Berkshire Child Anxiety Clinic

The Winnicott Research Unit

University of Reading

Interpretation Bias in Childhood Social Anxiety Disorder

Berkshire Healthcare **NHS**
NHS Foundation Trust

MRC | Medical Research Council

Anxiety: Interpretation of ambiguity

- Cognitive models propose threatening interpretations of ambiguous information reinforces anxious affect

- Anxious vs non-anxious adults:
  - Endorse negative interpretations of homophones (e.g. Mathews et al, 1989; Richards & French, 1992)
  - Infer negative outcomes to ambiguous situations (e.g. Hirsch & Mathews, 1997)

- Evidence for maintaining role from bias modification experiments
  - Participants who learn to endorse negative interpretations show heightened state anxiety (e.g. Mathews & Mackintosh, 2000)
  - Modification associated with reduced trait anxiety among clinical populations (e.g. Mathews et al., 2007)

Social Anxiety: Interpretation of ambiguity

- Interpretation of ambiguity may be of particular relevance to social anxiety
  - Social cues are often ambiguous and open to interpretation (e.g. Beard & Amir, 2008)

- Interpretation training leads to reductions in social anxiety symptoms among adult clinical groups
  - Changes in social anxiety mediated by changes in benign interpretation of social cues (Beard & Amir, 2008)

Anxiety disorders in childhood

- Anxiety disorders in childhood are common, often chronic and pose a risk for ongoing problems in later life (e.g. Costello & Angold, 1995; Kovacs et al, 1989)
  - Social anxiety disorder common and make up about 60% of anxious clinic patients (e.g. Hudson et al., 2010)
- Cognitive models have been influential in the treatment of childhood anxiety
- Threat interpretation associated with childhood anxiety generally
  - Community (e.g. Creswell & O'Connor, 2010)
  - Clinical populations (e.g. Barrett et al., 1996; Creswell, Schneiring & Rapee, 2006)

Limits to our knowledge of childhood anxiety and interpretation

Children from broad age ranges grouped together	• Are there age effects in the association between interpretation and anxiety?
Often 'positive'/'negative' interpretations grouped together	• Is specific cognitive content (e.g. threat/coping) associated with childhood anxiety?
Often anxiety disorders grouped together	• Are cognitive distortions content specific?
Studies typically cross-sectional	• Does interpretation maintain anxious affect?

Preliminary evidence (Vassilopoulos et al, 2009)

n=43

10-11 years

Community sample with high social anxiety scores

Interpretation training (n=22)

(45 situations over 3 sessions)

OR retest only (n=21)

3-4 days after training complete training group more likely to:

- **endorse more non-threat interpretations**

-**report lower social trait anxiety**

- **predict less anxiety in social interaction**

Study 1
With Lynne Murray & Peter Cooper

- Are there age effects in the association between interpretation and anxiety?
  - 7- 9 years vs 10-12 years
  - Studies of cognition and depressed affect suggest shift in association between mid and late childhood
- Is specific cognitive content associated with childhood anxiety?
  - Threat, anticipated negative emotional response, perceived control
- Are cognitive distortions content specific?
  - Social vs non-social
- NB Hypothetical and in vivo measures

	Principal diagnosis of social anxiety disorder	Diagnosed anxiety disorder (NOT social)	Nonanxious
n	40	40	40
7-9 years: 10-12 years	18:22	18:22	18:22
Mean age (sd)	9.88 (1.80)	9.68 (1.44)	9.70 (1.32)
Male: female	19:21	19:21	19:21
Family SES (% 'professional')	*47*	*78*	*73*
Ethnicity (% W. British)	91	90	76
Low mood (SMFQ-c)	*8.55 (6.13)*	*6.10 (3.15)*	*4.02 (3.40)*
Behavioural disturbance (SDQ-p)	*7.05 (3.89)*	*5.35 (3.48)*	*4.28 (3.85)*

Interpretation assessments

Ambiguous Scenarios

- 12 hypothetical scenarios
- 6 social/ 6 non-social

- Ratings:
  – Negative emotion (0-10)
  – Threat – free/forced
  – Control (0-10)


In vivo challenge

- Social
  – Filmed speech

- Non-social
  – Mysterious
    Box

- Ratings:
  – Negative emotion (0-10)
  – Threat (0-10)
  – Control (0-10)

