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Socioeconomic disadvantage and suicidal behaviour during times of economic recession and recovery

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Chapter 3: Socioeconomic disadvantage and suicidal behaviour during times of economic recession and recovery

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Abstract

The UK and Ireland have emerged from the global economic downturn, currently enjoying periods of steady (or, in the case of Ireland, rapid) economic recovery. However, the UK's decision to leave the European Union has cast considerable uncertainty on the future economic prosperity of both countries. Improving our understanding of the association between rapid economic change, including recessions, economic recoveries and economic uncertainty, and suicidal behaviour may help policy makers develop better strategies for suicide prevention in this uncertain climate. This chapter reviews recent literature, considers how economic theories have sought to explain suicidal behaviour, and reflects on what potential actions might be taken to tackle suicide during times of economic change.

The review finds that, according to the majority of studies, unemployment is a key risk factor for suicidal behaviour in men; and this higher risk is exacerbated during a downturn or period of economic growth. This association between suicidal behaviour and unemployment is much weaker for women, although the risk may become more pronounced as more women occupy high positions in the workforce. Economic uncertainty, the magnitude of decline in income relative to local wages, female participation in the workforce, unmanageable debt, including the threat or fear or home repossessions, job insecurity and business downsizing may also increase risk. This implies a need for carefully developed, multi-faceted suicide prevention strategies that focus on the alleviation of risk factors, for instance through adequate social welfare payments, psychological support for

unemployed people and those at risk of redundancy, better training for workplace managers and increased access to not-for-profit debt advice services.

Introduction

The UK and Ireland have emerged from the global economic downturn, currently enjoying periods of steady (or, in the case of Ireland, rapid) economic recovery. However, the UK's recent referendum decision to leave the European Union has cast considerable uncertainty on the future economic prosperity of both countries, potentially increasing the risk of recession. Past recessions have been associated with increased risks of poor mental health and suicidal behaviour[6].

Increases in unemployment, severe economic deprivation and the loss of social status and identity seen in Vienna in the 1920s and 1930s were associated with poor psychological wellbeing (Jahoda, Lazarsfeld, & Zeisel, 1932). Subsequent meta-analyses (which statistically pool the findings of many different studies) and systematic reviews also suggest that rising unemployment, income inequalities and poverty are associated with an increased incidence of stress, anxiety, depression and poor psychological wellbeing (Paul & Moser, 2009). Poor mental health in turn increases the risk of suicidal behaviour.

An association between increased risk of suicidal behaviour among unemployed compared to employed people has also been seen in studies where these behaviours can be tracked over time, even after taking into account the influence of ('controlling for') factors such as age, gender, civil

[6] The literature on the links between economic conditions and health can loosely be divided into two types: individual-level studies, which explore the specific links between health outcomes, e.g. mental health status or suicidal behaviour, and the economic circumstances of specific individuals; and aggregate-level studies, which investigate how population risk of adverse health events relates to changes in macroeconomic conditions, such as unemployment rates or levels of economic growth. These studies can further be sub-divided by temporal design: cross-sectional studies provide a snapshot of these potential associations at one specific point in time, while longitudinal studies track changes in associations over time.

state, social class and education level (Platt & Hawton, 2000). Recessions may exacerbate risks linked to employment status. In the main, longitudinal aggregate-level studies of past recessions have found that suicide is one of the few causes of death that behaves in a 'counter-cyclical' manner, that is increasing when the economy contracts (Gerdtham & Johannesson, 2005; Gerdtham & Ruhm, 2006; Neumayer, 2004; Tapia Granados & Diez Roux, 2009).

Improving our understanding of the association between different risk factors for suicidal behaviour during periods of major economic change, not only covering recessions, but also periods of economic uncertainty and rapid economic growth, may help policy makers in the development of plans and effective strategies to tackle suicidal behaviour. This chapter reviews some of these issues.

It begins by briefly looking at how economists have sought to explain suicidal behaviour and then reviews literature on recent and ongoing economic shocks in the UK, Ireland and other country contexts. What, for instance, is known about risks of suicide in those who remain long-term unemployed, as well as for individuals who never regain lost social status (e.g. associated with a different job) when there is an economic recovery? Is it the case that some sections of the population are particularly vulnerable to suicide during these time periods?

The review also considers the impact of the changing nature of the labour market, including job insecurity and the impacts of business downsizing for employees who manage to retain their jobs when many others lose theirs. Economic downturns will also mean a loss of income and savings; the review examines what is known about the risk of suicide relative to the changing nature of unmanageable financial debt, including levels of personal insolvency and home repossessions. It then ends with a reflection on the potential for additional actions to counter possible risks during an economic shock as one additional element of mental health promotion and suicide prevention plans and programmes.

Economic theories of suicidal behaviour

For more than 100 years different theories have been developed on the association between economic conditions and suicidal behaviour (McDaid & Kennelly, 2009). These theories have their origins in sociological research; most famously, Emile Durkheim looked at the links between the structures and roles that individuals play in society and their risk of suicide, arguing that sudden adverse changes in economic circumstances, whether positive or negative, would increase the risk of suicide (Durkheim, 1897). Risks, he contended, might increase in times of economic boom, if widening disparities and social change lead to 'anomie' or fragmentation in society. Some later sociologists argued that only during an economic downturn are individuals more vulnerable because of their frustration at not being able to attain all of their material goals (Henry & Short, 1954). The converse view that suicide would only increase in times of economic prosperity, in part due to unfulfilled aspirations, has also been put forward. In this case, during a recession economic aspirations would be expected to decline faster than economic growth; thus, individuals would expect less than what they would actually receive (Ginsberg, 1966).

