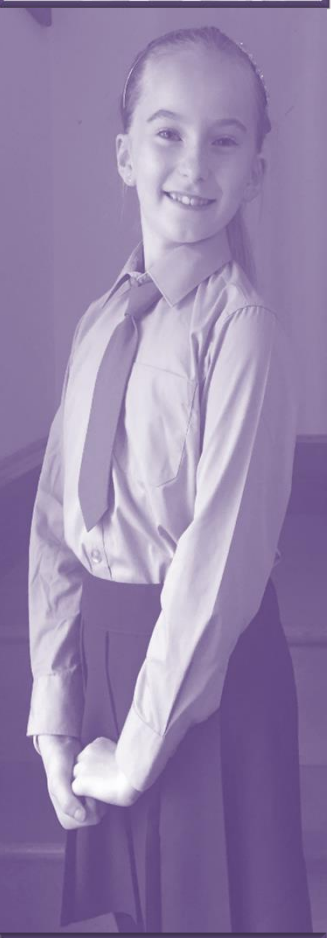
Growing Up in Ireland
National Longitudinal Study of Children



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Changes in self-concept and risk of psychotic experiences: a longitudinal population based cohort study.

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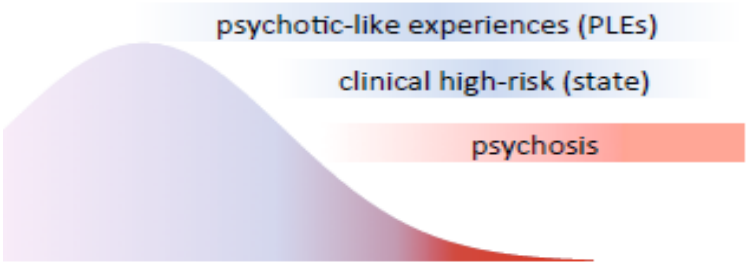
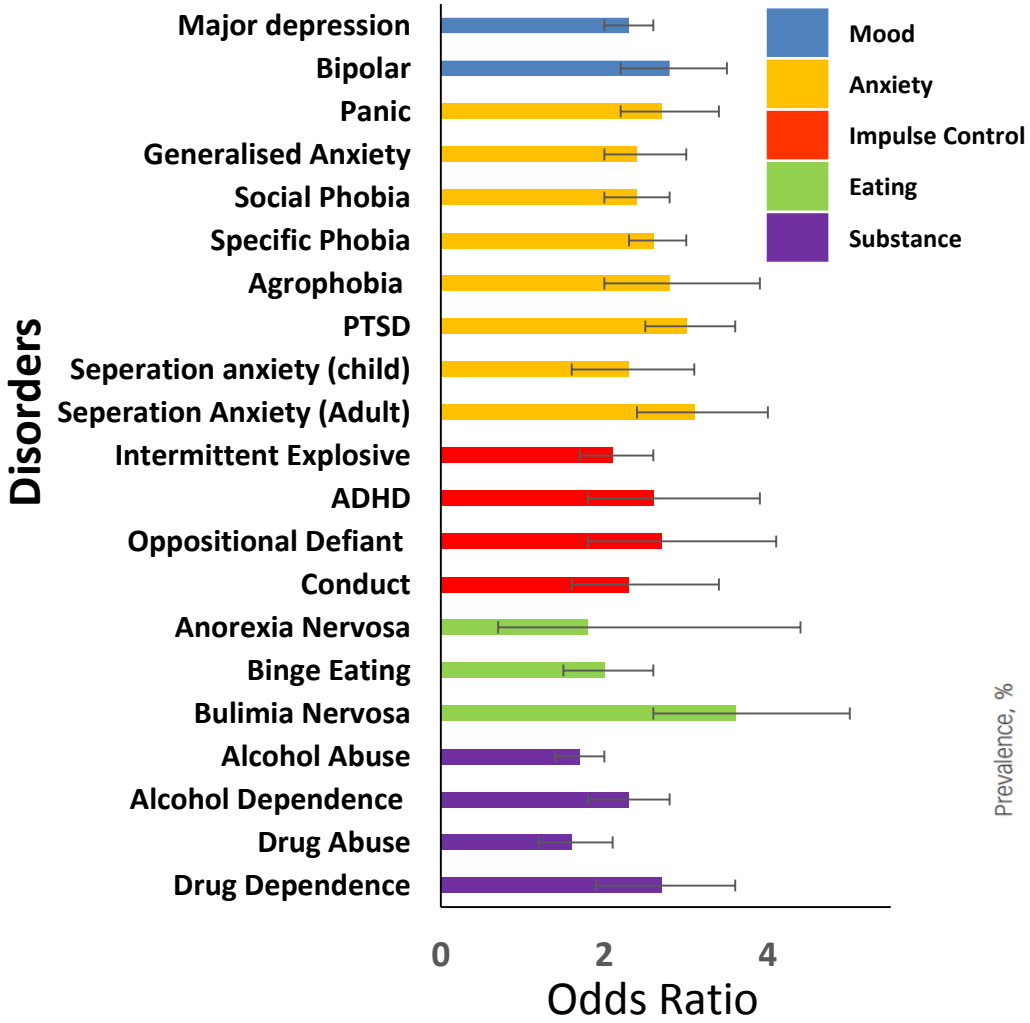
PSYCHOTIC EXPERIENCES (PEs)



