

# Social Anxiety and Trauma:

Exploring Environmental and Genetic Influences

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# Outline

- Background
  - > Social anxiety (SA)
  - > Trauma and posttraumatic stress disorder (PTSD)
  - > Existing SA and PTSD research
- Method
  - > Measures
  - > Procedure
- Analyses and Results
- Summary and Discussion

# Social Anxiety (SA)

- The tendency to be anxious or feel uncomfortable in social situations
- Social anxiety disorder (SAD)
- Evidence supporting a genetic component for SA
- Traumatic experiences have been implicated as risk factors for emotional disorders, including SAD

# Trauma

- Lifetime prevalence rate (Breslau, 2002; Kessler et al., 1995)
  - Exposure to any traumatic event: ~70%
- PTSD prevalence rate of ~10%

# Posttraumatic Stress Disorder (PTSD)

- Intense fear, helplessness, or horror in response to a traumatic event
- Symptoms of reexperiencing, hyperarousal, avoidance, and numbing
- Evidence supporting a genetic component for PTSD
- Evidence supporting a genetic component for assaultive trauma exposure

# Existing SAD and PTSD Research

- SAD and PTSD frequently co-occur
- Individuals with both disorders report greater distress and impairment
- Research exploring factors underlying co-occurring SA and PTSD symptoms is limited
- Few studies have examined the relationship between traumatic event exposure and SA

# Purpose

- To investigate the impact of different types of traumatic events on SA symptoms
- To examine whether SA mediates the path between different types of traumatic events and PTSD symptom severity
- To estimate the relative effect of genetic and environmental influences on the risk of trauma exposure and SA symptoms in MZ and DZ twin pairs

# Hypotheses

- Participants who experienced an assaultive trauma will report higher levels of SA than those who experienced a nonassaultive trauma
- SA will mediate the relationship between assaultive trauma and PTSD symptoms, but it will not mediate the relationship between nonassaultive trauma and PTSD symptoms



# Method

## ◎ Participants and Procedure

- Large sample
  - MZ ( $n=455$ ) and DZ ( $n=427$ ) twins
- Participated in a larger study approved by the University of British Columbia REB
- Recruited from Vancouver through advertisements and media announcements

# Method

## ● Procedure

- Verbal consent
- Each participant was mailed a questionnaire package
- Twins completed the questionnaires independently
- Written informed consent
- Paid honorarium for participation

# Method

## ● Measures

- Anxiety Sensitivity Index
- Brief Fear of Negative Evaluation Scale
- Events Questionnaire
- Measure of PTSD symptoms
- Beck Depression Inventory

# Analyses

## ● Phenotypic analyses

- Analyses were conducted on a subsample using one twin from each pair
- Analyses were replicated in the subsample containing the other twin from each pair
  - No statistically significant differences between groups on age, sex, ASI, BFNE, BDI, and PTSD symptoms (all  $p > .10$ )

## ● Biometric analyses

# Phenotypic Analyses

- 2 groups: assaultive (i.e., participants reporting an assaultive trauma or both types of trauma) and nonassaultive trauma
  - Assaultive trauma;  $n=126$ 
    - 75% women
    - 16-79 years old ( $M=31.06$ ,  $SD=11.99$ )
  - Nonassaultive trauma;  $n=31$ 
    - 77% women
    - 17-71 years old ( $M=33.03$ ;  $SD=13.08$ )

# Results

- No statistically significant difference in ASI-social or BFNE scores between assaultive and nonassaultive trauma groups
  - ASI-social,  $F(1,154) = .52, p > .10$
  - BFNE,  $F(1,151) = 1.11, p > .10$
- Comparable results obtained in the second subsample

# Results

- Correlations between traumatic event type and either the ASI-social or BFNE scores were not statistically significant (all  $p$ s>.10)
- Neither the ASI-social nor the BFNE were statistically significant mediators of the relationship between traumatic event type and PTSD symptoms
  - Comparable results obtained in the second subsample

