



The Association
for Child and Adolescent
Mental Health

CAMHS around the Campfire



Virtual journal club

#CAMHScampfire



The Mental Elf

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Critical appraisal workshop on

**Autism and eating disorders:
Evidence from two population cohort
studies**



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Critical appraisal 101

“Not all evidence is created equal”

Ben Djulbegovic

Broadly, we can think of three possible explanations for the results of any research study:

1. Bias
2. Chance
3. The truth

The more we can rule out 1 and 2, the more confident we can be that we're looking at 3.



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Critical appraisal process

1. What is the research question?
2. Are the methods valid?
3. Are these valid results important?
4. Are these valid, important results applicable to my setting?



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**The Journal of Child
Psychology and Psychiatry**



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Mental Health

Original Article | Open Access |

Trajectories of autistic social traits in childhood and adolescence and disordered eating behaviours at age 14 years: A UK general population cohort study

Francesca Solmi , Francesca Bentivegna, Helen Bould, William Mandy, Radha Kothari, Dheeraj Rai, David Skuse, Glyn Lewis,

First published: 03 May 2020 | <https://doi.org/10.1111/jcpp.13255> | Citations: 11

Anorexia nervosa and autism: a prospective twin cohort study

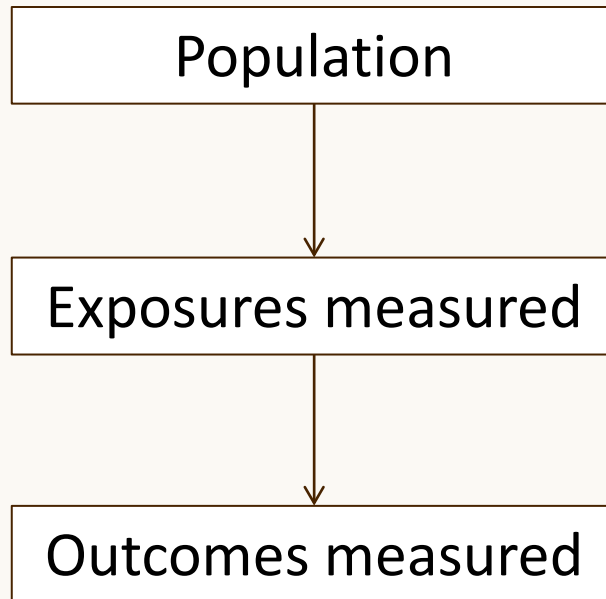
Lisa Dinkler , Mark J. Taylor, Maria Råstam, Nouchine Hadjikhani, Cynthia M. Bulik, Paul Lichtenstein, Christopher Gillberg, Sebastian Lundström,

First published: 04 June 2020 | <https://doi.org/10.1111/jcpp.13265> | Citations: 3



Population cohort studies

In an ideal world



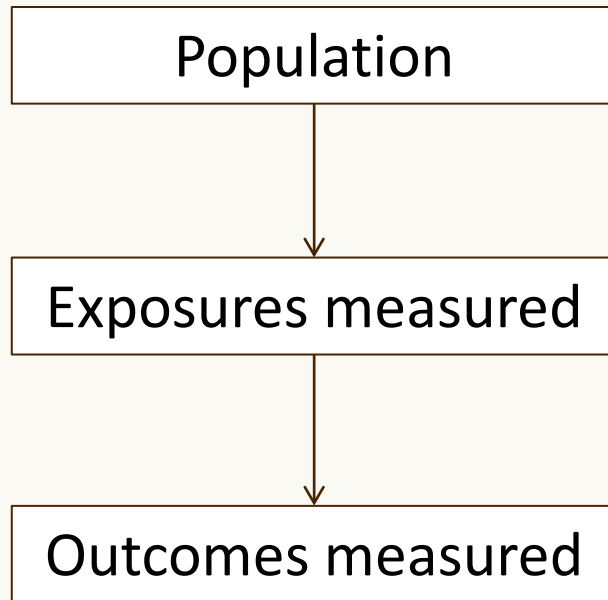
Well-defined inception cohort,
planned analysis

Followed forward in time, using
validated instruments

Measure the association between
these variables.



Population cohort studies



Retrospective analysis

Confounders (known and unknown) may introduce selection bias

The measures used or data available may introduce measurement biases

- Proxy measures
- Different measures at different times.

There's a risk of "false positives" from too much data dredging.



