

EXPOSURE TO VIOLENCE AND RISK OF DEMENTIA IN WOMEN: POSSIBLE MEDIATOR IN GENDER DIFFERENCES?

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INTRODUCTION

Women and girls are disproportionately exposed to physical and sexual violence, particularly in low-income settings¹. Trauma exposure has been associated with lower cognitive performance and increased risk of neurological and psychiatric disorders, potentially mediating gender differences in dementia prevalence^{2,3}. We investigated whether exposure to violence during childhood or adulthood increases dementia risk in women.

METHODS

A systematic review and meta-analysis were conducted using MEDLINE and EMBASE databases. Observational studies examining exposure to childhood adversity, physical or sexual abuse, and intimate partner violence, and their relation to incident dementia in women were included. Separate meta-analyses were conducted by exposure timing, type and effect measures. Meta-analyses were performed using MetaAnalysisOnline.com⁴.

RESULTS

After removal of duplicates, 275 records were identified, 21 underwent full-text review, and 6 met the inclusion criteria. Studies differed in the type of trauma investigated (Intimate partner violence or childhood maltreatment) and the statistical method used for assessing the risk (HR vs OR).

When combining the studies reporting HR, three studies were included. Cations et al.⁵ investigate only intimate partner violence, while Tani et al.⁶ focused on Adverse Childhood Experiences (ACEs), including physical, sexual and emotional abuse. The recent study from Xie et al.⁷ reported exposure to both physical and sexual violence, during adulthood and childhood.

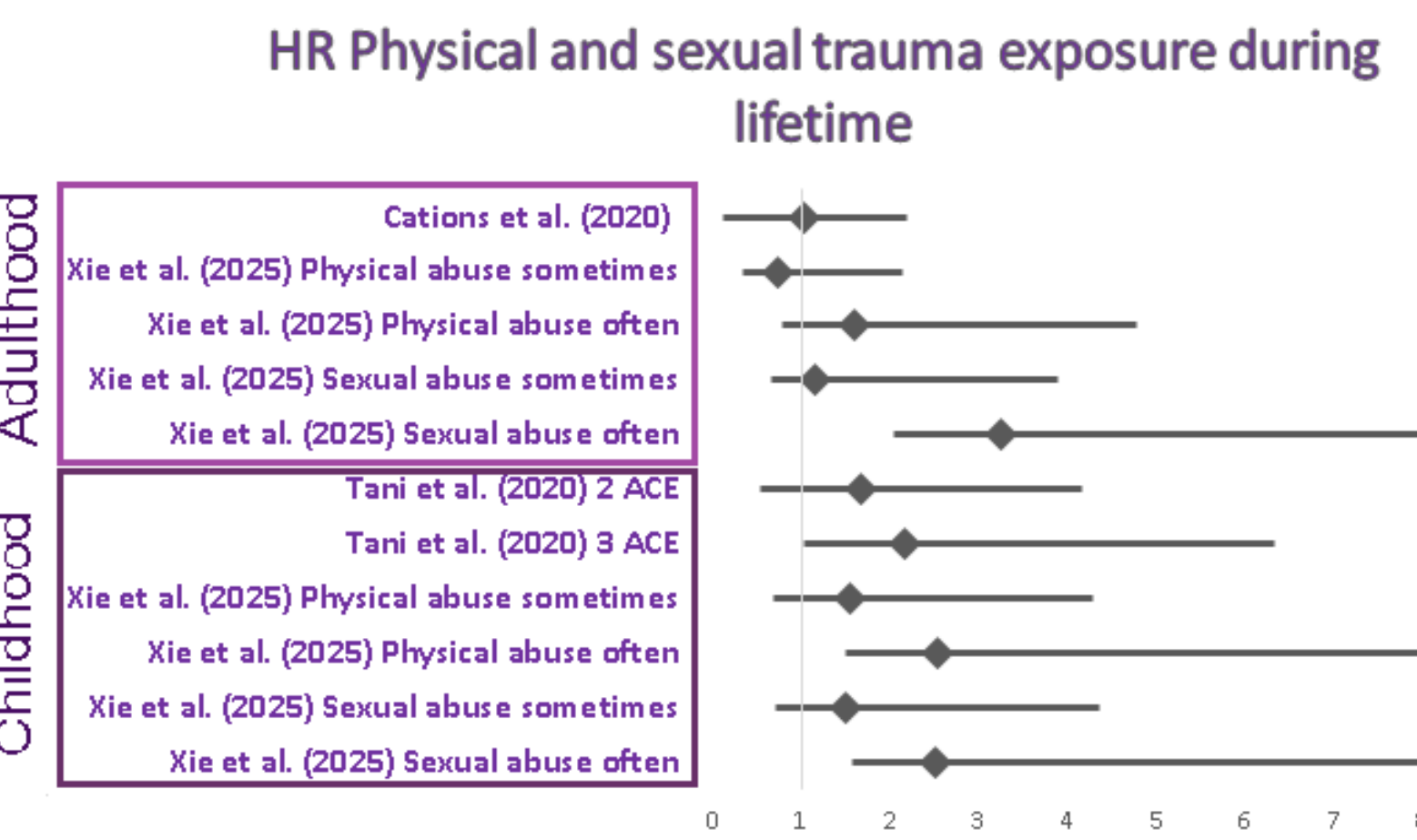


Figure 1. Forest plot of the association between physical and sexual trauma exposure and risk of dementia in women. Pooled hazard ratio estimated using a random-effects model (IV method). HR 1.50 (95% CI 1.15–1.95); $I^2 = 57.9\%$; $Z = 3.02$ ($P = 0.0025$).