# Additional Phenotypic Analyses and Results

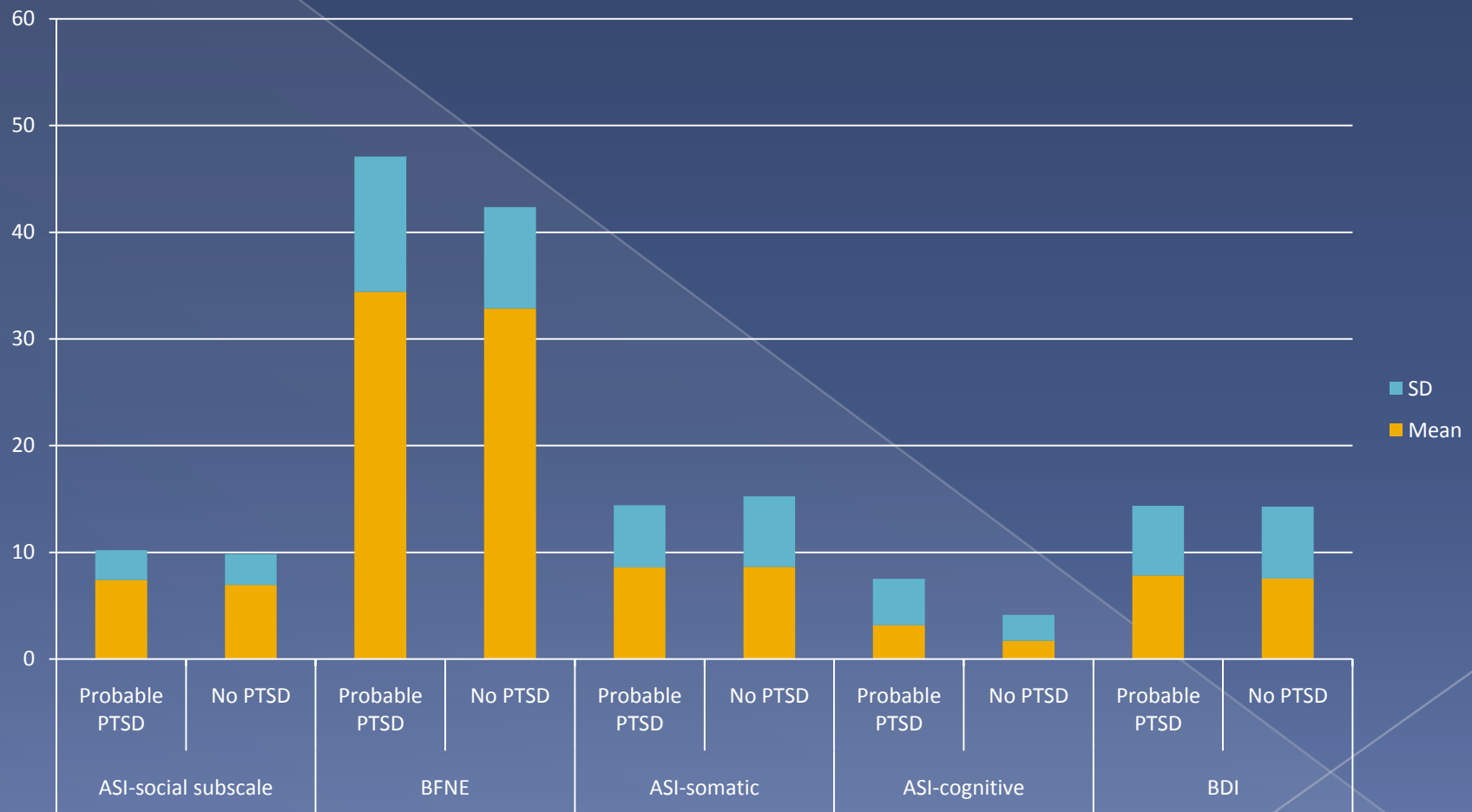
- Trauma type by exposure timeframe interactions (all  $ps > .05$ )
  - Comparable results obtained in the second subsample
- Between-group differences (all  $ps > .05$ )
  - ASI-somatic, ASI-cognitive, or BDI scores
    - In the second subsample, statistically significant between-group differences in the ASI-cognitive subscale



