Violence and mental health: does disability make a difference?

Background

Violence is a major determinant of poor mental and physical health [1]. While the detrimental health effects of violence and the high levels of violence experienced by people with disability are well documented [2], we do not know whether the mental health impacts of exposure to violence differ between people with and without disability. In this study we specifically look at physical violence and assess whether the association between exposure to physical violence and changes in mental health are modified by disability status using a large population-based Australian longitudinal study. Given the differences in the type of violence experienced by men and women experience [3], analyses were stratified by gender.

Methods:

Data sources

We used longitudinal data from The Household, Income and Labour Dynamics in Australia (HILDA) Survey, waves one (2001) to 16 (2016). The sample size after 16 waves was 17,694, and response rates are above 90% for respondents who have continued in the survey and above 70% for new respondents being invited into the study [4].

Exposure variable - Victim of physical violence

Participants were asked whether they had been a "Victim of physical violence (e.g., assault) in the previous 12 months". This was a binary variable.

Effect modifier - Disability:

Participants responded to whether they had experienced 'a long-term health condition, impairment or disability that restricts you in your everyday activities, and has lasted, or is likely to last, for 6 months or more'. To deal with temporal ordering of violence and disability we used four time-invariant disability categories: never disabled, always disabled, become disabled (censored after first wave of disability), and became not disabled (censored after first wave of not disability). Observations start when participants enter study, with participants allowed to miss waves.

Outcome variable – Mental health

Measured using the Mental Health Inventory (MHI-5) [5]. Each item is scored using five response categories, and the total scores are transformed into a scale ranging from 0 to 100; higher scores reflect better mental health.

Covariates

We modelled age, education, employment status, household weekly equivalised income, and household structure as time-varying confounders. These were selected basis on a directed acyclic graph and informed by previous literature.

Analysis

A total of 93,835 observations across 19,472 participants had complete data and were included in analyses. Linear fixed-effects regression models with cluster robust confidence intervals were used to estimate the association between being a victim of physical violence and mental health within individuals, with disability (fitted as time-invariant) interacted with exposure to physical violence. Analyses were conducted separately for men and women.

Results

Descriptive statistics of the analytic sample are presented in Supplementary Table 1. Table 1 shows the difference in mental health for being victim of violence results across all strata of

disability status. There was an effect of violence on mental health among men who had transitioned from being disabled to not disabled, men who had always been disabled, women who had become disabled, and men who had become disabled.

TABLE 1 ABOUT HERE

Discussion

Strengths of this study include that the data were a large nationally-representative sample, and the more causally robust fixed-effects analysis. Among the study limitations are that self-reported data may be susceptible to response bias (e.g., social desirability effects), dependent measurement error (errors in self-reported exposure and outcomes correlated due to individual-level factors), underreporting of violence, and people with severe disability, and perhaps those experiencing violence, may be less likely to participate in HILDA. While out of scope for this short report, future research could apply g-computation to analyse the dynamic interplay between our exposure (violence), effect modifier (disability) and confounders.

Policy implications of this study include targeted preventive approaches to groups more susceptible to poorer mental health following being a victim of physical violence. Future research should endeavour to use improved measures of exposure to violence.

References:

1.   Butchart, A. and C. Mikton, *Global status report on violence prevention, 2014.* 2014.

2.   Krnjacki, L., et al., *Prevalence and risk of violence against people with and without disabilities: findings from an Australian population-based study.* Australian and New Zealand journal of public health, 2016. **40**(1): p. 16-21.

3.   Australia Bureau of Statistics, *Peronsal Safety Survey*. 2016, ABS: Canberra.

4.   Summerfield, M., et al., *HILDA User Manual – Release 17*. 2018, Melbourne Institute of Applied Economic and Social Research: Melbourne.

5.   Rumpf, H.-J., et al., *Screening for mental health: validity of the MHI-5 using DSM-IV Axis I psychiatric disorders as gold standard.* Psychiatry research, 2001. **105**(3): p. 243-253.

Tables

Table 1. Fixed effects with cluster robust confidence intervals: analysis of Mental health from waves A-P of the Household Income and Labour Dynamics in Australia (HILDA) survey by category of time-invariant disability*

	Never disabled	Always disabled	Became disabled[a]	Became not disabled[b]
Men				
Participants	6,377	653	2,087	805
Observations	31,200	1,509	9,366	1,841
Not a victim of violence (ref)				
Victim of violence	-1.50 (-4.02, 1.02)	-10.71 (-19.24, -2.19)	-4.83 (-8.46, -1.20)	-15.95 (-26.95, -4.95)
Women				
Participants	6,270	582	1,945	756
Observations	30,283	1,583	8,677	1,779
Not a victim of violence (ref)				
Victim of violence	-2.82 (-5.15, -0.48)	-5.41 (-17.82, 7.00)	-7.98 (-13.18, -2.79)	-0.77 (-13.19, 11.66)

*Observations start when participants enter study, all groups could miss waves.
[a]Consecutive waves of reporting not disability, then censored after first wave of disability
[b]Consecutive waves of reporting disability, then censored after first wave of not disability