1.Van Os et al, 2009; McGrath et al., 2015; Therman et al, 2012; and Kelleher et al 2012;

PEs & PSYCHATRIC PROBLEMS

Mental Disorder



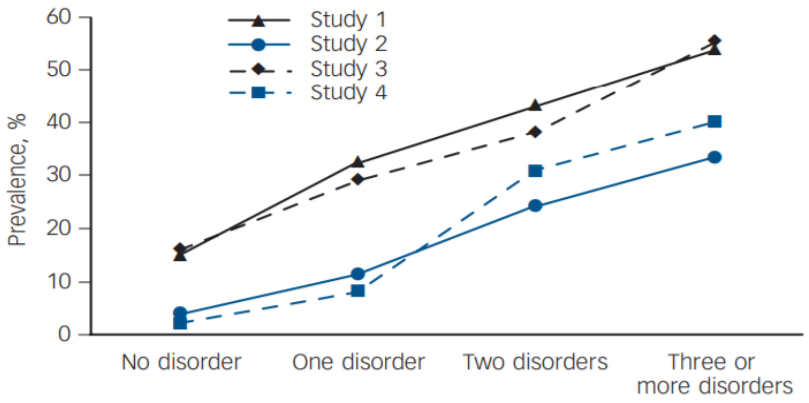
Suicidal Thoughts and Behaviour

Suicidal thoughts: OR: 2.5 (1.7-3.6)

Self harm: OR: 2.4 (1.1-5.0)

Suicidal behaviour: OR: 3.0 (2.1-4.4)

Psychiatric Multi-morbidity



1. McGrath et al., 2016; Honing et al., 2016; and Kelleher et al 2012;

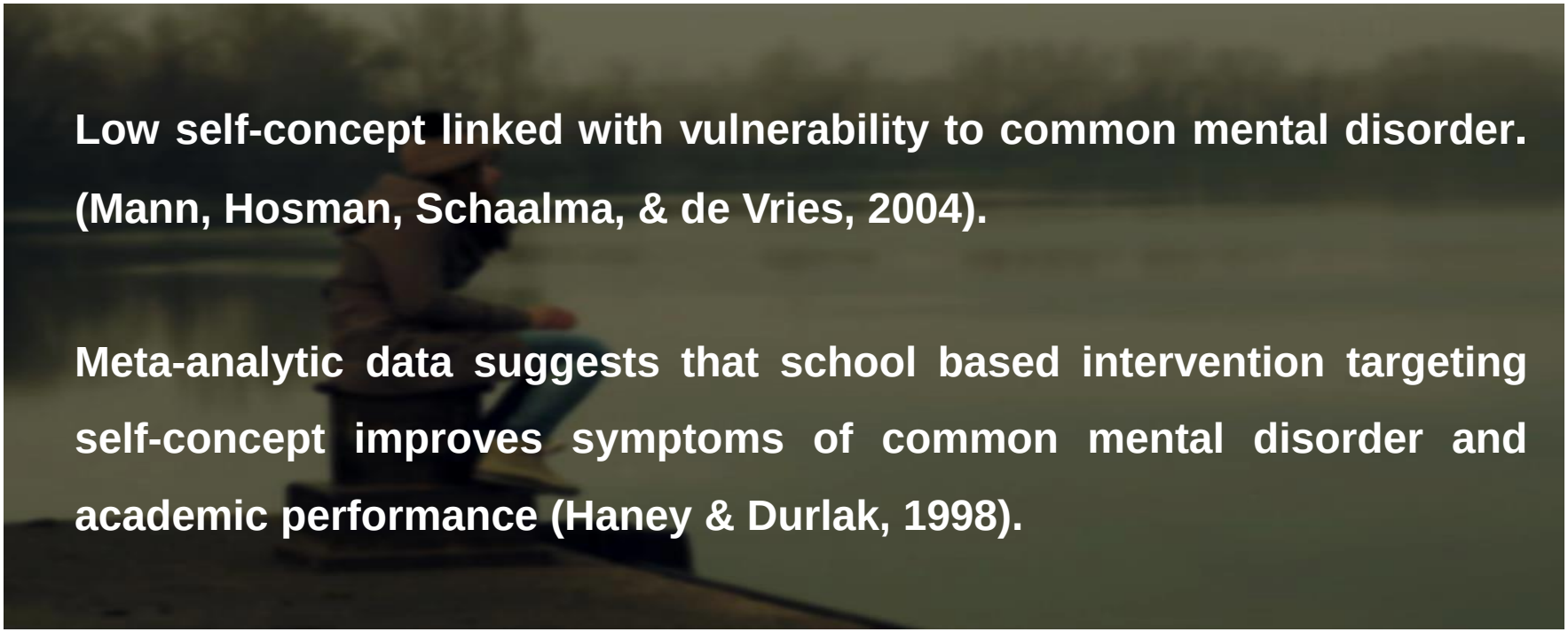
Risk Factors for PEs

Healy & Cannon, accepted

SELF CONCEPT

Self Concept Definition.

