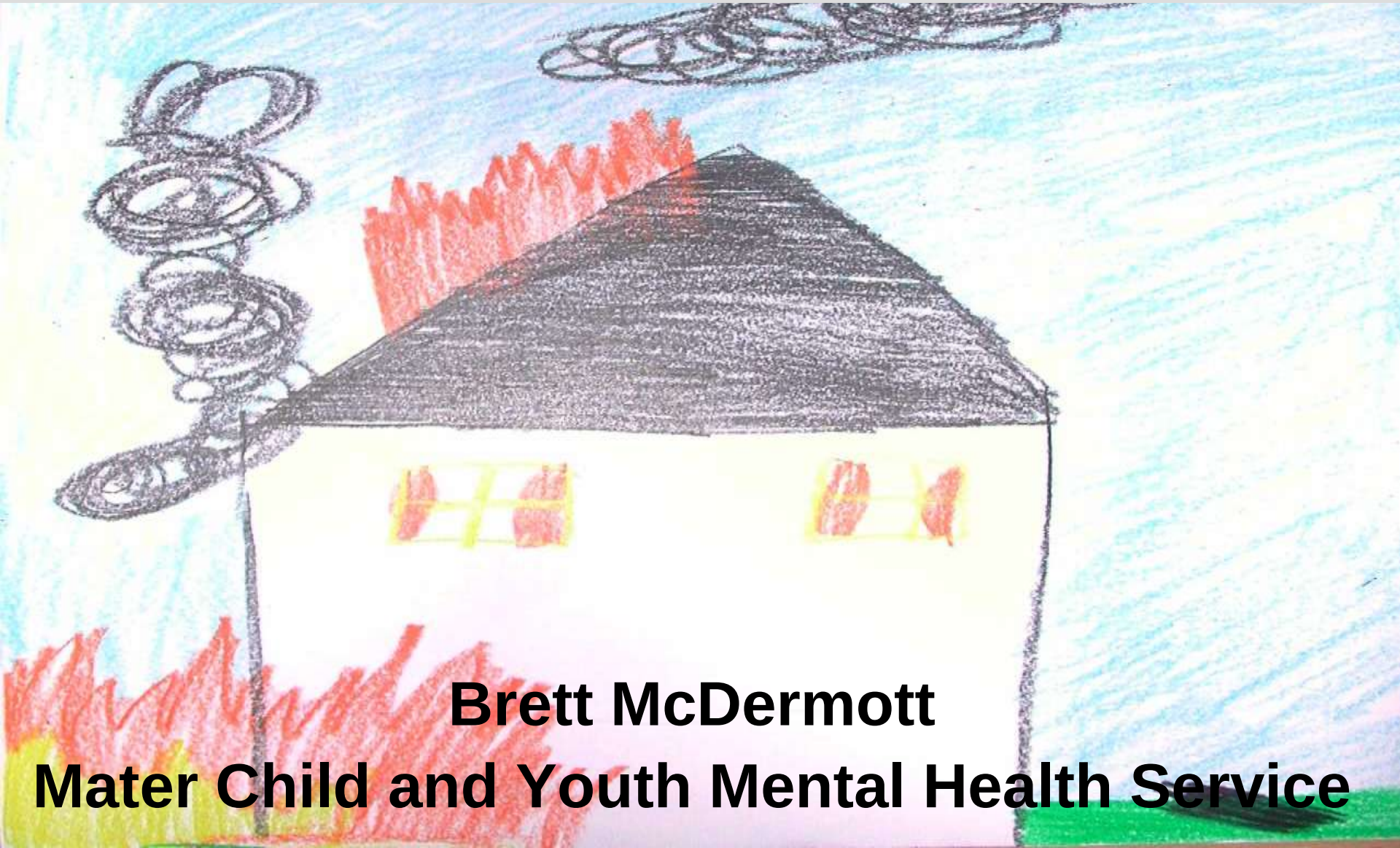
Children, adolescents and bushfire-related traumatic stress.



Brett McDermott

Mater Child and Youth Mental Health Service

Acknowledgements

Sutherland Bushfire Trauma Project (n=4000)

- Victor Storm, Don Finlayson, Sue Pammet, school counselors

Canberra Bushfires (n=400)

- Erica Lee, Marianne Judd, Peter Gibbon

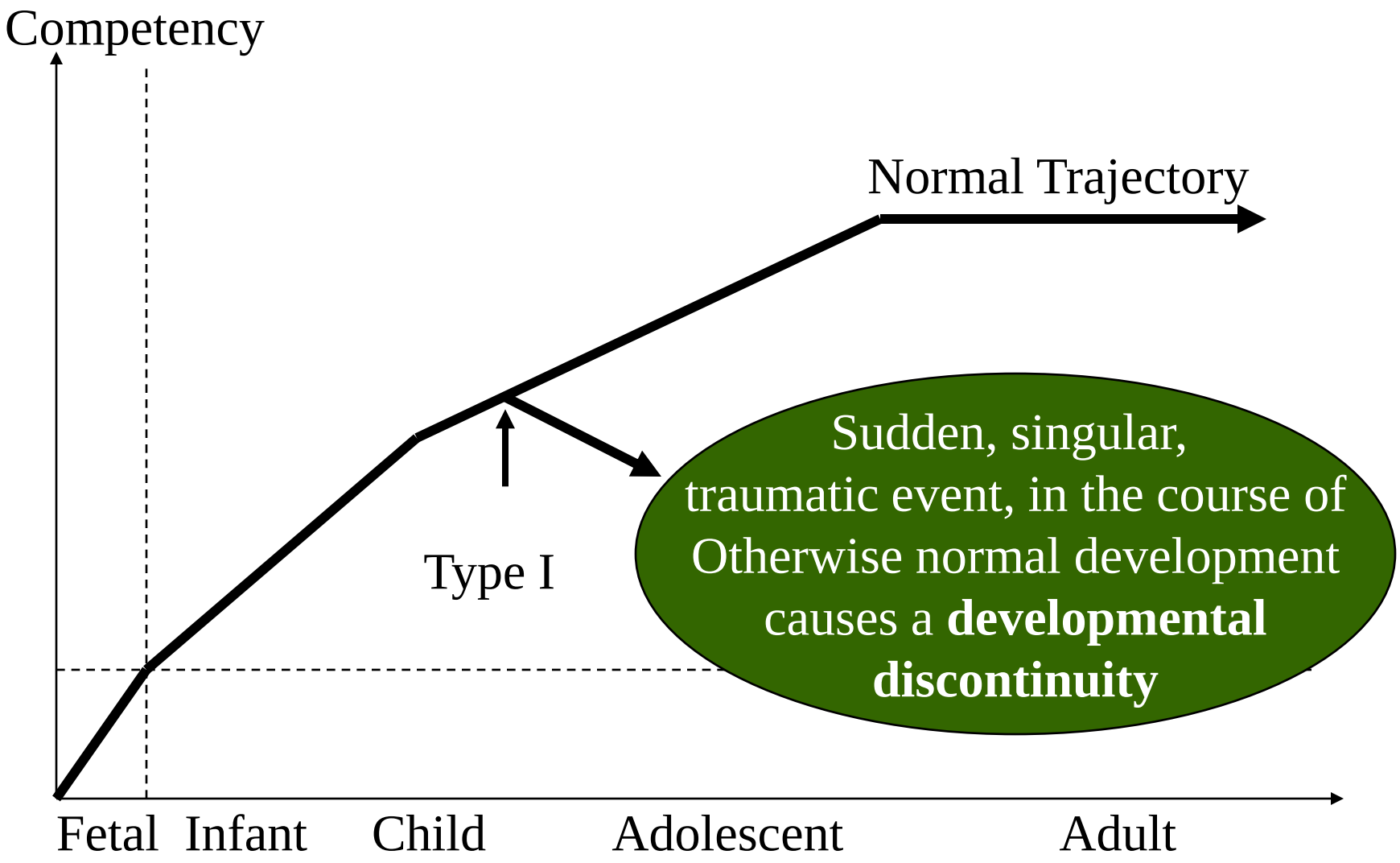
Cyclone Larry Children Project (n=2700)

- Vanessa Cobham, Helen Berry, Kevin Freele, EdQ and Cathed counselors and teachers

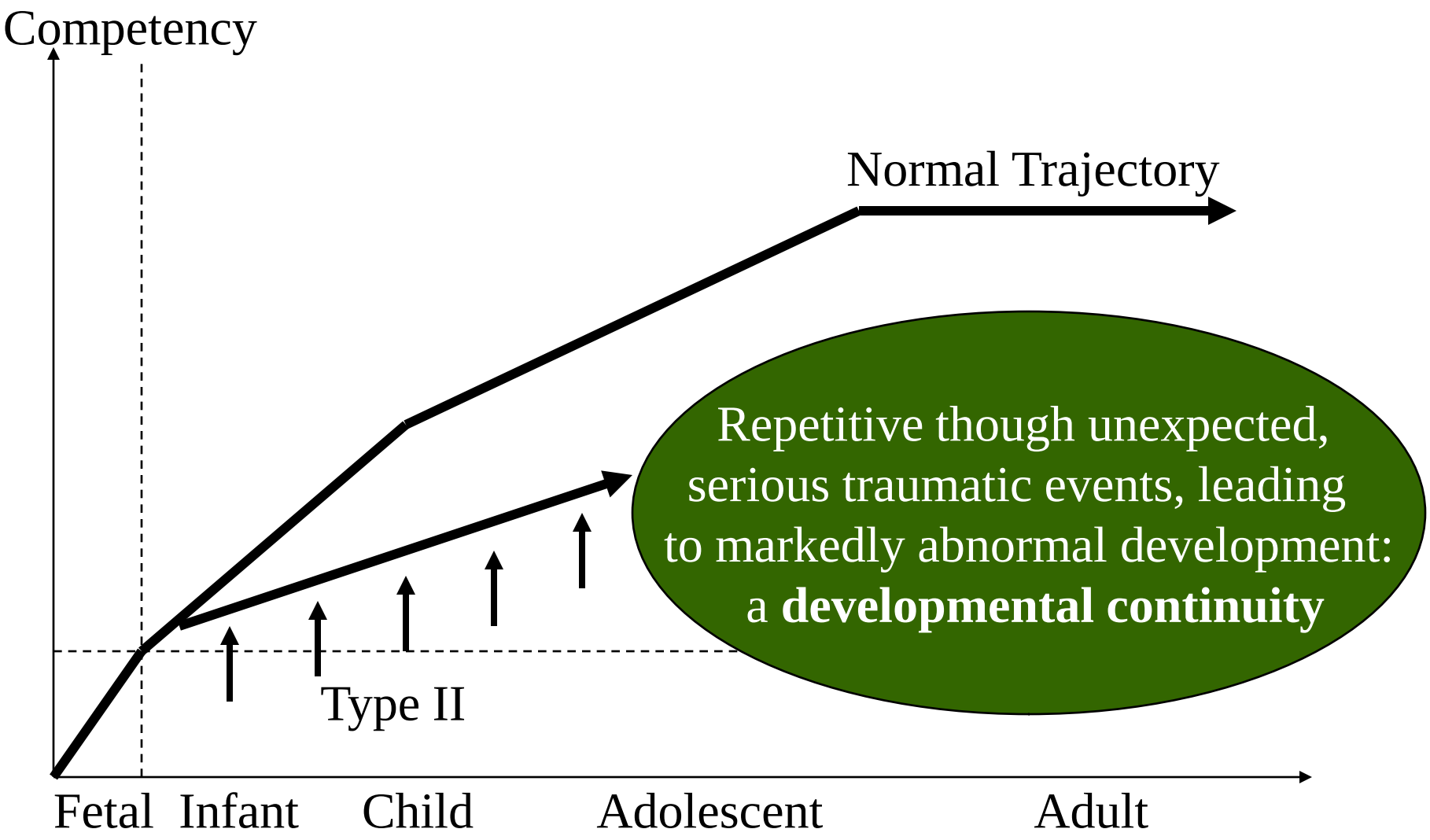
Brisbane Storms 08-09 (n=2000)

- Vanessa Cobham, Judi Krause, NW CYMHS.

