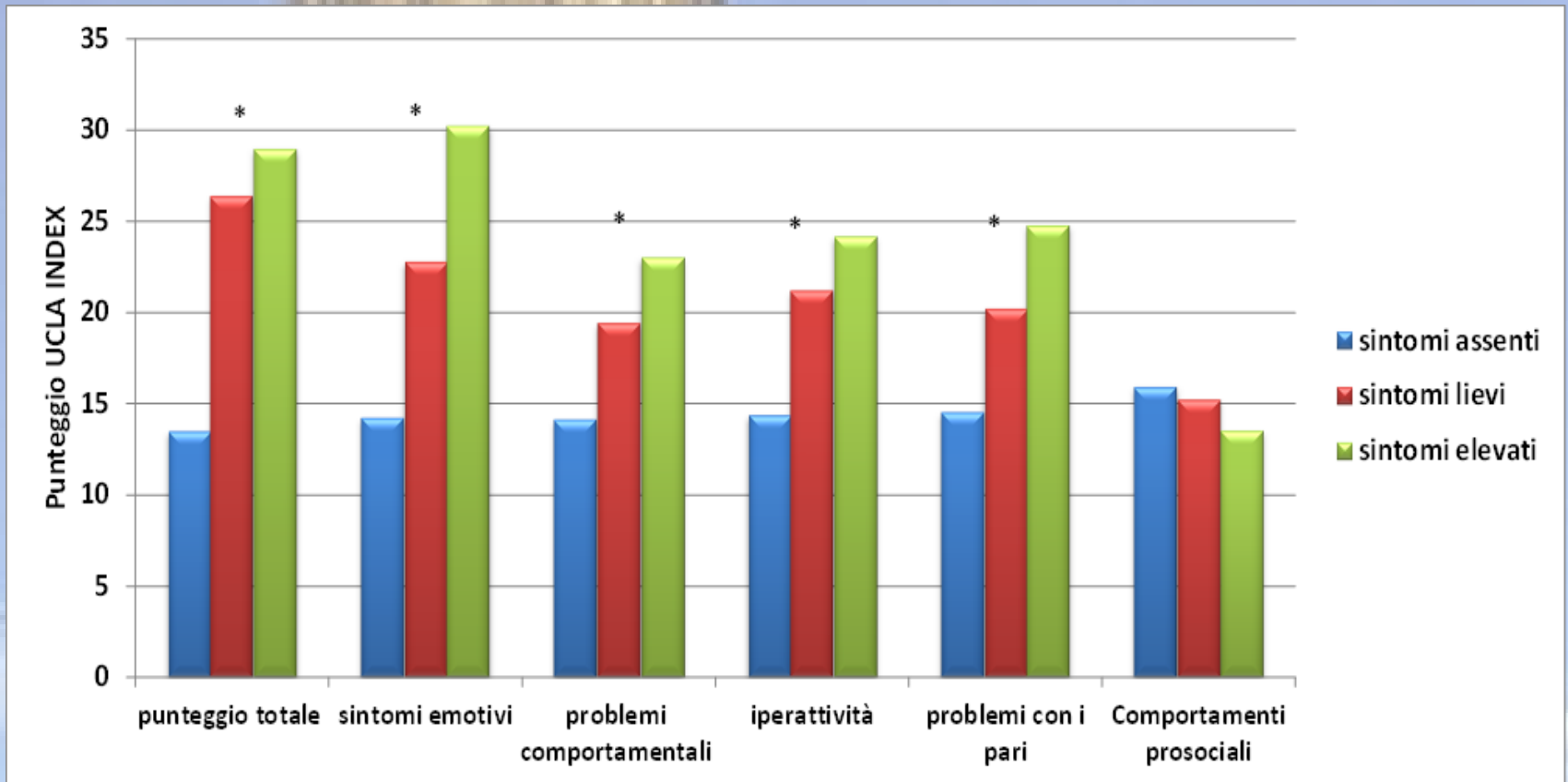




# Results Strength and Difficulties Questionnaire (SDQ):

SDQ score	EEA subjects	EA subjects	p
Global difficulties score	8.50	9.74	<0.01
Emotionality (points of weakness)	2.28	2.50	n.s.
Behavioural problems id	2.04	2.31	<0.05
Distraction/hyperactivity id	2.92	3.28	<0.05
Problems with equals in age id	1.25	1.65	<0.01
Pro-social behaviours (point of strength)	7.20	7.03	n.s.

# Correlation between UCLA Test Index and SDQ:



## Final remarks

- PTSD prevalence appeared **lower than previously observed** in similar investigations, even though comparisons are difficult due to different diagnostic tools, different intensity of the earthquakes, different social and economic conditions of the involved populations.
- Perhaps the **existing social network** at local level could have played a crucial role increasing subjects' resilience.
- Anyway, cases of PTSD in children and adolescents, mainly in females, still **exist after one year** or more since the earthquakes, and deserve attention from parents and teachers.

