



OPEN ACCESS

# Evictions and suicide: a follow-up study of almost 22 000 Swedish households in the wake of the global financial crisis

Yerko Rojas, Sten-Åke Stenberg

Swedish Institute for Social Research (SOFI), Stockholm University, Stockholm, Sweden

## Correspondence to

Yerko Rojas, Swedish Institute for Social Research (SOFI), Stockholm University, Stockholm SE-10691, Sweden; yerko.rojas@sofi.su.se

Received 27 July 2015

Revised 17 October 2015

Accepted 19 October 2015

Published Online First

4 November 2015

## ABSTRACT

**Background** Millions of families across the world are evicted every year. However, very little is known about the impact that eviction has on their lives. This lack of knowledge is also starting to be noticed within the suicidological literature, and prominent scholars are arguing that there is an urgent need to explore the extent to which suicides may be considered a plausible consequence of being faced with eviction.

**Method** The present study's sample consists of all persons served with an application for execution of an eviction order during 2009–2012. This group is compared to a random 10% sample of the general Swedish population, ages 16 years and over. The analysis is on penalised maximum likelihood logistic regressions.

**Results** Those who had lost their legal right to their dwellings and for whom the landlord had applied for the eviction to be executed were approximately four times more likely to commit suicide than those who had not been exposed to this experience (OR=4.42), controlling for several demographic, socioeconomic and mental health conditions prior to the date of the judicial decision.

**Conclusions** Home evictions have a significant and detrimental impact on individuals' risk of committing suicide, even when several other well-known suicidogenic risk factors are controlled for. Our results reinforce the importance of ongoing attempts to remove the issue of evictions from its status as a hidden and neglected social problem.

process of social marginalisation rather than ascribing them the key independent role they are currently being given in explaining diverse detrimental outcomes in individuals' lives.<sup>4–9</sup>

This study is based on a unique data set made available to us by the Swedish Enforcement Authority, which contains information on all enforced expulsion orders for the period 2009–2012. With the help of Statistics Sweden, additional register-based data, including information on mental health and socioeconomic and demographic conditions, have been linked to this data set, making it possible to explore the extent to which being faced with an eviction is related to the subsequent risk of committing suicide. The study also employs a comparison group consisting of a 10% sample of the Swedish population.

## METHOD

### Exposed group: the Swedish Enforcement Authority register

Evictions may be based on court judgements, rulings in summary debt recovery procedures, court decisions in divorce cases, decisions by regional rent tribunals or rents and tenancies courts of appeal, protocols from distress auctions of real estate or settlements confirmed by a court.<sup>4</sup> The exposed group examined in this study includes instances of all the above cases, in which the creditor (most commonly a landlord), made an application for the judgement to be executed (a writ of execution) to the Swedish Enforcement Authority (Kronofogden) during the period 1 January 2009 to 16 March 2012. The Swedish Enforcement Authority is the only authority in Sweden sanctioned to execute home evictions. Thus the data contained in the agency's register include all persons subject to threats of eviction nationwide, a total of 23 203 individuals during the period covered by our study.

### National register data and comparison group

Our data from the Swedish Enforcement Authority register have been linked to several other national registers. In this study, we make use of the linkages made with (1) the longitudinal integration database for health insurance and labour market studies (known in Sweden as LISA), the population statistics register and the geography database; (2) the register of persons convicted of criminal offences and (3) the Medicinal Drug Register, the National Patient Register and the National Cause of Death Register. These registers are administered by Statistics Sweden, the Swedish National Council for

## INTRODUCTION

The Western world has undergone a severe economic crisis, of which we have still not seen the end, with strong links to the housing market. Hundreds of thousands have lost their homes, and suicide is being directly linked to foreclosures and evictions in an unprecedented way.<sup>1–2</sup> However, remarkably little is known about this relationship.<sup>1–3</sup> Sweden is no exception in this regard, with the evidence base remaining largely anecdotal.<sup>4</sup> Part of the explanation for this lies in the substantial difficulties associated with extensively following up entire groups of individuals who have been subjected to this form of severe social marginalisation.<sup>4–5</sup> Furthermore, the eviction problem in Sweden has historically been explained as an unintended consequence of the provision of homes to poor households and families with social problems, that is, to individuals who have a high eviction risk in the first place, thus viewing home evictions as having a subsidiary role in an ongoing



Open Access  
Scan to access more  
free content



CrossMark

**To cite:** Rojas Y, Stenberg S-Å. *J Epidemiol Community Health* 2016;**70**:409–413.

Crime Prevention and the National Board of Health and Welfare, respectively.