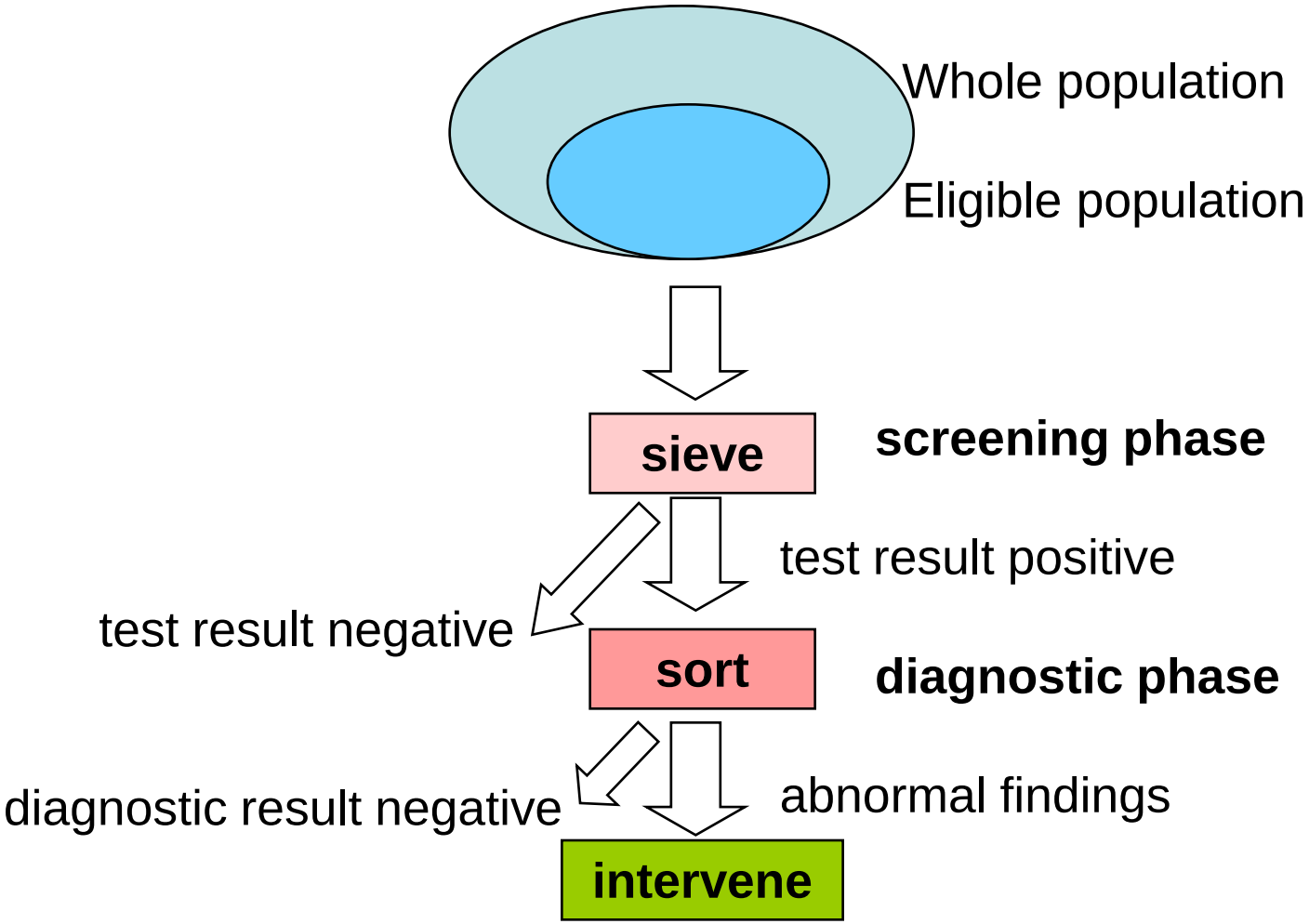
‘Type I’ emotional trauma



Type II trauma

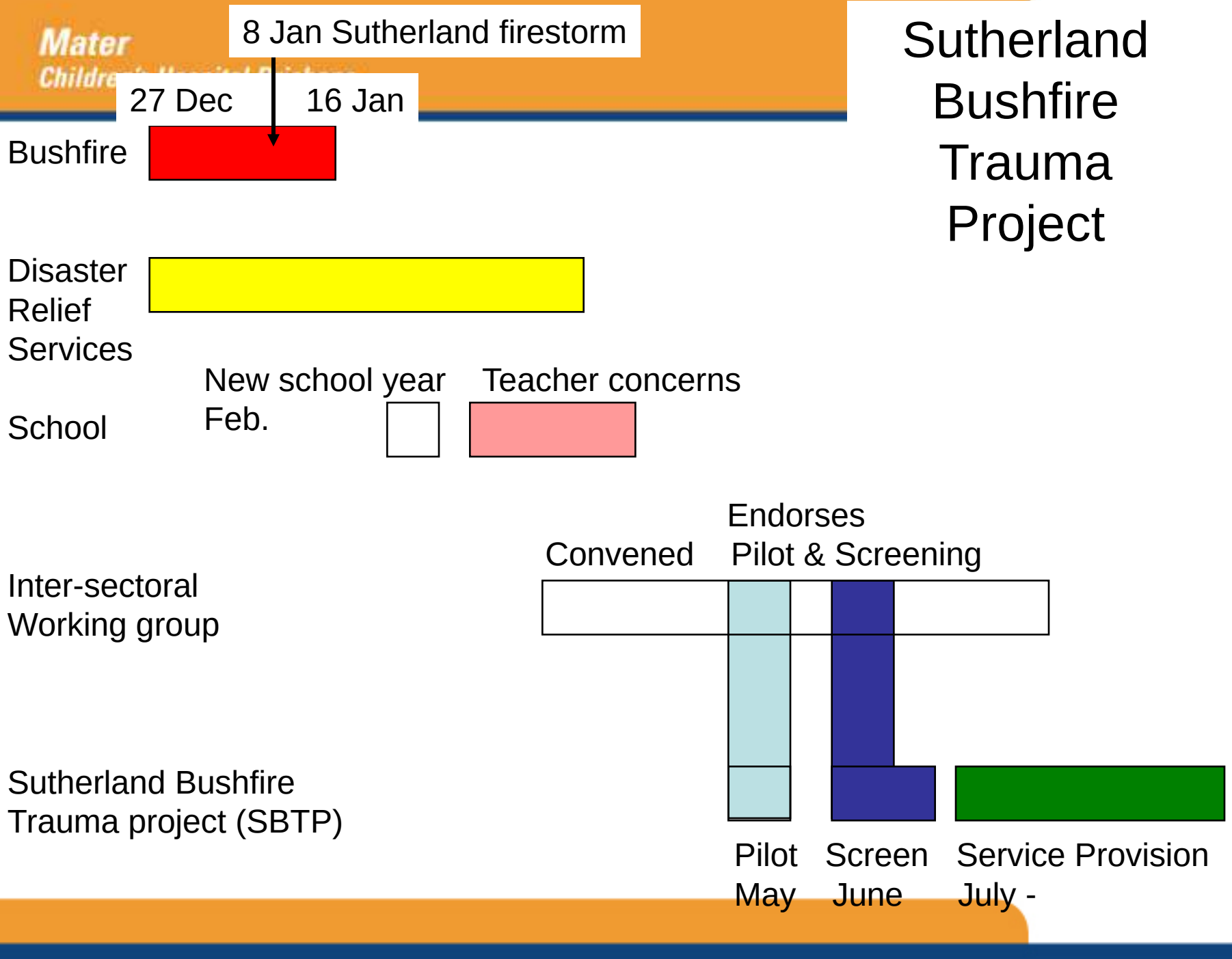


Basic screening flow diagram

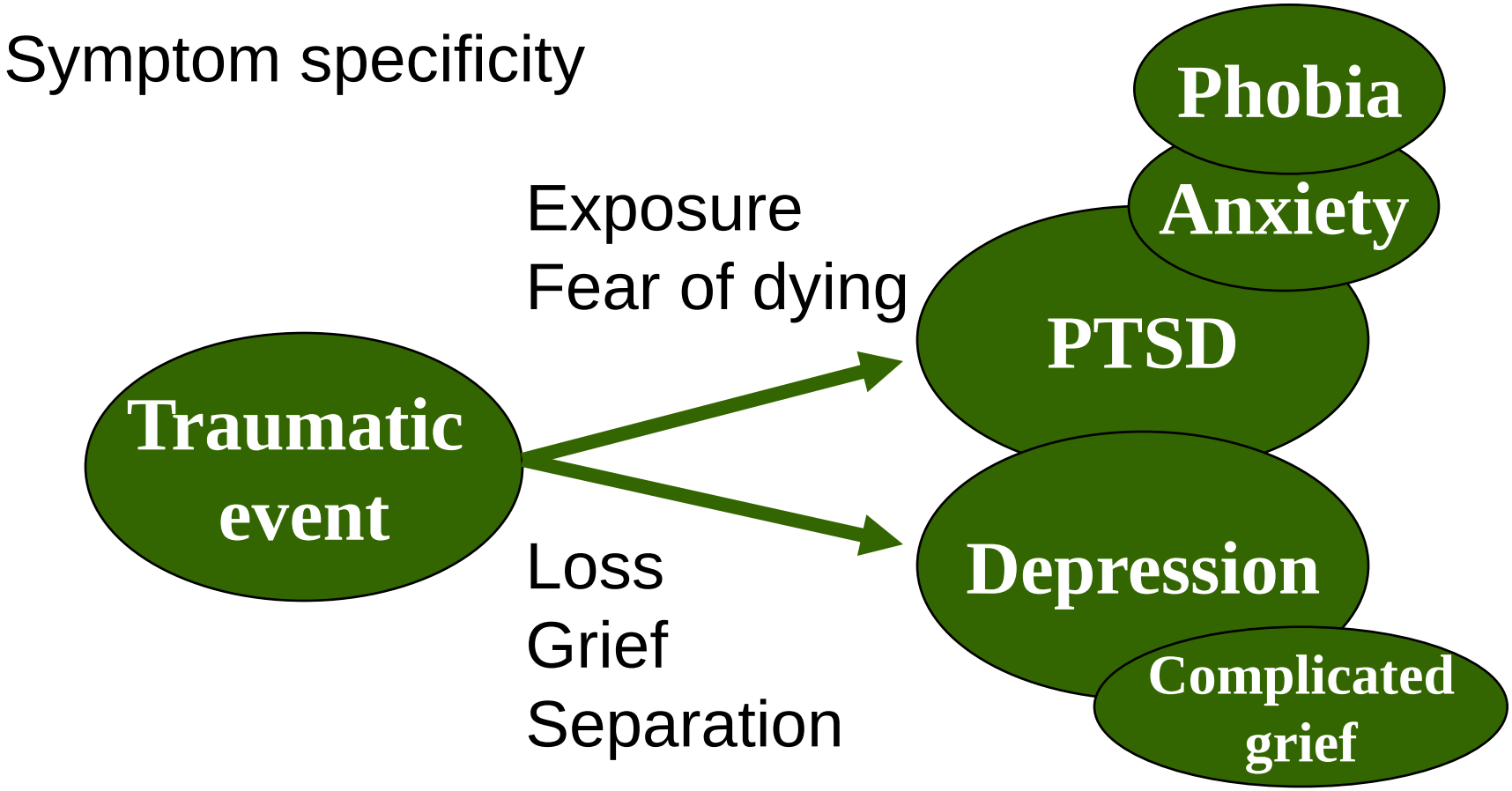


From: Screening Evidence and Practice, Raffle & Gray, 2007

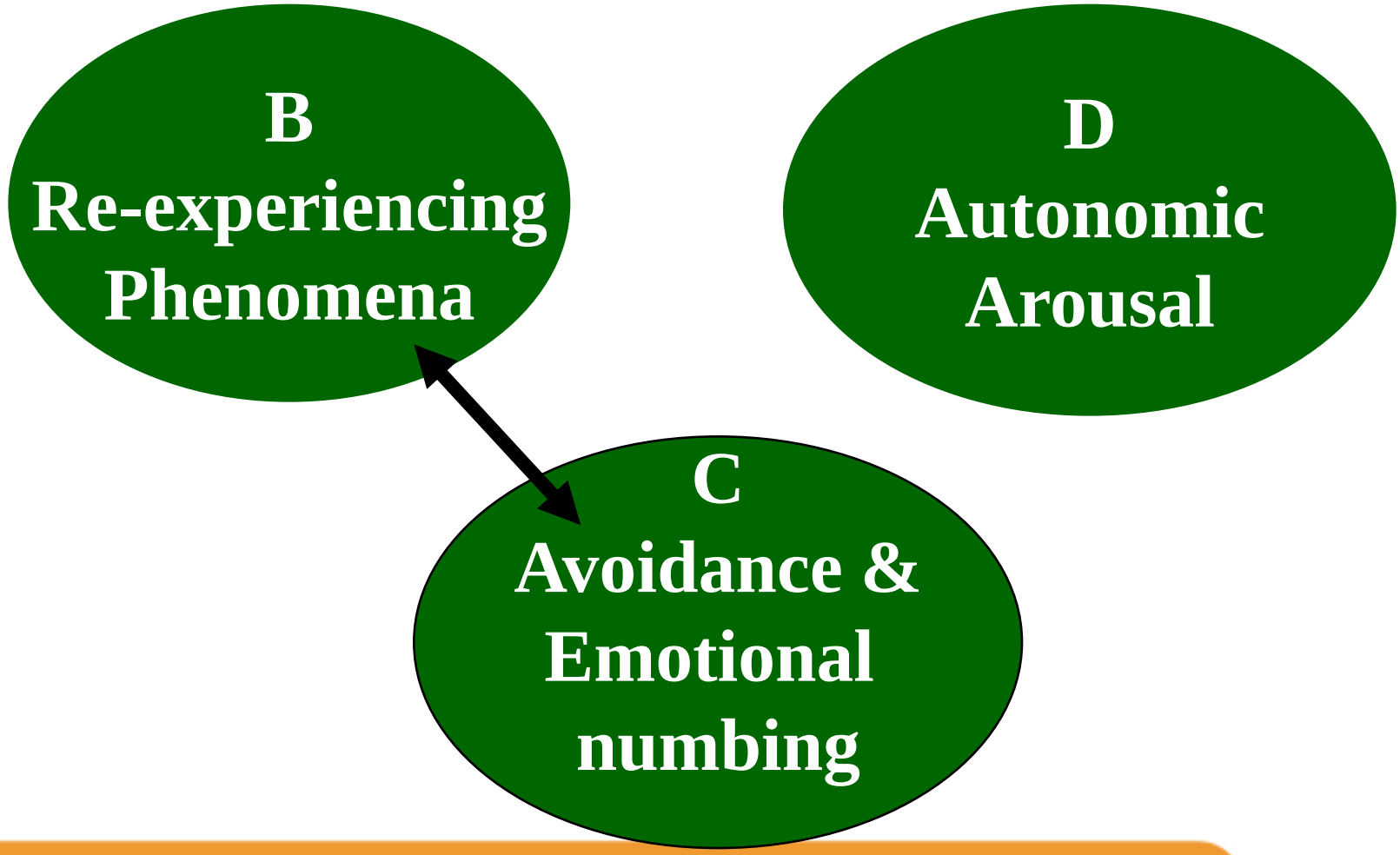
Sutherland Bushfire Trauma Project



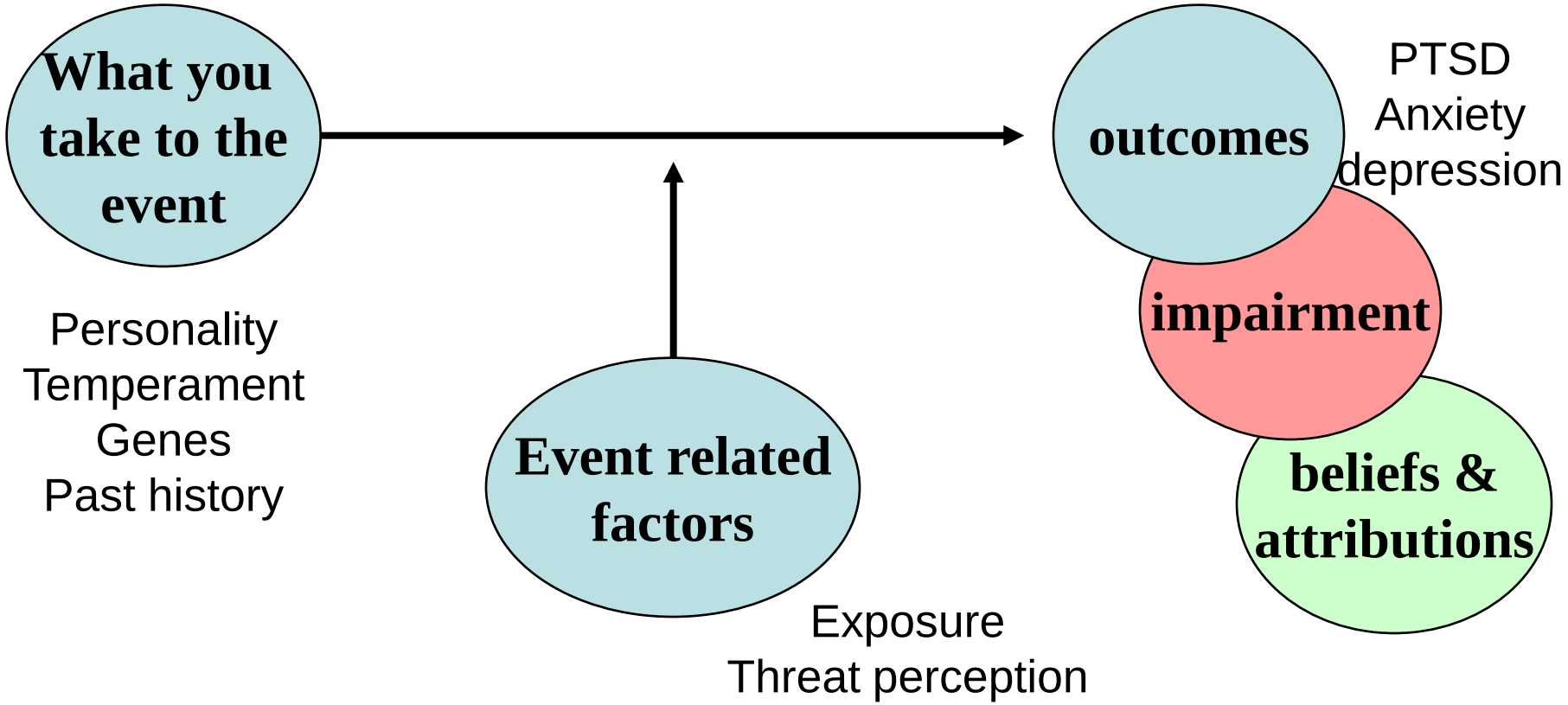
Type I trauma: not all = PTSD



DSM IV: PTSD


B
Re-experiencing
Phenomena
D
Autonomic
Arousal
C
Avoidance &
Emotional
numbing

Understanding mental health outcomes



Large scale public health approach

Cyclone Larry 2978 school children screened

	EdQ	Cath	Total
pre-3	502	201	703
4-7	583	236	819
