



# **SUBCLINICAL POSTTRAUMATIC STRESS SYMPTOMS IN CHILDREN AFTER A LOW IMPACT EVENT**

- AN TWO SAMPLE EXPLORATORY STUDY-

**INGEBORG PORCAR | 2013, SEPTEMBER**

UAB - Barcelona, Spain

# CONTENT

## 1. INTRODUCTION:

- State of art
- Goals
- Critical events

## 2. METHOD:

- Common aspects
- Procedure

## 3. RESULTS & DISCUSSION:

- Answers
- Limitations
- Implications

# STATE OF ART

## Bibliographical review

### 1. PARTICULARITIES OF PTSD:

- It is the only disorder which includes all etiologic factor as a diagnostic criterion.
- Disorder recently added into DSM:
  - DSM III (1980) for general population.
  - DSM III TR (1987) for children.

### 2. THE DISCUSSION ON CRITERION A:

- Follow-up studies after September 11, 2004's Tsunami and Hurricane Katrina in 2005 indicate stress in not directly affected kids, after more than three months
- Research on low-impact stressors (Kilpatrick et al., 1998) indicate significant effects.
- Is it possible that everyday emergencies, not included in the criteria, can also generate ASD and PTSD?

### 3. GAP's:

- Which is the real prevalence of PTSD in children?
  - Dagleish, Meiser-Stedman & Smith (2005) > 0 to 100%.
- Which are the best thresholds for PTSD diagnosis?
- Which are the most significant protective and risk factors:

### RECOMMENDATIONS:

(Dagleish et al, 2005)

- › Compare only affected and survivors of similar stressors and impacts.
- › Use standardized and agile measures.
- › Stratify samples in order to be able to compare the results.
- › Avoid publication bias.

# OBJECTIVES

Research questions

GENERAL OBJECTIVE:

To study stress reactions and PTSD symptoms in **two samples** of children aged from 3 to 12 years **3 months after a low-impact** critical incident.

SPECIFIC OBJECTIVES:

## ESTIMATE PREVALENCE OF PTSD SYMPTOMS

Evaluating the **presence of PTSD symptoms** and **subclinical diagnosis** using parental reports.

## EVALUATE THE SCHOOL'S DISPOSITION

To participate in programs of **preventive monitoring** following a critical incident using the model Fleur de Lis™ (Cohen, Jaycox, Walker; Mannarino, Langley & Duclos, 2009).

## RATE THE APLICABILITY OF 2 SCREENING SCALES

Of Laso, Bonillo & Jané (2012) in affected population of **pre-school education** and **primary education**.

## EVALUTAE RISK FACTORS

That affect the development of PTSD.

## STUDIED CRITICAL INCIDENTS

### Characteristics



### EL HIERRO:

- Declared a biosphere reserve by UNESCO.
- The volcano began the activity in **September 9<sup>th</sup>, 2011** and was productive until **March 2012**.
- From **September, 23<sup>th</sup> to 28<sup>th</sup>** there were over 1000 earthquakes; 40 were clearly perceived by the population.
- The strongest earthquake was on **October 8<sup>th</sup>, 2011** and resulted in a submarine eruption.
- The village of La Restinga (547 pers.) was evacuated twice, **10.10.2011** and **11.05.2011**



### LLERS:

- On **July 22<sup>th</sup>, 2012** two wildfires started in the Alt Empordà (north of Barcelona)
- The first began in La Jonquera. It affected the area of Llers and could not be extinguished until **6 days later**.
- It burned 13.963 acres in which there are 19 villages.
- It produced two deaths (one in Llers) and 31 wounded.
- About 500 people were evacuated.
- In the case of Llers, 80% of the municipal territory was burned.

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# METHOD

## Common aspects

### LEGAL ASPECTS

- Coordination and reliance on the Educational Inspection.
- Legal difficulty (= IMPOSSIBILITY) to work with children in the classroom.