The comparison group consists of a 10% random sample of the Swedish population aged 16 years and over, drawn on 31 December 2012 by Statistics Sweden on the basis of LISA. The data set for the comparison group contains the same information from the national registers as does the data set for the individuals from the Swedish Enforcement Authority's register. The individuals in the exposed group were removed from the sample population before the comparison group was produced. The comparison group comprises a total of 777 628 individuals.

The research project has been approved by the Regional Ethical Review Board in Stockholm (reference number: 2014/24-31/5). All the data are stored at Statistics Sweden and have been made available to us via their Micro data online Access (MONA) system.

### Analytical strategy

The available information on cause-of-death for our comparison group is limited to the year 2013, that is, to a follow-up period of 1 year. As a consequence of this, we have restricted the comparison with the exposed population to those suicides occurring within a year of the date of enforcement orders issued in connection with eviction applications lodged at any point during the period 2009–2012. Similarly, the control variables are measured during the calendar year preceding the year of suicide for the comparison group and the calendar year preceding the year of the enforcement order for cases that applied for eviction for the exposed group (with the exception of the inpatient care data, where the information relates to the 365 days preceding the actual date of the enforcement order). The reason for this is that the data in LISA are collected on an annual basis, making it impossible for us to establish whether a control variable drawn from this database was present prior to or subsequent to the date on which the enforcement order was issued in a given year.

An individual may have been served with several enforcement orders during our observation period. We only consider the first enforcement order issued during the period in connection with an eviction application. Furthermore, the analysis only includes respondents from the comparison group who were aged 18 years and over. Personal identification numbers that were identified as erroneous have also been excluded. Of all the suicide cases included in the analysis, three only contained information on the year and the month for the date of death. For these cases, the first day of the month was assigned as the day of death.

The relationship between our independent/control variables and suicide has been estimated using penalised maximum likelihood logistic regression (firthlogit). Firthlogit is a technique that is suited to dealing with situations in which the event of interest is rare, which is the case here, in the sense that our binary dependent variables (suicide) include thousands of times fewer events (ones) than non-events (zeros). Firthlogit is available as a subroutine in STATA.<sup>10–12</sup>

### Dependent variable

Suicide is defined as an external cause of death that, in accordance with the 10th revision of the International Classification of Diseases (ICD-10), has been coded as either intentional self-harm (X60–X84) or an event of undetermined intent (Y10–Y34) in the Swedish Cause of Death Register.<sup>13</sup>

### Independent variable

Almost 80% of the suicides associated with an eviction have been found to occur before the actual loss of housing.<sup>1</sup> This

study therefore defines home eviction in terms of having lost the right of possession to one's dwelling, measured as the date of the enforcement order issued in connection with eviction applications registered at the Swedish Enforcement Authority.

### Control variables

Although knowledge concerning the relationship between eviction and suicide is limited, we know a great deal about factors that immediately precede an eviction.<sup>4–6 14 15</sup> In order to be able to assess the degree to which being faced with eviction can in itself be considered suicidogenic, we need to control for these factors. Evictions are primarily a so-called big-city phenomenon. Resource-weak groups such as the unemployed and recipients of means-tested social welfare have all been found to be considerably overrepresented among those who are evicted. This also holds true, but to a lesser extent, for individuals with a criminal record. For persons born abroad, the evidence is not as categorical, and suggests only a negligible over-representation. It has also been shown that men and unmarried persons are evicted to a greater extent than women and family households, and that the mean age of those evicted is over 40 years.<sup>4</sup> Furthermore, suggestions for preventive work among evicted persons note the importance of tackling the problem of low levels of education within parts of this group.<sup>16</sup>

