Child and youth post-disaster emotional responses: the Cyclone Larry Children's Project

Brett McDermott
Mater Child and Youth Mental Health Service

Mater
Children's Hospital Brisbane

Vanessa Cobham & Kareen Adam (Mater & UQ)

Aaron Groves (Mental Health Branch, QHealth)

SPECIAL thanks to FNQ collaborators:
- Kevin Freele and Team from MHCairns
- CathEd teachers, counselors and staff
- EdQ teachers, counselors and staff

AND
- 2967 students who participated and parents who gave consent.

Overview

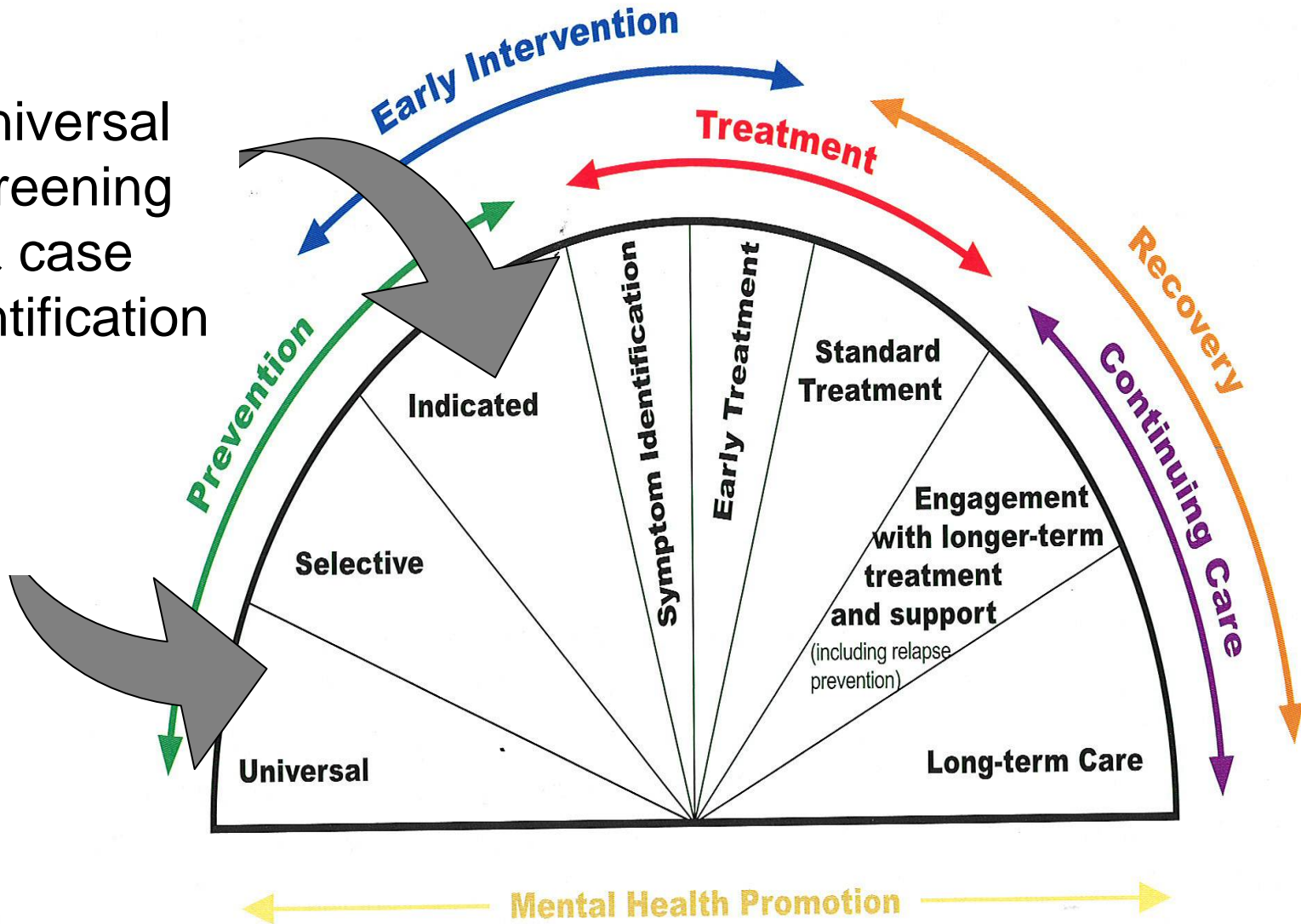Public health perspective

Screening

Results from Cyclone Larry

Intervention: *"Cyclone Larry and Me"*

Future directions

Public Health perspective

Universal Screening & case identification

Early Intervention

Treatment

Recovery

Prevention

Continuing Care

Indicated

Selective

Universal

Symptom Identification

Early Treatment

Standard Treatment

Engagement with longer-term treatment and support
(including relapse prevention)

Long-term Care

Mental Health Promotion

Screened

grade	EdQ n	Cath n	Total n
1-3	513	193	706
4-7	569	235	804
8-12	913	543 total	1457 2967

18 Primary schools and 2 high schools from Ed QLD,

6 primary schools and 1 high school from Catholic Ed.

Ethics of screening

In the service provision arena:

        sole purpose of screening is case identification

        followed by provision of a 'treatment'

        (otherwise = cross-sectional research)

screen only if:

        is supported by the community

        informed consent is given

        is economically viable

        if the science is sound

        there is a treatment benefit from early

        identification & intervention

Science of screening

Gold Standard

Screening test	PTSD	Not PTSD	
Positive	a	b	a + b
Negative	c	d	c + d
	a + c	b + d	a+b +c+d

Sensitivity: screen +ve and are +ve a/a+c

Specificity: Screen –ve and are –ve d/b+d

PPV = a/a+b

Accuracy = a+b/a+b+c+d

Screening instruments

Child report
        PTSD-RI
        exposure questions
        social connectiveness questions

Parent report
        SDQ-Em
        exposure questions
        social connectiveness questions
        Family Adjustment Device
          or Family Resiliency Scale

} Delivered through schools & with local resources

Benchmark: know prevalence?