The dangers of data dredging



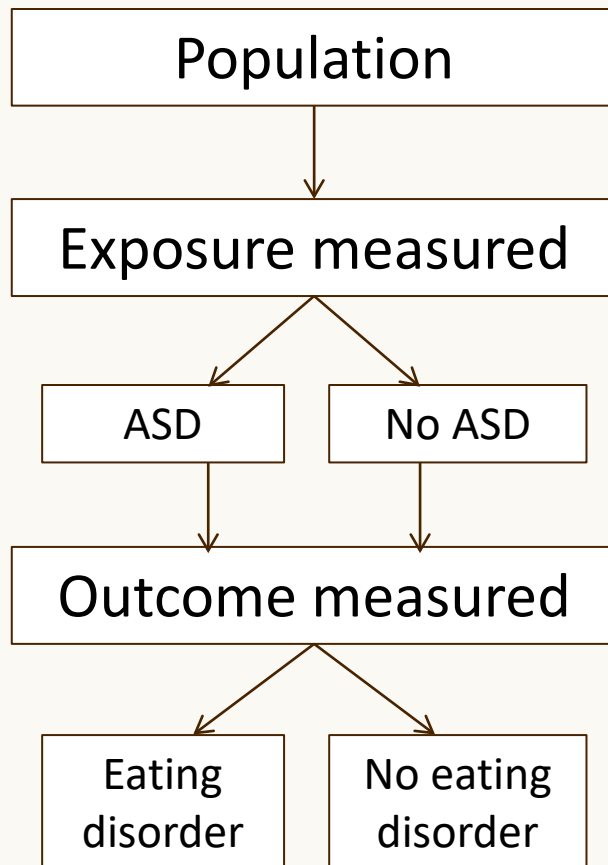


Critical appraisal checklist

1. Did the study address a clearly focused question?
2. Was the cohort recruited in an acceptable way?
3. Was the exposure accurately measured to minimise bias?
4. Was the outcome accurately measured to minimise bias?
5. (a) Have the authors identified all important confounders?
5. (b) Have they taken account of the confounding factors in the design and/or analysis?
6. (a) Was the follow up of subjects complete enough?
6. (b) Was the follow up of subjects long enough?



Two population cohort studies



ALSPAC

YP born in Avon, UK,
from 1991

Autistic traits, by SCDC
checklist (social
communication)
•Ages 7, 11, 14 and 16.

Any disordered eating
behaviour (DEB)
•Age 14, self-reports
by postal
questionnaire.

CATSS

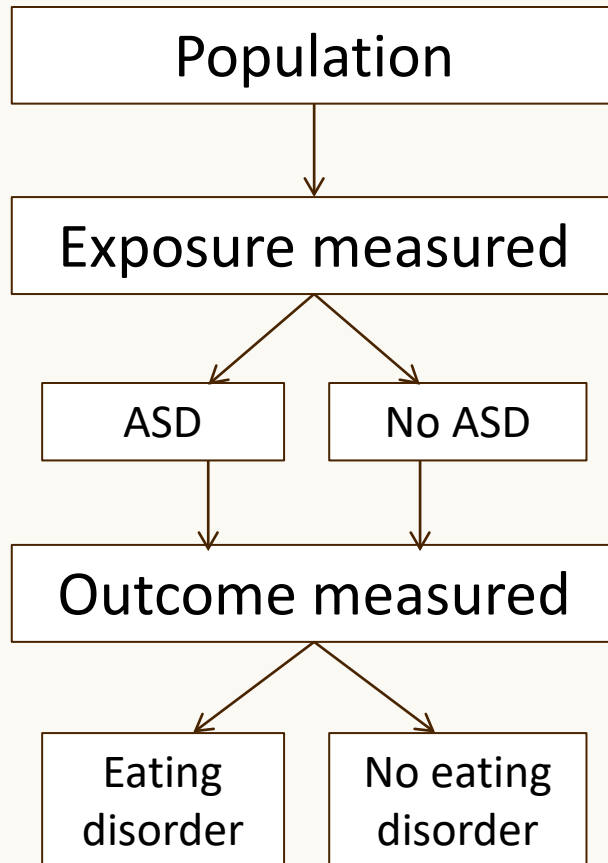
Twins born in
Sweden from 2004

Autistic traits, from
A-TAC inventory
(includes repetitive
behaviour)
•Ages 9 and 18.

Diagnosis or
treatment for
anorexia nervosa
•Age 18, from clinical
records or parent
report.



The Results



ALSPAC

5,381 participants with autism and DEB data at 14.