Psychiatric care events are considerable more common among evicted persons than among the 'normal' population. However, it is not known what this distribution looks like in relation to different types of mental and behavioural disorders.<sup>4</sup> For the purpose of the current study, it is of paramount importance to control for mental and behavioural problems that might explain the possible co-variation between suicide and being faced with eviction. Recent reviews of the suicidological literature suggest that mood disorders, substance abuse and schizophrenia are the three most common diagnoses found in relation to completed suicide.<sup>17</sup>

The control variables have been measured in accordance with the analytical strategy described above, and are defined as follows. *Big city*: living in one of the three regions in Sweden that include the country's three largest cities (Stockholm, Gothenburg and Malmö, respectively). *Unemployment*: being registered as unemployed at the relevant authorities for at least 1 day over the course of a 1-year period. *Social welfare reciprocity*: having received means-tested social assistance at least once over the course of a year. *Criminal record*: having been convicted of a criminal offence at least once over a 1-year period. *Foreign born*: having been born outside Sweden. *Family constellation*: single persons/all other family constellations (married families (including civil unions), cohabiting families (with common children) and one-parent families). *Age*: year of birth. *Gender*: women/men. *Education*: pre-upper-secondary, upper-secondary and post-upper-secondary education. *Mood disorder*: registered as having being prescribed antidepressants (ATC-code: N06A) at least once over a 1-year period. *Substance abuse*: having been recorded in the Swedish inpatient care register with mental or behavioural disorders due to psychoactive substance use as a main diagnosis (ICD-10: F10–F19) at least once over a 1-year period. *Schizophrenia*: having been recorded in the Swedish inpatient care register with schizophrenia or schizoaffective disorders as a main diagnosis (ICD-10: F20 and F25, respectively) at least once over a 1-year period.

### RESULTS

A total of 195 suicides are included in the analysis, of which 41 occurred in the exposed group and 154 in the comparison

group (table 1). The proportion of suicides within the exposed group is almost 10 times greater than the corresponding proportion within the comparison group (see table 1). Overall, the distributions of the control variables differ considerably between the exposed group and the control group, although not to the same extent as the level of suicide (with the exception of substance abuse, social welfare reciprocity and criminality), confirming the marginalised condition of those in the final stages of the eviction process (see table 1).

The results from the penalised maximum likelihood logistic regression analysis are presented in table 2. In model 1, we see that eviction is significantly related to suicide, with a corrected OR of 9.21. In other words, those who had lost their legal right to the dwelling, and where the landlord had applied for the eviction to be executed, were approximately nine times more likely to commit suicide than those who had not been exposed to this experience. As can be seen in model 2, this relationship remains practically unchanged when adjusted for age, gender and place of birth.

When substance abuse, mood disorders and schizophrenia are included in the analysis, the effect of eviction remains significant but decreases considerably in strength (see model 3). The size of the OR is still large (5.94) and is not significantly different from

any of the ORs associated with these newly introduced controls (OR=4.82, 4.94 and 7.36, respectively).

In the final model, six additional control variables are introduced into the analysis (unemployment, social welfare reciprocity, education, region, family constellation and criminality). The effect of eviction remains significant but decreases slightly in strength, OR=4.42.

## DISCUSSION

To the best of our knowledge, this study is the first to examine the relationship between home evictions and suicide, using large-scale register data for an entire country.<sup>1–3</sup> This has made it possible to control, in an unprecedented way, for crucial factors that may have been biasing the relationship, including other economic stressors (such as unemployment and social welfare reciprocity<sup>1</sup>). The fact that the effect of an eviction remains not only significantly related to suicide in a detrimental way when adjusting for multiple background variables, but is also comparable to the size of the effects of the three most common mental health diagnoses found in completed suicide, has strong policy implications, three of which are particularly important.