Uniform PTSD rates would be unexpected

Immediately following event a high proportion of survivors validate PTSD symptoms

100% 'psychic disturbance' post chowchilla (Terr)

94% PTSD post school sniper attack (Pynoos & Nader)

41% Post-trauma distress post shipping disaster (Yule)

12% PTSD post bushfire (McDermott & Palmer)

11% post MVA (McDermott & Cvitanovich)

5% Hurricane Hugo (Shannon et) 5% Hurricane Andrew

(Vernberg et al)

Bushfire Disasters
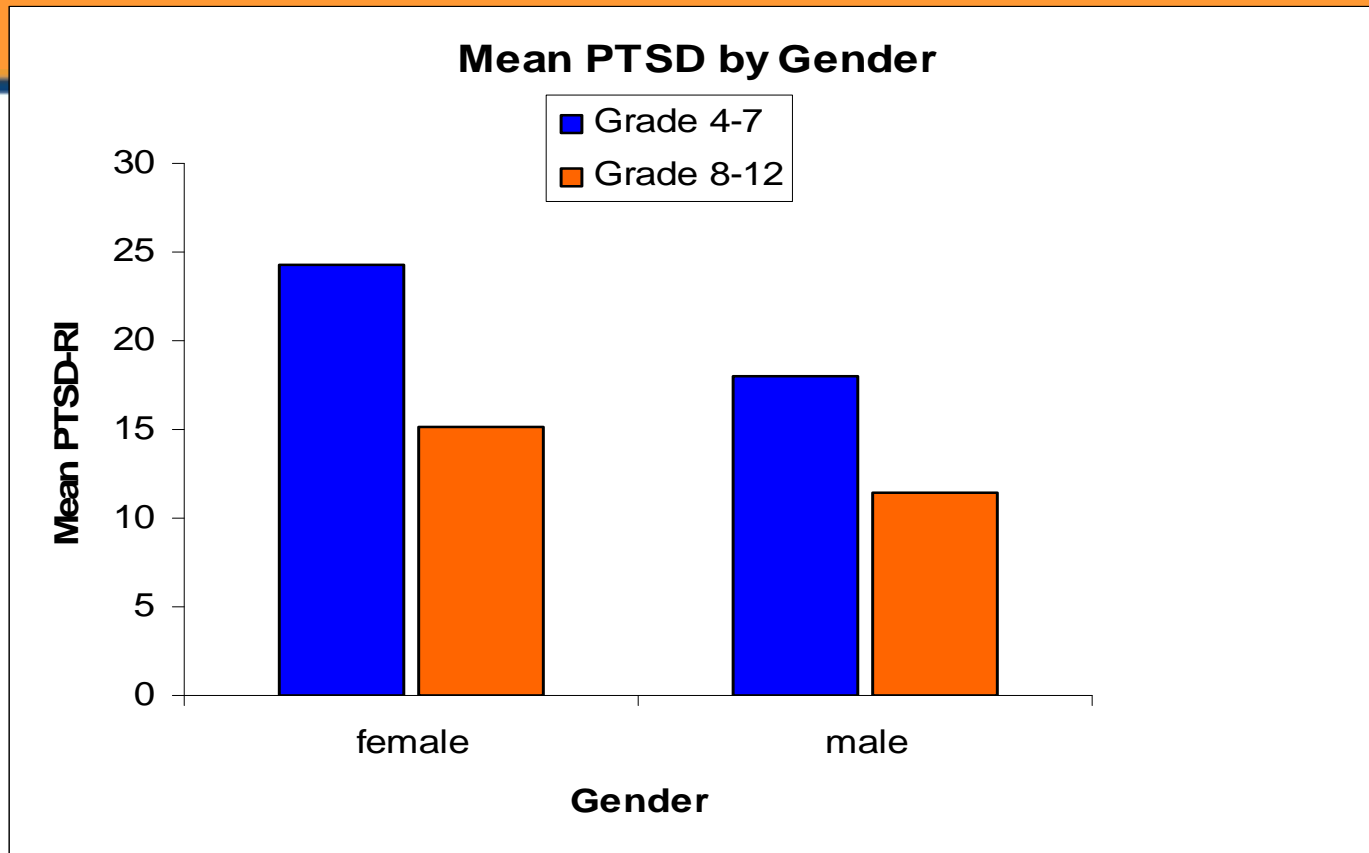

Sutherland (NSW) 1995
     above cut-off for PTSD
     12% (n = 2379)
     complex relationship with
     age