8-12	913	543	1456

27 schools:
- 18 Primary schools and 2 high schools from Ed QLD
- 6 primary schools and 1 high school from Catholic Ed

Screening 3 months post disaster

Child report

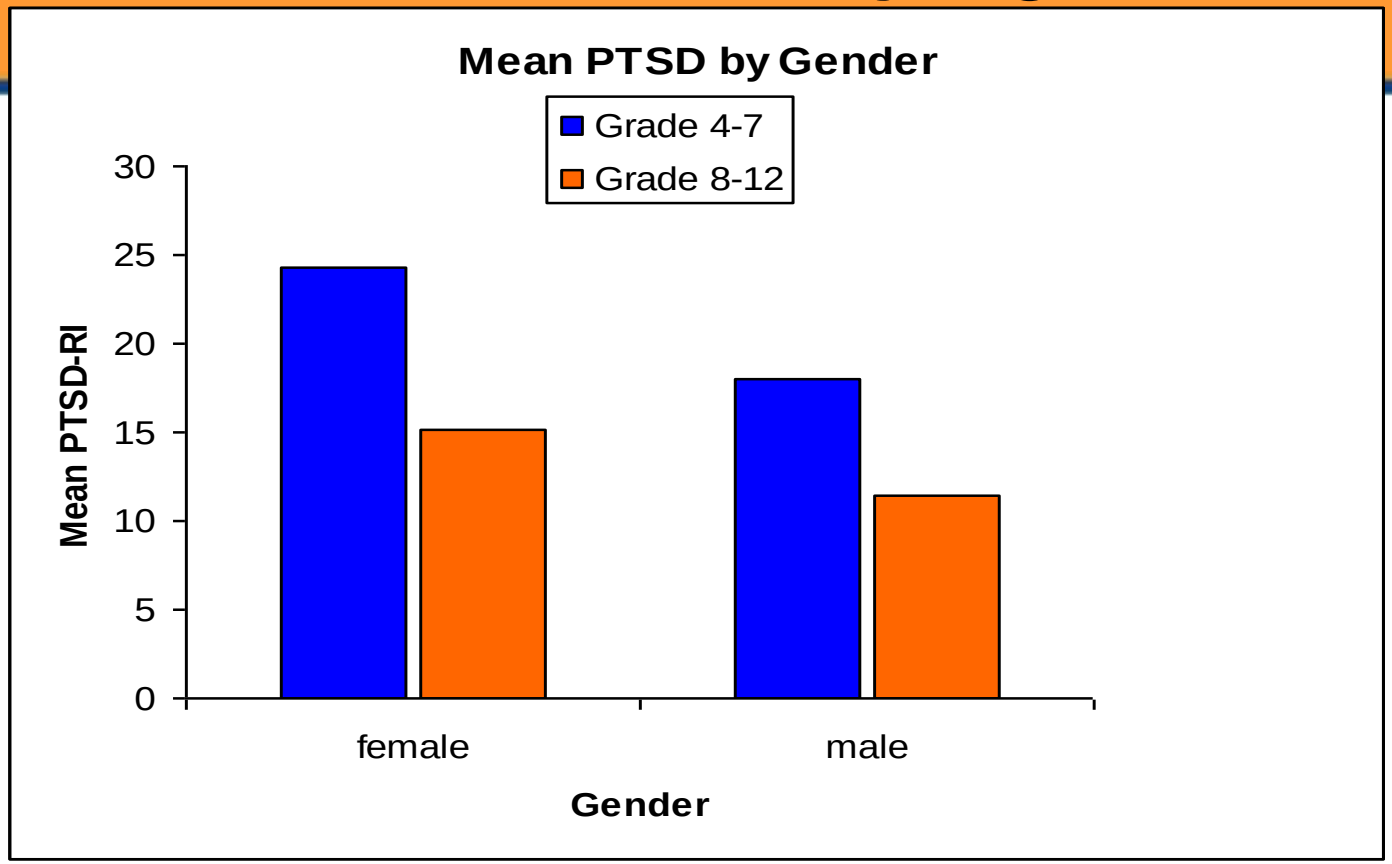
- PTSD measure
- exposure questions
- community connectedness questions

Parent report

- general mental health symptoms
- exposure questions
- community connectedness
- Family Adjustment Device
  or Family Resiliency Scale

} Delivered through schools + local resources

CLCP: PTSD by Age



Logistic regression **Number of obs = 2252**

ptsdcat1	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
age	0.78	0.03	-7.00	0.000	0.72	0.83

