

Intimate Partner Violence And Co-occurring Modifiable ADRD Risk Factors: Opportunities For Trauma-informed Prevention

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High frequency physical IPV is associated with increased prevalence of cardiovascular risk factors for ADRDs.

INTRODUCTION

METHODS

RESULTS

CONCLUSIONS

Intimate partner violence (IPV), particularly physical IPV, is an underrecognized cause of traumatic brain injury (TBI) and repetitive head impacts (RHI), experienced by >90% of physical abuse survivors.¹ TBI is a modifiable risk factor for Alzheimer's disease and related dementias (ADRDs) accounting for an estimated 3% of dementia cases globally.² The 2024 Lancet Commission on Dementia Prevention, Intervention, and Care identified 14 modifiable risk factors that collectively account for approximately 45% of dementia cases worldwide, spanning cardiovascular, lifestyle, and psychosocial domains. In populations with disproportionately elevated clustering of modifiable risk factors, targeted prevention strategies may therefore offer particular benefit in reducing future dementia burden.³



A growing body of evidence suggests that TBI initiates or accelerates cardiovascular and cardiometabolic pathology.⁴ Longitudinal studies have demonstrated that individuals sustaining TBI, including those without pre-existing comorbidities, face substantially elevated long-term risks for hypertension, dyslipidemia, diabetes, and obesity; all of which appear on the Lancet Commission's list of modifiable dementia risk factors.⁵ However, the relationship between IPV-related TBI/RHI and dementia risk profiles has not been thoroughly examined.

Using data from the U.K. Biobank, we investigated the association between IPV exposure and prevalence of modifiable ADRD risk factors in women in mid-to-late life.

Aim: To examine the prevalence of modifiable ADRD risk factors in women with exposure to IPV and IPV-related TBI/RHI in mid-to-late life.



We conducted a cross-sectional analysis of baseline data from female UK Biobank participants with complete lifetime IPV data (n=84,890). IPV was categorized by increasing likelihood of TBI/RHI: no exposure, emotional IPV, physical IPV low/medium-frequency, and physical IPV high-frequency. Twelve modifiable ADRD risk factors were derived from self-report questionnaires, medical assessments, and linked health records at baseline, these included: Low education; smoking; diabetes; high cholesterol; hypertension; physical inactivity; depression; hearing loss; social isolation; visual loss; and air pollution exposure. Missing data were imputed using multiple imputation by chained equations. Adjusted prevalence ratios (aPRs) for each individual risk factor were estimated using robust modified Poisson regression controlling for age, ethnicity, and socioeconomic status. Results were pooled using Rubin's rules.

Of the 84,890 women in this study, 2,470 (2.9%) reported physical IPV – high frequency, 11,957 (14.1%) physical IPV – low frequency, 13,165 (15.5%) emotional IPV, and 57,298 (67.5%) no exposure. The median age of participants was 54 (IQR: 47 – 62) years.

Individuals with IPV exposure had higher prevalence of several modifiable Alzheimer's disease and related dementias (ADRD) risk factors compared with unexposed individuals. High-frequency physical IPV was associated with substantially elevated prevalence of cardiovascular risk factors, including smoking (aPR=2.56, 95%CI:2.32-2.83), diabetes (aPR=1.83, 95%CI:1.57-2.13), high cholesterol (aPR=1.64, 95%CI:1.46-1.84), obesity (aPR=1.53, 95%CI:1.44-1.64), and hypertension (aPR=1.42, 95%CI:1.33-1.53).