Results - Ambiguous scenarios

- MANCOVA controlling for behavioural disturbance and low mood

- Significant effects of
  - behavioural disturbance ($F_{(6,100)}= 6.47$, $p<.001$)
  - Group ($F_{(6,101)}=3.29$, $p= .005$)
  - age x group ($F_{(6,102)}=3.94$, $p=.001$)

- 7-9 years
  - Neither anxious group differed from non-anxious group
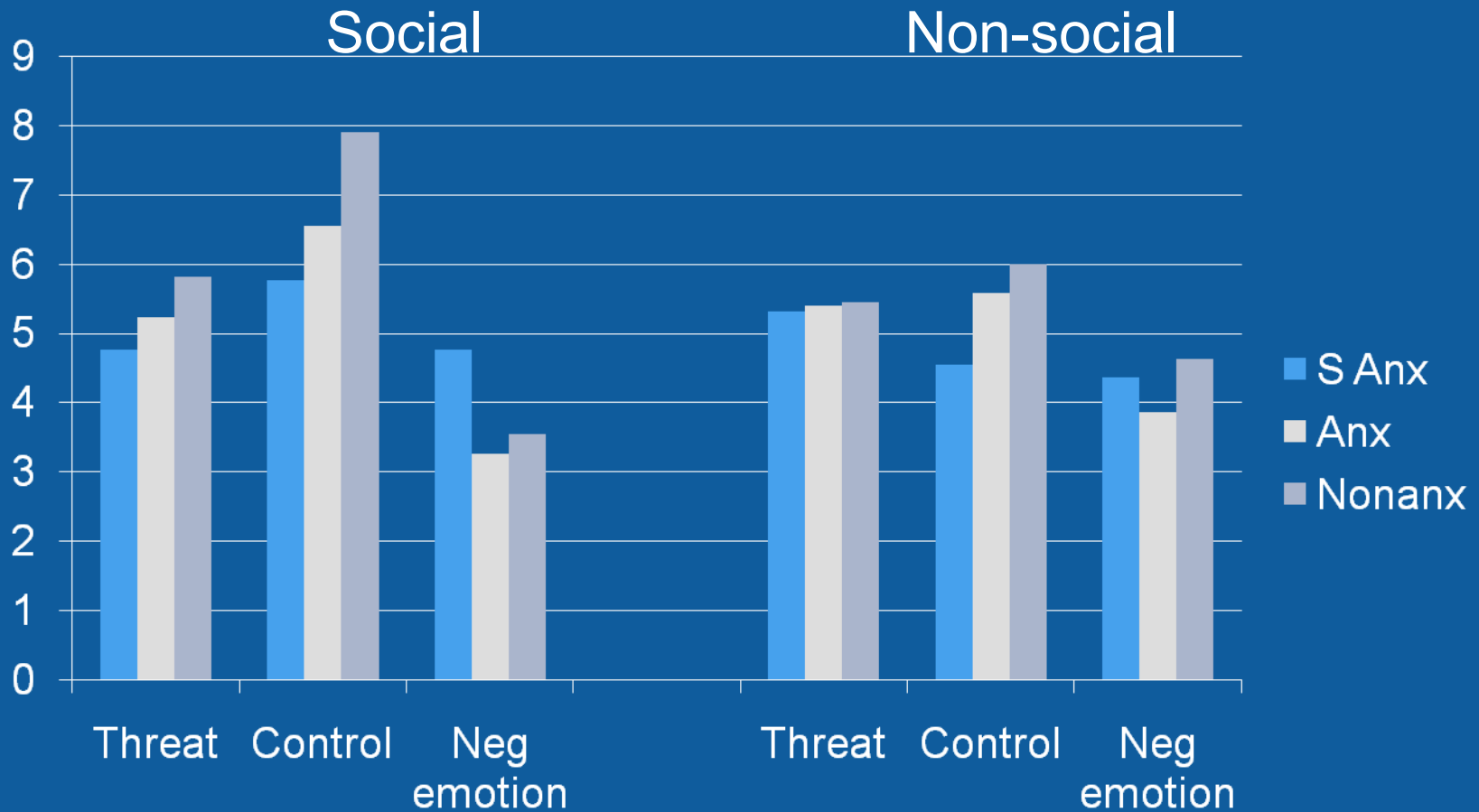
Ambiguous scenarios- 10-12 year olds
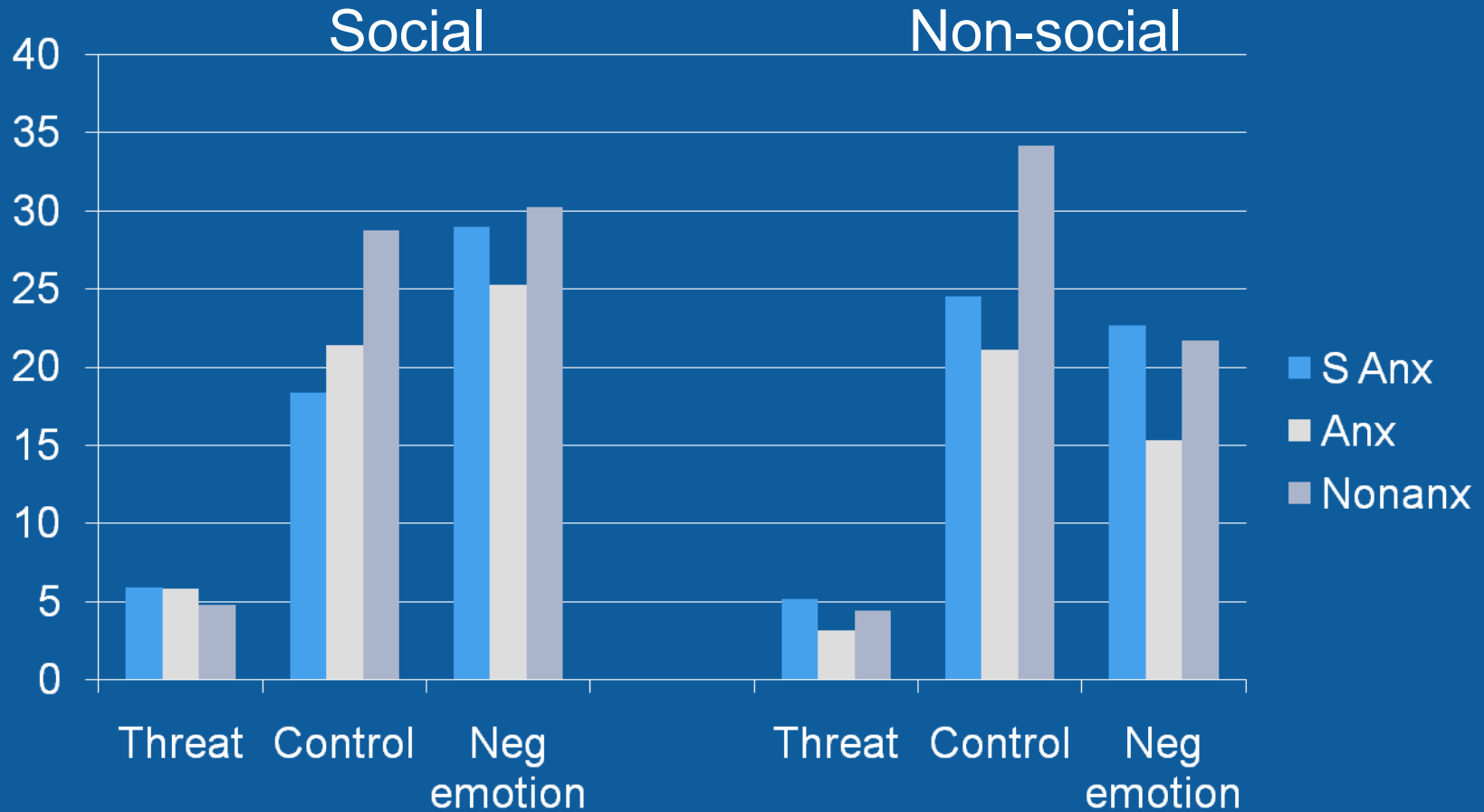
Control: NANX > SANX and ANX