Canberra 2003
Prevalence PTSD:
     Mild   15.8%
     Moderate   3%
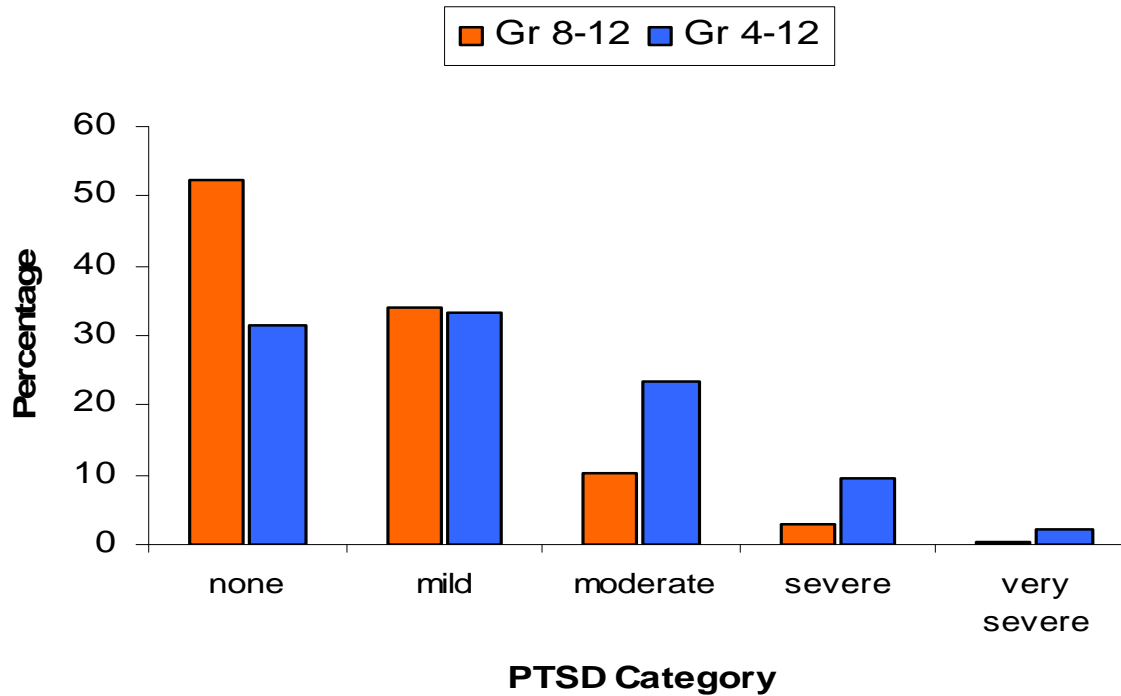   Severe   1%

CLCP: PTSD by Age

Mean PTSD by Gender

Legend:
- Grade 4-7
- Grade 8-12

Y-axis: Mean PTSD-RI (0 to 30)
X-axis: Gender (female, male)

Logistic regression　　　　　　　　**Number of obs   =   2252**

```
-------------------------------------------------------------------------
   ptsdcat1 | Odds Ratio   Std. Err.     z    P>|z|    [95% Conf. Interval]
-------------+-----------------------------------------------------------
       age |  .7766798    .0280567   -7.00   0.000    .7235913    .8336633
-------------------------------------------------------------------------
```

CLCP: PTSD by Age

Children's Hospital Brisbane

Severity of PTSD by School Grade

Logistic regression   **Number of obs   = 2250**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	.7813282	.0281957	-6.84	0.000	.7279746	.838592
sex	2.718803	.5265757	5.16	0.000	1.86002	3.974091

CLCP: Past emotional problems
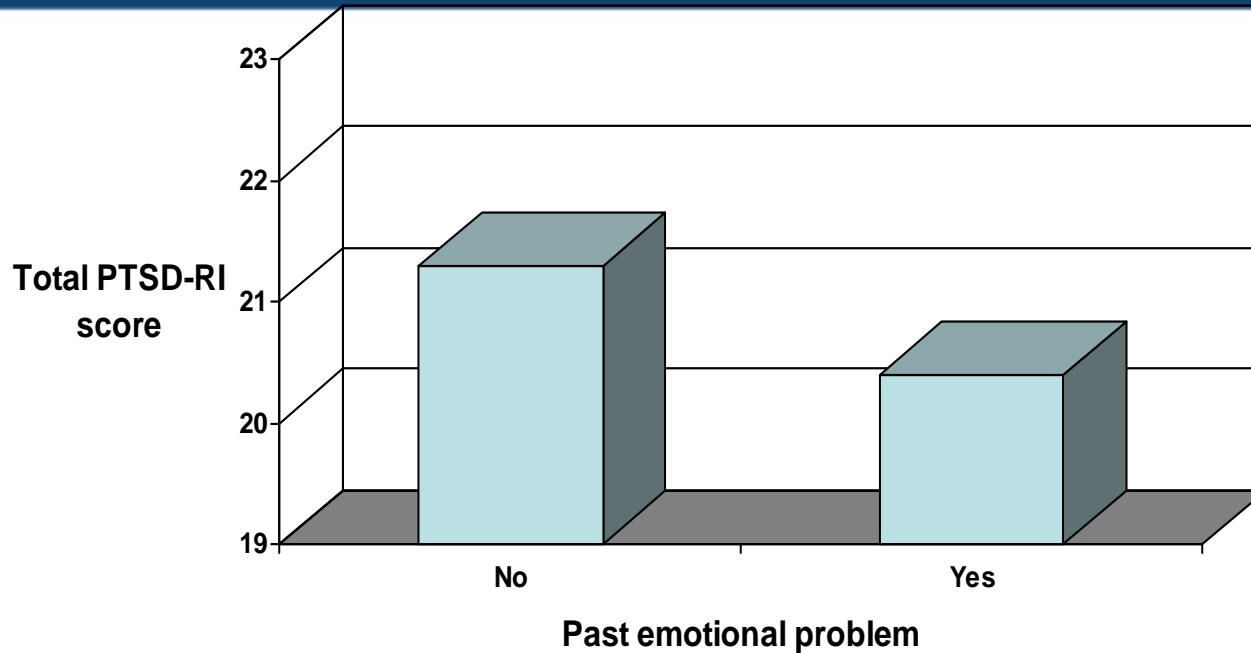
Logistic regression   Number of obs   = 588

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	.6841896	.0790246	-3.29	0.001	.5455842	.8580077
sex	3.290168	1.029591	3.81	0.000	1.78177	6.075532
prevdiff	1.162246	.4215896	0.41	0.679	.5708682	2.366249

