



Understanding the relationship between crime victimisation and mental health: A longitudinal analysis of population data

APPENDIX

CONTROL VARIABLES

The following variables were obtained from the self-completion questionnaire with the exception of partner status, area of residence and labour force status, which were obtained from the face-to-face person questionnaire:

- Partner status at the time of interview ('partnered' includes married or de facto; 'not partnered' includes separated, divorced, widowed or never married and not de facto).
- Area of residence at the time of the interview (major city, regional/remote).
- Labour force status at the time of the interview (employed, unemployed, not in labour force).
- Financial prosperity at the time of the questionnaire (based on item 'Given your current needs and financial responsibilities, would you say that you and your family are?'; response options: 'prosperous'; 'very comfortable'; 'reasonably comfortable'; 'just getting along'; 'poor'; 'very poor').
- Ability to raise funds in emergency at the time of the questionnaire (based on the item 'Suppose you had only one week to raise \$3000 for an emergency. Which of the following best describes how hard it would be for you to get that money?'; response options: 'I could easily raise the money'; 'I could raise the money, but it would involve some sacrifices (e.g., reduced spending, selling a possession)'; 'I would have to do something drastic to raise the money (e.g., selling an important possession)'; 'I don't think I could raise the money'). Prior to the 2012 wave of HILDA, respondents were asked about their ability to raise \$2000 in an emergency.
- Alcohol consumption at the time of the questionnaire (based on items 'Do you drink alcohol?' and 'On a day that you have an alcoholic drink, how many standard drinks do you usually have?'). Responses to these items on the frequency and intensity of alcohol consumption were converted into a number of drinking occasions per week and into a number of alcoholic drinks per occasion, respectively. This conversion was undertaken in the following way: 0 - 'no, I have never drunk alcohol'; 0 - 'no, I no longer drink alcohol'; 7 - 'yes, I drink alcohol every day'; 5.5 - 'yes, I drink alcohol 5 or 6 days per week'; 3.5 - 'yes, I drink alcohol 3 or 4 days per week'; 1.5 - 'yes, I drink alcohol 1 or 2 days per week'; 0.5 - 'yes, I drink alcohol 2 or 3 days per month'; 0.25 - 'yes, but only rarely'. Responses to the intensity of alcohol consumption was converted to number of alcoholic drinks per occasion in the following way: 13 - '13 or more standard drinks'; 11.5 - '11 to 12 standard drinks'; 9.5 - '9 to 10 standard drinks'; 7.5 - '7 to 8 standard drinks'; 5.5 - '5 to 6 standard drinks'; 3.5 - '3 to 4 standard drinks'; 1.5 - '1 to 2 standard drinks'. Additionally, for respondents who reported their frequency of drinking as 'no, I have never drunk alcohol' or 'no, I no longer drink alcohol', number of alcoholic drinks was coded 0. Number of drinking occasions per week and number of alcoholic drinks per occasion were multiplied to obtain a number of alcoholic drinks per week. The number of alcoholic drinks per week was classified as 'low risk – less than 12 drinks per week'; 'risky to high risk – 12 or more drinks per week'; and 'abstainer or ex-drinker'.
- Smoking status at the time of the questionnaire (based on item 'Do you smoke cigarettes or any other tobacco products?'; classified: 'non-smoker', 'ex-smoker', 'smoker').
- Physical activity at the time of the questionnaire (based on item 'In general, how often do you participate in moderate or intensive physical activity for at least 30 minutes?'; six response options range from 'not at all' to 'every day').
- General health at the time the questionnaire was completed. This measure was assessed using the SF-36 general health score.
- Social network mean score at the time of the questionnaire based on HILDA's social network index (Wilkins & Warren, 2012). The social network mean score was calculated as the

mean item response to questions about how much support respondents get from other people. There were five positively phrased items such as 'There is someone who can always cheer me up when I am down' and five negatively phrased items such as 'I often need help from other people but can't get it'. As no time frame was specified, we assume that responses reflect how respondents felt at the time of the survey. Response options were on a scale from 1 (strongly agree) to 7 (strongly disagree). Positive items were reverse coded. Higher mean scores indicated poorer social networks. Mean item scores were categorised either '1.00-1.99'; '2.00-2.99'; '3.00-3.99'; or '4.00 or higher'. A mean score of '4.00 or higher' was deemed to indicate an inadequate social network (Wilkins & Warrens, 2012). A non-missing mean score was obtained if at least eight of the ten items had a valid response.

- Number of life events based on a count of nine life events. Respondents were asked if they had occurred in the past year (excluding physical violence). A non-missing value was obtained if a valid response was made to at least one of the nine items. The nine life events were:
 - serious personal injury or illness of a close relative/family member;
 - death of spouse or child;
 - death of other close relative/family member (e.g., parent or sibling);
 - death of a close friend;
 - retired from the workforce;
 - fired or made redundant by an employer;
 - changed jobs (i.e., employers);
 - major worsening in financial situation (e.g., went bankrupt); and
 - changed residence.