Participants with DEB at age 14:

- **had higher SDCD autism scores**, RR = 1.25 (1.16-1.34)
- also had higher autism scores at age 7,
- but not at 16.

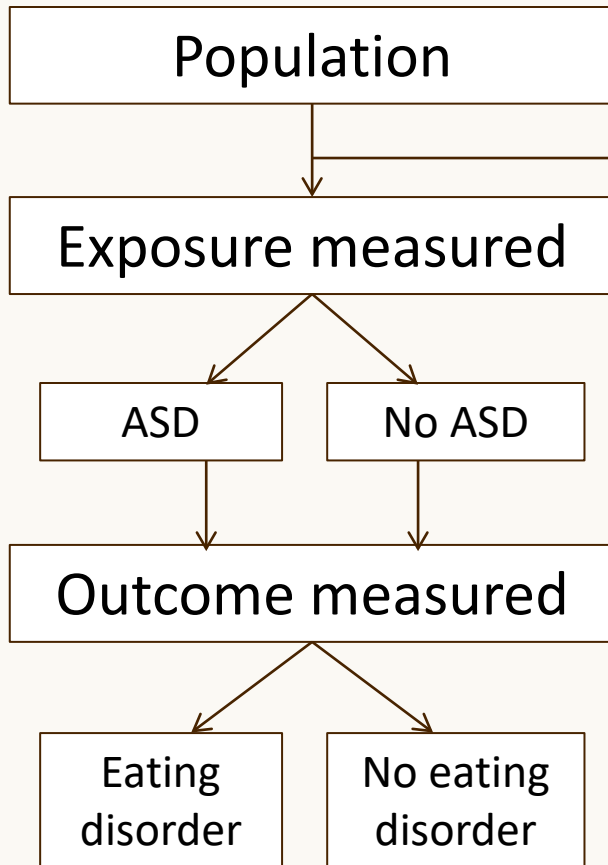
CATSS

5,987 participants with autism data at 9 and 18

No association was found between A-TAC autism scores at age 9 and a later diagnosis of anorexia nervosa.

RRBI was higher at age 18 in girls with acute AN, but not in girls with previous AN.

Attrition analysis



ALSPAC

5,381 participants
(39% follow-up rate).

Missing data or lost to follow-up

Missing data was imputed to test the sensitivity of the results to attrition.

Children with missing data tended to have younger, less educated mothers with a higher BMI and more likely to have a history of depression.

CATSS

5,987 participants
(36% follow-up rate).

They analysed drop-outs and concluded that these people did not differ significantly from those who were included.



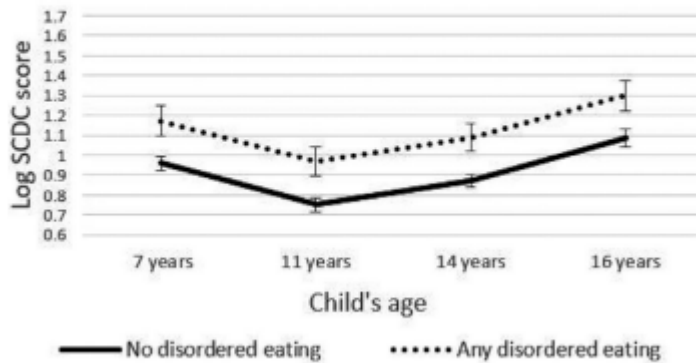
Report cards

<i>Critical appraisal checklist for cohort studies</i>	ALSPAC			CATSS		
	Yes	DK	No	Yes	DK	No
1. Did the study address a clearly focused issue?	X			X		
2. Was the cohort recruited in an acceptable way?	X			X		
3. Was the exposure accurately measured to minimise bias?	X			X		
4. Was the outcome accurately measured to minimise bias? •DEB at one point in time in ALSPAC		X		X		
5. (a) Have the authors identified all important confounders? •No confounder analysis in CATSS	X					X
5. (b) Have they taken account of the confounding factors in the design and/or analysis?	X				X	
6. (a) Was the follow up of subjects complete enough? •See Attrition analysis		X			X	
6. (b) Was the follow up of subjects long enough?	X			X		