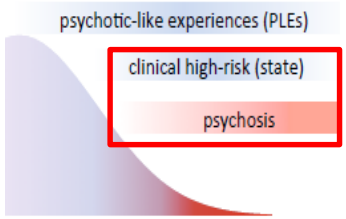
A set of attitudes reflecting description and evaluation of one's own behavior and attitudes. **(Piers & Herzberg, 2002).**



Low self-concept linked with vulnerability to common mental disorder. (Mann, Hosman, Schaalma, & de Vries, 2004).

Meta-analytic data suggests that school based intervention targeting self-concept improves symptoms of common mental disorder and academic performance (Haney & Durlak, 1998).

SELF CONCEPT & PSYCHOTIC PHENOMENA

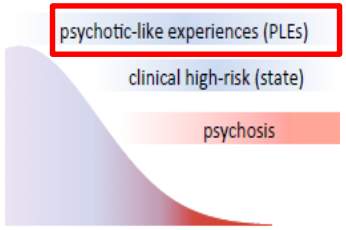


Patients with Psychosis and Ultra High Risk (UHR).

Patients with schizophrenia report more negative self-concepts (Close & Garety, 1998).

Negative self-concept strongly associated with positive symptoms (Barrowclough et al., 2003).

Also been observed in individuals at UHR for psychosis (Carol & Mittal, 2015; Morrison et al., 2006).



Psychotic experiences.

Low self-esteem is a risk factor for PEs (Krabbendam et al., 2002)

Adolescence, those with PEs were four times more likely to have concurrent low self-esteem (Dolphin, Dooley, & Fitzgerald, 2015).

Targeting self-esteem reduces positive symptoms

CBT aimed at improving self-esteem in individuals with psychotic disorders suggested that improving self-esteem successfully reduced positive symptoms and improved social functioning (Hall & Tarrier, 2003; Lecomte et al., 1999).

AIMS

Aim 1:

To investigate the relationship between self-concept in childhood and adolescence and adolescent PEs.

Aim 2:

To investigate the relationship between changes in self-concept between childhood and adolescence and the risk of PEs.

METHODS - Participants

Child Cohort

- 9 years (n=8,5694)
- 13 years (n=7,423)

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METHODS – Measurement - PEs

Adolescent Psychotic Symptom Screener

1) Have other people ever read your mind?
2) Have you ever felt you were under the control of some special power?
3) Have you ever heard voices or sounds that no one else can hear?
4) Have you ever seen things that other people could not see?
5) Have you ever felt that you have extra special powers?
6) Have you ever thought that people are following you or spying on you?

Validated PE

Score of 2 or more (NO = 0, Maybe = 0.5 and Definitely = 1): Sens – 70% Spec – 82.6%

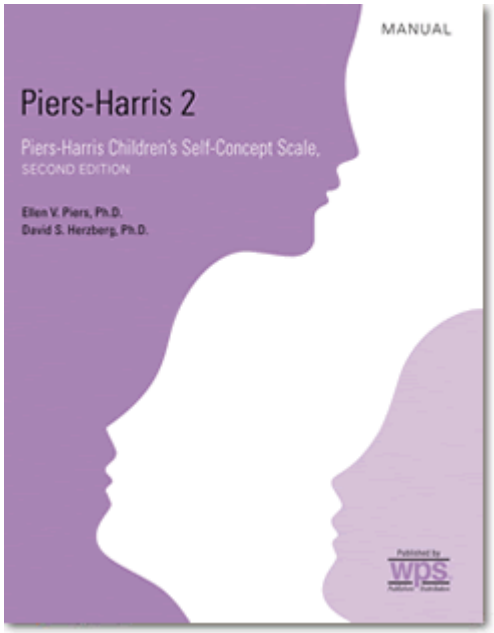
OR

Definite response to the question on auditory hallucinations: Sens – 70% Spec – 100%

=

METHODS – Measurement – Self Concept

The **Piers Harris II** is a 60 item self-report questionnaire which is designed to assess self-concept in children aged between seven and eighteen. It is comprised of six sub-scales including:



Subscales:

1) ***Behavioural Adjustment:*** 14 items, e.g. "I cause trouble to my family".
2) ***Intelligence and School Status****:* 16 items, e.g. "I am an important member of my class".
3) ***Physical Appearance and Attributes:*** 11 items, e.g. "I have a pleasant face".
4) ***Freedom from Anxiety:*** 14 items, e.g. "I worry alot".
5) ***Popularity:*** 12 items, e.g. "I feel left out of things".
6) ***Happiness and Satisfaction:*** 10 items, e.g. "I am a good person".