REFERENCES

Wilkins, R., & Warren, D. (2012) *Families, Income and Jobs, Volume 7: A Statistical Report on Waves 1 to 9 of the Household and Labour Dynamics in Australia Survey*. Retrieved from the HILDA, Melbourne Institute of Applied Economics and Social Research, website: http://www.melbourneinstitute.com/downloads/hilda/Stat_Report/statreport-v7-2012.pdf

Table A1. Survey response status for persons who participated in HILDA for any wave between 2002 and 2011

	Year of wave t ^a										Pooled waves	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
All records	29,489	29,489	29,489	29,489	29,489	29,489	29,489	29,489	29,489	29,489	29,489	294,890
Entered study before or at wave t	21,045	22,062	22,958	23,903	24,852	25,702	26,523	27,518	28,530	29,489	29,489	252,582
<i>Excluded: not entered study at or before wave t</i>	8,444	7,427	6,531	5,586	4,637	3,787	2,966	1,971	959	0	0	42,308
Aged 15 yrs or older at wave t	16,243	17,288	18,299	19,257	20,329	21,236	22,145	23,158	24,204	25,174	25,174	207,333
<i>Excluded: Less than 15 yrs old at wave t</i>	4,802	4,774	4,659	4,646	4,523	4,466	4,378	4,360	4,326	4,315	4,315	45,249
Interviewed at wave t (in person or by phone)	13,041	12,728	12,408	12,759	12,905	12,789	12,785	13,301	13,526	13,603	13,603	129,845
<i>Excluded: Out of scope/not interviewed^b</i>	3,202	4,560	5,891	6,498	7,424	8,447	9,360	9,857	10,678	11,571	11,571	77,488
Responded to self-complete questionnaire at wave t	12,130	11,747	11,397	11,465	11,716	11,381	11,194	11,564	12,049	11,946	11,946	116,589
<i>Excluded: did not respond to self complete questionnaire</i>	911	981	1,011	1,294	1,189	1,408	1,591	1,737	1,477	1,657	1,657	13,256
Valid response to property crime or violence item at wave t	11,876	11,533	11,199	11,263	11,487	11,187	10,964	11,373	11,893	11,819	11,819	114,594
<i>Excluded: invalid response to property crime or violence item at wave t^c</i>	254	214	198	202	229	194	230	191	156	127	127	1,995
Valid mental health score at wave t	11,829	11,488	11,137	11,214	11,441	11,142	10,848	11,264	11,844	11,789	11,789	113,996
<i>Excluded: invalid mental health score at wave t</i>	47	45	62	49	46	45	116	109	49	30	30	598
Eligible records for at least two waves of survey	10,856	11,174	10,925	11,030	11,256	10,976	10,696	11,059	11,593	11,106	11,106	110,671
<i>Excluded: only one eligible record</i>	973	314	212	184	185	166	152	205	251	683	683	3,325

^a The 5,451 persons from households in the 2011 top-up sample are not included in this study.

^b The most common reasons for out of scope or not interviewed were 'household not issued to field: persistent non response' and 'out of scope - temporary sample member no longer living with a permanent sample member'.

^c Due to refused/not stated, implausible values or multiple responses to self-complete questionnaire.

Table A2. Fixed effects regression victimisation coefficients (and robust 95% confidence intervals) for model predicting change in SF-36 mental health scores from the change in physical violence and property crime victimisation status in past 12 months between survey years *i* and *j* but not controlling for any dynamic factors (110,671 records from 16,187 persons)

	Reported being a victim at survey year <i>j</i> of:			
	Not violence & not property	Property but not violence	Violence but not property	Violence & property
Reported being a victim at survey year <i>i</i> of:				
Not violence & not property	– ^a	-0.3 (-0.7, 0.1)	-4.7 (-5.6, -3.7) ^b	-6.1 (-7.8, -4.3) ^b
Property but not violence		– ^a	-4.4 (-5.4, -3.3) ^b	-5.8 (-7.5, -4.0) ^b
Violence but not property			– ^a	-1.4 (-3.3, 0.5)
Violence & property				– ^a

Note. Lower mental health scores indicates poorer mental health. All records were included for persons with two or more survey years of not necessarily consecutive data.

^a Not applicable as no change in victimisation status.

^b Fixed effects coefficient p-value was less than .05 and there was a statistically significant decrease in mental health scores associated with change in victimisation status.

