

EPA guidance on mental health and economic crises in Europe

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Abstract This European Psychiatric Association (EPA) guidance paper is a result of the Working Group on Mental Health Consequences of Economic Crises of the EPA Council of National Psychiatric Associations. Its purpose is to identify the impact on mental health in Europe of the economic downturn and the measures that may be taken to respond to it. We performed a review of the existing literature that yields 350 articles on which our conclusions and recommendations

are based. Evidence-based tables and recommendations were developed through an expert consensus process. Literature dealing with the consequences of economic turmoil on the health and health behaviours of the population is heterogeneous, and the results are not completely unequivocal. However, there is a broad consensus about the deleterious consequences of economic crises on mental health, particularly on psychological well-being, depression, anxiety disorders, insomnia, alcohol abuse, and suicidal behaviour. Unemployment, indebtedness, precarious working conditions, inequalities, lack of social connectedness, and housing instability emerge as main risk factors. Men at working age could be particularly at risk, together with previous low SES or stigmatized populations. Generalized austerity measures and poor developed welfare systems trend to increase the harmful effects of economic crises on mental health. Although many articles suggest limitations of existing research and provide suggestions for future research, there is relatively little discussion of policy approaches to address the negative impact of economic crises on mental health. The few studies that addressed policy questions suggested that the development of social protection programs such as active labour programs, social support systems, protection for housing instability, and better access to mental health care, particularly at primary care level, is strongly needed.

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Introduction

The current economic crisis, widely known as the Great Recession, is a consequence of a number of imbalances

that are affecting the real economy worldwide. Originating in the financial system, it has led to a deterioration of the socio-economic climate experienced by many countries in the world over the past 8 years and its endpoint is not yet perceived in the short term. In the context of a globalized economy, the financial crisis has seriously hit Europe, causing increases in national debt levels, decreased GDP, and worsening unemployment rates [1]. As a result, in 2012, 124.2 million people, or 24.8 % of the European population were at risk of poverty or social exclusion, compared with 24.3 % in 2011 [2]. The meltdown has not been merely a financial event but rather a challenge to basic assumptions of many European societies, such as the welfare state and principles of solidarity.

Economic downturns bring multiple types of economic hardships to the population, such as unemployment and declines in household economic resources. Some individuals may be affected by one hardship, but not by others, some may experience multiple hardships, while others do not observe any negative effects on their own employment or financial situation at all. Focusing on only one type, such as an individual's own unemployment, may underestimate negative effects on health of those who did not lose a job, but whose well-being was affected by, for instance, a decrease in a number of work hours available to them (via a drop in income) or the unemployment of others who normally contribute to household income [3].

Economic crises are not new. We can define three major economic crises in the twentieth century: the Great Depression (1929), the Post-communist Depression (early 1990s), and the East Asian financial crisis (late 1990s). Most experts agree on the Great Depression of the 1930s as the main reference for the current economic situation, not so much by the economic conditions that caused them, but because of their social, political, and cultural impact [4]. There are many studies dealing with the consequences of economic turmoil on the health and health behaviours of the population, and the results are not completely unequivocal [5]. Controversies arise, for an instance, concerning the effects of financial downturns on overall mortality rates and the health status of the population [6–8]. At the same time, it is known the link between health and the economic prosperity of a society [9, 10].

However, there is a substantial agreement about the deleterious effects of declining economic conditions on mental health [11], including among others depression, anxiety, substance abuse, suicide, and psychological distress [12]. These negative outcomes can be particularly relevant in already vulnerable population groups, such as people with mental disorders, children, elderly, migrants, uneducated, ethnic minorities, or social/economically deprived [13–18]. For many people, what they are faced with in times of economic downturn can best be understood as an acute

exacerbation of a chronic condition [19]. Specific factors, such as unemployment, debts, or housing instability, may have an important role in the onset or persistence of mental disorders or behavioural problems [20–22]. Social and health policies can contribute to exacerbate or alleviate these undesirable consequences; as an example, austerity regulations affecting health or social spending may be particularly harmful [23–25]. Many of the adverse effects on mental health can be pervasive or manifest fully long after the onset of the crisis. Therefore, it is possible that we are not yet able to understand the full impact of the crisis on the mental health of European citizens [26].

While human suffering is immense, crises can offer an opportunity for change [10]. Several studies and reports have pointed out a continuing need for more and better mental health care in Europe, even prior to the current economic crisis [27–29]. A time of need can provide the impetus to address structural changes postponed for long. A cost-effective and equitable mental health care requires controlling impeding factors, such as institutional inertia, poor coordination, and cooperation mechanisms among sectors, levels of government and agents, the consolidation of non-evidence-based paradigms of treatment and care reinforced by lobbies and cultural patterns, and inadequate collaboration among experts, practitioners, and health authorities. However, these factors may be counterbalanced by political will and by the knowledge provided by European and non-European experiences and studies. The situation arising from the current economic depression offers a major chance to introduce needed changes in mental health-oriented actions [30–32].

Given its relevance, the topic of mental health and economic crises was chosen by the Guidance Committee of the European Psychiatric Association (EPA) and its implementation was entrusted to the Working Group on Mental Health and Economic Crises of the EPA Council of National Psychiatric Associations.

Aims and objectives

The central aim of this review is to identify the impact on mental health in Europe of the economic downturn and the measures that may be taken to respond to it. The underlying objectives are:

- To identify how the economic downturn may impact directly on the mental health of European people.
- To recognize who is likely to be vulnerable or resilient to the effects of the economic crises.
- To identify interventions and policy approaches that may best protect mental health during the economic turmoil and its aftermath.