It was only in the 1970s that an economic theory of suicide, the Lifetime Utility Model (Hamermesh & Soss, 1974), was developed. This model, which remains the mainstay of economic research on suicide, assumes that suicide is usually an economically rational choice when an individual deems that the economic value of being alive is less than that of completing suicide. This economic value is dependent on levels of income, remaining life expectancy, plus a personal 'taste for living'. Any increase in income should reduce the risk of suicide, while advancing age (and therefore less time to generate income and accumulate assets) increases suicide risk.

The original lifetime utility model thus suggests that suicidal behaviour would be concentrated in older people; some economists have also hypothesised that high rates of suicidal behaviour sometimes seen in younger age groups may reflect their perception of higher levels of lifetime work-related income that will be lost if their economic circumstances deteriorate. However, younger people with unsatisfactory low levels of income, but without unmanageable debt, may be more

willing than older age groups to delay any suicidal actions and wait to see if their prospective incomes are likely to improve in future.

Later papers that build on this model suggest that a widening of income inequalities relative to peers is 'suicidogenic' (suicide-creating), influencing the economic value of life (Daly & Wilson, 2006; Daly, Wilson, & Johnson, 2013). Inequalities in subjective wellbeing in the community has been suggested as another risk factor (Daly, Oswald, Wilson, & Wu, 2011), while social capital, which in broad terms covers the level of social connectedness, trust or tolerance in a community, has been suggested to be protective (Helliwell, 2007).

Economists have also modified the lifetime utility model to try and explain gender differences. The higher rate of suicidal behaviour in men could be explained by their expected higher loss of earned income during a downturn, as well as because of their shorter life expectancy (Chung, 2009). Another version of the model suggests that the lower rate of suicide among women may mask an increased risk for some women following a major change in their employment status and income (Snipes, Cunha, & Hemley, 2011). One potential issue to explore further would be whether women who experience very high levels of social status and income loss feel this more intensely in societies where they have had to strive greatly to be treated equally in the workplace.

A recent addition to the economic literature is a Finnish contribution looking at changes in the severity of economic hardship and long-run trends in suicide (Korhonen, Puhakka, & Viren, 2016). This model assumes that individuals develop a 'habit' of a certain level of consumption of goods and services dependent on their typical level of income; the greater any reduction in this level of consumption due to adverse economic conditions, the greater the risk of suicide. The authors found that this relationship held when looking at suicide and economic data in Finland between 1875 and 2010, including several periods of economic crisis. Impacts were found to be less severe on younger people whose consumption habits would be more modest that older groups.

Economists have also considered non-fatal suicidal behaviour (NFSB), separately from suicide. Some have argued that NFSB in people of all ages may be a rational way to seek attention and help (Cutler,

Glaeser, & Norberg, 2001; Marcotte, 2003). Individuals may trade off the potential benefits of obtaining help and support against the potential risk of death or involuntary detention. The likelihood that an individual will seek help will be dependent on the probability that support will remove suicidal tendencies with certainty (Yaniv, 2001), or that the utility associated with help and support is greater than the disutility associated with potentially fatal suicidal behaviour (Marcotte, 2003). This theory would support investment in actions to promote better awareness of how life can be transformed with help and support to deal with suicidal behaviour.

Methods

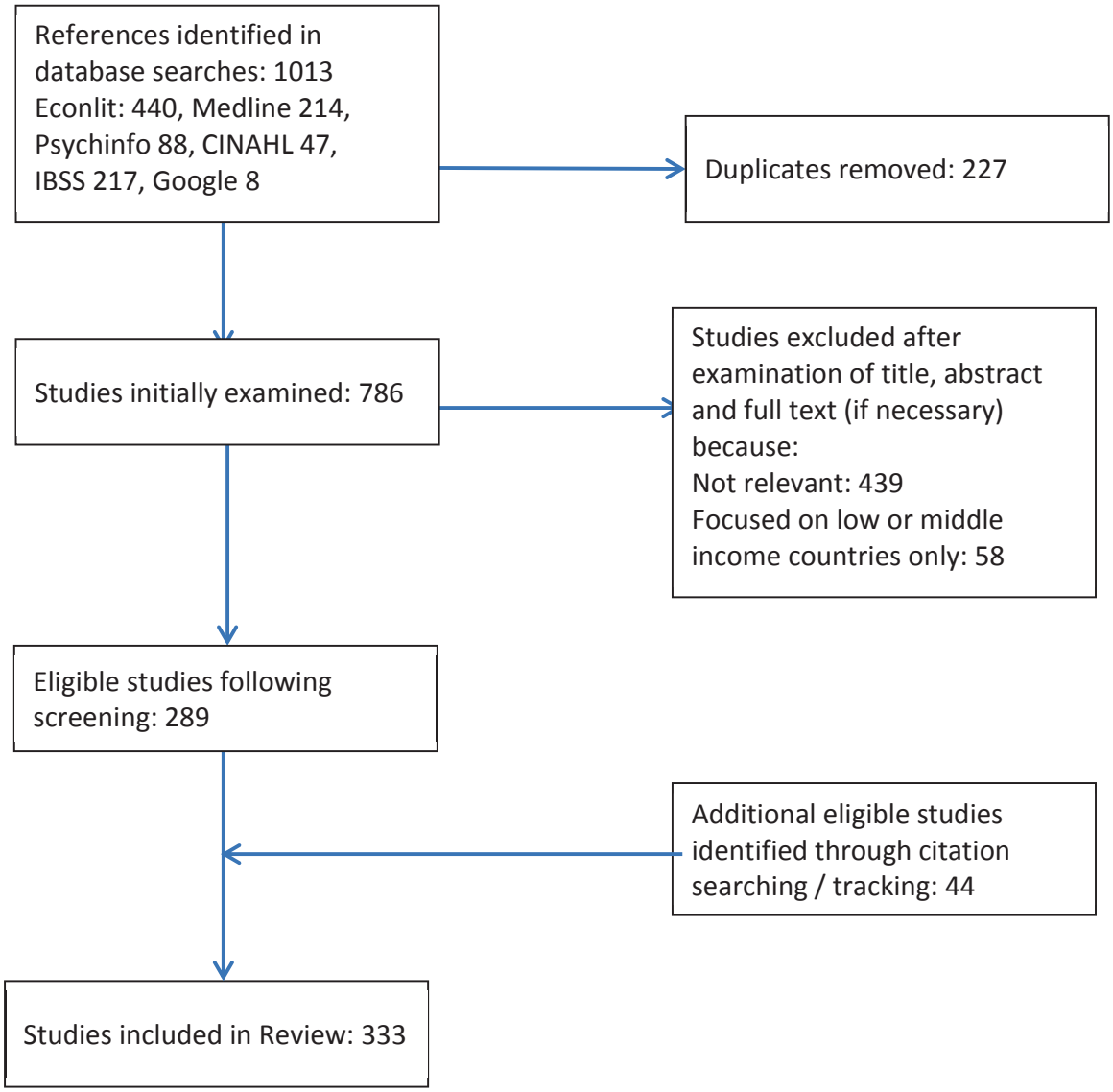
To help understand whether economic theory is consistent with observed behaviours a rapid review was undertaken using five electronic bibliographic databases (Cinahl, Econlit, Medline, the International Bibliography of the Social Sciences and PsychINFO). Further studies were identified from references in included studies, forward tracking citations of included studies and a very limited search of Google.