First, we need to acknowledge that the prospect of losing one's home as a result of eviction may be experienced as a significant crisis.<sup>1</sup> Given that an eviction is the final step in a conflict between a landlord and a tenant, which is grounded on an asymmetric power relation between the two (in which the landlord has the upper hand),<sup>9</sup> it is not difficult to envisage eviction from a suicidogenic perspective as a traumatic rejection, that is, as an exquisitely shameful experience in which one's most basic human needs are denied.<sup>2</sup> Merely the strain that comes with a threat of an eviction has been suggested to be sufficiently powerful for the individual to feel that it is unbearable, hence, the suicidal act.<sup>13</sup>

Second, professionals and others who interact with individuals who are in the process of losing their homes may be important 'gatekeepers' in preventing suicide.<sup>1</sup> According to the WHO, a 'gatekeeper' is anyone who is in a position to identify whether someone may be contemplating suicide, and such gatekeepers are particularly important, since individuals at risk of committing suicide rarely seek help but may exhibit risk factors and behaviours that identify them as vulnerable when encountered.<sup>18</sup> In Sweden, social workers, enforcement authorities and landlords could play a key role in this respect. The Swedish legislation obliges the landlord to inform the social services when they serve a tenant with a notice to vacate in order to give the social services an opportunity to assess whether it is possible to help those threatened by the eviction at an early stage in this process. Furthermore, households can apply to the social services at any time for financial assistance to settle their rent arrears.<sup>4</sup>

Finally, from the perspective of the legislator, evictions are intended as a general preventative measure to promote the general payment moral in society.<sup>4</sup> In other words, an eviction is to be considered as a powerful corrective sanction, with a deterrent and exclusionary function (similar to other societal sanctions such as imprisonment).<sup>15</sup> Thus, on the one hand, the legitimacy of this measure needs to be viewed in relation to its unintended consequences. Knowledge on the degree to which evictions lead to suicide is an important part of this equation that has up to now been missing. Is suicide a reasonable outcome in relation to rent arrears of €1000–€2000? Earlier studies have suggested that 80% of those evicted in Sweden had rent arrears that were lower than €2000.<sup>4</sup> On the other hand, if

**Table 1** Distribution of dependent and control variables included in the models by the group served with an application for execution of an eviction (exposed group) and the 10% random sample of the Swedish population (comparison group)

Variables	Respondents	
	Exposed group (n=21 672)	Comparison group (n=741 675)
Suicide (%)	0.19	0.02
<i>Control variables</i>		
Age		
Year of birth (mean)	1969.03	1962.95
Gender		
Women (%)	40.84	50.80
Place of birth		
Foreign born (%)	27.60	16.21
Mood disorder		
Prescribed antidepressants (%)	17.62	10.11
Substance abuse		
Mental and behavioural disorders due to psychoactive substance use (%)	3.53	0.27
Schizophrenia		
Schizophrenia or schizoaffective disorders (%)	0.30	0.06
Unemployment		
Unemployed (%)	36.05	8.69
Social welfare reciprocity (%)		
Received social assistance	39.67	3.74
Education		
Pre-upper-secondary (%)	35.51	21.36
Upper-secondary (%)	53.64	45.12
Region		
Living in a big city	42.58	51.64
Family constellation		
Single (%)	57.04	35.78
Criminality		
Convicted of a criminal offence (%)	10.94	1.10