- To identify major areas of uncertainty and specify needs for further studies.

Therefore, we first present the data available so far on different aspects of the economic crises and mental health, such as morbidity, health indicators, risk/protective factors, and consequences on vulnerable groups. Finally, we propose a number of recommendations, being aware of the difficulties in implementing some of these measures, but recognizing also their public health significance and potential for implementation. Since our primary interest in the mental health of European people, we will put more emphasis on studies conducted in Europe and particularly on those concerned with the current crisis, but will use the global literature as a way to contrast data and to clarify the most controversial points.

Publication review

Method

In general terms, bibliography on health and economic recessions is procyclical; it tends to increase during crises and immediately after. Accordingly, most affected countries or regions produce a significant bulk of the studies. Another important characteristic is that many of the articles are opinion papers, attempting to modify the policies being carried out. As far as Europe is concerned, the impact of the financial downturn has varied significantly in the different European countries, and the available data vary accordingly. On the other hand, there is not a defined set of mental health indicators related to economic crises, and the existing information on the different European countries is heterogeneous. This makes it thus impossible to make a systematic comparison of the effects of the economic crisis on mental health across European countries, and our recommendations are based on a narrative review.

Given these considerations, our aim was to obtain the maximum possible information from data-based studies. The review articles have also been taken into account systematically. As for the data coming from other economic regions, particularly the USA and Eastern Asia have also been reviewed as they contained substantial valuable information. However, the translation of these data to the European reality must necessarily be qualified.

We ran separate electronic database searches in PubMed, MEDLINE (OvidSP), EMBASE (OvidSP), PsycINFO (OvidSP), CENTRAL (The Cochrane library) to ensure that the search was as comprehensive as possible (Table 1). The searches were completed on 31 December 2014. There were not any language or date limitations, given that at least an English abstract was available. Furthermore, we

performed a manual search on Google and reference lists of review articles.

Results

The results of the searches are outlined in a PRISMA diagram (Fig. 1). We found 2906 potentially interesting references through electronic search. As 843 references were repeated, only 2063 were screened. Of these, 1281 references were excluded because: their objective was different from our review; the papers were written in languages other than English, German, Greek, Portuguese, Polish, French, or Spanish and/or have no abstract available in English. In this way, we considered 782 studies for review. Further discussion among the reviewers excluded 488 records. In total, 60 ad hoc additional references selected through manual search were added. Finally, our work is based on the 354 review papers or research articles concerned with economic crises and mental health in Europe which met our inclusion criteria, although selected articles from other economic regions have been also incorporated. The process of filter and selection of the references was made by two independent researchers with experience in reviews and in the topic. In case of doubt, a third researcher was consulted to determine inclusion and/or exclusion of the reference. Some references first published online appear with their definite date of publication in 2015. Tables 2, 3, 4, and 5 show a summary of the main findings of the reviewed epidemiological studies conducted in Europe during the current economic downturn. However in the text are cited and described also relevant epidemiological studies from other global zones and/or previous economic crises, as well as review and opinion articles.

Morbidity

The question of whether economic decline causes psychological problems has been studied in different ways. There are two basic types of studies: individual-level and aggregate-level studies. Both types have their advantages and shortcomings. A major advantage of aggregate-level studies is that they reflect environmental effects of changes in the economic situation beyond the sum of the individual effects, such as job losses. Even without the presence of a major financial downturn, psychiatric morbidity has been linked to adverse economic conditions in many studies [33–35], including several national surveys [36]. Particularly, higher frequencies of the conditions now called the “common mental disorders” (mostly non-psychotic depression and anxiety) have been found in subjects with lower socio-economic status (SES) at individual or ecological (i.e. family, neighbourhood) level. Low SES has been