Control: NANX > SANX and ANX
Negative emotion: NANX> ANX

Results – Challenge tasks

- MANCOVA controlling for SES and low mood

- Significant effect of
  – age x group $(F(6,94)=2.94, p=.03)$

- 7-9 years
  – Neither anxious group differed from non-anxious group

Challenge tasks- 10-12 year olds

Control: NANX > SANX

Summary

Are there age effects in the association between interpretation and anxiety?

- YES
- No sig associations in 7-9 year olds

Is specific cognitive content (e.g. threat/coping) associated with childhood anxiety?

- YES
- Perceived control (but not threat) associated with anxiety

Are cognitive distortions content specific?

- NO
- No significant differences between Social anxiety and other anxiety groups when account for co-morbid mood/behavioural disturbance

A puzzle?

- Recall Vassilopoulos et al (2009)

- Do earlier findings using cognitive bias modification of interpretations (CBM-I) with socially anxious children apply to clinical populations?

- Despite not necessarily having elevated threat bias might the CBM-I process have a beneficial effect on social anxious youth?

- Are the effects limited to older (not younger) children?

Study 2

with Adela Apetroaia & Kiri Clarke

- Does CBM-I lead to more benign and less threatening interpretations among children with social anxiety disorder?

- Does CBM-I lead to reductions in social anxiety symptoms?

- Will changes in anxiety be mediated by changes in interpretation?

- Are effects heightened amongst older (10-12 years) vs younger (7-9 years) children?

	CBM Training	No training
n	26	17
7-9 years; 10-12 years	15:11	11:6
Mean age (sd)	9.42 (1.45)	8.88 (1.45)
% male	35%	53%
Family SES (% 'professional')	50%	71%
Ethnicity (% W. British)	81%	82%
Low mood (SMFQ-c)	6.87	5.64
SCAS-C- social phobia	6.58	5.00
SCAS-C- total	*38.73*	*25.47*
% primary social anxiety disorder	23%	24%

Pre and post training: Ambiguous Scenarios Interview (from Vassilopoulos et al, 2009)

You ask a classmate to help you with a group project and he says no.

- **He doesn't want to work with me.**

1= I would not think that at all; 5= I would immediately think that

- **He has already found another classmate to work with.**

1= I would not think that at all; 5= I would immediately think that

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

They don't ask you to join a team and play with them.

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

They don't ask you to join a team and play with them.

Why do you think this happens?

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

They don't ask you to join a team and play with them.

Why do you think this happens?

The teams were decided before the break and there is no room for other players.

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

They don't ask you to join a team and play with them.

Why do you think this happens?

The teams were decided before the break and there is no room for other players.

They think I'm no good at this game and they don't want me to play with them.

You go out in the break and you see your schoolmates getting ready to play a game in different teams.

They don't ask you to join a team and play with them.

Why do you think this happens?

click on the right answer

The teams were decided before the break and there is no room for other players.

They think I'm no good at this game and they don't want me to play with them.

The teams were decided before the break and there is no room for other players.

This is the right answer!

The teams were decided before the break and there is no room for other players.

This is the right answer!