Odds Ratios

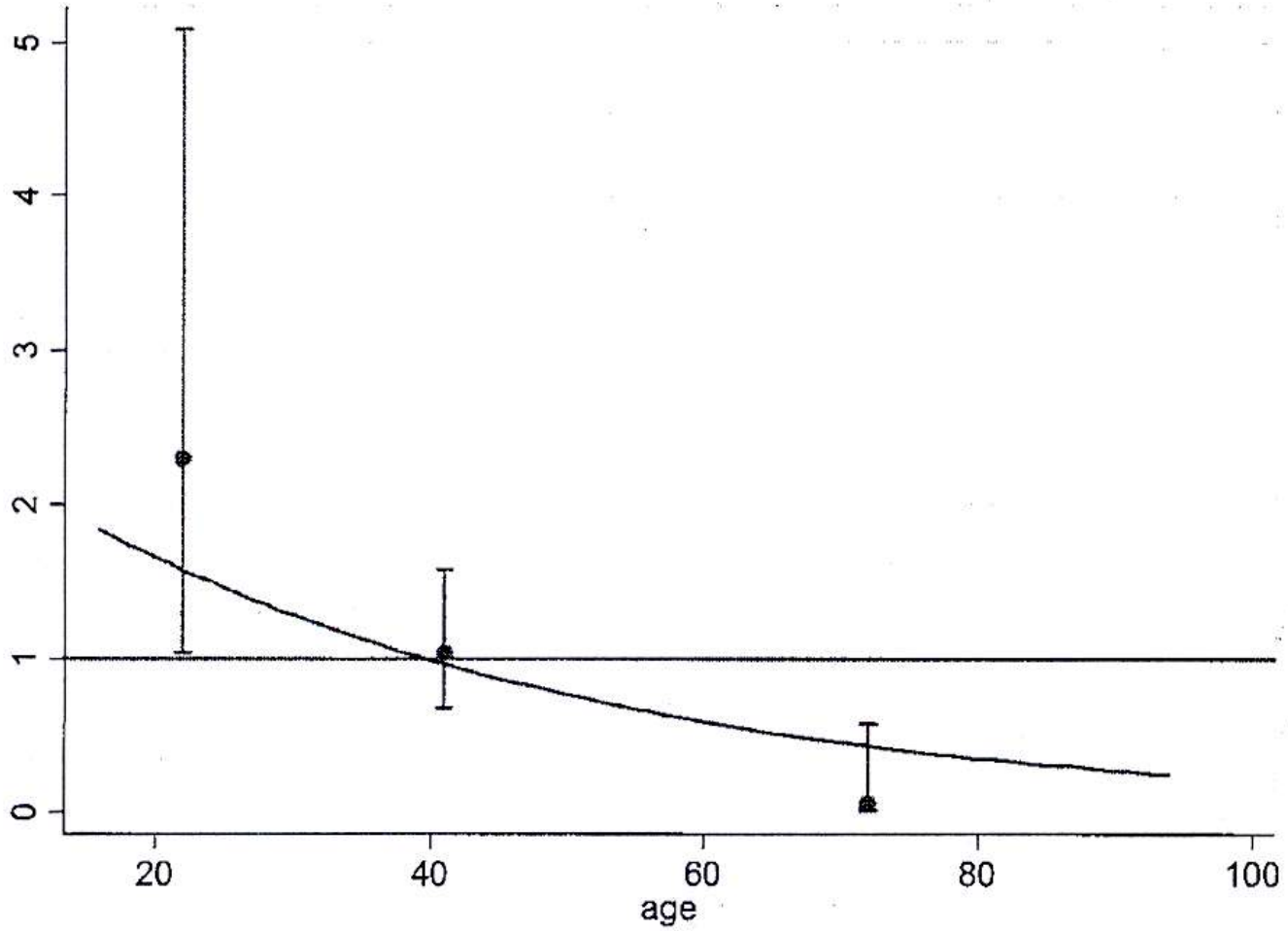
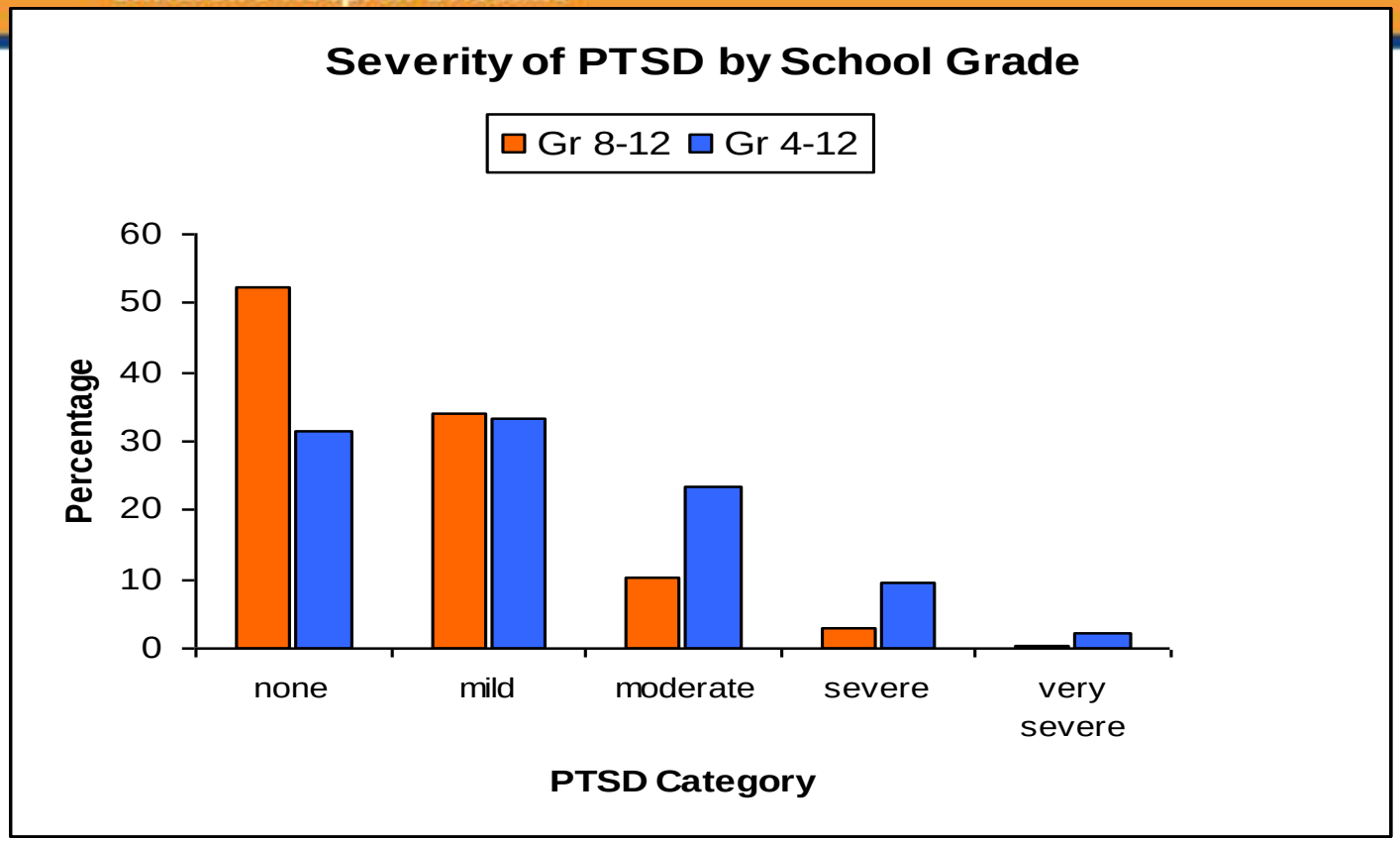


Figure 5: Suicidal Behavior Odds Ratios for Active Drug relative to Placebo – Preparation or Worse –Adults with Psychiatric Disorders – By Age

CLCP: PTSD by Age

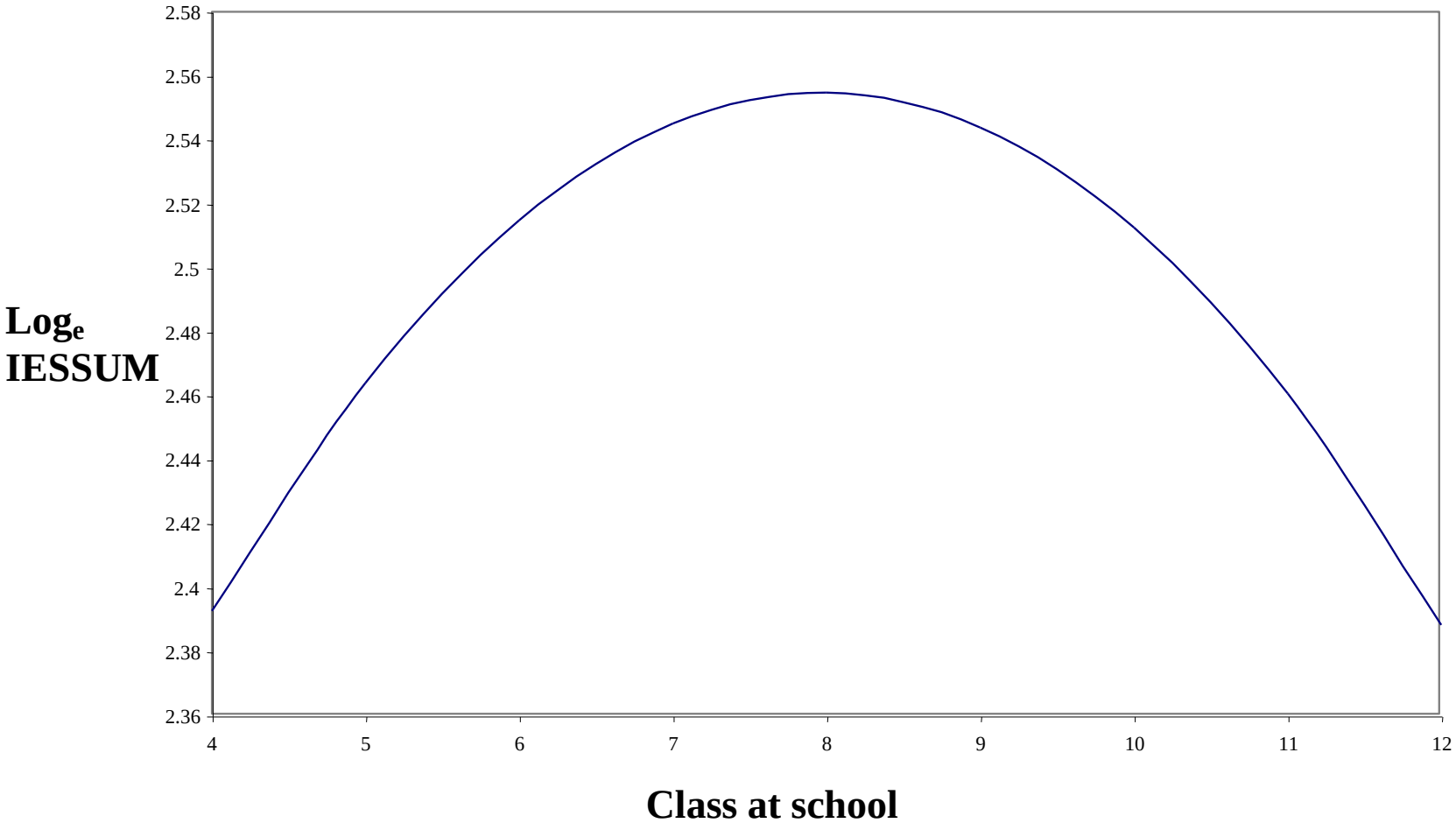
Children's Hospital Brisbane



Logistic regression **Number of obs = 2250**

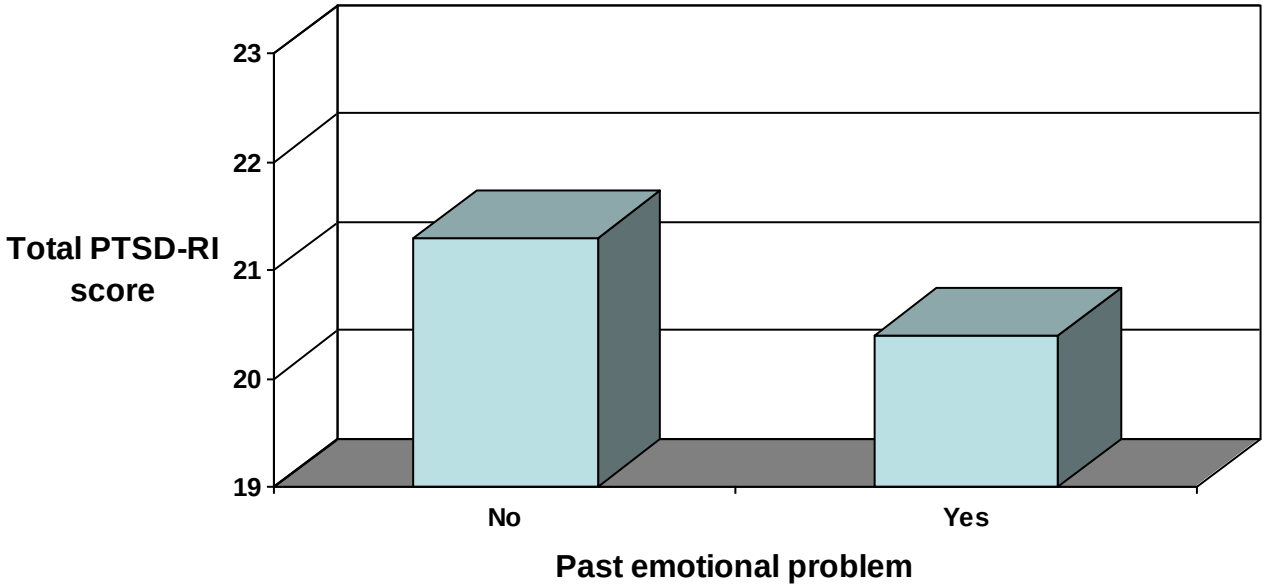
ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	0.78	0.028	-6.84	0.000	0.73	0.84
sex	2.72	0.526	5.16	0.000	1.86	3.97

Modelled relationship of emotional distress symptom score to class at school.