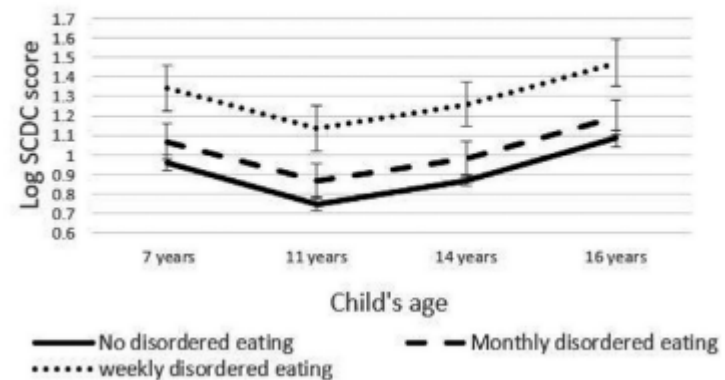


Consistent pattern in ALSPAC

(A) Trajectories of autistic social traits by presence/absence of disordered eating



(B) Trajectories of autistic social traits by frequency of disordered eating





Repetitive behaviour in CATSS

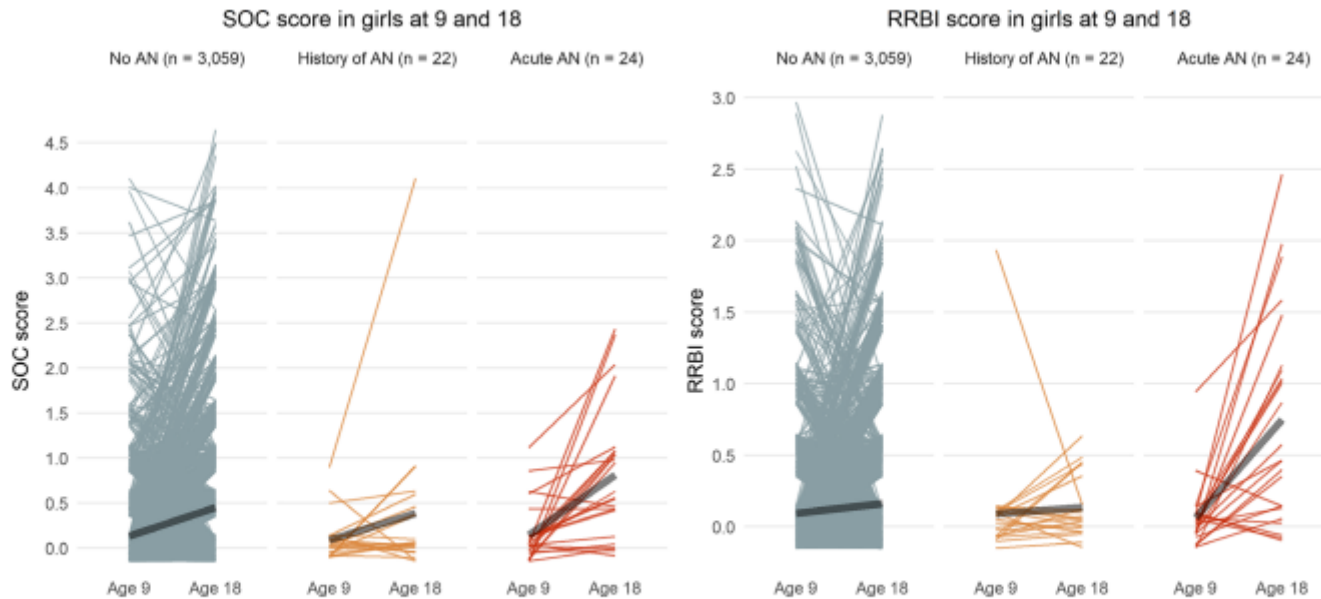


Figure 4 Within-individual change in ASD subscale scores from age 9 to age 18 by group. Each colored line corresponds to one individual. The thicker black line is the group average. Compare Table 1. AN, Anorexia nervosa; SOC, Social communication; RRBI, Restricted/repetitive behavior and interests [Colour figure can be viewed at wileyonlinelibrary.com]



Conclusions

ALSPAC found that autistic traits at age 14 were associated with disordered eating behaviour

- The overall relative risk was 1.25 (1.16 to 1.34)

CATSS found no association between autistic traits at age 9 and anorexia nervosa

- Higher RRBI in girls with acute AN

The studies had quite different measures of autistic traits

- social/communicative in ALSPAC, RRBI in CATSS

...and eating disorders

- Any DEB in ALSPAC vs clinically diagnosed AN in CATSS

The link ALSPAC identified may be camouflaged in CATSS

- Low event rate
- Having an acute ED affects communication
- Communication difficulties may affect people with eating disorders