METHODS - Procedure

Child Cohort

9 years

13 years

Aim 1a

Aim 1b

Aim 2b

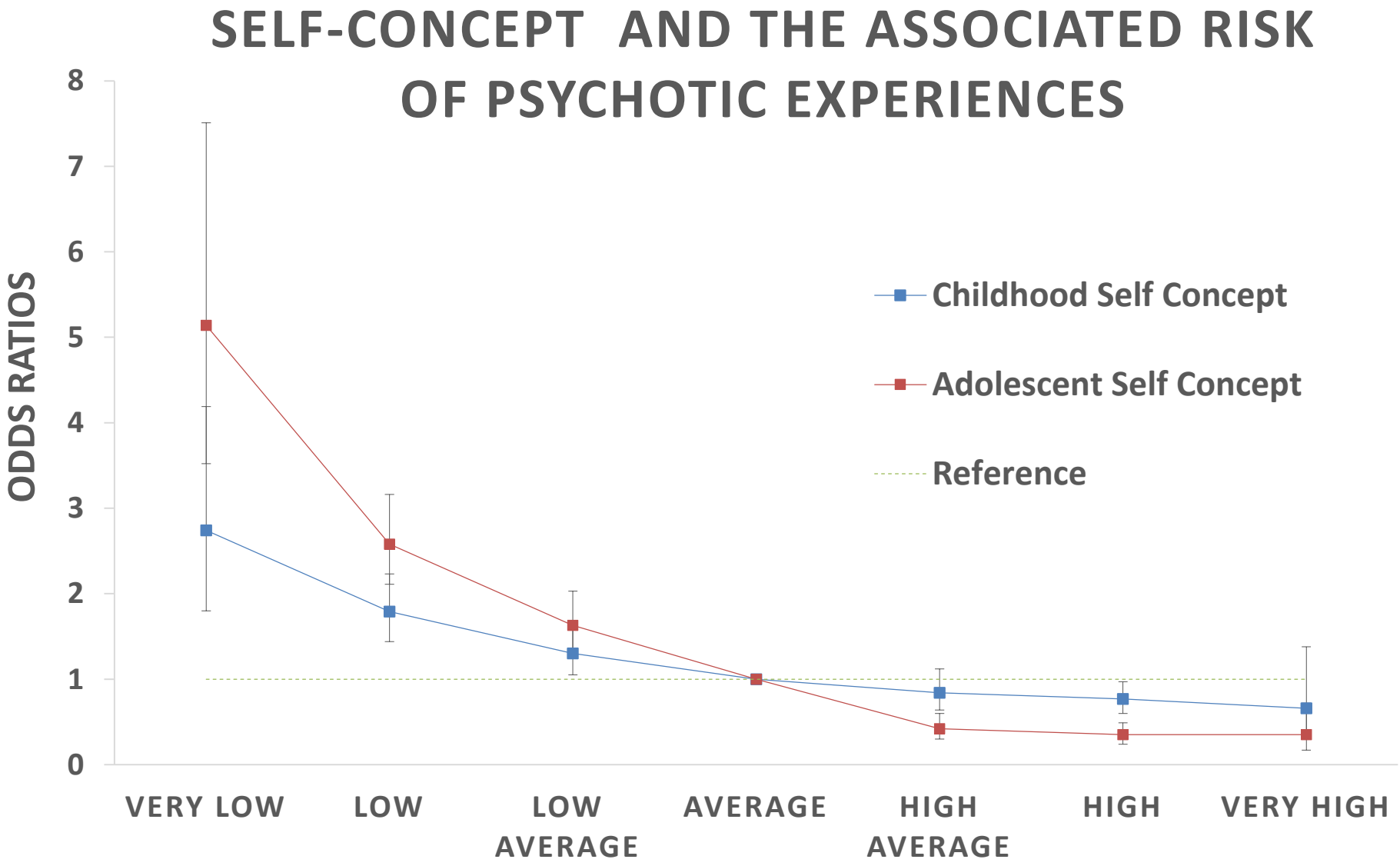
Aim 2a

Outcome: Risk of PEs (Age 13 only)!!