McDermott & Palmer, 2001

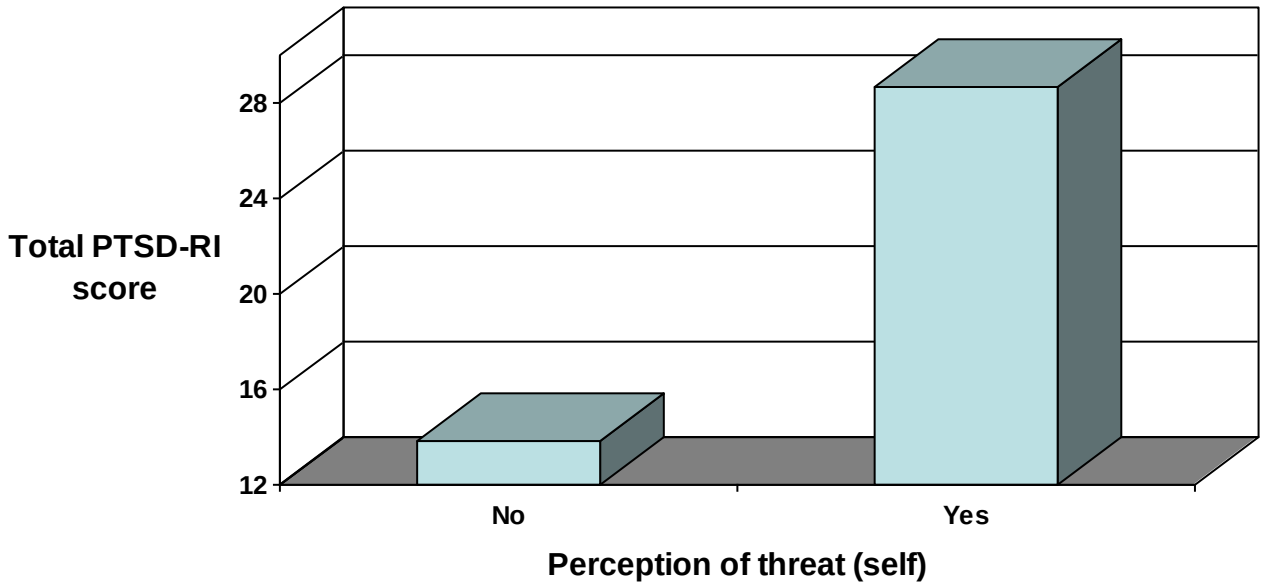
CLCP: Past emotional problems



Logistic regression **Number of obs = 588**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	0.68	0.08	-3.29	0.001	0.54	0.86
sex	3.29	1.03	3.81	0.000	1.78	6.07
prevdiff	1.16	0.42	0.41	0.679	0.57	2.37

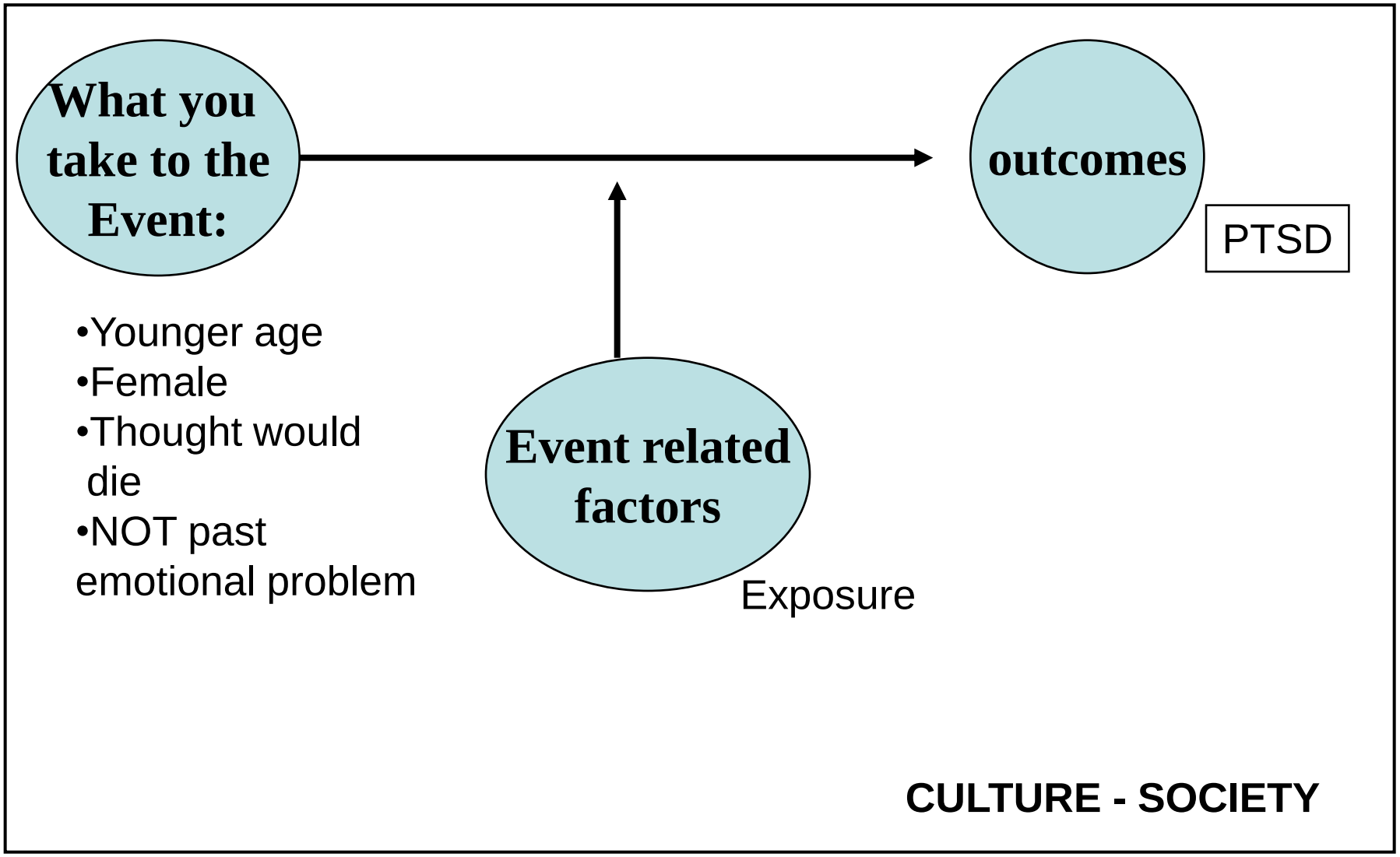
CLCP: Threat perception



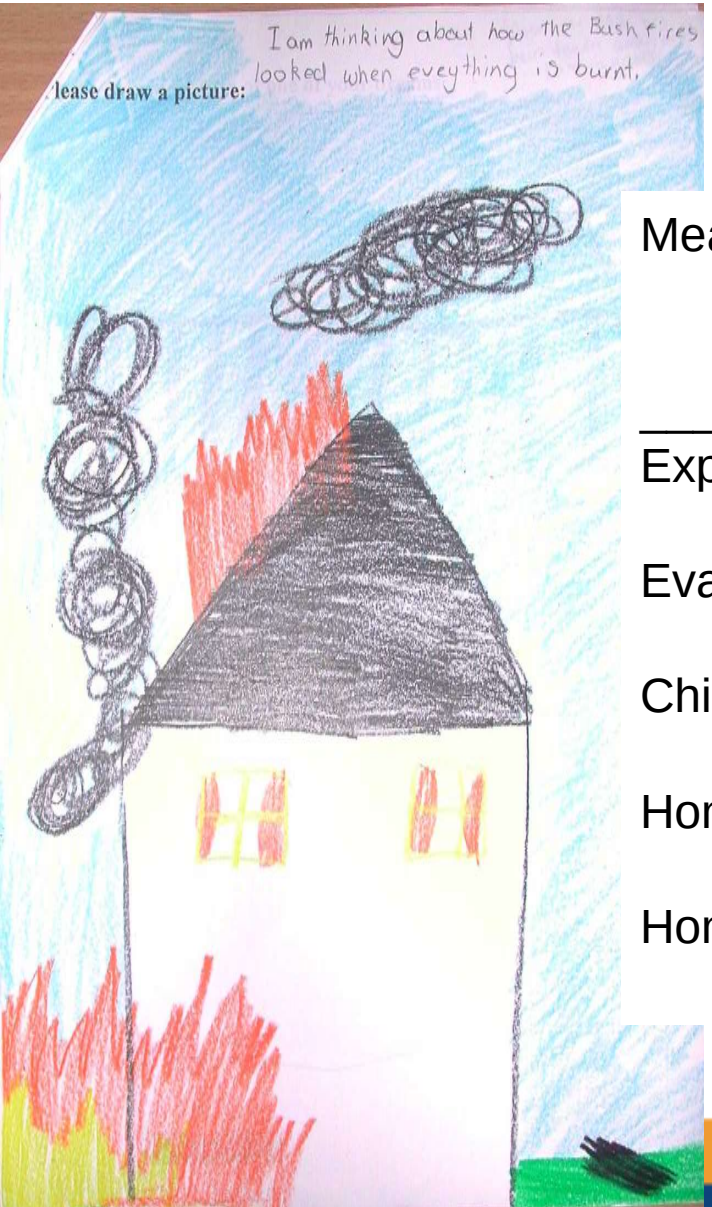
Logistic regression **Number of obs = 2176**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	0.84	0.03	-4.64	0.000	0.78	0.90
sex	2.32	0.48	4.03	0.000	1.54	3.50
selfdie	8.24	1.59	10.91	0.000	5.64	12.03

Explanatory models



Sutherland Bushfire Disaster



Measure	Emotional distress (IESSUM)		
	Mean (SD)	Mean (SD)	p
Experience:	YES	NO	
Evacuation	21.90 (17.10)	11.65 (13.04)	.000
Child separation	16.58 (16.51)	12.28 (13.08)	.000
Home damage	23.49 (18.94)	12.99 (14.54)	.000
Home destroyed	22.65 (14.07)	14.07 (14.54)	.009

Canberra Bushfire Disaster

Prevalence PTSD:

Mild	15.8%
Moderate	3%
Severe	1%

Increased risk PTSD:

	OR	p
Thought would die	2.3	.000
Parent die	2.1	.000
Separation	1.6	.02
Within 50 meters	1.6	.01

Cyclone Larry: Disaster-related event

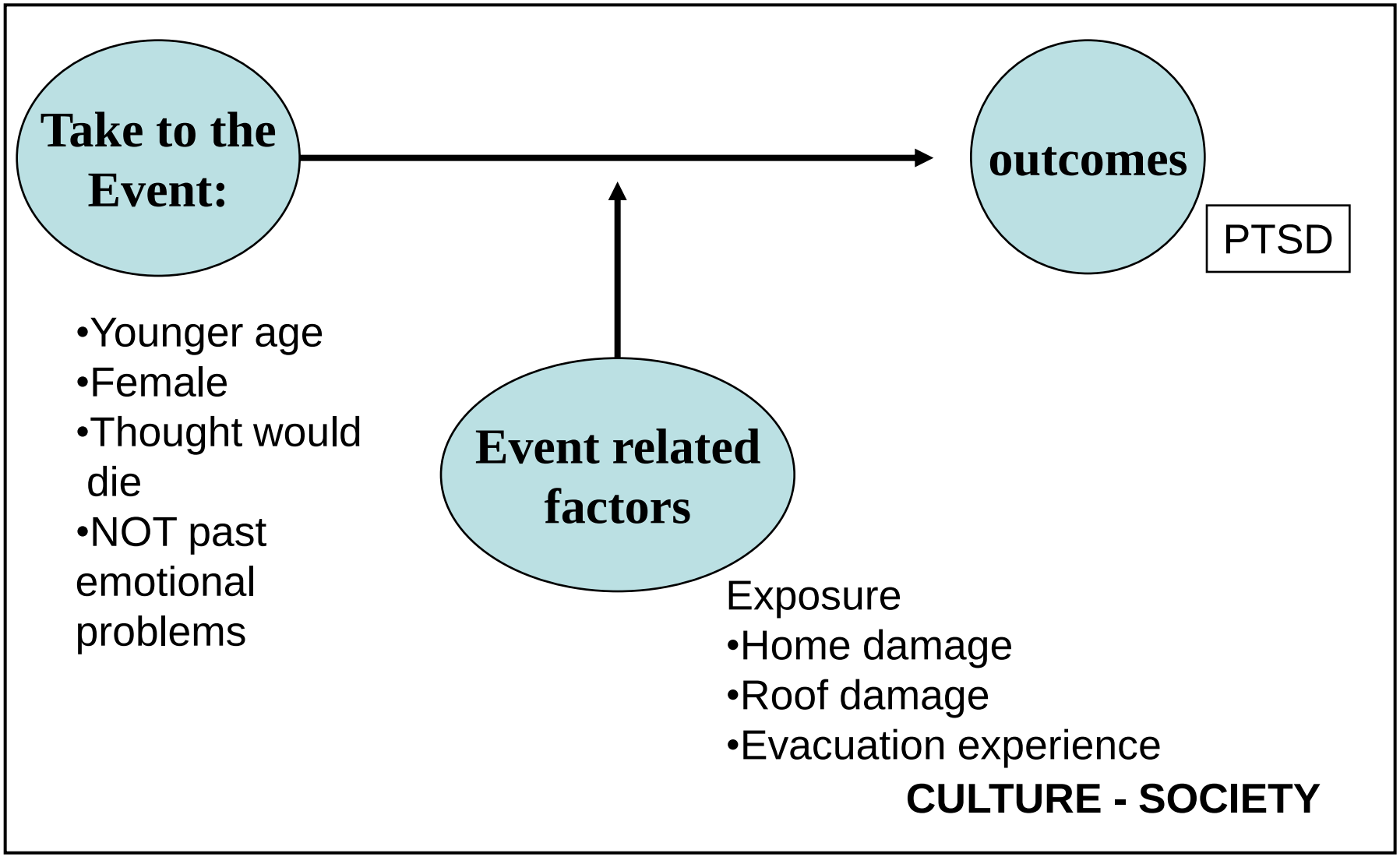
Mean Odds Ratios for PTSD by event-related variable

	OR	X^2	p	95% CI
Saw debris	1.54	3.15	.074	.95 – 2.51
Home damage	2.23	14.88	.000	1.47 – 3.39
Lose part roof	2.18	20.46	.000	1.51 – 3.09
Lose whole	3.62	22.01	.000	2.03 – 6.43
Live else	3.15	14.02	.000	1.74 – 7.09