Table 1 Search terms and syntax of the electronic literature search

Database	Search strategy	Number of retrieved documents
PubMed	<p>((“Economic Recession”[Mesh]) OR (Economic recession*[tiab]) OR (Economic crisis[tiab]) OR (Economic crises[tiab]) OR (Economic cycle*[tiab]) OR (Economic collap[s]*[tiab]) OR (Economic downturn*[tiab]) OR (Economic depressi*[tiab]) OR (Economic constraint*[tiab]) OR (Banking recession*[tiab]) OR (Banking crisis[tiab]) OR (Banking collapses[tiab]) OR (Banking downturn*[tiab]) OR (Banking depress*[tiab]) OR (Banking constraint*[tiab]) OR (Financial recession*[tiab]) OR (financial crisis[tiab]) OR (financial crises[tiab]) OR (financial collap[s]*[tiab]) OR (financial downturn*[tiab]) OR (Financial constraint*[tiab]) OR (Great recession[tiab]) OR (Great crisis[tiab]) OR (Global crisis[tiab]) OR (Austerity[tiab]) OR (Restrictive poli*[tiab])) AND (“Mental Disorders”[Mesh]) OR (Mental disorder*[tiab]) OR (Mental disease*[tiab]) OR (Mental illness[tiab]) OR (“Mental Health”[Mesh]) OR (Mental health[tiab]) OR (“Psychiatry”[Mesh]) OR (Psychiatr*[tiab]) OR (“Suicide”[Mesh]) OR (Suicid*[tiab]))</p> <p>(Exp economic recession/OR Economic recession*.ti.ab. OR Economic crisis.ti.ab. OR Economic crises.ti.ab. OR Economic cycle*.ti.ab. OR Economic collap[s]*.ti.ab. OR Economic downturn*.ti.ab. OR Economic depressi*.ti.ab. OR Economic constraint*.ti.ab. OR Banking crisis.ti.ab. OR Banking crises.ti.ab. OR Financial recession*.ti.ab. OR financial crisis.ti.ab. OR financial crises.ti.ab. OR financial cycle*.ti.ab. OR financial collap[s]*.ti.ab. OR financial downturn*.ti.ab. OR financial depressi*.ti.ab. OR Financial constraint*.ti.ab. OR Great recession.ti.ab. OR Great crisis.ti.ab. OR Global crisis.ti.ab. OR Austerity.ti.ab. OR Restrictive poli*.ti.ab.) AND (Exp Mental Disorders/OR Mental disorder*.ti.ab. OR Mental disease*.ti.ab. OR Mental illness.ti.ab. OR Exp Mental Health/OR Mental health.ti.ab. OR Exp Psychiatry/OR Psychiatr*.ti.ab. OR Exp Suicide/OR Suicid*.ti.ab.))</p> <p>(MeSH descriptor: [Economic Recession] explode all trees OR Economic recession*.ti.ab OR Economic crisis.ti.ab OR Economic crises.ti.ab OR Economic cycle*.ti.ab OR Economic collap[s]*.ti.ab OR Economic downturn*.ti.ab OR Economic constraint*.ti.ab OR Banking recession*.ti.ab OR Banking crisis.ti.ab OR Banking collapses.ti.ab OR Banking downturn*.ti.ab OR Banking depressi*.ti.ab OR Banking constraint*.ti.ab OR Financial recession*.ti.ab OR financial crisis.ti.ab OR financial crises.ti.ab OR financial cycle*.ti.ab OR financial collap[s]*.ti.ab OR financial downturn*.ti.ab OR financial depressi*.ti.ab OR financial constraint*.ti.ab OR Great recession.ti.ab OR Great crisis.ti.ab OR Global crisis.ti.ab OR Austerity.ti.ab OR Restrictive poli*.ti.ab) AND (MeSH descriptor: [Mental Disorders] explode all trees OR Mental disorder*.ti.ab OR Mental disease*.ti.ab OR Mental illness.ti.ab OR MeSH descriptor: [Psychiatry] explode all trees OR Psychiatr*.ti.ab OR MeSH descriptor: [Suicide] explode all trees OR Suicid*.ti.ab)</p>	581
MEDLINE 1946 to December Week 5 2014, In-Process & Other Non-Indexed Citations, Daily Update (OvidSP), EMBASE 1974 to 2014 Week 50 (OvidSP), PsycINFO 1806 to December Week 5 2014		1915
CENTRAL (COCHRANE)		410

also associated with an increased risk of suicide [37, 38], poor self-rated health [39], and pervasive depression [5, 40, 41]. Obviously, recessions can magnify socio-economic inequalities, which in turn increase the risk of poor mental health [37, 42], particularly in high-risk groups such as unemployed/disabled individuals or those with less education [43]. Here we describe the findings related to the impact of economic turmoil on certain mental disorders and mental health indicators.

Common mental disorders

Articles looking at the relationship between mental health and economic decline have frequently adopted the unemployment rate as a measure of the economic well-being of the population. Comparatively few works have focused on global prevalence of mental disorders, regardless of working status. The IMPACT study [44] examined the prevalence of mental disorders in primary care before and during the economic crisis (2006 vs. 2010) in Spain. The results show a sharp increase in mood disorders (30.2 %), anxiety disorders (14.4 %), somatoform disorder (7.2 %), and alcohol abuse and dependence (7 %) during the crisis. However, also in Spain, the assessment of a cumulative case register administrative data did not identify any increase in prevalence or incidence of people demanding mental health care related to socio-economic conditions [45, 46]. Taken together, these results suggest that primary care may be the depository of excess demand for mental health care generated by the economic crisis. Health, demographic, and socio-economic measures on 1.36 million survey responses aged 16–64 were extracted from the Quarterly Labour Force Survey of the United Kingdom, collected every 3 months, from January 2006 to December 2010. The likelihood of self-reporting poor health status and specific types of health problems (depression, mental illness, cardiovascular, and respiratory) across time were estimated separately using logistic regression. The reporting of poor health status increased from 25.7 % in July 2009 to 29.5 % by December 2010. Depression and poor mental health also increase, particularly among the unemployed [47]. Another British study examined the prevalence of poor mental health measured by the general health questionnaire-12 before and after the 2008 recession using repeat cross-sectional analysis of the 1991–2010 Health Surveys of England. Results showed a worsening of mental health in men at population level within 2 years of the onset of the current recession. However, these changes, and their patterning by gender, could not be accounted for by differences in employment status or education level [48].

Two studies [49, 50] explored changes in the prevalence rates of major depression in Greece during 2008, 2009, and 2011, and its link to financial hardship. The authors