Table A3. Fixed effects regression control variable coefficients (and robust 95% confidence intervals) for model predicting change in SF-36 mental health scores from the change in physical violence and property crime victimisation status in past 12 months interacted with sex between survey years *i* and *j*, controlling for dynamic factors (105,446 records from 16,146 persons)

Variable	Fixed effects coefficient (robust 95% CI)
General health score (from SF-36)	0.3 (0.3, 0.3) ^c
Partner status	
Partnered ^a	
Not partnered	-1.3 (-1.7, -1.0) ^b
Area of residence	
Major city ^a	
Regional/remote	0.5 (0.0, 1.0) ^c
Labour force status	
Employed ^a	
Unemployed	-1.0 (-1.5, -0.5) ^b
Not in the labour force	-0.6 (-0.9, -0.3) ^b
Ability to get emergency funds	
Could easily raise emergency funds ^a	
Could raise emergency funds, but it would involve some sacrifice	-0.5 (-0.7, -0.2) ^b
Would have to do something drastic to raise emergency funds	-1.2 (-1.6, -0.9) ^b
Couldn't raise emergency funds	-1.7 (-2.1, -1.3) ^b
Financial prosperity	
Prosperous/very comfortable ^a	
Reasonably comfortable	-0.6 (-0.9, -0.4) ^b
Just getting along	-2.2 (-2.5, -1.9) ^b
Poor/very poor	-5.4 (-6.0, -4.7) ^b
Alcohol consumption	
Low-risk drinker <12/wk ^a	
Abstainer/ex-drinker	0.2 (-0.1, 0.6)
Risky/high-risk drinker 12+/wk	-0.3 (-0.6, 0.0)
Smoking status	
Non-smoker ^a	
Ex-smoker	-0.1 (-0.6, 0.3)
Smoker	-0.7 (-1.3, -0.2) ^b
Number of time exercise per week	
Not at all ^a	
Less than once a week	0.7 (0.4, 1.0) ^c
1 to 2 times a week	1.2 (0.8, 1.5) ^c
3 times a week	1.5 (1.2, 1.9) ^c
More than 3 times a week	2.0 (1.6, 2.3) ^c
Every day	2.3 (1.9, 2.7) ^c
Mean social network score	
1.000 - 1.999 ^a	
2.000 - 2.999	-2.8 (-3.0, -2.6) ^b
3.000 - 3.999	-6.3 (-6.6, -6.1) ^b
4.000 - 7.000 (inadequate)	-10.7 (-11.1, -10.3) ^b
Number of life events	
0	
1	-0.4 (-0.6, -0.3) ^b
2	-1.3 (-1.5, -1.0) ^b
3+	-2.0 (-2.3, -1.6) ^b
Constant	61.1 (60.3, 61.9)

Note. Model also includes the interaction between physical violence and property crime victimisation and sex. Reference category for sex was 'male' and the reference category for crime victimisation was 'not violence and not property'. The 5,225 records with missing information for at least one of the control variables were excluded from the model.

^a Reference category for control variable.

^b Fixed effects coefficient p-value was less than .05 and there was a statistically significant decrease in mental health scores associated with the change in control variable.

^c Fixed effects coefficient p-value was less than .05 and there was a statistically significant increase in mental health scores associated with the change in control variable.

Table A4. Fixed effects regression coefficients (and robust 95% confidence intervals) for males and females for adjusted model predicting change in SF-36 mental health scores from the change in physical violence and property crime victimisation status in past 12 months between survey years *i* and *j*, controlling for dynamic factors (105,446 records from 16,146 persons)

		Reported being a victim at survey year <i>j</i> of:			
		Not violence & not property	Property but not violence	Violence but not property	Violence & property
Reported being a victim at survey year <i>i</i> of:					
Not violence & not property	Males	– ^a	0.0 (-0.5, 0.5)	-2.3 (-3.4, -1.1) ^b	-2.8 (-5.0, -0.6) ^b
	Females	– ^a	-0.4 (-0.9, 0.1)	-5.0 (-6.3, -3.6) ^b	-6.0 (-8.3, -3.7) ^b
	Difference (males minus females)	– ^a	-0.4 (-1.1, 0.3)	-2.7 (-4.5, -0.9) ^c	-3.2 (-6.4, 0.0) ^c
Property but not violence	Males		– ^a	-2.3 (-3.5, -1.0) ^b	-2.8 (-5.0, -0.5) ^b
	Females		– ^a	-4.6 (-6.0, -3.1) ^b	-5.6 (-7.9, -3.3) ^b
	Difference (males minus females)		– ^a	-2.3 (-4.2, -0.4) ^c	-2.8 (-6.0, 0.4)
Violence but not property	Males			– ^a	-0.5 (-3.0, 1.9)
	Females			– ^a	-1.0 (-3.5, 1.5)
	Difference (males minus females)			– ^a	-0.5 (-4.0, 3.0)
Violence & property	Males				– ^a
	Females				– ^a
	Difference (males minus females)				– ^a

Note. Lower mental health scores indicates poorer mental health. All records were included for persons with two or more survey years of not necessarily consecutive data. Controls included general health score, partner status, area of residence, labour force status, ability to manage in emergency, financial prosperity, alcohol consumption, smoking status, physical activity, social networks and number of life events. The 5,225 records with missing information for at least one of the control variables were excluded from the model.

^a Not applicable as no change in victimisation status.

^b Fixed effects coefficient p-value was less than .05 and there was a statistically significant decrease in mental health scores associated with the change in victimisation status.

^c Fixed effects interaction coefficient p-value was less than .05 and the decline in mental health scores associated with a change in victimisation status was significantly greater for females than for males.