The review focused on identifying econometric or statistical analyses of the association between non-fatal suicidal behaviour (NFSB) and/or completed suicidal acts during times of economic recession (defined as two or more quarters of negative growth) or economic recovery following recession. Longitudinal studies, both individual- and aggregate-level, were eligible for inclusion. For the Econlit database the search strategy focused only on studies with variants of the word suicid* and self-harm. For the other four databases, studies were identified through a combination of keywords and subject headings related to suicide and NFSB, as well as terms related to economic circumstances, including economic recession, recovery, security, cycle, upturn, downturn, growth, debt, bankruptcy, mortgage, repossession, foreclosure, eviction, job insecurity/ security, downsizing, redundancy and financial strain. The Google search was restricted to combinations of suicide and/or self-harm with economic crisis, recession or recovery.

The initial focus was on evidence relating to the UK or Ireland, with additional selective illustrative examples from other (mainly) high income countries. All papers needed to have at least an

abstract/summary in English, in order for their eligibility to be determined. The review was restricted to studies published between January 2000 and May 2016, allowing the review to pick up on long-term follow-up studies related to the East European and Asian economic crises in the late 1990s, as well as the more recent 2008-2010 global economic downturn. As figure 3.1 shows, 333 relevant papers were identified; however, many focused generally on the association between general macroeconomic indicators and suicidal behaviour, rather than specifically on the impact of economic recession or recovery on suicide and are not discussed in detail in this chapter.

Figure 3.1: Search strategy flow diagram



Findings

Economic cycles, socioeconomic disadvantage and suicidal behaviour

Impacts in the UK and Ireland

Studies in the UK and Ireland, undertaken using aggregate-level data and analysing trends over time, are generally consistent with worldwide literature in suggesting that the link between suicide and the economy is important, but that a change in unemployment rates is one of many risk factors.

One recent study examined suicide rates and the onset of the recession in England and Wales, (Coope et al., 2014). While no significant association between the economic crisis and rates of suicide for women was found, suicide rates among men aged 35-44 rose significantly in the recession and rates of suicide among men aged 45-64 also continued on an upward trend seen since 2001. This increase in suicides in middle-aged men may have been in part due to economic uncertainty. There was no significant difference in changes in suicide rates by deprivation status; the suicide rate actually decreased significantly in men living in more deprived areas (although the rate remained much higher than that recorded for more affluent areas). The impacts of any decline in income may have been more keenly felt in communities used to enjoying higher standards of living than for those in areas where making ends meet had always been a challenge. The study also observed that the downward trend in suicides for men aged 16-34 in fact ended in 2006, prior to the crisis, possibly due to increases in personal bankruptcies and home repossessions.

An earlier English analysis also found a significant positive association between suicide and unemployment for men only, with the recession accounting for 40% of excess suicides between 2008 and 2010 (Barr, Taylor-Robinson, Scott-Samuel, McKee, & Stuckler, 2012). Increases in suicide rates were greatest in regions most affected by increased unemployment. Work that took account of regional time trends in England revealed an even more complex picture, with rates of suicide actually falling significantly in some regions that experienced a rise in unemployment (Saurina, Bragulat, Saez, & Lopez-Casasnovas, 2013). The authors of this latter study recommended that individual-level, rather than aggregate-level, analysis should be undertaken to fully understand the risk factors for suicide.

Ireland was also badly affected by the global economic crisis, with severe austerity measures having to be introduced, and rates of unemployment rising to a peak of 15% in 2012. A positive association between suicide or NFSB rates and the recession was found when comparing the periods 2000-2007 with 2008-2012 (Paul Corcoran, Griffin, Arensman, Fitzgerald, & Perry, 2015). Male suicide rates increased 57% more than would have been expected if pre-recession trends had continued. There was also an age effect for men, with suicides being significantly higher in the 25-44 and 45-64 age groups only. Hospital presentations of NFSB were significantly higher than expected in women.

The impact of economic circumstances on NFSB hospital presentations in Derby, Manchester and Oxford has also been examined, using individual-level data (Hawton et al., 2016). Following the most recent economic crisis there were significant increases in the proportion of all NFSB patients (both men and women) who were unemployed and / or reported problems with their employment situation in psychosocial assessments. Rates of self-harm increased overall in Derby and among males in Manchester, but there was no significant change in Oxford. These findings were largely consistent with changes in unemployment in the general population.