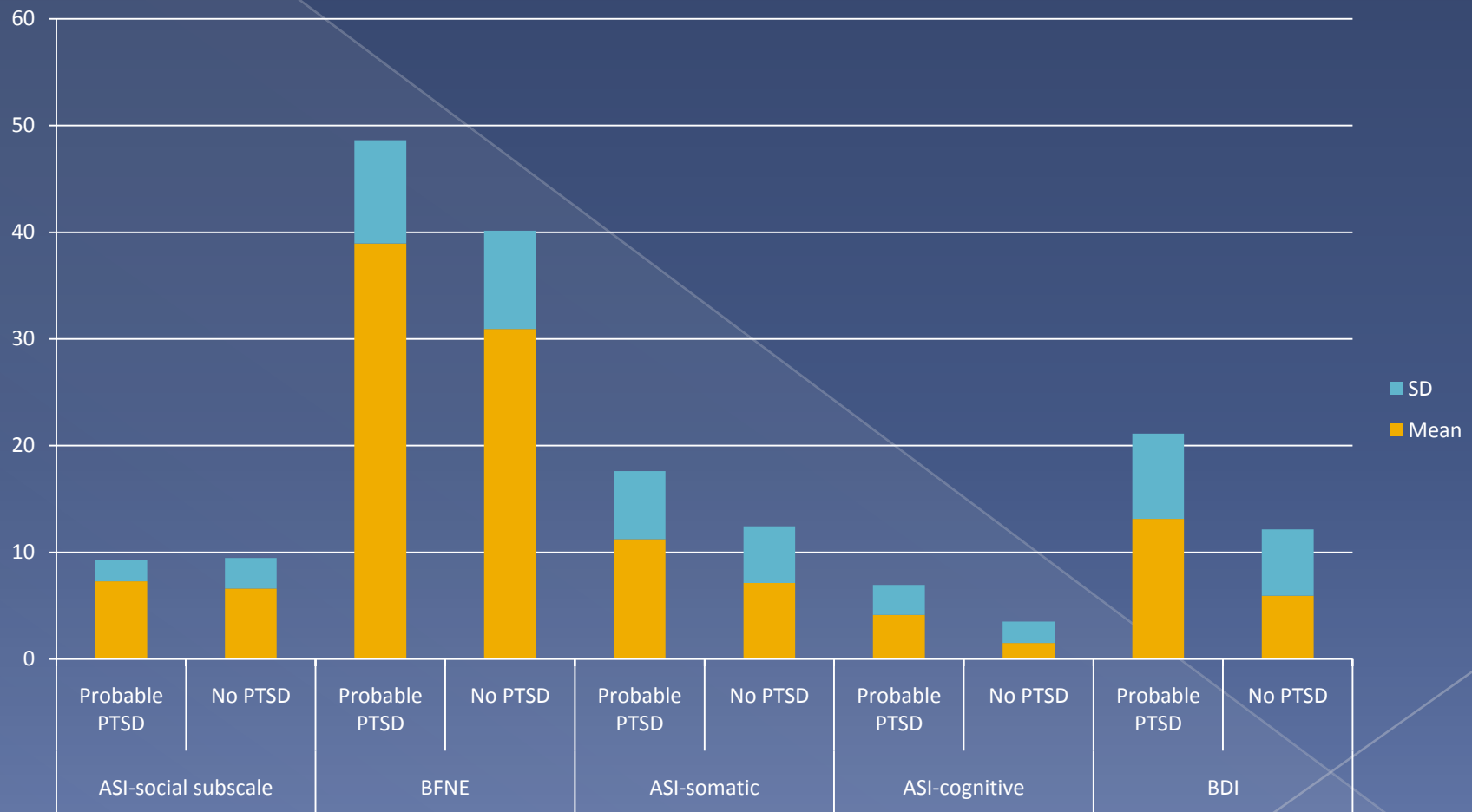
# Additional Phenotypic Analyses and Results

- 2 groups: probable PTSD ( $n=12$ ) and no PTSD ( $n=107$ )
- Between-group differences (all  $ps>.05$ )
  - ASI-social, BFNE, ASI-somatic, ASI-cognitive, or BDI
  - However, mean scores in probable PTSD group were higher
    - Second subsample – between-group differences (all  $ps<.05$ ) on all measures except for the ASI-social

# Descriptive Statistics, Subsample 1



# Descriptive Statistics, Subsample 2



# Biometric Analyses and Results

- A (additive genetic), C (shared environmental), E (nonshared environmental) effects provided the most satisfactory explanation for assaultive and non assaultive trauma
- Most of the variance was attributable to C and E effects for both trauma types

# Biometric Analyses and Results

- A and E effects provided the most satisfactory explanation for the SA measures (i.e., BFNE, ASI-social)
- It was not possible to compute  $r_G$  between trauma variables and any SA measure because both types of trauma were not heritable

# Summary and Discussion

- Assaultive trauma victims did not report greater SA symptoms (i.e., BFNE or ASI-social score) relative to nonassaultive trauma victims
- Assaultive trauma victims did not report greater fear of somatic sensations or depressive symptoms
  - Further research is needed on fear of cognitive dyscontrol

# Summary and Discussion

- Traumatic event type was not correlated with SA symptoms (as measured by the BFNE or ASI-social)
- SA was not a statistically significant mediator in explaining the relationship between traumatic event type and PTSD symptoms

# Summary and Discussion

- Participants with a probable diagnosis of PTSD reported greater
  - SA symptoms (i.e., BFNE scores)
  - Fear of somatic sensations and cognitive dyscontrol
  - Depressive symptoms
- Results not robust across both subsamples



# Summary and Discussion

- Environmental (shared and nonshared) factors may primarily influence trauma exposure
- Environmental (nonshared) and genetic factors may influence SA symptoms

# Limitations

- ⦿ Not possible to examine between-group differences based on various facets of SA
- ⦿ Small sample size, low proportion of men
- ⦿ Categorization of assaultive and nonassaultive trauma groups
- ⦿ Conceptualization of assaultive and nonassaultive trauma
- ⦿ Cross-sectional nature of the study
- ⦿ Self-report measures

# Implications

- Trauma type does not impact SA symptom levels (i.e., BFNE, ASI-social)
- Persons with a probable diagnosis of PTSD may display greater SA symptoms (i.e., BFNE) than those without a probable diagnosis of PTSD
- Clinical implications
  - Assessment
  - Treatment

# Future Research Directions

- Examine various facets of SA in persons who have experienced different types of trauma (and in PTSD populations)
- Larger and more representative samples, including clinical samples
- Trauma-related beliefs, interpersonal factors
- Temporal sequence of symptom development
- Examine potential assessment and treatment implications

# Thank you

## Questions?



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