**Table 2** Penalised maximum likelihood logistic regression of home eviction and suicide in Sweden 2009–2013

Variable	Model 1 Crude OR (95% CI)	Model 2 Adjusted OR (95% CI)	Model 3 Adjusted OR (95% CI)	Model 4 Adjusted OR (95% CI)
<i>Independent variable</i>				
Home eviction				
Lost the right to the dwelling (reference category: other)	9.21 (6.54 to 12.98)*	8.84 (6.24 to 12.53)*	5.94 (4.10 to 8.62)*	4.42 (2.95 to 6.64)*
<i>Control variables</i>				
Age				
Year of birth (continuous)		1.00 (0.99 to 1.00)	1.00 (0.99 to 1.01)	1.00 (0.99 to 1.01)
Gender				
Women (reference category: men)		0.36 (0.26 to 0.50)*	0.31 (0.22 to 0.42)*	0.33 (0.24 to 0.46)*
Place of birth				
Foreign born (reference category: born in Sweden)		0.81 (0.55 to 1.20)	0.88 (0.60 to 1.30)	0.91 (0.61 to 1.35)
Mood disorder				
Prescribed antidepressants (reference category: other)			4.94 (3.62 to 6.74)*	4.56 (3.35 to 6.22)*
Substance abuse				
Mental and behavioural disorders due to psychoactive substance use (reference category: other)			4.82 (2.70 to 8.60)*	3.66 (2.01 to 6.65)*
Schizophrenia				
Schizophrenia or schizoaffective disorders (reference category: other)			7.36 (2.07 to 26.10)*	5.48 (1.54 to 19.50)*
Unemployment				
Unemployed (reference category: other)				0.99 (0.64 to 1.55)
Social welfare reciprocity				
Received social assistance (reference category: other)				0.98 (0.60 to 1.60)
Education				
Pre-upper-secondary (reference category: post-upper-secondary education)				1.21 (0.80 to 1.82)
Upper-secondary (reference category: post-secondary education)				1.10 (0.77 to 1.58)
Region				
Living in a big city (reference category: other)				0.87 (0.65 to 1.15)
Family constellation				
Single (reference category: other family constellations)				2.36 (1.74 to 3.19)*
Criminality				
Convicted of a criminal offence (reference category: other)				1.98 (1.15 to 3.38)*
Suicides	195	195	195	195
Total study population (n)	n=763 347	n=763 347	n=763 347	n=763 347

\*Statistically significant (at the 5% level).

one accepts the legitimacy of this corrective sanction, it needs to be accompanied by inclusionary and compensatory societal measures in order to minimise its long-term negative effects (as is the case for other societal sanctions, eg, rehabilitation programmes in prisons).<sup>15</sup>

### Limitations

Two main methodological considerations should be born in mind when interpreting the results of this study. First, we have not been able to assess the degree to which the legal loss of the tenant's right of possession to his/her dwelling has resulted in an actual loss of the home. According to the Enforcement Authority, approximately 30% of the applications result in an eviction being executed.<sup>19</sup> However, the landlord's application for an execution of the eviction is the final stage in the eviction process and has thus been preceded by several opportunities for the parties to reach a settlement in which the tenant may retain his/her dwelling.<sup>4</sup> Furthermore, interview studies among evictees have suggested that at least half of them had left their dwellings before the actual eviction date.<sup>14</sup> But more importantly, the suicidological literature on this topic, although scarce, has hitherto emphasised the importance of the time preceding

the actual loss of the dwelling, that is, the threat of being evicted.<sup>1 3</sup>

Second, as may be the case in situations where rare events are endemic to the data,<sup>13</sup> we have been unable to control for possible multiplicative effects that might be present between a home eviction and one or several of the background variables included in the final model. However, our research question has only been concerned with main effects. Furthermore, as long as the suicidological literature fails to include home evictions as an important social risk indicator of suicide, the strategy employed in this study will continue to be important, as, before we can address the complexities of a given social problem, we first need to acknowledge the existence of the social problem in itself.

### CONCLUSION

Home evictions have a detrimental impact on individuals' risk of committing suicide. This effect is statistically independent of other well-known suicidogenic risk factors present prior to the date of the judicial decision that, on the one hand, has established that the tenant was no longer entitled to his/her dwelling, and on the other hand, has been submitted by the landlord to the Swedish Enforcement Authority in order to have the

eviction executed. Although a few other studies have recognised this connection, ours is the first to examine the relationship between home evictions and suicide, using large-scale register data for an entire country. Future studies may need to consider the dynamics at the margin of the housing market in order to fully understand the process behind suicidal acts.

### What is already known on this subject

Evictions have been neglected as a possible risk factor in the study of suicide. In fact, the first study to systematically examine suicides linked to evictions and foreclosures was published in 2015 by Fowler and colleagues in the USA. Studying the fallout of eviction is of paramount importance for understanding the consequences of the Western world's most recent economic crisis.