Wider European experience

The majority of recent analyses in European countries suggest the 2008-2010 economic crisis did have a significant, albeit variable, impact on suicide. Three different patterns of association between economic conditions and suicide (Fountoulakis et al., 2014) have been identified: an interruption in the downward trend in suicide caused by the economic crisis followed by a period of stabilisation (as in the UK), a temporary interruption of a downward trend in suicides, or a reverse in the downward trend (as in Ireland).

Several multi-country aggregate-level longitudinal European studies that include the UK and/or Ireland were identified. One analysis of eight western European countries, including the UK, modelled changes in the level of unemployment between 2008 and 2010, relative to unemployment rates in 2000 (Laanani, Ghosn, Jougla, & Rey, 2015). A dummy 'crisis' variable was also created to see if this confounded results. A small statistical association between increased unemployment and excess

suicide rates was found: a 1% increase in suicide was associated with a 10% increase in unemployment in the UK. The economic crisis variable was also found to be significant in the UK.

A positive association between changes in unemployment rates and changes in suicide rates between 2007 and 2011 was also reported for 20 EU countries, including the UK and Ireland (Reeves et al., 2015). Across all countries a 0.94% increase in suicides was observed for every 1% increase in unemployment. A 1% increase in unemployment following the economic downturn in 2008 has also been associated with an even greater 4.1% increase in suicide between 2000 and 2010 in an analysis covering 23 EU countries, including the UK and Ireland (Toffolutti & Suhrcke, 2014).

Changes in public expenditure, gross domestic product (GDP), unemployment rates and suicides from 1968 to 2012 were examined in Greece, Ireland, Italy, Portugal and Spain (Antonakakis & Collins, 2015). Controlling for time, gender and age-specific effects on suicide, a contraction in GDP growth in one year was consistently associated with an increase in suicides for all age groups in the subsequent year. Reductions in public expenditure were associated with increased rates of suicide in all age groups for men and for women aged 25-44. Older men in some of these countries may have been particularly vulnerable because of cuts in old-age pensions and other welfare benefits. In the medium term (five years after austerity measures) the most significant impacts on suicide were seen in men aged 65-89, among whom a 1% reduction in government spending was associated with a 2.42% increase in suicide. A positive association with measures of economic growth, such as GDP, was also identified, e.g. for 13 European OECD countries (Okada & Samreth, 2013) and 18 high income countries including Ireland and the UK (Barth et al., 2011).

Greece has perhaps been most dramatically affected by the economic crisis and has been much discussed in suicide literature. Greek studies point to a positive association between suicide and adverse economic conditions and increased levels of unemployment following the beginning of the economic crisis in 2010 (Madianos, Alexiou, Patelakis, & Economou, 2014; Rachiotis, Stuckler, McKee, & Hadjichristodoulou, 2015). Another aggregate-level analysis reported a significant association between the fiscal austerity actions that decreased Greek government expenditure and increasing

suicide rates; the association was most marked in older age groups that would be more reliant on state pensions and other welfare benefits (Antonakakis & Collins, 2014).

Positive associations between NFSB and rising unemployment in men were reported after the onset of the 2008 economic crisis in Andalucia, Spain (Cordoba-Dona, San Sebastian, Escolar-Pujolar, Martinez-Faure, & Gustafsson, 2014); for suicides in men in Spain (Lopez Bernal, Gasparrini, Artundo, & McKee, 2013) and Italy (Mattei, Ferrari, Pingani, & Rigatelli, 2014); and for suicide and several different economic downturn periods, controlling for socioeconomic characteristics and political change, using longitudinal aggregate-level data, in Portugal (Pereira dos Santos, Tavares, & Pita Barros, 2016).

Experience beyond Europe

Looking beyond Europe, longitudinal studies also tend to suggest an association between suicide and the state of the economy. Chang and colleagues, examining aggregate-level data from 54 countries in Europe and the Americas, estimated that there were around 4,900 excess suicides in 2009 compared with what would have been expected if pre-recession suicide trends had continued (S. S. Chang, Stuckler, Yip, & Gunnell, 2013). Suicide rates were 4.2% and 6.4% higher in men in Europe and the Americas, respectively, than expected. Rates were also 2.3% higher for women in the Americas, but no impact was observed in Europe. No excess suicides were found in four high income Asian countries (Japan, Korea, Hong Kong and Singapore).

Nordt and colleagues, examining data from 63 countries around the globe, similarly identified almost 5,000 excess suicides following the onset of the downturn. Nonetheless, nine times more suicides could be associated with unemployment than suicides associated with the economic downturn. They concluded that prevention strategies need to focus on risks associated with unemployment across the whole economic cycle and not just during a downturn. The impact of increased unemployment on suicide rates was found to be greatest prior to the onset on economic recession, especially in countries where the baseline rates of unemployment had been lower (Nordt, Warnke, Seifritz, & Kawohl, 2015).

A modest positive association (particularly for men) was found between suicide rates and provincial level economic performance in Canada over a 25 year period that included three economic downturns (Pierard & Grootendorst, 2014). US analyses found a positive association between unemployment and suicide during economic recessions, at national level for individuals aged 25-64 using aggregate-level data covering 80 years (Luo, Florence, Quispe-Agnoli, Ouyang, & Crosby, 2011) and a small but significant association between periods of economic downturn and suicide in aggregate-level analysis covering US states between 1980 and 2010 (Harper, Charters, Strumpf, Galea, & Nandi, 2015).