The pooled analysis showed that women exposed to physical and sexual trauma had a significantly greater risk of developing dementia than those without such exposure (HR = 1.50, 95% CI 1.15–1.95). The analysis showed a dose-dependent relationship between the frequency and severity of violence exposure, particularly during childhood. Moderate between-study heterogeneity was observed ($I^2 = 57.9\%$), and the overall pooled effect was statistically significant ($Z = 3.02$, $P = 0.0025$),

supporting a positive association between trauma exposure and dementia risk (Fig 1). No significant association was found for violence limited to adulthood (HR 1.12; 95% CI 0.78–1.62, $p=0.527$).

When focusing only on severe childhood trauma, a significantly increased risk of dementia was observed, including physical abuse (HR 2.29; 95% CI 1.35–3.87) and sexual abuse during childhood (HR 2.26; 95% CI 1.31–3.90) (Fig 2). The results from studies reporting pooled odds ratios also showed an increased risk; however substantial heterogeneity ($I^2 = 82.9\%$) in this analysis was found, limiting interpretation.

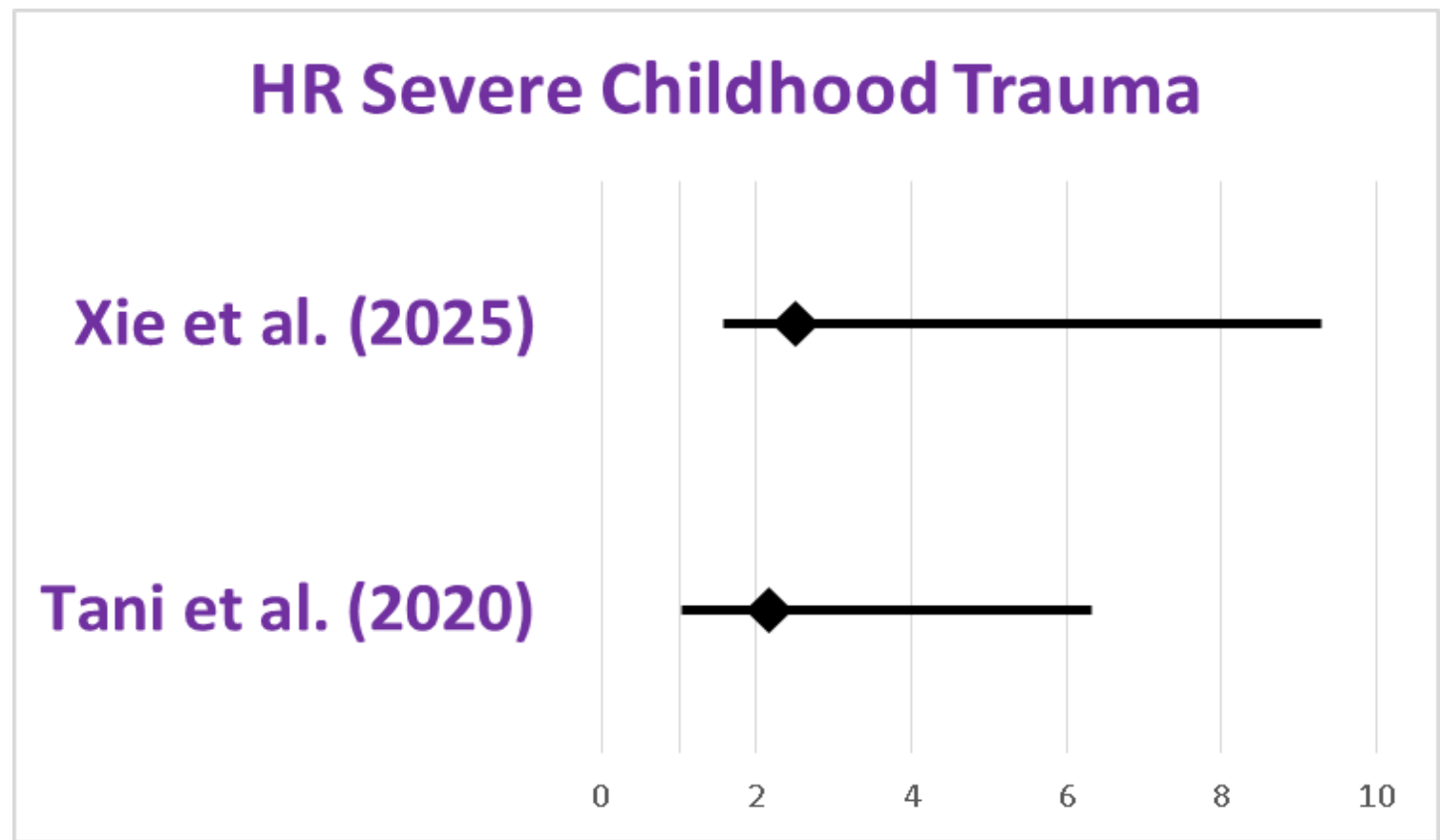


Figure 2. Forest plot of the association between severe childhood trauma including sexual abuse during childhood and risk of dementia in women. Pooled hazard ratio estimated using a random-effects model (IV method). HR 2.26 (95% CI 1.31–3.90); $I^2 = 0.0\%$; $Z = 2.93$ ($P = 0.0034$).

CONCLUSIONS

Exposure to physical and sexual violence was associated with 50% increase in dementia risk among women.

The evidence was stronger for severe exposure to violence during childhood, which was associated with an approximately twofold increased risk of late-life dementia in women, while adulthood-only exposure did not reach statistical significance. These gender-specific risk factors should be further investigated in population-based studies and considered in frameworks addressing gender differences in dementia prevalence. Few studies explored this association and they differed substantially in methodology and the type of violence assessed. This study advances the discussion by examining the potential contribution of women's social roles as a mediator in the association between trauma exposure and dementia risk.

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