RESULTS – Demographics

CHARACTERISTICS	CONTROLS	PSYCHOTIC EXPERIENCES	OR (CI)
AGE (MEAN, SD)	**13.01 (0.11)**	**13.02 (0.15)**	**0.015[a]**
GENDER (% OF MALES)	**51.98**	**42.83**	**1.26 (1.09-1.44)**
HANDEDNESS (% LEFT HANDED)	13.42	14.28	0.92 (0.74-1.13)
NATIONALITY (% OF IRISH)	**89.74**	**86.87**	**1.40 (1.14-1.73)**
URBANICITY (% LIVING IN URBAN AREA)	**12.76**	**15.87**	**1.29 (1.06-1.57)**
CULTURAL BACK GROUND (%)			
· WHITE IRISH	91.55	88.41	-
· WHITE NON-IRISH	**6.18**	**8.31**	**1.58 (1.22-2.04)**
· BLACK	**1.40**	**1.85**	**1.81 (1.07-3.04)**
· ASIAN/OTHER	0.86	1.44	1.07 (0.58-1.98)
SOCIO-ECONOMIC STATUS (PRIMARY CARE GIVERS HIGHEST LEVEL OF EDUCATION %)			
· NONE/PRIMARY	3.46	3.94	1.03 (0.58-1.83)
· LOWER SEC	16.23	18.82	1.16 (0.90-1.48)
· HI SEC/TECH VOC/UPPER SEC	39.19	38.11	-
· NON DEGREE	19.53	17.98	0.97 (0.80-1.17)
· PRIMARY DEGREE	12.92	12.36	0.91 (0.73-1.13)
· POST GRAD	8.67	8.79	0.96 (0.76-1.21)
ANNUAL INCOME QUINTILE (FAMILY %)			
· LOWEST	20.84	19.99	1.14 (0.82-1.42)
· 2ND	19.51	24.6	1.19 (0.94-1.52)
· 3RD	19.22	21.64	-
· 4TH	21.34	14.35	0.83 (0.65-1.05)
· HIGHEST	19.09	19.43	1.01 (0.81-1.26)
FAMILY HISTORY OF PSYCHIATRIC DISORDER (%)	**2.96**	**4.66**	**1.84 (1.30-2.61)**
CHILDHOOD PSYCHOPATHOLOGY (%)	**6.28**	**12.06**	**2.18 (1.69-2.79)**
ADOLESCENT PSYCHOPATHOLOGY (%)	**5.31**	**10.99**	**2.42 (1.86-3.14)**
THREE OR MORE STRESSFUL LIFE EVENTS ADOLESCENCE (%)	**7.69**	**11.59**	**1.55 (1.22-1.97)**

RESULTS – Aim 1. SELF CONCEPT & PEs



RESULTS – Aim 1. SELF CONCEPT & PEs

Table 2. The relationship between childhood (Wave 1) and adolescent (Wave 2) self-concept and psychotic experiences.

	CHILDHOOD SELF CONCEPT AND ADOLESCENT PEs (AGE 9)				ADOLESCENT SELF CONCEPT IN ADOLESCENCE PEs (AGE 13)				
TOTAL SELF CONCEPT SCORES CATEGORY (%)	Controls	Children who report PEs in adolescence	Unadjusted Odd Ratio (CI)	Adjust 1 Odds Ratio (CI)	Controls	Participants reporting PEs	Unadjusted Odd Ratio (CI)	Adjust 2 Odds Ratio (CI)	Adjust 3 Odds Ratio (CI)
VERY LOW (≤2ND %ILE)	2.18	4.69	**3.10 (2.05-4.68)**	**2.74 (1.80-4.19)**	1.31	7.95	**6.62 (4.65-9.42)**	**5.96 (4.15-8.57)**	**5.14 (3.52-7.51)**
LOW (3ND-14TH %ILE)	11.05	21.90	**1.92 (1.55-2.38)**	**1.79 (1.44-2.23)**	11.34	29.58	**2.84 (2.36-3.44)**	**2.71 (2.24-3.28)**	**2.58 (2.11-3.16)**
LOW AVERAGE (15TH-28TH %ILE)	15.62	16.65	**1.34 (1.09-1.66)**	**1.30 (1.05-1.62)**	12.74	17.77	**1.71 (1.39-2.11)**	**1.65 (1.34-2.04)**	**1.63 (1.31-2.03)**
AVERAGE (29TH-71TH %ILE)	43.38	37.64	-	-	43.77	34.29	-	-	-
ABOVE AVERAGE (72TH-83TH %ILE)	10.16	8.46	0.84 (0.63-1.10)	0.84 (0.64-1.12)	12.74	5.34	**0.41 (0.29-0.57)**	**0.41 (0.29-0.58)**	**0.42 (0.30-0.60)**
HIGH (84TH-97TH %ILE)	16.02	9.04	**0.75 (0.59-0.95)**	**0.77 (0.60-0.97)**	14.69	4.08	**0.35 (0.25-0.49)**	**0.35 (0.25-0.49)**	**0.35 (0.24-0.49)**
VERY HIGH (≥98TH %ILE)	1.60	1.61	0.60 (0.29-1.25)	0.66 (0.32-1.38)	3.41	0.99	**0.31 (0.15-0.63)**	**0.32 (0.15-0.66)**	**0.35 (0.17-0.72)**

Note: Emboldened metrics denote significant differences ($p < .05$).
Adjust 1: Adjusting for age, gender, nationality, cultural background and urbanicity, family history of mental disorder, child psychopathology and exposure to three or more stressful life events.
Adjust 2: Adjusting for age, gender, nationality, cultural background, urbanicity, family history of mental disorder, child and adolescent psychopathology, exposure to three or more stressful life events.
Adjust 3: Adjusting for age, gender, nationality, cultural background, urbanicity, family history of mental disorder, child and adolescent psychopathology, exposure to three or more stressful life events and childhood self-concept.

RESULTS – Aim 1. SELF CONCEPT & PEs

Aim 1: Self-concept in childhood and adolescence and adolescent PEs.