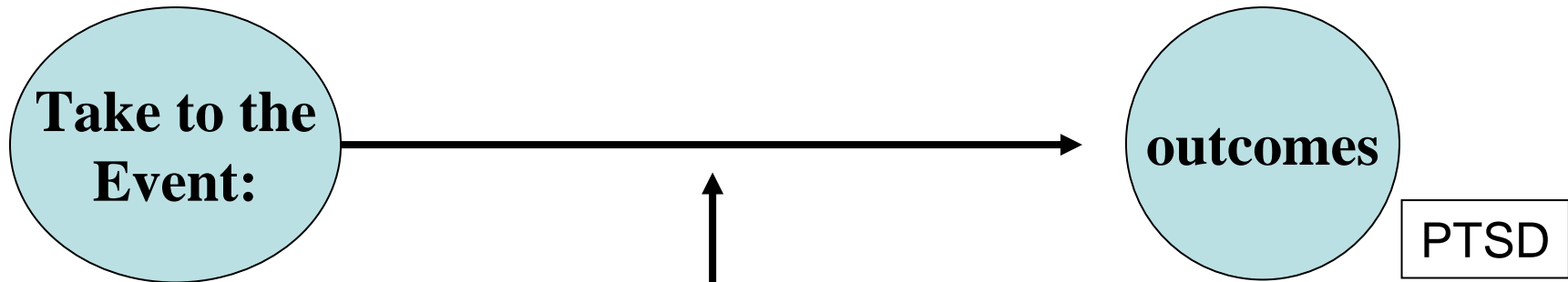# CLCP: Threat perception
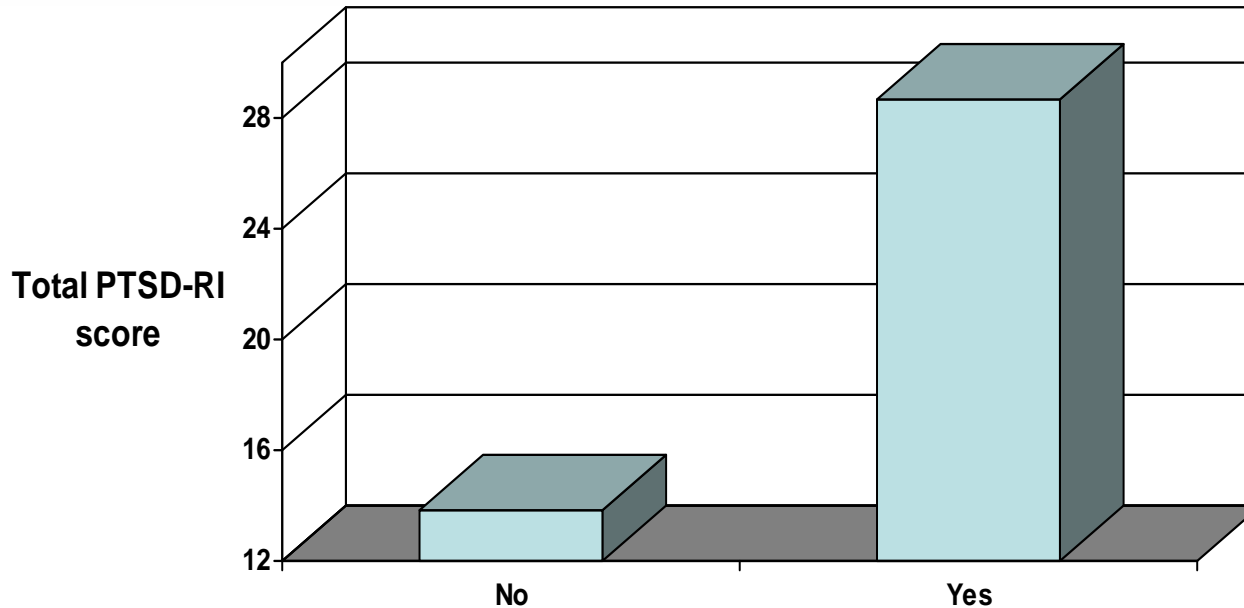
Logistic regression   Perception of threat (self)   **Number of obs = 2176**

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	.8377633	.0319305	-4.64	0.000	.7774611	.9027427
sex	2.322045	.4859811	4.03	0.000	1.540716	3.499603
selfdie	8.23893	1.592652	10.91	0.000	5.640617	12.03414

Explanatory models

Take to the Event:

outcomes

PTSD

- Younger age
- Female
- Thought would die
- NOT past emotional problem

Event related factors

Exposure

CULTURE - SOCIETY

CLCP:
PTSD Symptoms & Disaster Experience

	Grade 4 to 7 (n= 818)	Grade 8 to12 (n = 1456)
PTSD Prevalence (%)^	11.9	3.5
Mean PTSD-RI*	21.3	13.8
Disaster Experience	%	%
Saw flying debris	71	80
Evacuated from home	15	5
Home was damaged	67	62
Home lost roof	5	3
Perceived threat to self	24	12
Perceived threat to family	32	19