Another analysis covering all US states took account of a number of factors, including the rate of female participation in the labour force. Rates of suicide were higher for both men and women in states with higher levels of female labour force participation. It found that a 1% increase in unemployment was associated with a 3% increase in suicides in Minnesota, which has the highest female labour participation rate (63.5%); in contrast, no association was found in states such as West Virginia that had the lowest level of female participation (under 50%) (Phillips & Nugent, 2014). The authors suggested that, as more women were in employment, they would be vulnerable to the adverse impacts of a loss of income (as were men). States with higher rates of female participation, they contended, may also be 'more prosperous and progressive', so that the shock of an economic downturn is more keenly felt than in states with lower numbers of women in the workforce. The authors also suggested that men in these states might also be more affected by job loss in labour markets as they have to compete more with women than they had previously anticipated.

In Asia multi-country aggregate level studies also point to the impacts of the 1997 economic crisis on higher suicidal ideation and suicide. One such study found a correlation between greater levels of contraction in economic growth following the crisis and higher suicide rates in Japan, South Korea and Hong Kong (S.-s. Chang, Gunnell, Sterne, Lu, & Cheng, 2009). An Australian study found that economically inactive or unemployed men and women had suicide rates four and eight times higher respectively, than their employed counterparts over the period 2001-2010. It observed that the risk for economically inactive women was also almost double the risk of employed men (A. Milner, Morrell, & LaMontagne, 2014). Compared with 2006, the year before the financial crisis began in

Australia, the risks of suicide in unemployed/ economically inactive men and women were also significantly higher, by 22% and 19%, respectively, in 2008.

Not all studies in Europe and beyond conclude, however, that there is evidence of a positive association between economic downturns and suicidal behaviour (Barstad, 2008), (Hagquist, Silburn, Zubrick, Lindberg, & Weitoft, 2000), (Bussu, Detotto, & Sterzi, 2013) and (Andrés, 2005; Gusmao et al., 2013). In the US, analysis using national, state and county level data from all 50 states between 1976 and 2013 found that periods of economic recessions were associated with a small reduced risk of suicide, which more than offset the increased risk of suicide that was found to be associated with increasing unemployment. No interpretation was made by the author of this finding, other than arguing for more research into better understanding of the local versus national impacts of recessions (Ruhm, 2015).

Socioeconomic disadvantage, suicide and economic growth

Much of the literature identified in this review has focused on economic recession and suicidal behaviour. It is also important to know what long-term effects on suicidal behaviour may persist beyond the end of any economic crisis, including periods of rapid economic recovery such as that seen currently in Ireland, so as to help inform suicide prevention strategies. Most economic theories suggest that the risk of suicide increases with a widening of inequalities, economic aspirations, and human difficulties in coping with rapid societal change; this can also occur during a period of rapid recovery and growth. While there appear to be relatively few studies that focus on this issue, those that do tend to support these theories.

In the period of extraordinary economic growth in Ireland between 1996 and 2006 before the 2008-10 crisis, the association between aggregate-level data on suicide rates and employment status for men and women was examined (Corcoran & Arensman, 2011). Rates of suicide among female homemakers were found to have doubled relative to rates for employed women. Unemployed women had five times the level of suicide seen in employed women; there was a threefold higher level of suicide in unemployed men. Unemployment was also found to be a stronger risk factor for

suicidal behaviour when rates of unemployment were at their lowest; this finding is consistent with economic theory about the relative magnitude of the loss of status and income.

In Finland, suicides were also found to increase during a period of economic recovery in rural areas, in contrast to urban population centres (Pesonen et al., 2001). This may have been due to poorer access to services and loss of cohesion in rural communities compared to urban areas where economic investment in new infrastructure and opportunities are likely to have been greater. A positive association between rapid economic growth and suicides during a boom between 1985 and 1990, and negative association in a time of recession from 1990 to 1995, were also reported in Finland (Hintikka, Saarinen, & Viinamaki, 1999).

An individual level study following more than three million Swedes who had been employed in 1990 indicates that suicide rates for those who lost their jobs in the economic crisis in the mid-1990s and were still unemployed when the country was recovering were higher than during the crisis itself. These effects were more pronounced for unemployed men, who were 1.5 times more likely to have died by suicide in the period of economic recovery between 1997 and 2002 compared to those who were employed, whereas there was a 1.3 times increased rate of suicide among women (Garcy & Vågerö, 2012; Garcy & Vågerö, 2013). Other studies found that the risk of suicide in Sweden and Denmark (men only) in those who had lost their jobs was almost double that of individuals who remained in employment for up to four years following job loss (Browning & Heinesen, 2012; Eliason & Storrie, 2009).

Outside Europe higher rates of suicide were seen in Japan and South Korea for those who became long-term unemployed or whose incomes did not improve during the economic recovery (J. Chen, Choi, Mori, Sawada, & Sugano, 2012; Jihyung Hong & Knapp, 2013; J. Hong, Knapp, & McGuire, 2011). In Hong Kong, suicide rates, which had significantly increased as unemployment rose during the economic crisis from 1997-2003, continued to rise as the economy recovered (possibly due to an epidemic increase in the use of charcoal burning as a method of suicide around this time (K. P. Chan, P. S. Yip, J. Au, & D. T. Lee, 2005; Y.-Y. Chen, Yip, Lee, Fan, & Fu, 2010).

Context, culture and infrastructure will also play a role in some of the differences seen between countries. The positive association between economic growth and suicide has been seen in an aggregate-level studies in many, but not all, low and middle income countries, as well high income countries in Asia (Japan and South Korea) (Blasco-Fontecilla et al., 2012). One aggregate-level analysis of suicide over time found that increases in unemployment in lower income OECD countries may be associated with lower suicide rates, in contrast to what was observed for higher income countries (Noh, 2009). The author speculated that possible explanations included higher rates of economic growth being protective in some countries, higher levels of fertility being suggestive of stronger family bonds, as well as higher per capita public expenditure for older people and for unemployed people in some settings.