### What this study adds

As a result of this study, we know that being faced with an eviction is detrimentally related to suicide, independently of well-known suicidogenic risk factors preceding the date of the threat of eviction, including gender, substance abuse, mood disorders, unemployment and welfare reciprocity. The legitimacy of using evictions as a general preventative measure to promote the general payment moral in society needs to be viewed in relation to this negative type of outfall that we are only now starting to become aware of.

**Funding** The research was financed by the Swedish Research Council for Health, Working Life and Welfare (Grant: dnr 2013-0452).

**Competing interests** None declared.

**Patient consent** Not applicable.

**Ethics approval** The Regional Ethic Board of Stockholm (reference number: 2014/24-31/5).

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Open Access** This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

### REFERENCES

- 1 Fowler KA, Gladden RM, Vagi KJ, *et al.* Increase in suicides associated with home eviction and foreclosure during the US housing crisis: findings from 16 national violent death reporting system states, 2005–2010. *Am J Public Health* 2015;105:311–16.
- 2 Serby MJ, Brody D, Amin S, *et al.* Eviction as a risk factor for suicide. *Psychiatric Serv* 2006;57:273–4.
- 3 Stack S, Wasserman I. Economic strain and suicide risk: a qualitative analysis. *Suicide Life Threat Behav* 2007;37:103–12.
- 4 Eriksson L, Stenberg S-Å, Flyghed J, *et al.* *Vräkt-utkastad från hus och hem i Stockholm 1879–2009*. Stockholm: Premiss förlag, 2010.
- 5 Flyghed J, Stenberg S-Å. *Vräkt i laga ordning*. Stockholm Konsumentverket, 1993.
- 6 Stenberg S-Å. *Vräkt ur folkhemmet. En studie av vräkningarna i Sverige under 1900-talet*. Stockholm Carlssons, 1990.
- 7 Desmond M, Kimbro RT. Eviction's fallout: housing, hardship, and health. *Social forces* 2015;sov044.
- 8 Stenberg S-Å, Kåreholt I, Carroll E. The precariously housed and the risk of homelessness: a longitudinal study of evictions in Sweden in the 1980s. *Acta Sociol* 1995;38:151–65.
- 9 Stenberg S-Å, van Doorn L, Gerull S. Locked out in Europe: a comparative analysis of evictions due to rent arrears in Germany, the Netherlands and Sweden. *Eur J Homelessness* 2011;5:39–61.
- 10 StataCorp. *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP, 2015.
- 11 Hilbe JM. *Logistic regression models*. Boca Raton, FL: CRC Press, 2009.
- 12 Firth D. Bias reduction of maximum likelihood estimates. *Biometrika* 1993;82:667–7.
- 13 Rojas Y, Stenberg S-Å. Early life circumstances and male suicide—a 30-year follow-up of a Stockholm cohort born in 1953. *Soc Sci Med* 2010;70:420–7.
- 14 Nilsson A, Flyghed J. Vräkt och hemlös? Marginaliseringsprocesser bland vräkta. *Socialmedicinsk tidskr* 2004;1:14–21.
- 15 Flyghed J. Vräkning—orsak eller verkan? En studie av marginellt boende. In: Runquist W, Swärd H, eds. *Hemlöshet Om olika perspektiv och förklaringsmodeller*. Stockholm: Carlssons, 2000:95–112.
- 16 Socialstyrelsen. *Vräkningsförebyggande arbete—stöd till socialtjänsten och andra aktörer*. Västerås: Edita Västra Aros, 2008.
- 17 Reutfors J. *Epidemiological studies of suicide in patients with psychiatric illness* [Thesis for doctoral degree, Department of Medicine]. Stockholm: Karolinska Institutet, Repro Print AB., 2010.
- 18 WHO. *Preventing suicide: a global imperative*. Luxembourg: World Health Organization, 2014.
- 19 Kronofogden. *Statistik om vräkningar*. 2015. <https://www.kronofogden.se/Avhysningsstatistik.html#> (accessed 29 Jun 2015).