used three nationwide cross-sectional telephone surveys. In 2011, 1-month prevalence rate of major depression was found to be 8.2 %, as compared to the corresponding rate in 2009 (6.8 %) and 2008 (3.3 %). A prospective cohort study evaluated the presence of psychological distress in the Icelandic population following the financial collapse that occurred in 2008. The authors used a national cohort of 3,755 persons who responded to a survey administered in 2007 and 2009, including a stress measure. The findings indicate that psychological stress may have increased, particularly among females in economically vulnerable groups (i.e. unemployed, middle education level) [51]. A Spanish study applied a matching technique to cross-sectional data from the Spanish Health Survey for the years 2006 and 2011–2012 and tried to estimate the average effect of unemployment on self-assessed health (SAH) in the last year, mental problems in the last year, and on the mental health risk in the short term. Unemployment has a significant negative impact on both SAH and mental health. This impact is particularly high for the long-term unemployed [52]. Another comparative analysis of the last two Spanish National Health Surveys revealed a rise in mental health problems in men (from 15 % in 2006 to 17 % in 2012), which contrasts on the other hand with a decrease in women (25 % in 2006 to 23 % in 2012). The decline in men was not uniform, but was concentrated in people aged 35 to 54 (relative increase of 26 %), with manual occupations (22 %), primary or secondary education (28 %), and more pronounced among immigrants (33 %). The result is a significant increase in health inequalities between socio-economic levels, as highlighted in the article. The questionnaire used in the mental health National Health Survey includes symptoms of anxiety and depression in particular. The authors emphasized that the increase in symptoms in men appears to be mainly due to the increased proportion of men in unemployment [53]. It should be noted that the main impact of the crisis on the population was relatively delayed from the moment of the financial crash in many European countries, partly because of the bumper effect of social and family support network, and partly because austerity measures were not adopted from the very beginning of the crisis [54].

Another two cross-sectional surveys using identical random sampling and diagnostic methods were conducted among Hong Kong adults in 2007 and 2009, before and during the Great Recession. According to a structured interview based on the DSM-IV the 12-month prevalence of major depressive episode was significantly higher in 2009 (12.5 %) than in 2007 (8.5 %) [55]. An Australian work [56] used a large community survey to compare the health and psychological functioning of older adults prior to the crisis (2005–2006) to that during the recent recession (2009–2010). The authors found a significant increase in

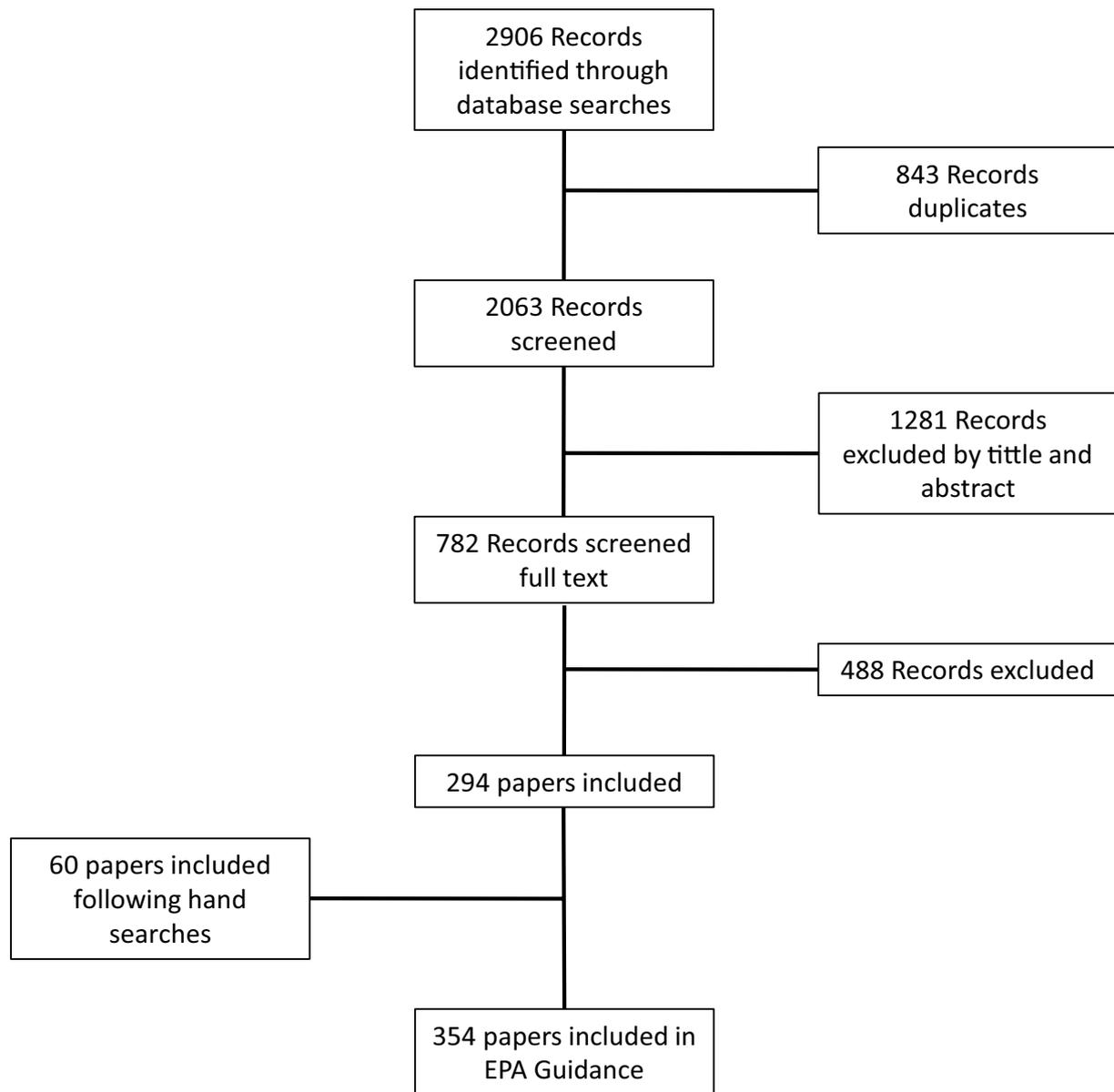


Fig. 1 Flow of studies retrieved in the literature search with the algorithm detailed in Table 1

depression and anxiety symptoms during the crisis period that was not explained by demographic or socio-economic factors such as an increase in financial hardship over time. Furthermore, the results indicated a timing effect, where participants were more likely to report higher depression symptoms at the end of the study period.

