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
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 ps > .10)

- Biometric 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 $p > 0.10$).

- 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 $p$s > .05)
  - Comparable results obtained in the second subsample

- Between-group differences (all $p$s > .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

- **ASI - social subscale**
  - Probable PTSD: 10 (SD), 30 (Mean)
  - No PTSD: 0 (SD), 10 (Mean)

- **BFNE**
  - Probable PTSD: 30 (SD), 50 (Mean)
  - No PTSD: 0 (SD), 10 (Mean)

- **ASI - somatic**
  - Probable PTSD: 10 (SD), 30 (Mean)
  - No PTSD: 0 (SD), 10 (Mean)

- **ASI - cognitive**
  - Probable PTSD: 10 (SD), 30 (Mean)
  - No PTSD: 0 (SD), 10 (Mean)

- **BDI**
  - Probable PTSD: 10 (SD), 30 (Mean)
  - No PTSD: 0 (SD), 10 (Mean)
Descriptive Statistics, Subsample 2

- Probable PTSD
- No PTSD

ASI:
- Social subscale
- Somatic
- Cognitive

BDI

Mean and SD for each category.
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
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
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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