- ✓ Self concept in childhood is a risk factor for PEs.
- ✓ Over a 5-fold increased risk of low self-concept in those with PEs.

RESULTS–Aim 2. CHANGE IN SELF-CONCEPT

Childhood Self Concept

Low Self Concept

Average Self Concept

High Self Concept

TOTAL SELF CONCEPT SCORES CATEGORY (%)
VERY LOW (≤2ND %ILE)
LOW (3ND-14TH %ILE)
LOW AVERAGE (15TH-28TH %ILE)
AVERAGE (29TH-71TH %ILE)
ABOVE AVERAGE (72TH-83TH %ILE)
HIGH (84TH-97TH %ILE)
VERY HIGH (≥98TH %ILE)

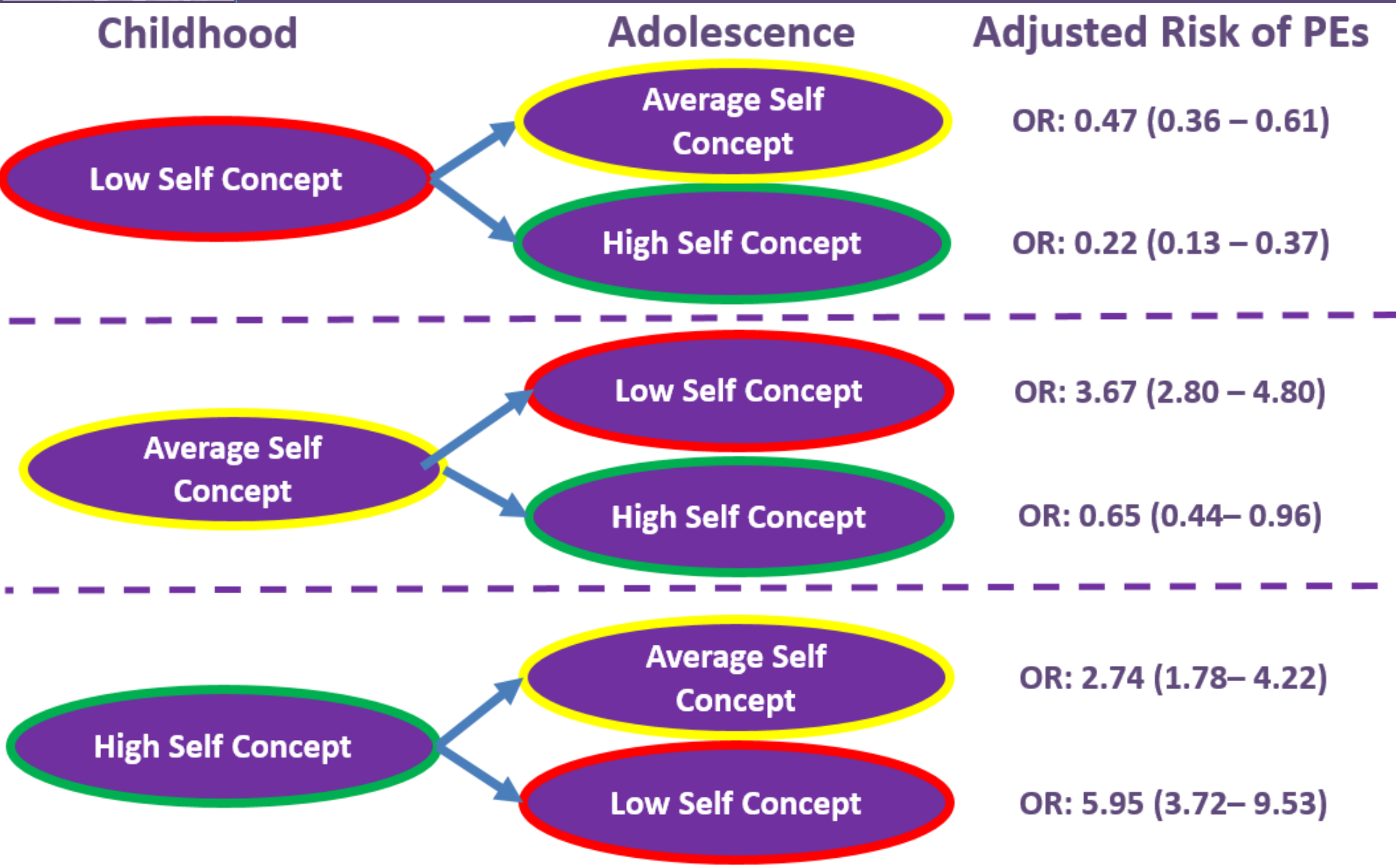
Adolescent Self Concept

Low Self Concept

Average Self Concept

High Self Concept

RESULTS–Aim 2. CHANGE IN SELF-CONCEPT



RESULTS–Aim 2. CHANGE IN SELF-CONCEPT

Which aspect of self-concept are important for risk of PEs???