Job insecurity and downsizing

Across many European countries there is rising job insecurity, greater work intensity, greater reliance on temporary and transitional employment, a reduction in guaranteed working hour contracts, deterioration of work–life balance and increasing stress at work (Van Gyes & Szeker, 2013). These issues may be more acute for individuals with poor mental health. Evidence from Australia indicates that employed people with a history of mental health problems are more likely to experience future periods of unemployment more frequently than the rest of the workforce (Butterworth, Leach, Pirkis, & Kelaher, 2012; Olesen, Butterworth, Leach, Kelaher, & Pirkis, 2013). The duration of each spell of unemployment is also likely to be greater. Moreover, analysis of data from 27 European countries suggests that, during an economic downturn, the gap in the rate of employment between those with and without mental health problems widens (Evans-Lacko, Knapp, McCrone, Thornicroft, & Mojtabai, 2013).

This review identified several studies showing that job insecurity and business downsizing may also be risk factors for suicide. There is also a large literature indicating that risks to mental health among those who experience job insecurity may be as great as for those who are unemployed (Kim & von dem Knesebeck, 2015; ten Have, van Dorsselaer, & de Graaf, 2015), as well as for employees who keep their jobs and ‘survive’ a workplace downsizing (Brenner et al., 2014).

In three areas of England there was a significant increase in the proportion of employed men and women who presented to hospital for self-harm and also reported problems with employment in subsequent psychosocial assessment following the 2008 economic downturn (Hawton et al., 2016). In Finland, registry data showed that the risk of suicide for both men and women in unstable employment was twice as high as for those in stable employment. These difference remained significant during times of low and high unemployment (Mäki & Martikainen, 2012).

Analysis of the short-term impacts of the 2007 economic crisis in Australia also suggests that the small but significant rise in suicides among employed men and women may be due to the stress of increased job insecurity and changed working terms and conditions (A. Milner et al., 2014). Researchers in Australia found significantly increased rates of suicide in birth cohorts of men born from 1970-1974 onwards, and speculate that this may be associated with the rise in 'underemployment', i.e. individuals working part-time who would prefer to work full-time (Page, Milner, Morrell, & Taylor, 2013).

Additional analysis of the association between the economic crisis and suicide in Australia found that the elevated risk of suicide in unskilled and manual occupational classes compared to the highest occupation class increased from threefold to six fold following the financial crisis, with a substantial increased risk seen in the technical and trade classes. Possible explanations noted by the authors include a higher likelihood of job insecurity and poorer working conditions in lower class occupations, as well as a shift of workers from high to low class jobs (A. J. Milner, Niven, & LaMontagne, 2015).

Another example comes from South Korea where the association between macroeconomic conditions and suicide can vary according to occupational roles: compared with unskilled workers, the relative risk of suicide for mangers tripled during the 2008-2010 recession (Chan et al., 2014). The authors speculate that job insecurity and the pressures of managing company downsizing might have been contributory factors.

Unmanageable financial debt

Unmanageable debt has been associated with increased risks of poor mental health in the UK (Fitch, Hamilton, Bassett, & Davey, 2011; Meltzer, Bebbington, Brugha, Farrell, & Jenkins, 2013) and in the US (Houle, 2014; Zurlo, Yoon, & Kim, 2014). In Spain 90% of women and 84% of men in mortgage arrears and threatened with eviction had poor mental health compared with rates of 15% and 10% in the general population (Vasquez-Vera, Rodriguez-Sanz, Palencia, & Borrell, 2016).

In an analysis of 20 EU countries, including the UK and Ireland, during the recent recession a 0.54% increase in suicides was observed for every 1% increase in indebtedness (Reeves et al., 2015). There is also some evidence of a significant increase in men and women presenting at hospital for NFSB who reported problems with their finances during the recession (Hawton et al., 2016). In subsequent psychosocial assessment women also reported more problems with their housing status.

Interviews in England with both employed and economically inactive individuals who self-harmed as a result of economic pressures document the profound levels of distress experienced as a result of unmanageable debt. For instance, one man described how unmanageable debt and fear of a visit from the bailiffs, coming on top of employment difficulties, was the final tipping point for self-harm (Barnes et al., 2016). Analysis of coroner records of nearly 300 people who died by suicide in England in 2010 and 2011 has also revealed that "4% of suicides entirely related to the recession, employment or financial-related difficulties and [there was] a further 9% where such difficulties contributed a lot to the suicide" (Coope et al., 2015).

In the US, NFSB patients, compared to those treated for accidental injuries, have double the chance of being declared bankrupt within two years, and 1.7 times the rate of having already been bankrupt in the previous two years (Kidger, Gunnell, Jarvik, Overstreet, & Hollingworth, 2011). Meta-analysis of two Hong Kong and two Chinese studies reported that individuals in debt were almost eight times more likely to complete suicide compared to individuals not in debt; when including an additional Finnish study (Hintikka et al., 1998) that looked at NFSB, they were still almost six times more likely to complete suicide or experience a NFSB compared to those not in debt (Richardson, Elliott, & Roberts, 2013).

Stigma and shame may be powerful incentives in some cultures, as in Japan where an individual may feel that the burden of being a debtor to other members of the family or friends (who typically act as guarantors for loans) is greater than that of suicide (J. Chen, Choi, & Sawada, 2010). Credit card and other over-indebtedness was also identified as a significant factor for suicide in a cross-sectional study interviewing relatives of individuals who died by suicide in Hong Kong (K. P. M. Chan, P. S. F. Yip, J. Au, & D. T. S. Lee, 2005).