### ETHICS AND CONSENT

- Approval of the research
- Obtaining informed consent, signed by the legal guardian.
- Guarantee of custody of the collected information

### STATISTICAL ANALYSIS

- SPSS 19.0 for Windows.
- In all analyses, the level of significance was  $p < .05$ .

# PROCEDURE

## Participants, phases of the investigation, measures

	AUTHORIZATION OF INVESTIGATION	PARTICIPANT SCHOOLS	OBTAINING SAMPLES	COMPOSITION OF INITIAL SAMPLES	ADMINISTRATION OF QUESTIONNAIRES	TEST CORRECTION	FINAL SAMPLES
<b>EL HIERRO</b>	Consejería de Educación e Inspección Educativa (Cabildo Insular)	LA RESTINGA EL PINAR VALVERDE 100% 48% 21%	3 INFORMATIVE MEETINGS  EXCLUSION CRITERIA		<i>BECIS/ Preschoolers</i> • For families • For teachers  <i>BCIS/Primary Ed.</i> • For families • For teachers  <i>IES/Caregivers</i>	<input checked="" type="checkbox"/> Families' version <input checked="" type="checkbox"/> Teacher's version  <input checked="" type="checkbox"/> Families' s version <input checked="" type="checkbox"/> Teachers' version  <input checked="" type="checkbox"/>	• Average age = 9.29 years  • Proportion of girls = 50%  • 17.2 % one parent families
<b>SAMPLES</b>	Elapsed time: 3 months		<b>n = 89</b>  <b>n = 40</b>	E.I. n = 25 E.P. n = 64  E.I. n = 11 E.P. n = 29			<b>n = 64</b>  <b>n = 29</b>
<b>LLERS</b>	Servei Educatiu de l'AltEmpordà	53% LLERS	EXCLUSION CRITERIA  1 INFORMATIVE MEETING		<i>BECIS/ Preschoolers</i> • For families • For teachers  <i>BCIS/Primary Ed.</i> • For families • For teachers  <i>UCLA -PTSD -screening/ Caregivers</i>	<input checked="" type="checkbox"/> Families' version <del>Teacher's version</del>  <input checked="" type="checkbox"/> Families' version <del>Teacher's version</del>  <input checked="" type="checkbox"/>	• Average age = 8.85 years.  • Proportion of girls= 48%  • 17.2 % one parent families



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# ANSWERS TO THE RESEARCH QUESTIONS

**ESTIMATE  
PREVALENCE OF PTSD  
SYMPTOMS**



Table  
**PTSD Criterion or  
Diagnosis**

**ASSESS SCHOOLS'  
READINESS**



**RATE APLICABILITY  
OF BECIS/BCIS**



**EVALUATE RISK  
FACTORS**



# ANSWERS TO THE RESEARCH QUESTIONS (1/4)

## Prevalence of PTAD symptoms



PTSD Criterion or Diagnosis	Sample "El Hierro" N = 64		Sample "Llers" N = 29	
	n/vn	<sup>a</sup> %	n/nv	<sup>a</sup> %
<b>DSM IV TR criteria:</b>				
Criterion B (reexperiencing)	17/47	<b>36.2%</b> [22-50]	9/21	<b>43%</b> ----
Criterion C (avoidance/numbing symptoms)				
Three	17/47	<b>3.1%</b> [0-7.5]	1/29	<b>3.4%</b> ----
Two	2/64	<b>10.9%</b> [3.08-18.8]	4/25	<b>13.8%</b> ----
One	17/49	<b>34.7%</b> [21-49]	10/25	<b>40%</b> ----
Criterion D (hyperarousal symptoms)				
Two	6/46	<b>13%</b> [3-23]	3/23	<b>13%</b> ----
One	12/64	<b>18.8%</b> [8.92-28.58]	8/29	<b>27.6%</b> ----
Criterion F (impairment symptoms)				
Two	11/48	<b>22.9%</b> [11-35]	4/22	<b>18.2%</b> ----
One	13/64	<b>20.3%</b> [10.2-30.44]	7/29	<b>24.1%</b> ----
<b>DSM IV-TR diagnosis of PTSD:</b>				
(one B, three C, two D, two F symptoms)	2/64	<b>3.1%</b> [0-8]	1/29	<b>3.4%</b> ----
Alternative thresholds for PTSD diagnosis:				
One B, one C, two D, two F criterion symptoms (Scheeringa et al.,2003)	3/47	<b>6.4%</b> [0-14]	2/23	<b>8.7%</b> ----
One B, two C, two D, two F criterion symptoms	3/64	<b>4.7%</b> [0-10]	2/29	<b>6.9%</b> ----
One B, two C, one D, two F criterion symptoms	3/64	<b>4.7%</b> [0-10]	2/29	<b>6.9%</b> ----
One B, one C, one D, two F criterion symptoms	3/64	<b>4.7%</b> [0-10]	2/29	<b>6.9%</b> ----