A Canadian study estimated the prevalence of depressive and anxiety disorders in different time intervals during the Great Recession, from January 2008 to October 2009, among a sample of the working population [57]. Mental disorders were assessed using the World Health Organization's Composite International Diagnostic Interview-Auto 2.1. The 12-month prevalence of major depressive disorder

(MDD) before 1 September 2008; between 1 September 2008, and 1 March 2009; and between 1 March 2009, and 30 October 2009, was 5.1, 6.8, and 7.6 % ($p = 0.03$), respectively. The lifetime prevalence of dysthymia reported during the 3 periods was 0.4, 0.7, and 1.5 % ($p = 0.006$), respectively. No changes in the 12-month prevalence of social phobia, panic disorder, and generalized anxiety disorder were found over time.

Besides depression and anxiety, other mental health-related aspects such as marital dissatisfaction [58, 59], family conflicts [60, 61], subjective feelings of sadness [62], or cognitive decline [63] have been associated with economic downturns or sudden wealth losses.

Table 2 Psychiatric morbidity related to the economic crisis: European studies (2007–2014)

Author/year	Country	Methodology	Main results
Dregan and Armstrong [84]	UK	Longitudinal cross-cohort analysis	Insomnia increases in economic downturn among the elderly
Molarius et al. [35]	Sweden	Cross-sectional	Economic hardships associated with poorer mental health
Lallukka et al. [77]	Finland	Serial cross-sectional	Poor sleep related to working conditions
Madianos et al. [50]	Greece	Serial cross-sectional	Depression increased
Economou et al. [74]	Greece	Cumulative register	Increased number of telephone calls with depressive content
Katikireddi et al. [48]	UK	Serial cross-sectional	Worsening of mental health in men
Talala et al. [83]	Finland	Serial cross-sectional	Insomnia and stress increased among unemployed
Astell-Burt and Feng [47]	UK	Serial cross-sectional	Increase in poor overall health, but not poorer mental health
Bobes et al. [45]	Spain	Cumulative case register	No increase of specialized mental healthcare demand
Donisi et al. [207]	Italy	Cumulative register	Lower socio-economic status but not unemployment was associated with a greater use of services
Economou et al. [49]	Greece	Serial cross-sectional	Depression increased
Gili et al. [44]	Spain	Serial cross-sectional	Mental disorders attended in primary care increased
Hauksdottir et al. [51]	Iceland	Prospective cohort study	Psychological stress increased
Thekiso et al. [64]	Ireland	Clinical descriptive	Increased in severe depression linked to abrupt financial adversities
Bartoll et al. [53]	Spain	Serial cross-sectional	Anxiety, depression increased in unemployed men
Iglesias García et al. [46]	Spain	Cumulative case register	No increase in demand of mental health care
Urbanos-Garrido and Lopez-Valcarcel [52]	Spain	Serial cross-sectional	Poorer mental health

Table 3 Alcohol abuse and addictive behaviours in the economic downturn: European studies (2007–2014)

Author/year	Country	Methodology	Main results
Zuccato et al. [130]	Italy	Analysis of illicit drugs traces in wastewater	Decrease of use of expensive drugs and increase in cheaper drugs consumption
Almarsdottir et al. [137]	Iceland	Longitudinal	Increased use of anxiolytics in men
Garcy and Vagero [123]	Sweden	Longitudinal prospective cohort study	Alcohol-associated mortality risk increases among the unemployed
Furtado [138]	Portugal	Serial cross-sectional	No change in psychotropic prescription
Gili et al. [44]	Spain	Serial cross-sectional	Significant rise of alcohol dependence
Asgeirsdottir et al. [119]	Iceland	Longitudinal	Alcohol and tobacco overall consumption decreased
Harhay et al. [120]	UK	Serial cross-sectional	Rises in binge drinking among unemployed drinkers
Mattei et al. [122]	Italy	Ecological gathering of data	Overall alcohol use increases
Toffolutti and Suhrcke [125]	23 EU countries	Cross-country panel analysis	Overall decrease of alcohol consumption and mortality due to liver diseases

As an epidemiological approach is characteristic of most articles on this topic, there is a paucity of studies describing clinical characteristics and outcome of patients who present with mood disorders related to economic recession. However, an Irish study [64] describes a subgroup of patients with severe depression narrowly related to abrupt economic circumstances with likely high suicide risk but very favourable outcome.

By and large, these results are in agreement with those coming from studies performed in previous economic crises [65–67]. A study assessed whether the recession which began in Sweden in 1991 resulted in an increase in psychological distress in the population. Self-reported symptoms of anxiety, anguish, depression, and sleeplessness were analysed in repeated cross-sectional surveys conducted every other year from 1989 to 1995. There was a significant

Table 4 Suicidal behaviour and the economic crisis: European studies (2007–2014)