^ PTSD-RI cut off of 40

*Posttraumatic Stress Disorder Reaction Index, Max score = 80, Min score = 0

CLCP: Disaster-related event

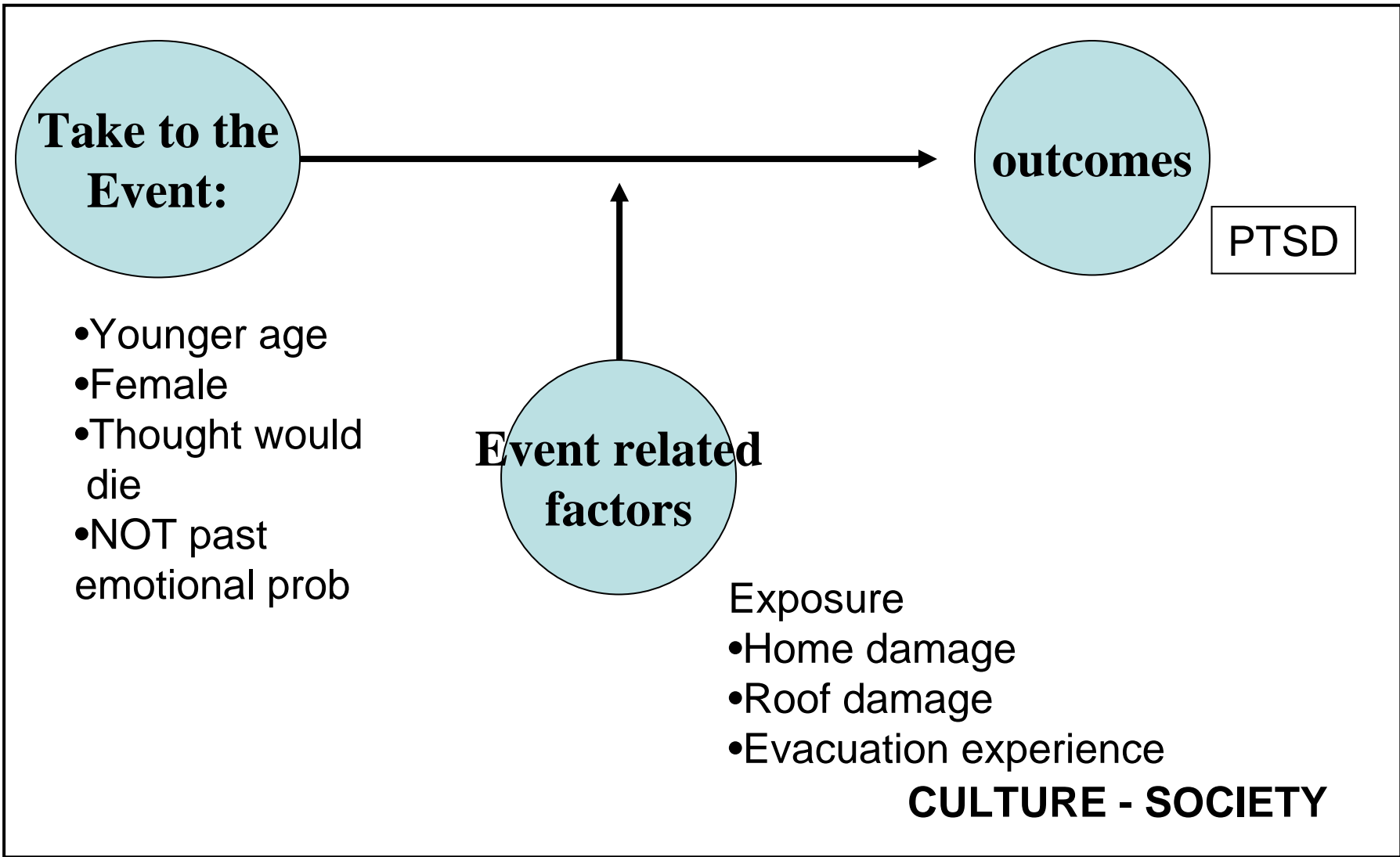Mean Odds Ratios for PTSD by event-related variable

	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	.8392253	.0328517	-4.48	0.000	.7772452	.906148
Sex	2.19586	.4668416	3.70	0.000	1.447566	3.33097
Selfdie	7.652293	1.527584	10.19	0.000	5.174531	11.3165
losewhol	1.947753	.659642	1.97	0.049	1.002903	3.78276

Explanatory model

Take to the Event:

- Younger age
- Female
- Thought would die
- NOT past emotional prob

Event related factors

Exposure
- Home damage
- Roof damage
- Evacuation experience

outcomes

PTSD

CULTURE - SOCIETY

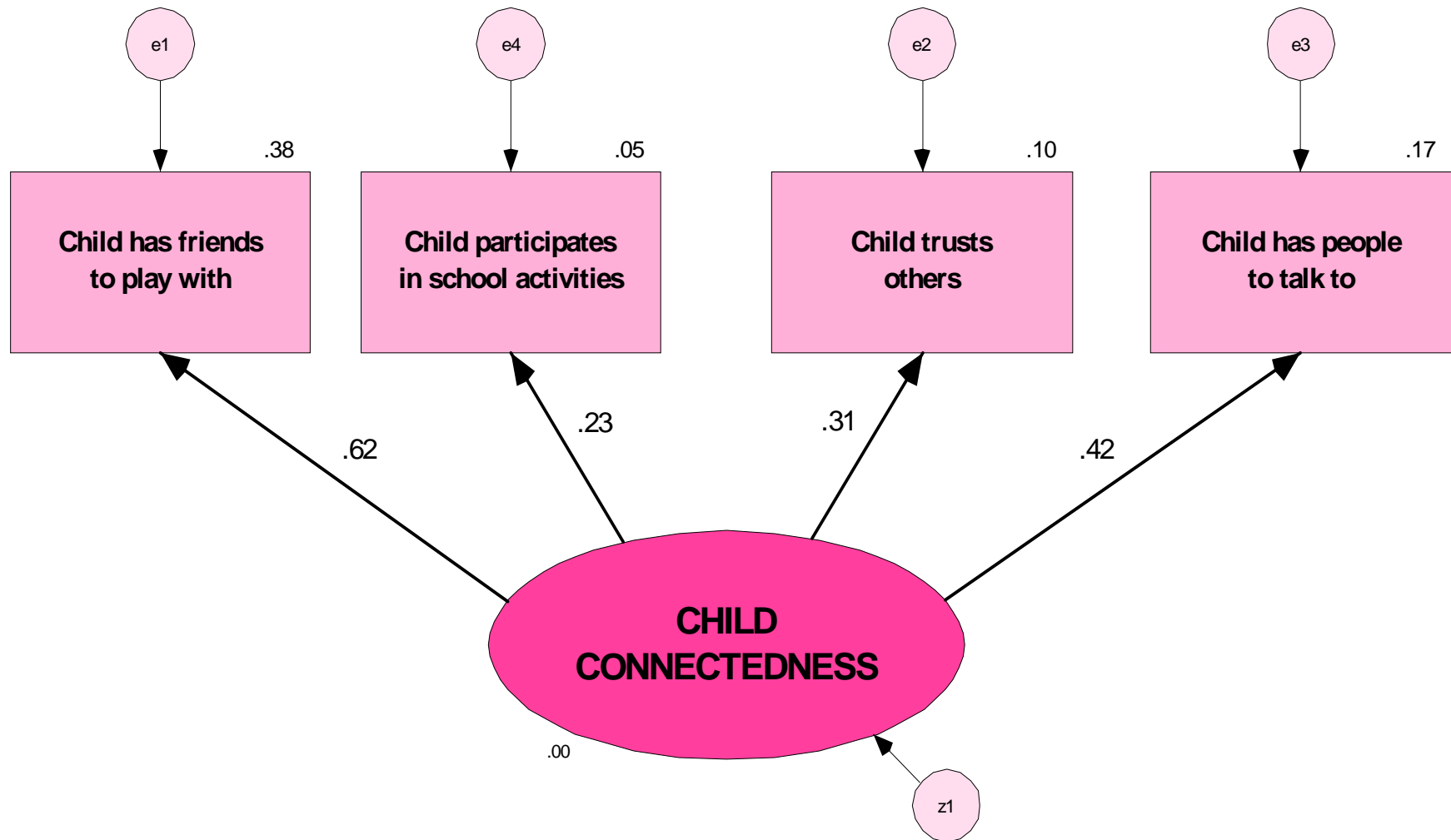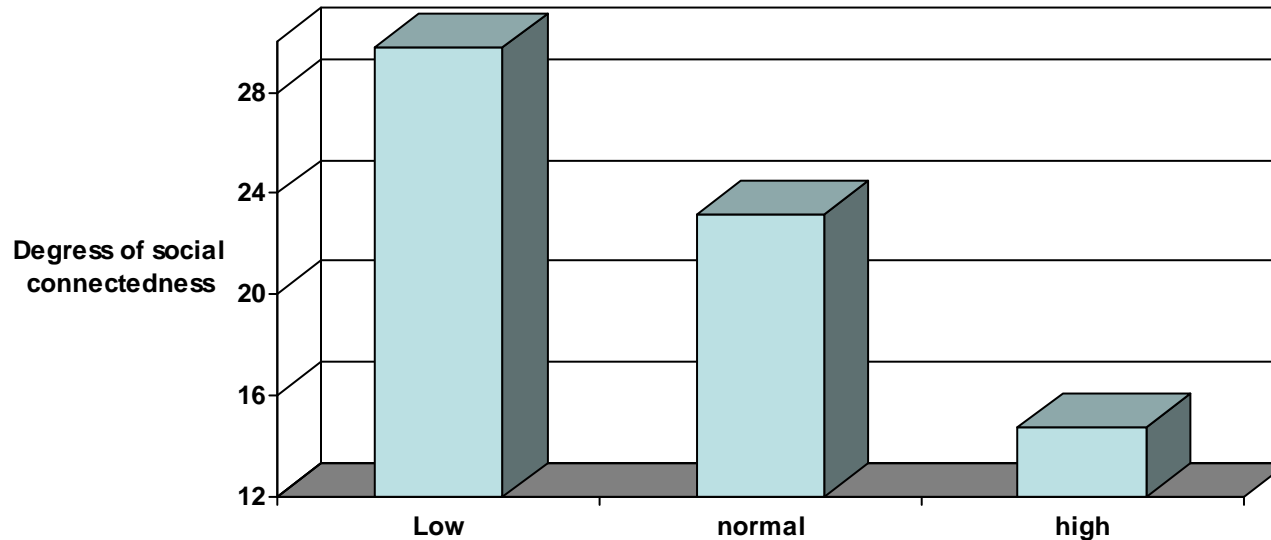# CLCP: Social connectedness

Figure: Fitted one-factor congeneric model of child connectedness.

CLCP: Social connectedness

ANOVA
F 38.37, p = .0000

Logistic regression   Number of obs   = 558

ptsdcat1	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
Age	.772099	.0895928	-2.23	0.026	.615037	.9692699
Sex	2.585571	.8160471	3.01	0.003	1.392848	4.799645
Selfdie	5.568321	1.590838	6.01	0.000	3.180832	9.747825
Evacda	3.208041	1.286584	2.91	0.004	1.461726	7.040671
Schigh	3.201682	1.264983	2.95	0.003	1.475941	6.945244

Logistic models:

Boys
only threat remains
significant (p = 0.000)

Girls
Several significant
factors age (.048),
threat (.000), evacuation
(.003), social connect
(.011)