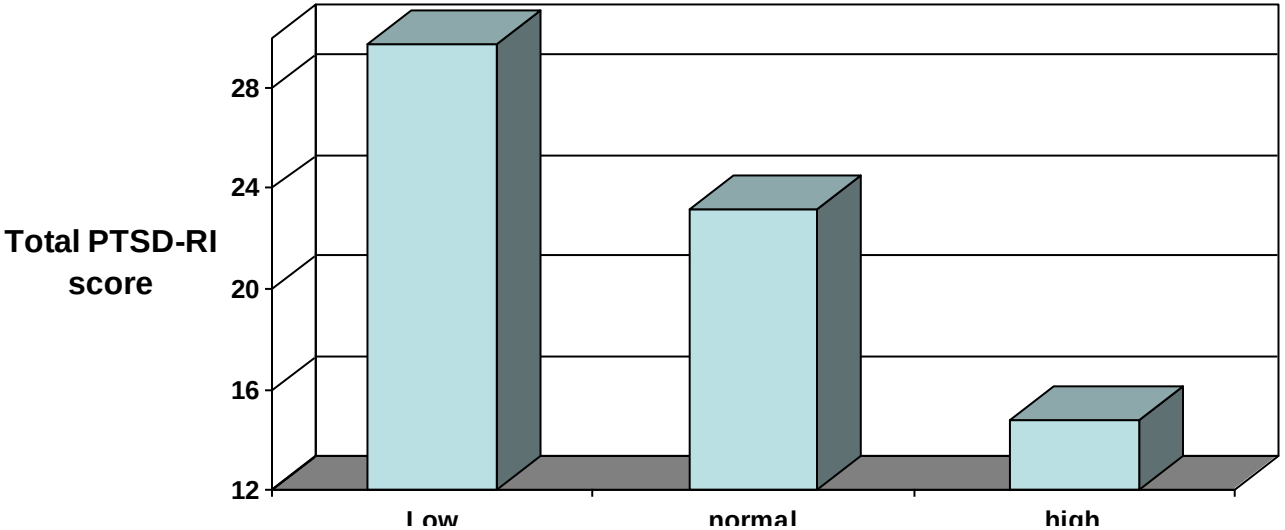
Logistic regression **Number of obs = 2113**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
Age	0.84	0.03	-4.48	0.000	0.78	0.91
Sex	2.19	0.47	3.70	0.000	1.45	3.33
Selfdie	7.65	1.53	10.19	0.000	5.17	11.32
losewhol	1.95	0.66	1.97	0.049	1.00	3.78

Explanatory model



CLCP: Social connectedness



ANOVA
F 38.37, p = .0000

Logistic regression **Number of obs = 269**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	0.71	0.13	-1.88	0.060	0.49	1.01
sex	4.88	2.62	2.95	0.003	1.70	13.99
selfdie	7.09	3.03	4.58	0.000	3.07	16.39
evacda	4.12	2.29	2.54	0.011	1.38	12.29
Sc-low	4.25	2.52	2.44	0.015	1.33	13.62

CLCP: PTSD by School

No difference in PTSD symptom rates were found when compared between:

School systems

$X^2 = .704$, n.s.

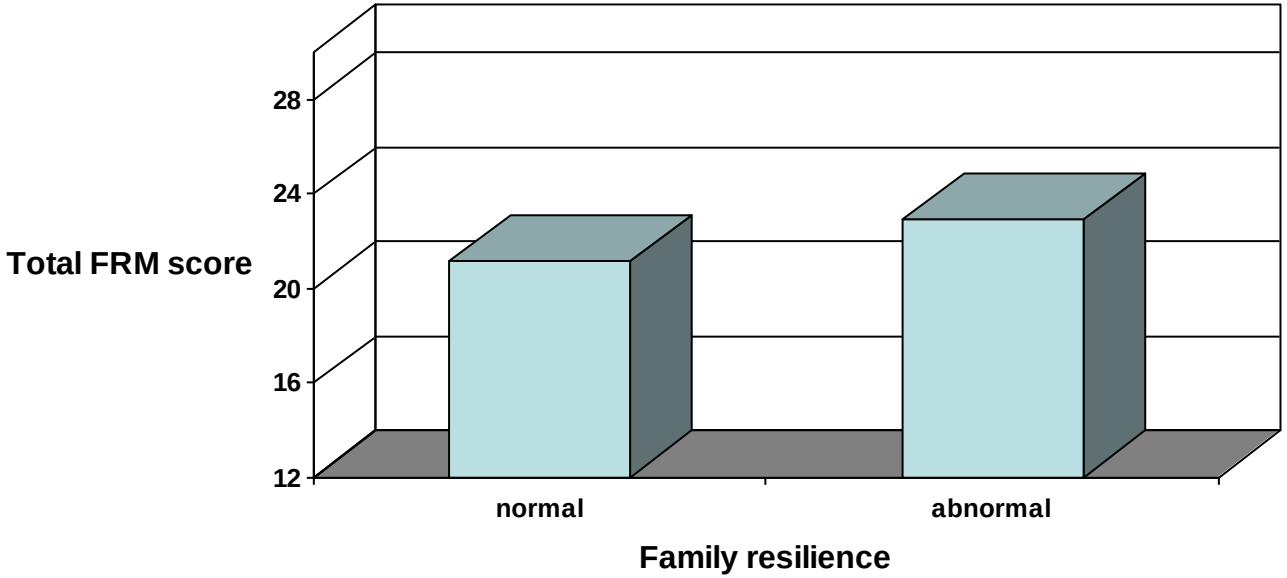
Or

School sizes

$X^2 = .010$, n.s.

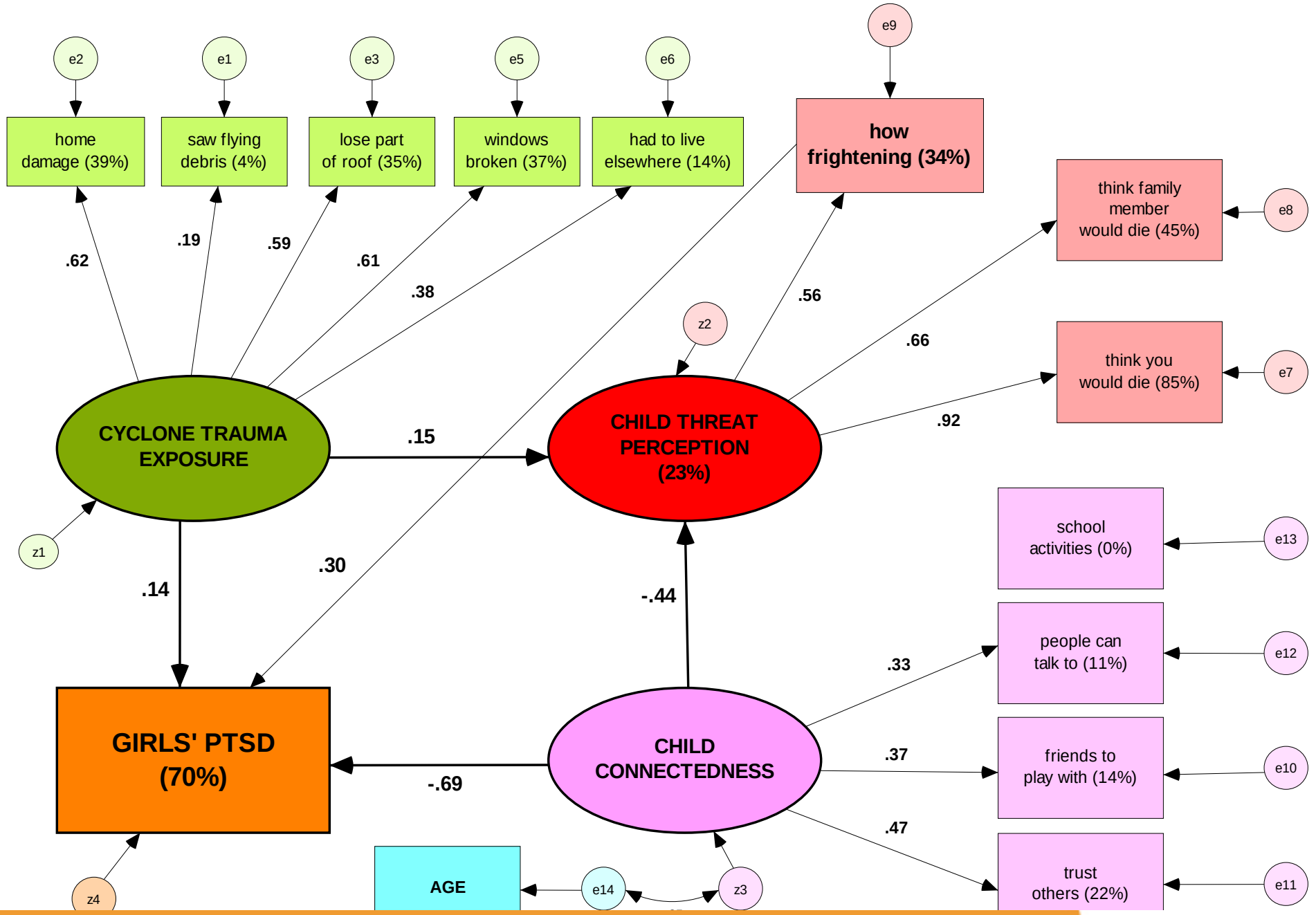
(<100 = small, >100 = large)