Author/year	Country	Methodology	Main results
Thomas and Gunnell [169]	UK	Time-trend analysis	Economic recessions coincide with increased suicide rates
Barr et al. [167]	UK	Time-trend analysis	Increase in suicides linked with financial crisis
Maki and Martikainen [154]	Finland	Registry analysis	Long-term unemployment is associated with a higher risk of suicide
Alvaro-Meca et al. [174]	Spain	Time-series analysis	Peaks in suicides correspond with times of economic crisis
Economou et al. [159]	Greece	Cross-sectional	Financial strain, but not employment status, associated with suicide
Kontaxakis et al. [172]	Greece	Time-trends analysis	Suicide mortality increase during financial crisis
Garcy and Vagero [149]	Sweden	Longitudinal prospective cohort study	Unemployment is associated with a higher risk of suicide
Lopez Bernal et al. [175]	Spain	Time-series analysis	Financial crisis associated with an increase in suicides
Oskarsson and Bjarnadottir [186]	Iceland	Registry analysis	Suicide rate stable and not affected by the economic crisis
Saurina et al. [188]	UK	Hierarchical mixed models analysis	No significant increase in the number of suicides during the crisis
Baumbach and Gulis [195]	8 EU countries	Mixed ecologic and time-trend design	Suicide rate increased in most countries
Fountoulakis et al. [198]	29 European countries	Time-trend analysis	No clear causal relationship between the economic crisis and an increase in the suicide rate
Laanani et al. [192]	Western UE	Time-trend analysis	Unemployment linked to an increase in suicide
Miret et al. [184]	Spain	Cross-sectional	No association between economic crisis and suicide risk
Pompili et al. [171]	Italy	Registry analysis	Suicide rates increase among men involved in labour force
Toffolutti and Suhrcke [125]	23 EU countries	Time-trend analysis	Increase in the unemployment rate had a beneficial health effect except for suicide mortality
De Vogli et al. [170]	Italy	Time-trends analysis	Mortality due to mental disorders increases during economic crisis
Breuer [196]	275 European regions	Time-trend analysis	Unemployment does have a significantly positive influence on suicides
Branas et al. [160]	Greece	Time-series analysis	Austerity measures associated with increased suicidal rates
Norstrom and Gronqvist [197]	30 European countries	Time-series analysis	Social protection buffers the effect of unemployment on suicide
Reeves et al. [194]	20 EU countries	Time-trend analysis	Male suicide associated with unemployment and debts

increase in the 12-month prevalence of psychological distress among both men and women. For example, at the beginning of the period 5 % of the men in the 20–29 years age group reported frequent symptoms of psychological distress. By 1995 this had increased to 10 % [68]. Similar results were found in a Finnish study on the same period [69]. The prevalence of levels of depressive symptoms was examined in an urban Korean population following the financial crisis in late 1997 [70]. While this study cannot

be directly compared with those reported in the closest Korean data from 1994 [71], prior to the start of the crisis, it showed a prevalence of CES-D “definite” depression 1.2 times higher.

Other studies have looked to the influence of the crisis on self-help behaviours related to psychological distress or depressive/anxiety symptoms, as a surrogate marker for the well-being status of the general population. Aggregate Internet search query surveillance was used to monitor

Table 5 Vulnerability factors, mental health, and the economic crisis: European studies (2007–2014)

Author/year	Country	Methodology	Main Results
Kivimaki et al. [229]	Finland	Prospective cohort study	Organizational downsizing associated with increased psychotropic drugs use
Taylor et al. [242]	UK	Serial cross-sectional	Housing payment problems are associated with psychological costs
Cooper et al. [246]	UK	Cross-sectional	Lone mothers psychologically affected by debt management
Jenkins et al. [248]	UK	Cross-sectional	Low income and debt are associated with mental illness
Rueda et al. [279]	Western Europe	Cross-sectional	Social inequalities foster poorer mental health among the elderly
Bockerman and Ilmakunnas [222]	Finland	Time-series analysis	People with poorer health are more likely to be laid off
Pevalin [271]	UK	Longitudinal prospective cohort study	Repossession significantly increases the risk of common mental illness
Van Laere et al. [267]	Netherlands	Registry analysis	Increased likelihood of mental disorders among those in arrears
Bridges and Disney [245]	UK	Cross-sectional	Positive association between subjective measures of financial well-being and psychological well-being
Meltzer et al. [231]	UK	Cross-sectional	Higher rates of depression among those who report job insecurity
Avcin et al. [224]	Slovenia	Cross-sectional	Economic crisis poses an additional risk factor for mental health problems on the employees
Forsman et al. [298]	Finland	Cross-sectional	Poorer social capital associated with psychological distress among older adults
Lang et al. [278]	UK	Serial cross-sectional	Low income mediates the relationship between age and common mental disorders
Selenko and Batinic [249]	Austria	Cross-sectional	Subjective economic stress predicts poorer mental health among people in serious financial strain
Ahnquist et al. [301]	Sweden	Cross-sectional	Both economic hardships and social capital contribute to a range of adverse health outcomes
Barriuso-Lapresa et al. [277]	Spain	Cross-sectional	There is a socio-economic gradient in the mental health of children and young adolescents
Bosma et al. [277]	Netherlands	Longitudinal prospective cohort study	Perception of unfairness has implications for functional decline in middle and older age
Mangalore and Knapp [290]	UK	Cross-sectional	Inequality in mental health morbidity between and within ethnic groups is at least partly linked to income, and thus to employment and education
Mauramo et al. [255]	Finland	Registry analysis	Economic difficulties and housing tenure were determinants of psychotropic medication use
Rueda et al. [279]	Western Europe	Cross-sectional	Social inequalities foster poorer mental health among the elderly
Angermeyer et al. [236]	Germany	Serial cross-sectional	Economic downturn jeopardizes access to work for people with mental illness
Evans-Lacko et al. [238]	27 EU countries	Serial cross-sectional	Economic hardship may intensify social exclusion of people with mental health problems
Kurtze et al. [287]	Norway	Cross-sectional	Educational inequalities associated with poorer mental health
Meltzer et al. [231]	UK	Cross-sectional	Debt is one of the major risk factors for common mental disorder
Snorraddottir et al. [230]	Iceland	Cross-sectional	Downsizing related to increased psychological distress
Economou et al. [302]	Greece	Cross-sectional	Cognitive social capital no longer exerts its protective influence on mental health if individuals experience high economic distress