Take a minute to think about how this sentence explains what happens

Read the following sentence and click the True button if you think it is true or the False button if you think it is not true.
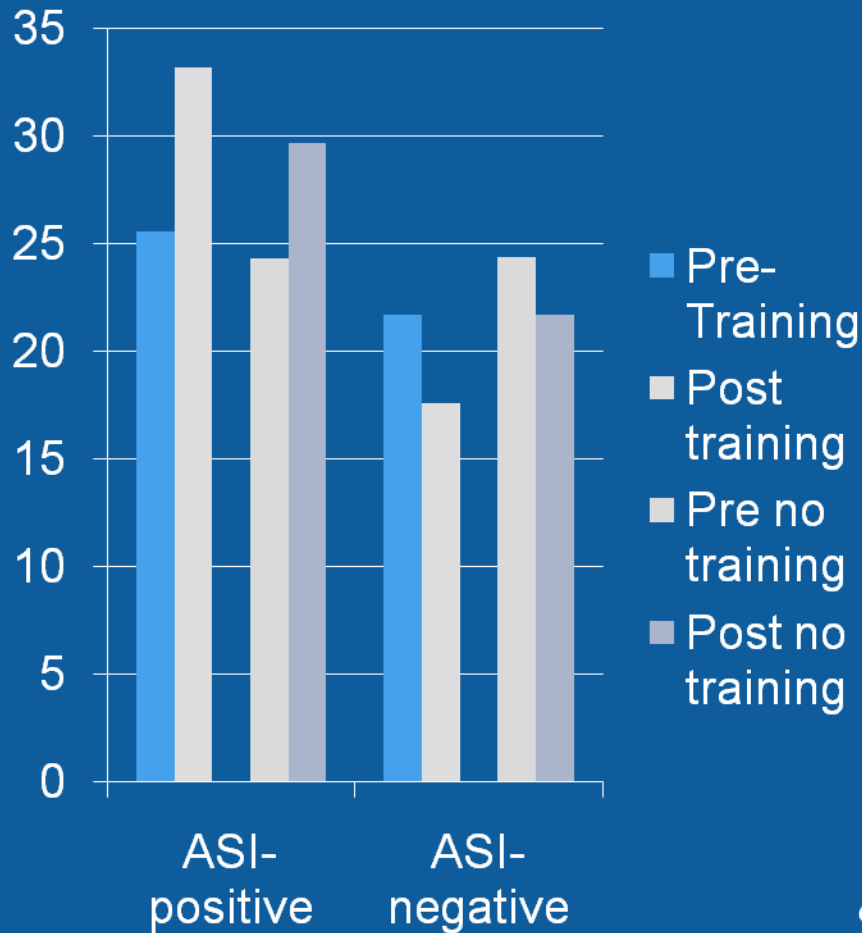
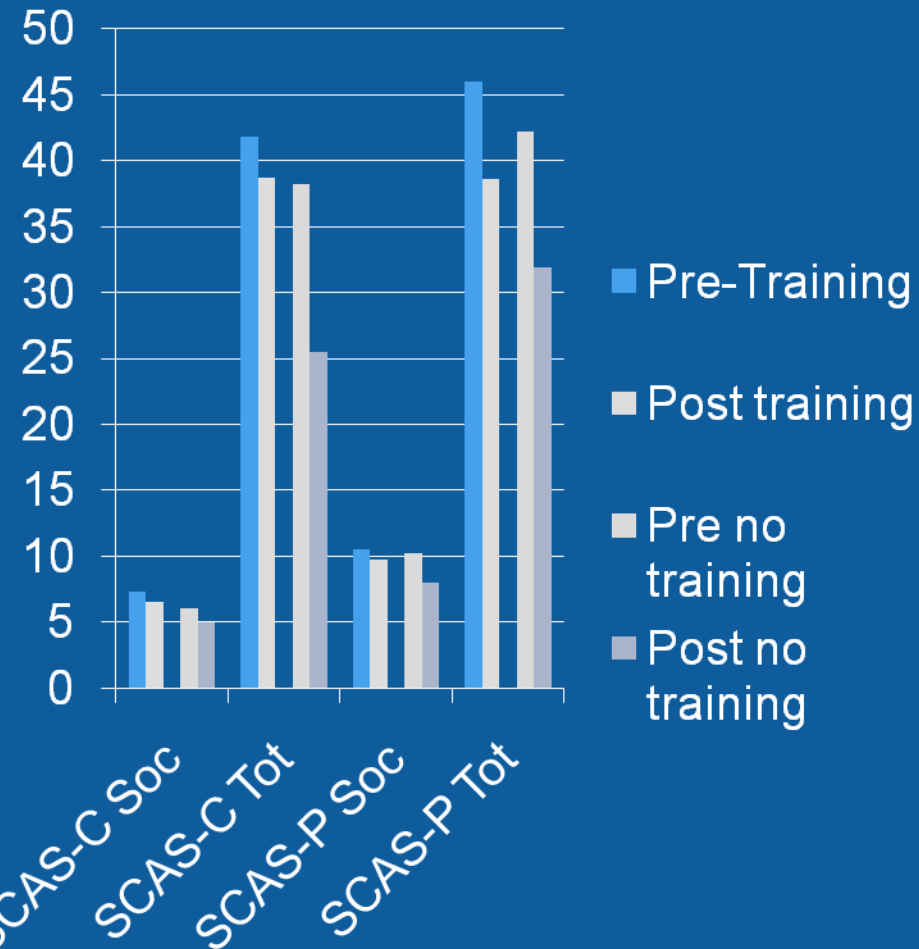My schoolmates would have liked to play with me if I had got there earlier.
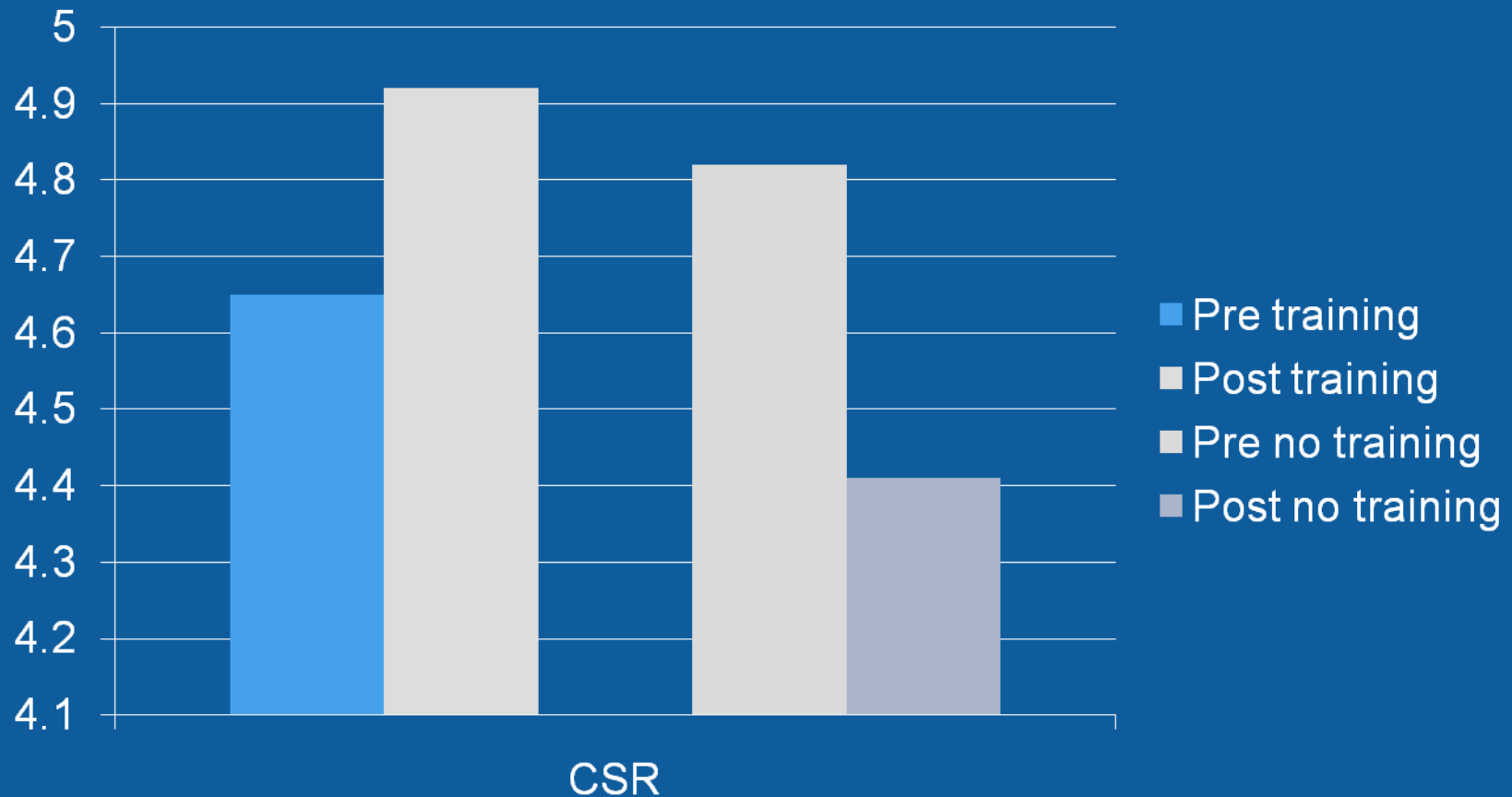
True