CHANGE IN SELF-CONCEPT BY ADOLESCENCE		HAPPINESS OR (CI)	POPULARITY OR (CI)	ANXIETY OR (CI)	BEHAVIOUR OR (CI)	INTELLECT OR (CI)	PHYSICAL OR (CI)
LOW IN CHILDHOOD							
Adolescent Category	**Low**	-	-	-	-	-	-
	Average	**0.61 (0.43-0.87)**	**0.59 (0.43-0.80)**	**0.72 (0.52-0.99)**	**0.52 (0.38-0.72)**	**0.72 (0.53-0.97)**	**1.77 (1.24-2.52)**
	High	**0.63 (0.42-0.94)**	**0.50 (0.28-0.88)**	**0.30 (0.18-0.50)**	**0.30 (0.21-0.43)**	1.00 (0.62-1.60)	**2.31 (1.32-4.01)**
AVERAGE IN CHILDHOOD							
Adolescent Category	**Low**	**2.02 (1.33-3.29)**	**1.54 (1.17-2.02)**	**1.93 (1.38-2.72)**	**1.59 (1.15-2.21)**	0.94 (0.68-1.28)	**0.56 (0.39-0.80)**
	Average	-	-	-	-	-	-
	High	1.54 (0.96-2.47)	0.84 (0.59-1.26)	**0.64 (0.43-0.95)**	**0.62 (0.44-0.87)**	0.98 (0.67-1.43)	1.30 (0.80-2.01)
HIGH IN CHILDHOOD							
Adolescent Category	**Low**	**1.31 (0.87-1.97)**	**3.27 (1.72-6.22)**	1.44 (0.88-2.37)	**1.86 (1.18-2.93)**	**3.10 (1.70-5.64)**	0.61 (0.31-1.22)
	Average	**1.61 (1.13-2.29)**	**1.53 (0.88-2.63)**	1.22 (0.84-1.78)	1.18 (0.74-1.89)	**1.94 (1.18-3.20)**	0.91 (0.57-1.44)
	High	-	-	-	-	-	-

Adjustment 1: Adjusting for age, gender, nationality, cultural background, urbanicity, family history of mental disorder, child and adolescent psychopathology, exposure to three or more stressful life events and all other subscales categories during adolescence

DISCUSSION

Aim 1: Self-concept in childhood and adolescence and adolescent PEs.

- ✓ Self concept in childhood is a risk factor for PEs.
- ✓ Over a 5-fold increased risk of low self-concept in those with PEs.

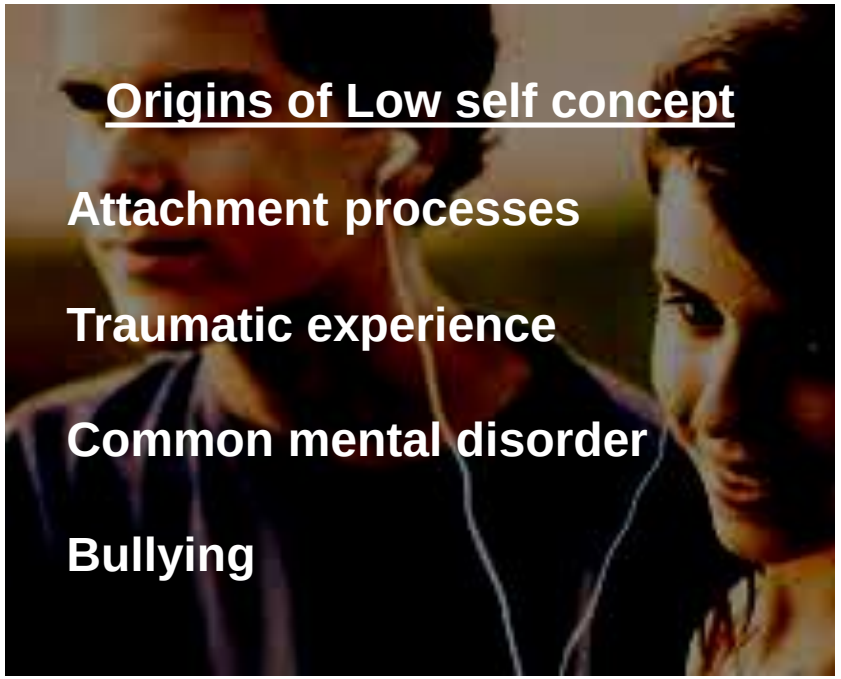
Aim 2: Changes in self-concept and the odds of PEs.

- ✓ As self concept improves the risk of PEs decreases.
- ✓ As self-concept worsens the risk of PEs increases.
- ✓ Changes in most sub-components alter the risk of PEs.