population changes in psychological distress around the US' Great Recession. A one percentage point increase in mortgage delinquencies and foreclosures was associated with a 16 % (95 % CI 9–24) increase in queries 1 month, and 11 % (95 % CI 3–18) 4 months later, in reference to a pre-Great Recession mean. Unemployment and underemployment had similar associations half and one-quarter the intensity. “Anxiety disorder”, “what is a depression”, “sign of depression”, “depression symptoms”, and “symptoms of depression” were the queries exhibiting the strongest associations with mortgage delinquencies and foreclosures, unemployment or underemployment [72]. Another US study used data on web searches from Google Insights for Search to estimate the association between weekly unemployment insurance (UI) claims, in addition to monthly unemployment rates, and search indexes for “depression” and “anxiety”. Results from state fixed-effects models yielded a positive relationship between the unemployment rate and the depression search index and a negative relationship between initial UI claims on the one hand and the depression and anxiety search indexes on the other. A lag analysis also showed that an extended period of higher levels of continued UI claims is associated with a higher depression search index [73]. Data extracted from the calls made to the Depression Telephone Helpline of the Greek University Mental Health Research Institute showed steep increase in calls with direct or indirect reference to the economic crisis during the first half of 2010 and onwards. The callers who referred to the economic crisis manifested depressive symptomatology of clinical significance to a greater degree than callers who made no such Ref. [74].

Sleep problems are prevalent, and they are associated with subsequent mental and physical health complications [75]. There is consistent evidence on the relationship between economic difficulties, regardless employment status, and sleep disorders [76–81]. Therefore, it is not surprising that several studies have explored specifically the relationship between economic crises and sleep disturbances. An article from Finland reported a longitudinal study conducted in an adult Finnish population cohort. Baseline data were obtained in 1983–1987, and the second screening conducted in 1992–1995, i.e. during economic recession. The prevalence of various sleep symptoms including insomnia, daytime tiredness, fatigue, parasomnias, and the use of hypnotics remained similar in the same age cohorts during economic crisis. However, middle-aged participants who were stably employed at the initial screening but became unemployed during economic recession were studied separately and prospectively unemployed persons suffered more from insomnia and used more hypnotics than the continuously employed [82]. Another Finnish study assessed trends in socio-economic differences in self-reported insomnia and stress over a

24-year time period. The data source was a repeated cross-sectional survey “Health Behavior and Health among the Finnish Adult Population” (AVTK), from the years 1979–2002, divided into five study periods. Outcome measures were single questions of self-reported insomnia and stress. Indicators for socio-economic status included employment status from the survey, and educational level and household income from the Statistics Finland register data. The authors found no statistically significant increase in insomnia during the period of high unemployment in 1993–1997, although respondents who were unemployed or had retired early reported more insomnia and stress over time among both men and women [83]. A British study used two longitudinal and nationally representative data sets and adopted a cross-cohort analysis to examine age, cohort, and period effects in the prevalence of sleep loss through worry for people over the age of 50 in the UK [84]. Two longitudinal surveys, Health and Activity Lifestyle Survey (HALs) and English Longitudinal Study of Ageing (ELSA), were used in the study. The finding of an important period effect—a rise in reported sleep problems in the early 1990s—was better explained by the economic downturn in the UK in this period. Chronic stress, as measured by ongoing financial strain, is a significant correlate of sleep disturbances in the elderly, even after adjusting for factors known to impact sleep in late life [85–87].

Mental health problems in childhood and adolescence are an important public health concern, particularly as a target for prevention of mental illness and promotion of mental health. Children, adolescents, and young people's mental health can be particularly affected in recessions [88–91]. A reduction in disposable family income constitutes a risk of child mental health through increased economic pressure and negative changes in parental mental health, marital interaction, and parenting quality [92]. Through their effects on parents [93], financial crises can affect the mental health of children in a pervasive way even after the crisis is over [94]. A study revealed that parents' concerns about their children's economic future accounted for variation in their reports of anxiety and depressed mood above and beyond that of perceived economic pressures and their views of the parent–child relationship. In contrast, for young adults, reports of personal economic pressure were generally related to self-reported anxiety and depressed mood [95]. Continuity of depressive symptoms from late adolescence to young adulthood is mediated in part by economic and work achievements or failures of young adults after controlling for adolescent conduct disorder/antisocial behaviour, parents' psychopathology, and family adversity [96, 97]. The effects of high unemployment on young people's health may be mediated through pessimism about the future, high demands, and financial problems [98].

Summary Epidemiologic data show rather consistently that economic disturbances are correlated with an increase in mental health problems. Particularly, an increase in the prevalence of common mental disorders (e.g. depression, anxiety, and sleep problems) and poorer mental health or psychological well-being has been found. Unemployment, inequalities, or another form of financial strain appears to be the more relevant mediating factors. Children, adolescents, and men in working age could constitute vulnerable groups, although this characteristic tends to disappear when controlling socio-economic factors. More studies are needed to evaluate to what degree this increase reflects mental health problems induced by economic crises, uncovers/exacerbates pre-existing mental disorders, or rather decreases a subjective threshold for self-reports of health abnormalities.