OR_{adj}
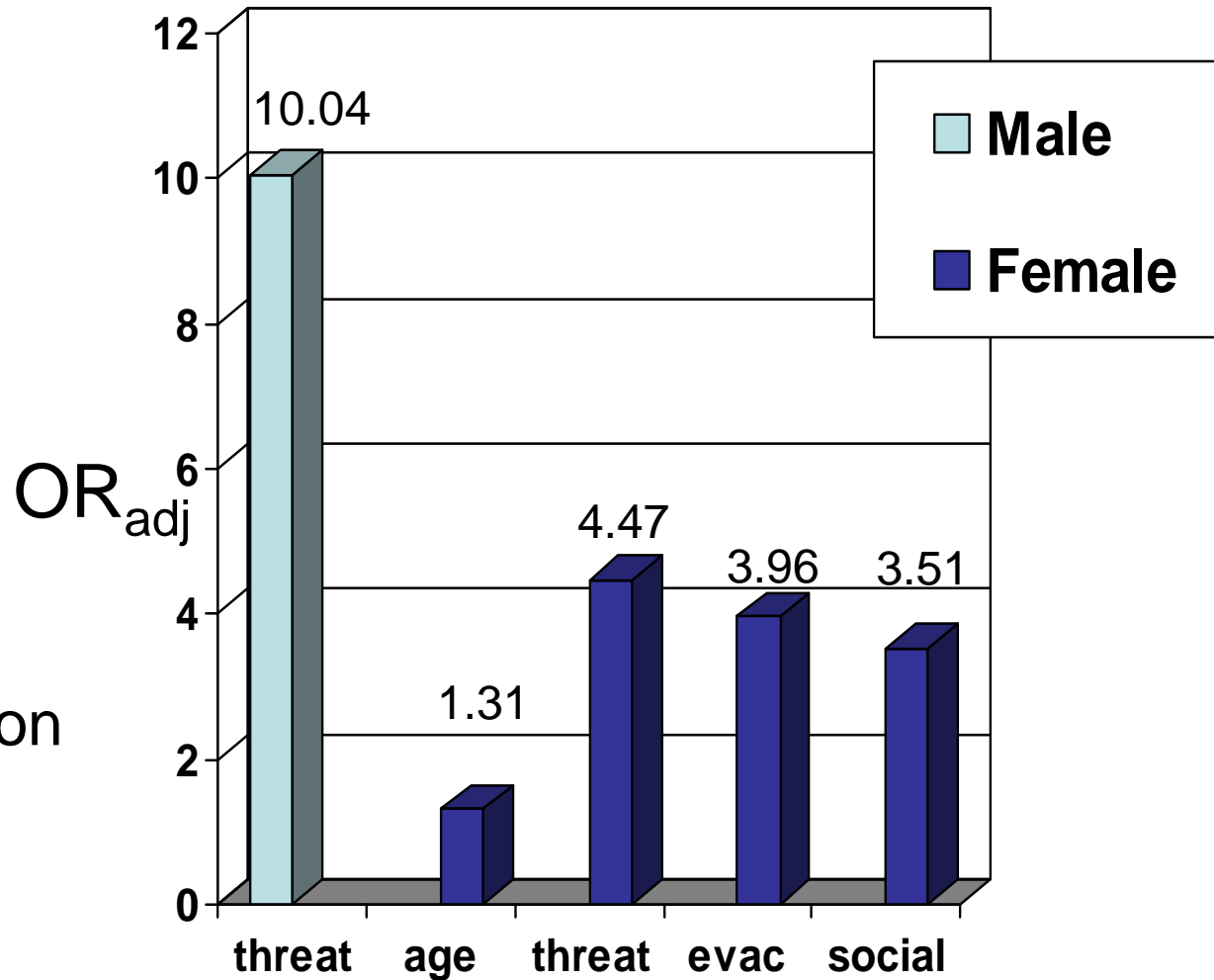
Meaning…..!

Traditional drivers of continuation of mental health:

      eg.   family factors, past mental health

      are related to post disaster dep/anx

Drivers of PTSD are very different:

      include: exposure variables, perception threat and social connectiveness.

Interventions

NICE Guidelines

Treatment of first choice is a trauma focused cognitive behavioural intervention (TF-CBT).

For effectiveness therapy must address the specific trauma memories and ameliorate their with exposure and habituation and/or cognitive restructuring.

Early presentations may require brief 5 session interventions.

Later presentations or if plus co-morbid traumatic bereavement, disability, & past history of other trauma may require longer intervention, i.e. 8-12 sessions.

May be equally effective by group or individual therapy.

The Bushfire and Me
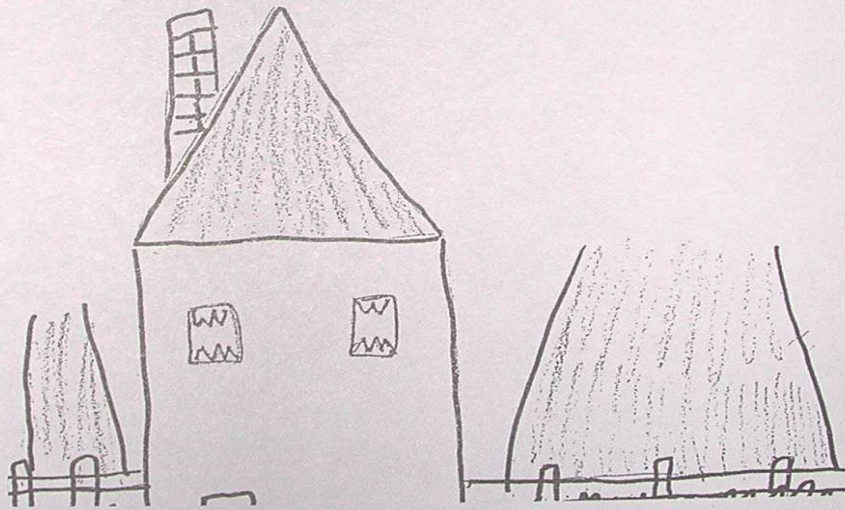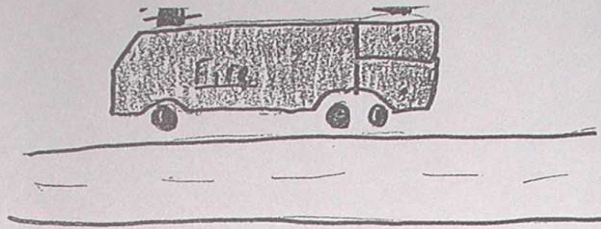
A Story of What Happened to ME and My Family

Victor Storm, Brett McDermott and Don Finlayson

Illustrations by Gerald Sertdemir

SBTP therapy for primary age children: a guided therapy workbook.

Cyclone Larry and Me

A Story of what happened to ME and My Family
Vanessa Cobham and Brett McDermott

Workbook structure

3 sections: parent – child – parent

Children:

8 chapters

CBT

Fairly relentless re-telling and re-examining of trauma story

In a (hopefully) engaging child format and lots of opportunity for parent involvement

FACTBOX:
Changing stories like typing on a computer

If you're *typing something* on the computer, you can <u>underline</u> certain words or sentences or **put them in bold** to make them stand out. And you can delete words and sentences as well – just as though ***they were never there***.