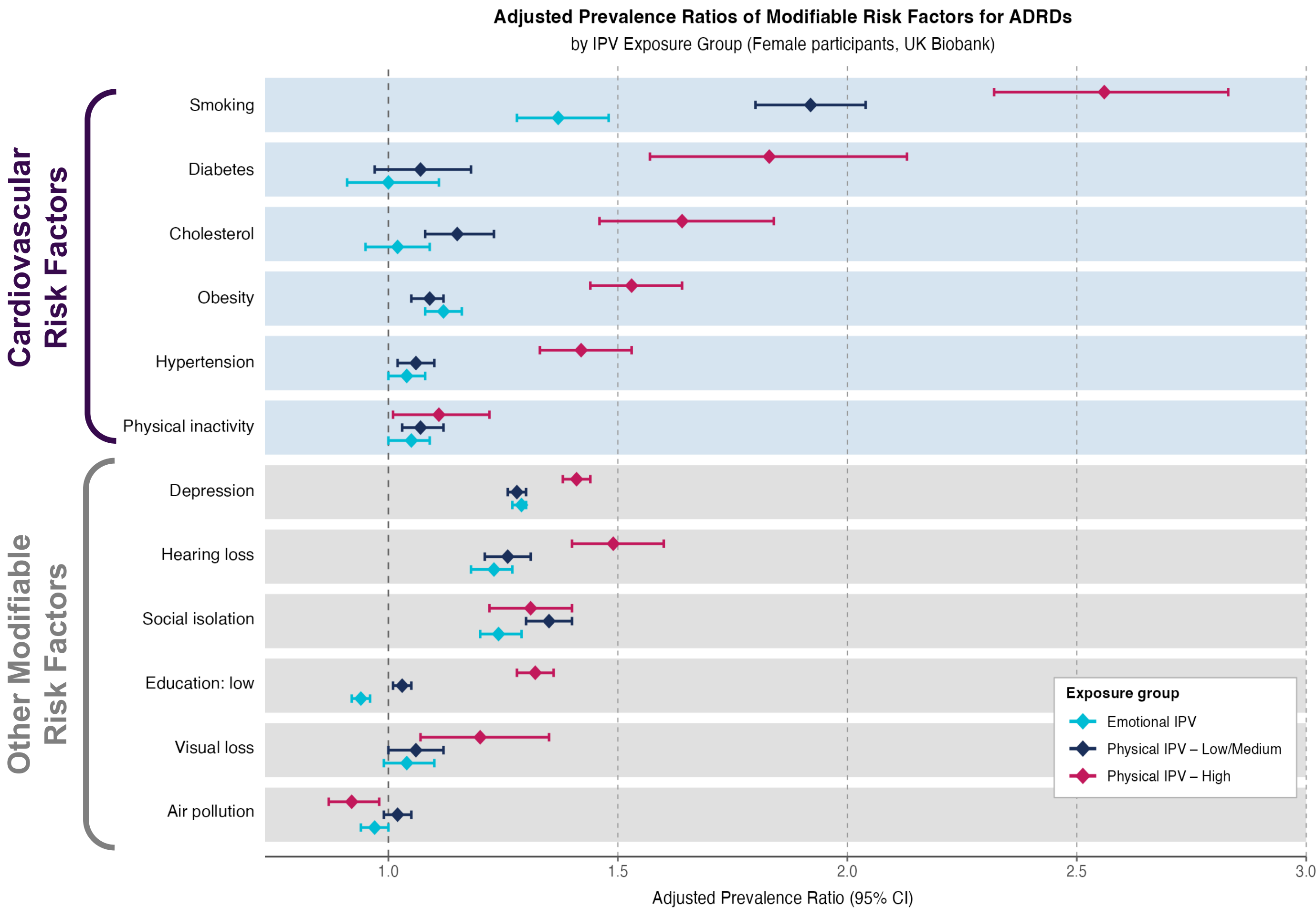


Figure 1. Prevalence of modifiable ADRD risk factors by IPV exposure. Estimates are presented as adjusted prevalence ratios (aPRs) comparing individuals with IPV exposure to those without exposure. All models were adjusted for age, ethnicity, and socioeconomic status.

Women reporting a history of IPV, particularly high-frequency physical IPV, had a substantially higher prevalence of multiple modifiable ADRD risk factors compared with women without IPV exposure. The strongest associations were observed for cardiovascular and metabolic risk factors, including smoking, diabetes, hypercholesterolemia, obesity, and hypertension.

These findings suggest that women with a history of IPV-related TBI may be at elevated ADRD risk via cardiovascular profiles distinct from the broader psychological and social consequences of IPV. The elevated clustering of modifiable risk factors in this population suggests that IPV survivors represent an underserved, high-risk population for whom trauma informed brain health education, and targeted cardiovascular risk prevention strategies could offer substantial benefit.

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