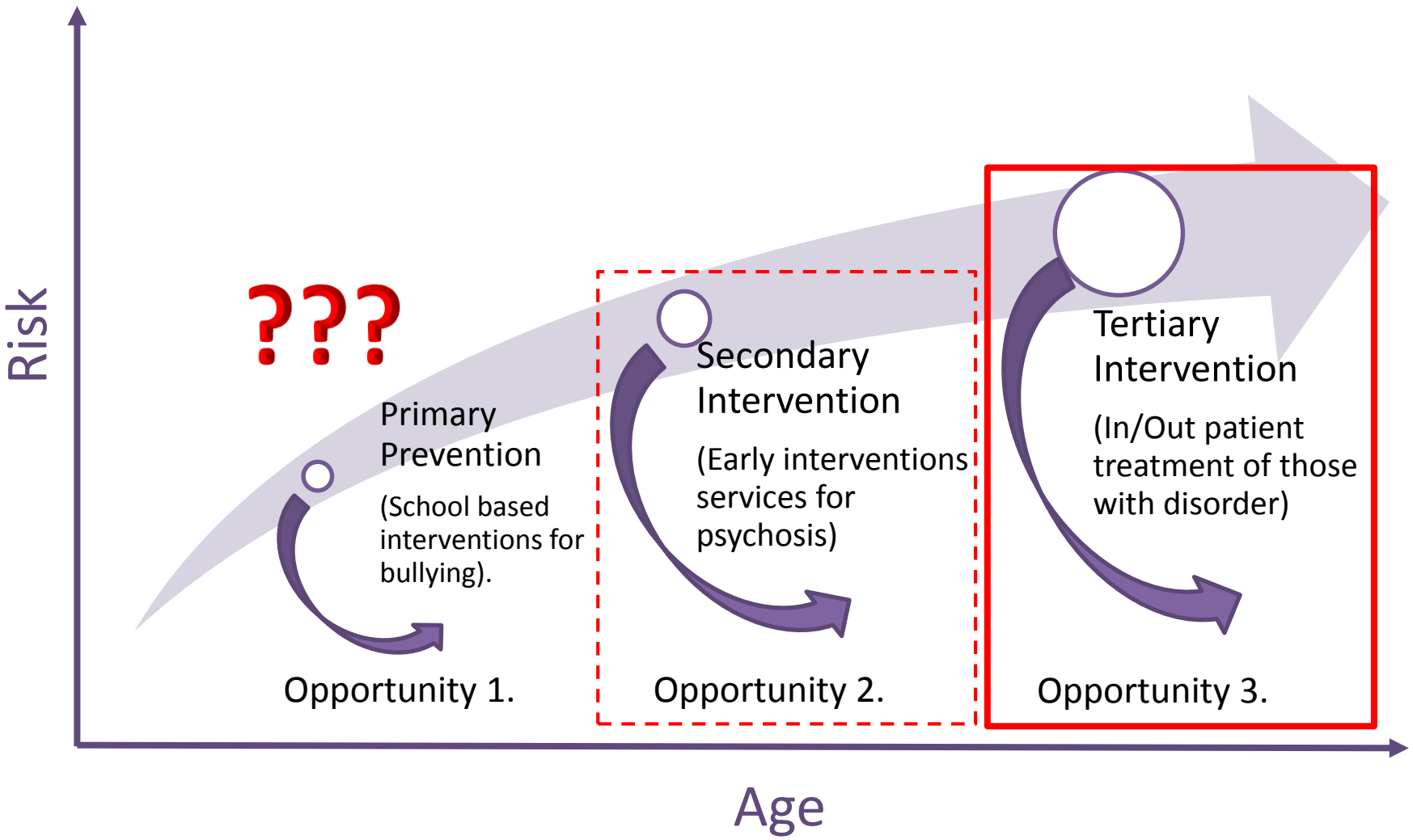
DISCUSSION 2

Intervening in self-concept in childhood may have the potential to decrease the incidence of PEs in adolescence. Programs focusing on improving self-concept would be a useful, broad-spectrum approach to improving well-being and symptomology in the general population (Mann et al., 2004).

Such broad-spectrum interventions in childhood presents a real opportunity to investigate strategies in preventative psychiatry at the sub-clinical level before a severe mental disorder becomes embedded.



PATH TO DISORDER



Overview see - Arango et al. (2018). Cost effectiveness - see Campion & Knapp, (2018)

Limitations and Future Research

Limitations

- **Psychotic experiences only tested at Wave 2**
  - **Bidirectional relationship?**
- **Self-report Questionnaires of PEs.**
  - **'Less' Reliable than clinical interview BUT even "false positive" PEs increase the risk of common mental disorder, PE persistence and help seeking behavior** (van der Steen et al., 2018; Van Nierop et al. 2012).
- **General population v Clinical population.**

Future Direction

- **Persisting PEs and Self concept.**
- **Is self-concept a mediator of a common cause?**
  - **Trauma/ Early life Stress/ Bullying?**

CONCLUSION

There is a strong relationship between self-concept and PEs.

This relationship is such that improvements in self-concept reduces the likelihood of PEs and decline in self-concept increase the likelihood of PEs.

Self-concept and the origins of low self-concept may be a useful psychosocial target for preventative psychiatry.

These results suggest that intervening in self-concept between childhood and adolescence may to reduce the incidence of PEs in adolescence.

Conclusion

Thank you for Listening! Questions?

Special Thanks

All the participants and researchers in the GUI study!	
Ms Helen Coughlan	Dr Ian Kelleher
Dr Mary Clarke	Professor Mary Cannon