CLCP: Family resilience

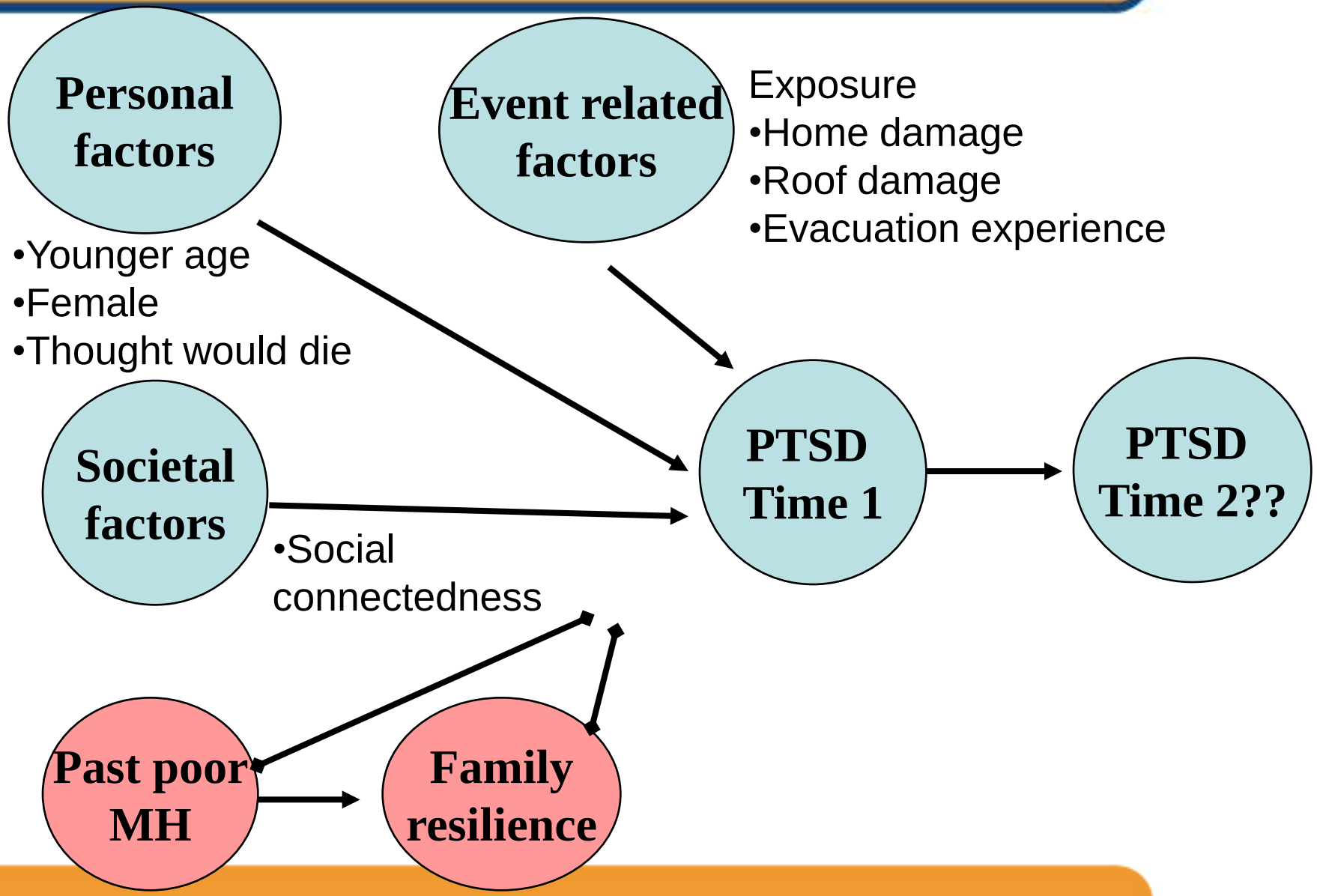


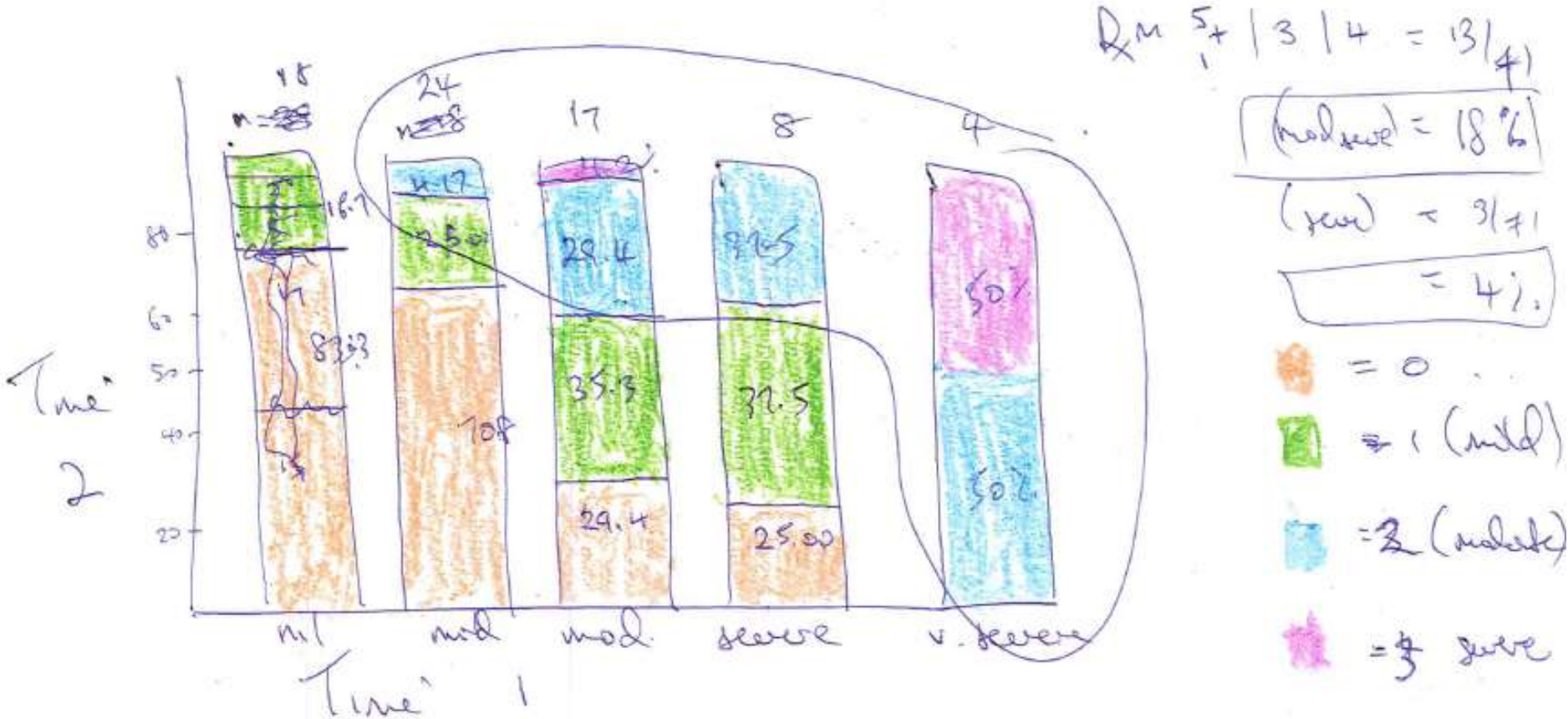
Logistic regression — Number of obs = 344

ptsdcat1	Odds Ratio	Std. Err.	Z	P>z	[95% Conf.	Interval]
age	0.71	0.13	-1.88	0.060	0.49	1.01
sex	8.87	5.64	3.43	0.001	2.55	30.86
selfdie	7.30	3.00	4.84	0.000	3.26	16.35
evacuate	2.03	0.98	1.46	0.144	0.79	5.24
schigh	3.68	2.17	2.21	0.027	1.16	11.67
frescat	0.49	0.43	-0.81	0.420	0.09	2.72


e2
e1
e3
e5
e6
e9
home damage (39%)
saw flying debris (4%)
lose part of roof (35%)
windows broken (37%)
had to live elsewhere (14%)
how frightening (34%)
think family member would die (45%)
e8
think you would die (85%)
e7
.62
.19
.59
.61
.38
.56
.66
.92
z2
CYCLONE TRAUMA EXPOSURE
CHILD THREAT PERCEPTION (23%)
z1
.15
.14
.30
-.44
school activities (0%)
e13
people can talk to (11%)
e12
friends to play with (14%)
e10
trust others (22%)
e11
.33
.37
.47
GIRLS' PTSD (70%)
CHILD CONNECTEDNESS
-.69
z4
AGE
e14
z3

PTSD prediction model





Primary:

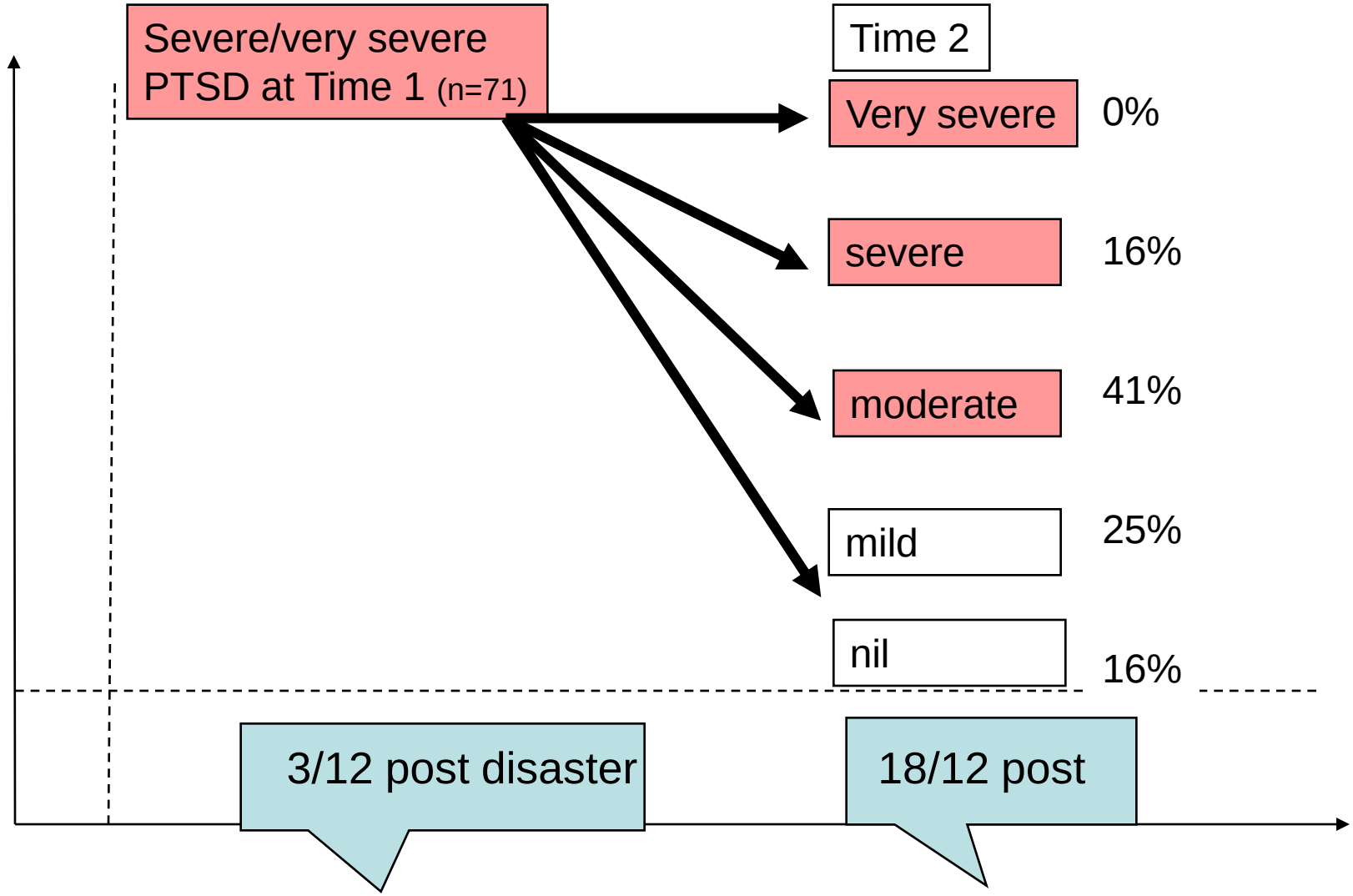
Time 1 **40.8%** (mod-very severe) → Time 2 **18.3%** (mod-very severe)

High:

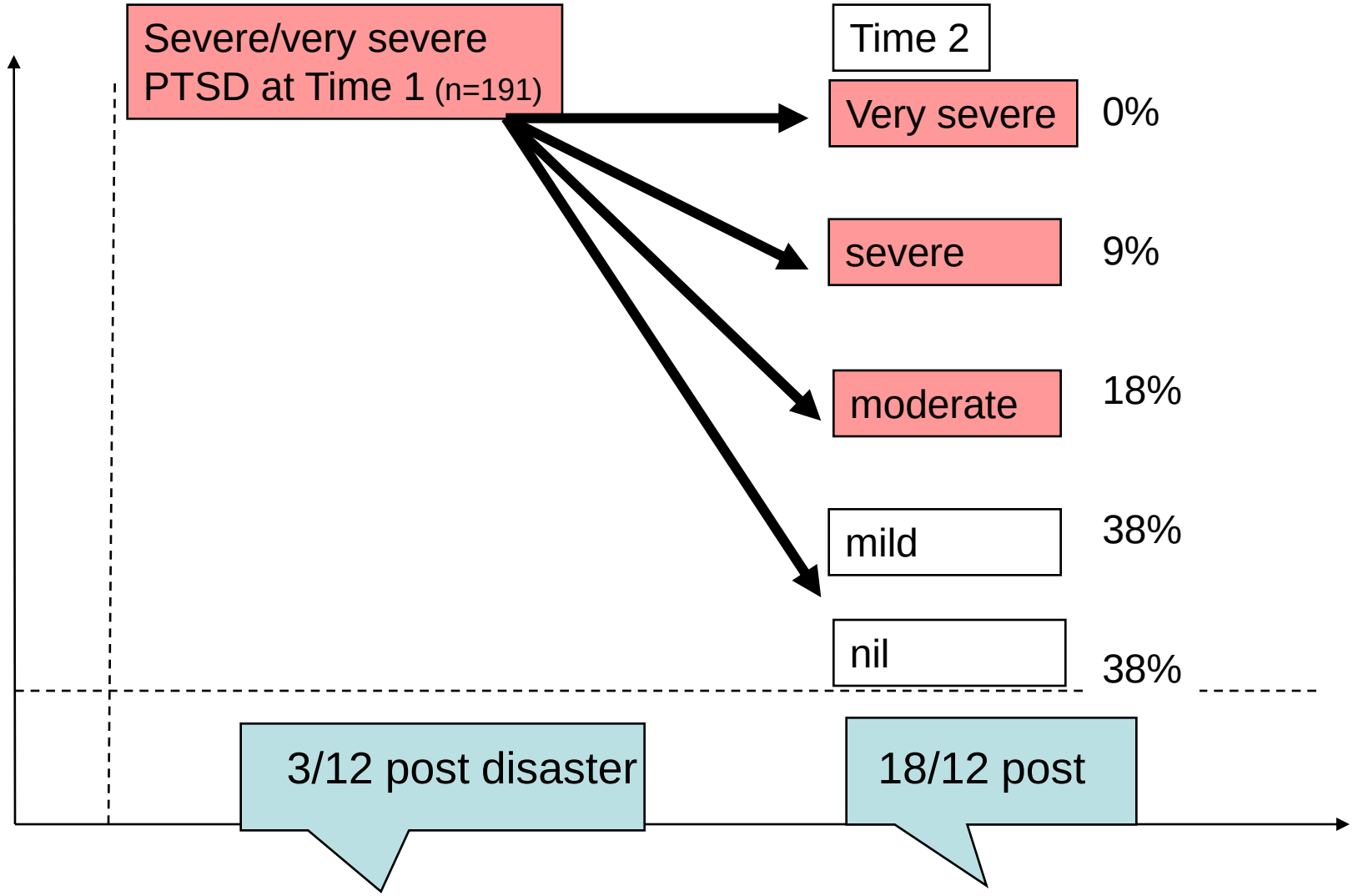
Time 1 **19.2%** (mod-very severe) Time 2 **8.2%** (mod-very severe)