## **ANSWERS TO THE RESEARCH QUESTIONS (2/4)**

### School's readiness

#### **IN TERMS OF TEACHERS**

- Their reports had no validity.
- But they have an important role:
  - Collect the data.
  - Guaranty confidentiality & custody information.

#### **IN TERMS OF FAMILIES**

- Families are willing to collaborate:
  - › CEIP La Restinga 100%
  - › CEIP Taibique/El Pinar 48%
  - › CEIP Valverde 21%
  - › CEIP Llers 53%
- Their responses are valid.



## ANSWERS TO THE RESEARCH QUESTIONS (3/4)

Aplicability of BECIS/BCIS in choosen samples

Scale	Version	EL HIERRO		LLERS	
		Total <sup>1</sup>	Subscales	Total	Subscales
		-			
BECIS	Families	0.69	0.21-0.72	0.94	0.81-0.99
	Teachers	0.45	0.23-0.56	-----	-----
BCIS	Families	0.74	0.60-0.96	0.72	0.58-0.96
	Teachers	0.36	0.18-0.56	-----	-----

<sup>1</sup> The values correspond to calculations made on Cronbach's Alpha.



## ANSWERS TO THE RESEARCH QUESTIONS (4/4)

### Study 1: El Hierro

#### Exploratory Simple Linear Regressions

Potential risk factors:

SIGNIFICANT	NON SIGNIFICANT
<ul style="list-style-type: none"><li>▪ Preventive evacuation</li><li>▪ Number of PTSD symptoms in principal caregiver:</li></ul>	<ul style="list-style-type: none"><li>▪ Age</li><li>▪ Gender</li><li>▪ Previous stressful life events</li><li>▪ Previous psychological assistance</li></ul>

#### Multiple Linear Regression

Variables introduced in the model:

- Preventive evacuation (EvPre)
- Number of PTSD symptoms in principal caregiver (PTIES)
- Interaction EvPre x PTIES

The model is **significant** ( $F = 12.437$ ,  $df = 3,54$ ,  $p < .0005$ ). It explains **37.6%** of variance.

Interaction is significant ( $p = .009$ ). It says that the number of PTSD symptoms in the principal caregiver is only significant in **children** who have been **evacuated from home**.

## LIMITATIONS

Auto-selected samples

**SELECTION BIAS**

Screening only reported by one  
of the parents/caregivers

**PRESENCE OF FALSE POSITIVES  
AND NEGATIVES**

Small samples

**THE GENERALIZATION TO THE PUBLIC  
MAY BE COMPROMISED, DESPITE  
ACHIEVING STATISTICAL SIGNIFICANCE**

## ACKNOWLEDGEMENTS

We express our gratitude to:

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### ALL SCHOOLS:

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- Escuela Unitaria de La Restinga
- CEIP Taibique - El Pinar
- CEIP Valverde
- CEIP Llers

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### EDUCATIONAL INSPECTIONS:

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Consejería de Educación e Inspección Educativa (Cabildo Insular)

Servei Educatiu de l'Alt Empordà

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### ACADEMIC TUTORS

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