Evictions and home repossessions

There is some limited research on the association between repossessions of property, evictions and suicide. The not-for-profit Irish Mortgage Holders Association recently conducted a survey of 488 of its clients and found that 31% had had suicidal thoughts in the previous four weeks, with 22% having active plans for suicide (McCormack, 2016). A Swedish study linked data on 23,000 court imposed rental eviction notices with use of mental health services and records of suicides or deaths of undetermined cause in the following 12 months (Rojas & Stenberg, 2016). After controlling for mental health, socioeconomic status, receipt of social welfare benefits, having a criminal record and being a substance abuser, individuals who received an eviction notice were four times more likely to complete suicide than the general population.

Analysis of trends in rental eviction notices that had been cited as a contributory factor to suicide was conducted in the US (Fowler, Gladden, Vagi, Barnes, & Frazier, 2015). Suicides associated with the risk of loss of housing in 2009 and 2010 were more than double those seen in 2005, prior to the onset of a major US housing crisis in 2006. Eviction- or foreclosure-related suicides accounted for 10% of all financial distress-related suicides in 2005, rising to 16% by 2009. Nearly two-thirds (63%) of all suicides occurred before the actual loss of housing, reflecting the impact of the fear of loss of a home. Analysis of coroner records of suicides in the US also documents how both fear and actual loss of a home, with all of its significance in terms of a loss of identity and being part of a community, could be the ultimate trigger for suicidal actions (Stack & Wasserman, 2007).

Another US study compared data on suicide with changes in rates of home repossession, looking at age-specific effects across the life course between 2005 and 2010 (Houle & Light, 2014). Every 1% increase in the rate of immediate home repossessions by home builders and estate agents who still directly owned these homes was significantly associated with a 0.8% increase in the rate of suicide for the 46-64 year age group. Looking at a broader measure of home foreclosure, which covers all stages of this process (receipt of legal notice of foreclosure, the property being put up for public auction or sale, as well as home repossession) there were positive associations between an increase in the rate of foreclosure and the rate of suicide in both the 30-45 and 46-64 year age groups. The size of this association for the 46-64 year age group was more than double that seen in the 30-45 age group. There was also a threefold greater association of suicide in an analysis of civil court cases in Ohio for home repossessions compared with individuals who died from other causes (Cook & Davis, 2012).

Discussion

This chapter has reviewed recent evidence on the association between economic shocks and suicidal behaviour from an economic perspective. This evidence, including UK and Irish studies, is broadly consistent with sociological and economic theories that suggest that individuals experiencing socioeconomic disadvantage during periods of economic change are at increased risk of suicidal behaviour. The review also supports the hypothesis that there can be an elevated risk of suicide when crises end, especially for individuals or communities whose economic circumstances do not recover. These increased risks can last for several years; potentially, they may be further compounded if governments maintain austerity measures in the longer-term beyond the end of any period of economic crisis.

There can be significant differences in risk for population sub-groups. Gender differences were reported in many studies, mainly identifying middle-aged men as a high risk group. This might in part be an artefact of focusing on employment rather than factors that affect individuals of different ages, e.g. any change or perceived change in old-age pensions or the impact of changes in interest rates on different age groups with different levels of debt and capital assets.

It may also indicate, consistent with some economic theories of suicide, that the most socially deprived may be less vulnerable to new economic shocks than individuals with more assets to lose, but this may depend on environmental factors, such as the strength of social welfare protection systems. Patterns of suicidal behaviour in a more equal society, even if overall median incomes are low, may be very different to those seen in societies with wide divergence in levels of income. The variation in the severity and duration of unemployment seen during an economic crisis might increase vulnerability to suicide, but psychologically vulnerable individuals might also be more likely to become unemployed and therefore also at greater risk of suicidal behaviour.

There is also a literature on the association between working conditions, debt and suicide. The review suggests that increased involuntary part-time work, job insecurity and workplace downsizing can be important risk factors for suicidal behaviour. Individuals with pre-existing mental health problems may be particularly vulnerable to the risk of job loss. This evidence base, although limited, is in line with studies that have associated these labour market changes with an increased risk of poor mental health.

There is also empirical evidence that unmanageable debt is a risk factor for suicidal behaviour. The experience of being declared bankrupt, losing one's home or not being able to repay debts to family and friends is not only stressful but can also be humiliating. Indeed, one possible explanation for the rise in suicide rates prior to the economic crisis is the mental health impact of worry about losing a home as economic conditions began to worsen (Coope et al., 2014).

Limitations

While these studies broadly suggest a positive association between unemployment and/or economic inactivity and suicidal behaviour, there are a number of limitations in the review process. The reader must exercise caution in the way in which the results of studies are interpreted. This is particularly the case when much of the evidence is drawn from very different contexts to those seen in Ireland or the UK.

First, this is a very rapid review focusing solely on English language literature and a limited set of bibliographic databases; thus, not all relevant research may have been identified. While more than 300 relevant papers were included in the review, it was not possible to go through all of these systematically; the chapter has had to draw selectively from this literature.

Second, the review is dominated by aggregate-level time series studies; while these can assess the effect of recessions and economic growth on population suicidal behaviour, more studies are needed that look at the experience of individuals within the population over time. These individual-level studies may be more complex and time-consuming to undertake but can be very revealing and help identify specific risk factors for different types of individuals within the population. This, is turn, can help policy makers and planners decide whether specific interventions might be targeted at specific vulnerable population groups. For instance, individual-level studies that have analysed rates of suicide by age, gender, employment status and other characteristics in several countries, including Australia, Finland, Ireland and UK, have found an elevated risk of suicide in unemployed women who lose their jobs (Corcoran & Arensman, 2011; Hawton et al., 2016; Mäki & Martikainen, 2012; Milner et al., 2014); moreover, the increased risk in some settings may be greater than that for men. Such findings are not typically found in aggregate-level studies, but they may strengthen the case for more focus on actions to support these women.

Third, most of the material examined in this review has concentrated on a narrow range of studies focused mainly on changes in employment rates and income levels during times of economic change. These are just two of many potential indicators of any wider economic malaise or period of recovery. Security of housing tenure, social capital, population density, interest rates and social welfare safety net features, including bankruptcy protection, are among other macro-level factors that may be either protective or increase risk in different contexts.