Time 2: Persistence of PTSD

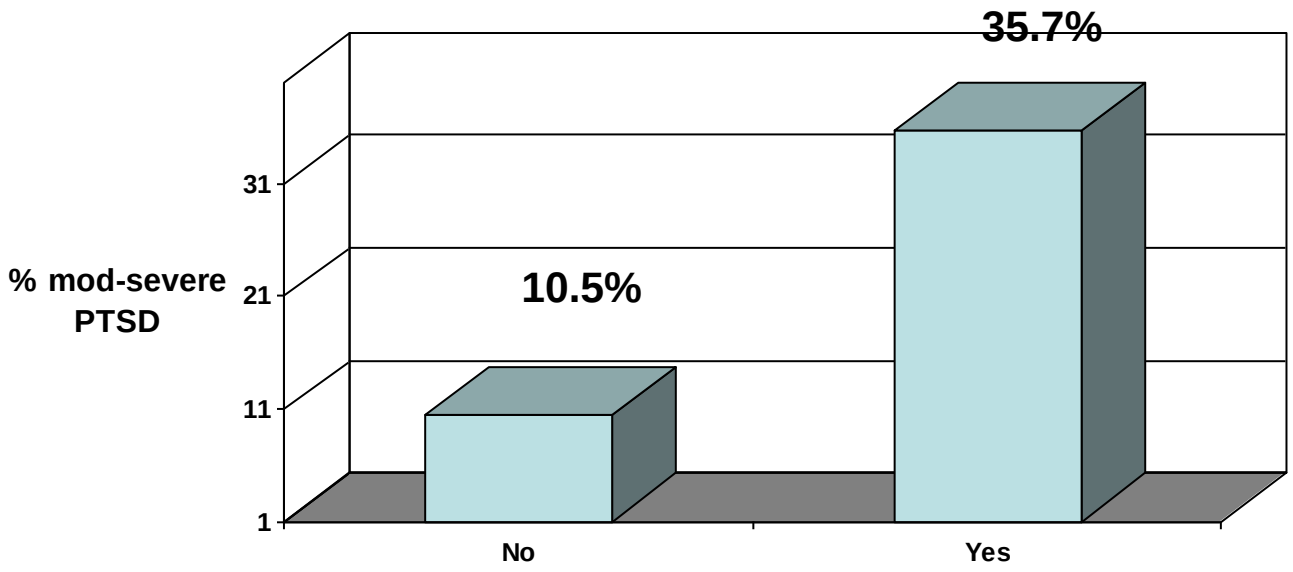
In other words…. (children)



In other words…. (adolescents)



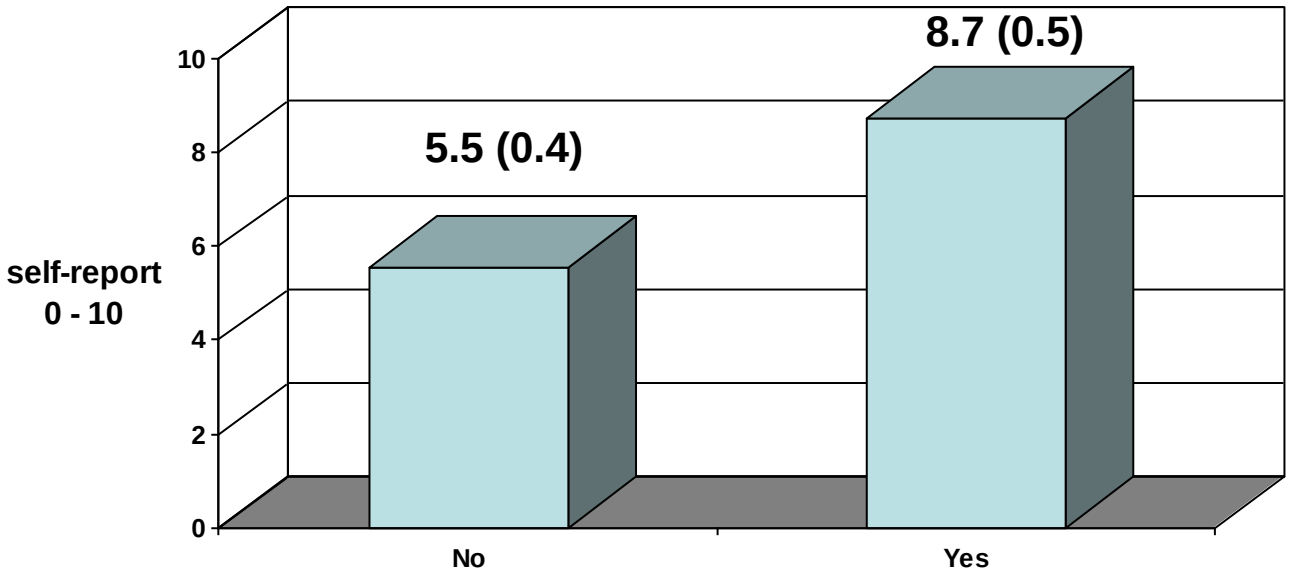
CLCP Time 2: Evacuation Experience & PTSD



Logistic regression — Number of obs = 71

PTSD case	OR	Std. Err.	P>|z|	[95% Conf.	Interval]
sex	1.61	1.01	0.453	0.47	5.54
age	0.89	0.25	0.691	0.51	1.55
evacuate	4.93	3.53	0.026	1.21	20.03

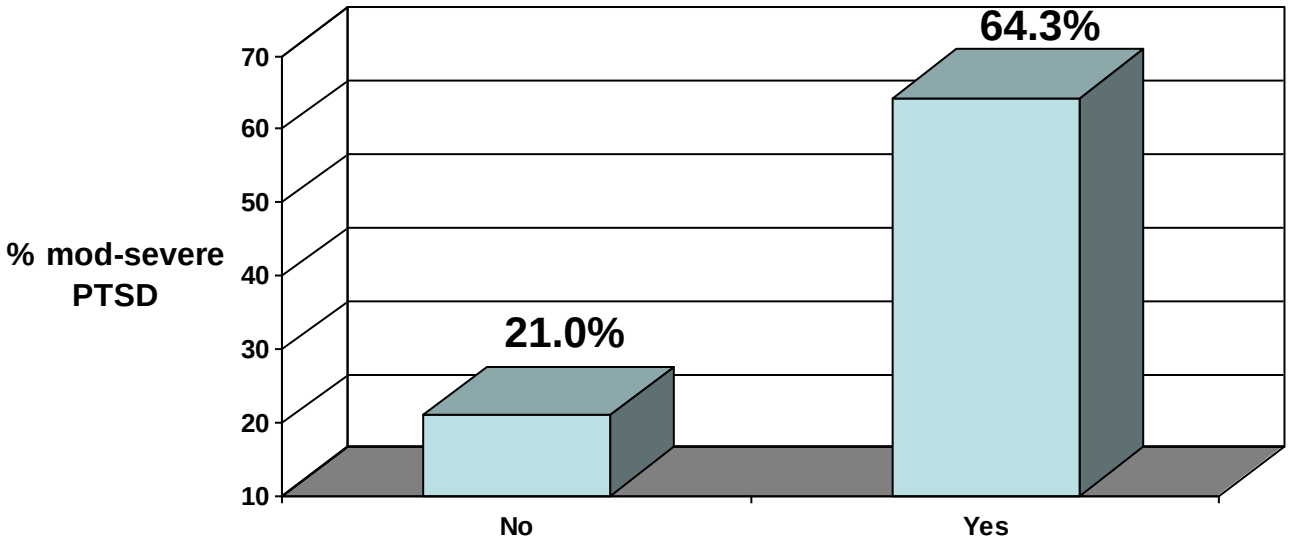
CLCP Time 2: How frightened?



Logistic regression Number of obs = 71

PTSD case	OR	Std. Err.	P>|z|	[95% Conf. Interval]	
evacuate	3.65	2.84	0.096	0.79	16.79
how fright	1.50	0.23	0.007	1.12	2.02

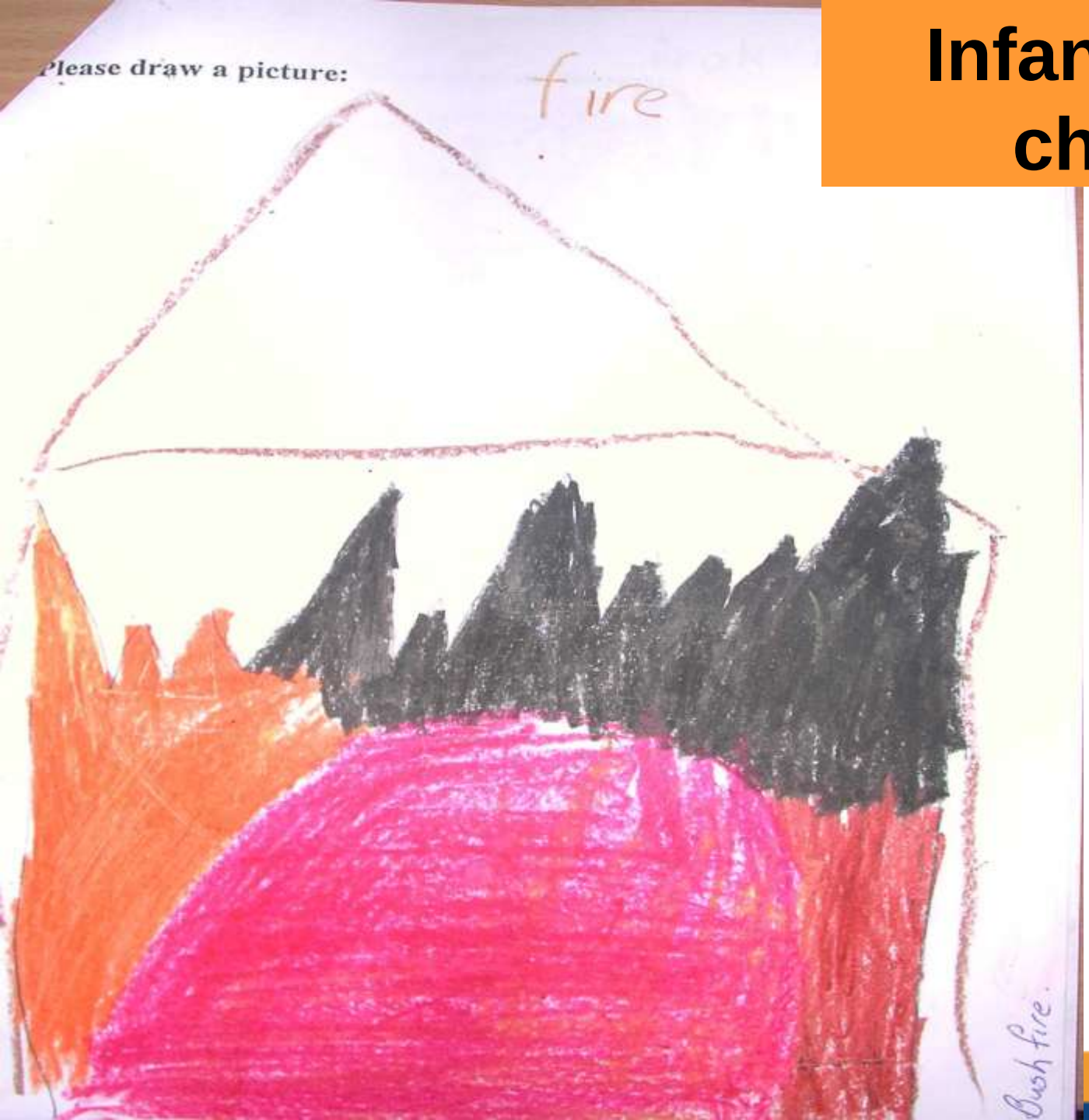
CLCP Time 2: Threat perception



Logistic regression Number of obs = 71

PTSD case	OR	Std. Err.	P>|z|	[95% Conf.	Interval]
Evacuate	4.14	3.20	0.066	0.91	18.83
Selfdie	6.28	4.19	0.006	1.70	23.20

Infant school children



Mark
Age 8

“fire”

Lauren
Grade 3

“I am thinking about how the bush fires looked when everything is burnt”

Leah
Age 7

“My brother hits me in the mouth with a hammer”

Post-disaster and the metaphor of swine flu

Complex problem = often need complex solution

Universal recovery framework is essential

However, public health case identification and treatment also has merit

Best solution – do both!

Conclusion

From a symptomatic perspective:

PTSD is common (8-12% severe/very severe)

Individual, event-related & social factors are *independent* significant associations

several are ‘targets’ for early identification

and maybe a ‘target’ for promotion/prevention

From a longitudinal & impairment perspective:

More work to be done

symptom chronicity occurs, fewer meet PTSD diagnosis

impairment (school, social, relationships) ?

Treatment

Trauma-focused CBT adapted for children!!