False

Interpretation

Anatomy symptoms

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Significant effects of time, but no significant time x condition, or time x age group x condition interactions.

Social anxiety disorder ADIS Clinical Severity Rating (CSR)

Time x condition interaction
F(1,39)=4.34, p=.04, partial eta sq= .10)

Summary from preliminary analyses

| NO | • Does CBM-I lead to more benign and less threatening interpretations among children with social anxiety disorder? |

| NO | • Does CBM-I lead to reductions in social anxiety symptoms? |

| N/A | • Will changes in anxiety be mediated by changes in interpretation? |

| NO (nb small cells) | • Are effects heightened amongst older (10-12 years) vs younger (7-9 years) children? |

Summary and conclusions

- Lack of support for role of threat interpretation in maintenance of *childhood* social anxiety
  - Not elevated amongst children with social / anxiety disorder
  - Training did not lead to reduced social anxiety symptoms (although training failed to change interpretations)

- Lack of support for cognitive content specificity

- Differences in interpretation between anxious and non-anxious children may become apparent in late childhood

Summary and conclusions

- Role of 'Perceived Control' warrants further investigation in terms of
    - Maintenance of anxiety symptoms
    - Mediator of treatment change

- Rather than challenging threat, interventions with pre-adolescents may benefit from a more specific focus on enhancing children's perceived control

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- The author and collaborators have no competing interests.

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