Fourth, no detailed assessment of the methodological quality of the different studies included in this review has been undertaken. This would be a very extensive undertaking; but, in any case, making comparisons between studies is difficult because of the diversity of methods that have been used. Although generally the studies in this review undertook some multivariate analysis controlling for

some additional factors (other than economic conditions) that might also influence suicidal behaviour, approaches to the inclusion of additional factors are inconsistent. These quality issues are further compounded by differences within and across countries in the way that suicidal events are recorded: the extent to which potential suicides may have been recorded as accidental deaths from some external causes, or as deaths where intent is unidentified, is unknown.

There may also be additional context-specific factors to take into account, such as the level of alcohol consumption in some northern and eastern European countries, or differences in social taboo and shame associated with suicide, job loss and unmanageable debt in Japan and South Korea. The severity and duration of any economic shock may also have a major influence on suicidal behaviour, but one recent critique of studies suggests that this is typically not considered (Oyesanya, Lopez-Morinigo, & Dutta, 2015).

Implications for policy, practice and research

There are many different facets to suicide prevention policy which go beyond the scope of this chapter. The discussion here is restricted to countering specific economic factors described earlier in the chapter.

One set of actions needs to focus on alleviating some of the risks associated with unemployment. Adequate social welfare payments can help reduce the risk of suicidal behaviour among unemployed people (Cylus, Glymour, & Avendano, 2014; Howden-Chapman, Hales, Chapman, & Keskimaki, 2005; Stuckler, Basu, Suhrcke, Coutts, & McKee, 2009): the effects of unemployment on suicide during past recessions have been more pronounced in countries in southern and eastern Europe where social protection systems are relatively weak (Norström & Grönqvist, 2015).

Such payments can be complemented by active labour market programmes to help support individuals seek and obtain employment (see chapter 4). These programmes may need to focus on individuals for whom unemployment is still a relatively recent occurrence and who therefore may be more vulnerable to suicide as a result of loss of status and income than might be the case for someone who has been long-term unemployed.

Some economists have also argued that, as future income uncertainty increases, so to must the level of guaranteed minimum income to protect against suicide risk, in the same way as arguments have been made for minimum income for healthy living rather than just surviving for those who are excluded from work and at higher risk of poverty and social isolation (Bambra, 2011) This may also have implications for safeguarding the value of old age pensions in particular. The income from safety nets needs to be much higher for older compared to young people, as otherwise older people may still not consider their future potential income to be sufficient to avoid suicide (Suzuki, 2015).

There are opportunities for workplaces to provide better psychological support to employees, in addition to standard careers guidance and retraining, as part of any redundancy package. This may help former employees strengthen their ability to cope with changed circumstances and actively seek work. Governments may also play a role. One way of identifying individuals in need who may be reluctant to seek help is to provide information and support about mental health and suicide at job fairs that may be organised or supported by government following major job losses in a locality, as for instance has happened recently in Scotland (Stalker, 2016).

Given the risk associated with job insecurity and workplace downsizing, it is also important to evaluate the effectiveness of workplace occupational health programmes that cover the negative aspects of downsizing, in addition to more traditional measures to promote better mental health at work. This includes support for managers and human resource departments who may be responsible and therefore affected by the downsizing process, as well as for staff who may be experiencing job insecurity. Government can again play a role here by strengthening regulations governing different employment contracts and safeguarding employment rights.

The average UK household is now set to owe close to £10,000 in unsecured debt by the end of 2016, with the total debt to income ratio projected to reach a historical high of 172% by 2020 (Westcott et al., 2015). The current easing of the mortgage credit market may also increase the risk of a return to a higher number of defaults. This emphasises the importance of financial advice and support to those at risk of having unmanageable debts, in order to help reduce the risk of mental health problems and suicidal behaviour (Hintikka et al., 1998; Holkar & Mackenzie, 2016; Kameyama et al., 2011; Wahlbeck

& McDaid, 2012). Measures can include access to not-for-profit debt advice agencies, stricter regulation of lenders and better financial literacy programmes in school.

Early intervention to help those already in debt may be important. In Sweden landlords are required to inform local government authorities if they wish to evict their tenants; this can give the local authority a chance to see if it can help the tenant avoid eviction (Rojas & Stenberg, 2016). Staff working in the banking and finance sectors might also be trained to improve recognition of the risk of suicide among clients who have mortgage and other debt problems (Fitch & Davey, 2010); they could then act as gatekeepers to appropriate psychological and social welfare support services. Debt relief mechanisms can also help. Debt relief orders introduced in 2007 in the UK can, in some circumstances, provide protection against the loss of assets for those who do not own their own home; one survey suggests that their use has been associated with improvements in mental wellbeing (Insolvency Service, 2015).

Research can also be strengthened. Encouraging investment in longitudinal, individual-level research can help improve our understanding of risk factors for suicide during times of economic change for different population groups. For example, valuable insights into the heightened risks of suicide for women in insecure jobs were highlighted through these types of study.

Finally, while estimates have been made of the costs of a suicide (McDaid, 2016b), little is still known about the cost-effectiveness of many actions such as those outlined in this chapter. However, where work has been done, economic analyses suggest that there is also a powerful economic, as well as moral, case for taking action (McDaid, 2016a; McDaid & Kennelly, 2009; Vasiliadis, Lesage, Latimer, & Seguin, 2015). Measures that can help reduce the risk of NFSB and suicide can help avoid costs not only to the health system, but also to many other sectors, such as the police, transport and legal sectors, as well as to society as a whole. This evidence base needs to be urgently expanded in order to strengthen the case for policy makers to invest more resource in suicide prevention.

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