How we deal with memories is a little like this.
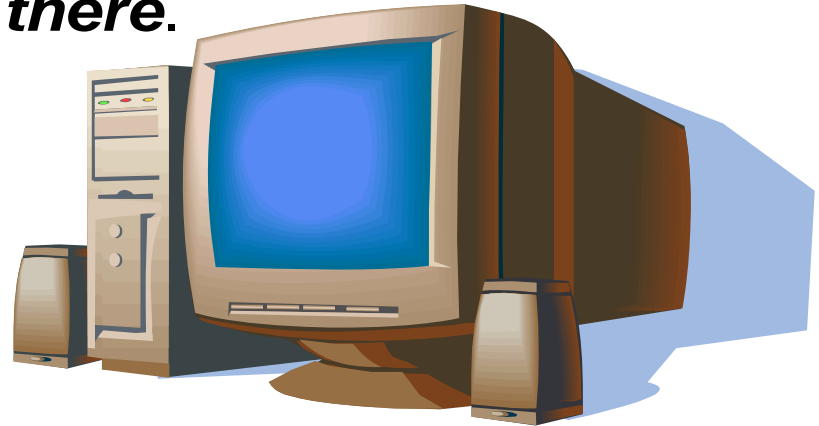
Intruder thoughts: What are they?

Do you remember Peter from last session? This is what Peter had to say about one of the problems he was having after the fires:

HINT

You may not even realise it yourself – but your friends and family may think of something you have been avoiding.

One common avoidance example is YOUR STORY
So lets go over it again

Conclusion

Public health approaches:

     are possible

     usually met with approval by majority of parents

     and identify children will elevated MH symptoms

Screening:

     could be improved

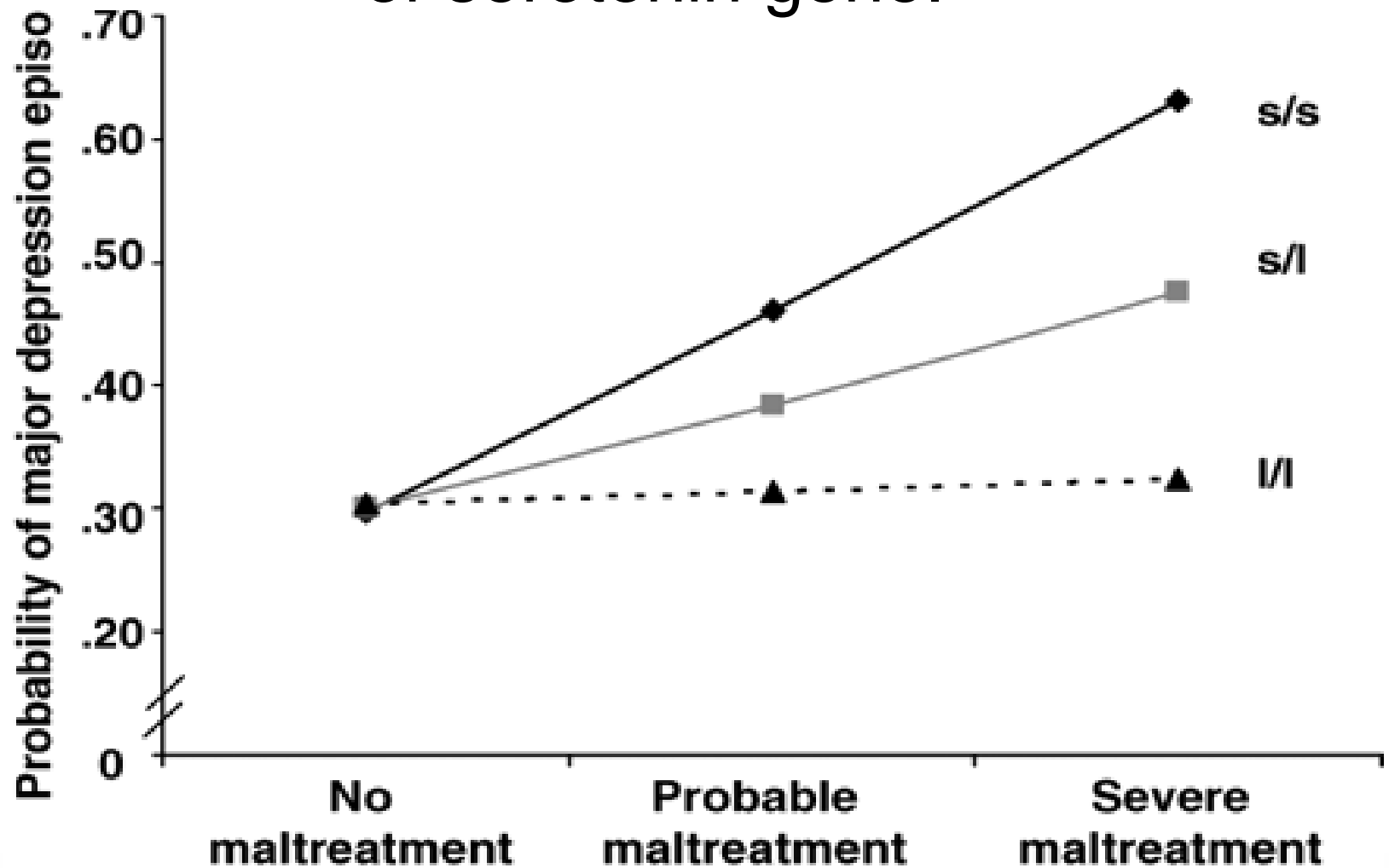   better standardisation, briefer instruments

Interventions:

     require more research

     & more sophistication with mixture of universal

     and selective reflecting Rx intensity.

Future Directions GxE: 5-HTT
Functional polymorphism in promoter region of serotonin gene.

Brett McDermott

Mater CYMHS