Alcohol abuse and addictive behaviours

Alcohol use or abuse is one of the most studied health behaviours as outcomes of macroeconomic fluctuations. Although moderate use alcohol cannot be necessarily considered a health problem, many studies use overall consumption as a proxy for problem drinking. In examining the effect of the crises on alcohol consumption, it is important to differentiate the impact on the whole population and the effect on certain vulnerable groups. Findings on the consequences of the economy cycle problem drinking remain controversial. Two pioneering US studies used the same state-level, aggregate data over the 1975–1988 time period, with a different empirical approach, to study the effect of economic recessions on alcohol consumption and found evidence that it was procyclical; alcohol consumption declined during economic recessions and increased during economic expansions [99, 100]. In the same line of results, a study using cross-sectional data from the 1988 National Health Interview Survey to assess the effect of employment status on alcohol consumption and dependence found an overall negative and significant effect of non-working status (i.e. unemployed or not in the labour force) on alcohol consumption and dependence, probably due to an income effect [101].

However, in an interesting example of the contradictions on this topic, three studies using data from the US Behavioural Risk Factor Surveillance System (BRFSS) survey over roughly the same period time previous to the current recession arrived at different conclusions. One resolved that overall alcohol consumption and problem drinking are procyclical and decreases during recessions [102], while another concluded that problem drinking is countercyclical and binge drinking increases in hard economic times [103]. A third piece of work adopted a two-sample instrumental

variables approach to combine the data on individual health behaviours from the BRFSS and the National Health Interview Survey (NHIS) with the data on individual employment from the Current Population Survey (CPS) in a study of the effects of employment, work hours, and wages on health behaviours [104]. The authors failed to find evidence that these variables have significant impacts on any alcohol use or “chronic” use with the exception of the effect of working hours on binge drinking. It suggests that working hours are negatively associated with binge drinking, although the magnitude is quite small. According to some authors [105], the discrepancies across studies arise from the use of different empirical specifications, measures of key variables, and choice of control variables.

More recently, an US study, using panel data from waves 1 (2001–2002) and 2 (2004–2005) of the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) and estimating fixed-effects models, found that changes in the unemployment rate are positively related to changes in binge drinking, alcohol-involved driving, and alcohol abuse and/or dependence [106]. Another US study examined the relationship between types of economic loss in the 2008–2009 recession and alcohol outcomes using data from the 2009 to 2010 US National Alcohol Survey ($n = 5382$). The authors applied multivariable regression to estimate associations between economic loss and alcohol volume, monthly drunkenness, negative drinking consequences, and alcohol dependence, controlling for demographic and alcohol history covariates. In the overall sample, severe economic loss (job or housing loss) was positively associated with negative drinking consequences, alcohol dependence, and (marginally) drunkenness [107]. Interestingly, another study found a similar relation between housing instability and increases in alcohol dependence and negative consequences. Not surprisingly, this relationship was moderated by perceived family support, i.e. participants with high perceived family support reported fewer alcohol problems, irrespective of housing instability. These findings indicate the importance of having supportive networks to mitigate the effects of economic recessions [108]. Of importance also, perceived decline can impact drinking patterns. In a US study, specifically perceived but not measured economic decline was associated with an increased risk on taking up harmful and hazardous drinking [3].

Economic crisis leads to physical health problems, that in turn could increase alcohol use in men as a self-medication, was the main finding of a post hoc study using data from a national telephone survey on economic status, distress and drinking behaviour [109]. A series of three studies assessed the role of race/ethnicity on alcohol drinking using data from the US National Alcohol Survey, using cross-sectional or time-trend analysis. The relationships

between economic loss and alcohol problems were moderated by race/ethnicity, but the results were better explained by differential effects on manner of drinking (e.g. drinking pattern, reasons for drinking, and venue choice) [110–112]. Gender differences are also relevant as far as drinking behaviours are concerned; according to an article that uses the Life Change Consequences of the Great Recession (LCCGR) to assess work and personal life-related stressors on a national US sample of 663 respondents of a mail survey, economy-related stressors manifested significant effects on both male and female consumption patterns, but most LCCGR subscales were more clearly related to problematic drinking patterns in men compared with women [113]. Ending this series of American works, a nationwide study evaluated changes in alcohol use in the USA during the Great Recession. Data on self-reported alcohol use were taken from the Behavioural Risk Factor Surveillance System (BRFSS). The prevalence of any alcohol use significantly declined during the economic recession, from 52.0 % in 2006–2007 to 51.6 % in 2008–2009 ($p < 0.05$), resulting in 880,000 fewer drinkers (95 % confidence interval [CI] 140,000 to 1.6 million). There was an increase, however, in the prevalence of frequent bingeing, from 4.8 % in 2006–2007 to 5.1 % in 2008–2009 ($p < 0.01$), corresponding to 770,000 more frequent bingeers (95 % CI 390,000 to 1.1 million). Non-Black, unmarried men under 30 years, who recently became unemployed (<1 year), were at highest risk of frequent binge drinking [114].

An Australian study made use of a series of repeated cross-sectional surveys from the National Drug Strategy Household Survey spanning 1991–2007 to examine the relationship between cannabis and alcohol use of Australians aged 14–49 years and the unemployment rate and real income per capita [115]. The authors reported a procyclical effect of economic oscillations on alcohol use. A Korean study focused on the analysis of the associations of socioeconomic disparities with alcohol-related mortality among men aged 40–59 years during the period before and after the economic crisis in the late 1990s. Based on Korean Census data (1995, 2005) and data from the National Death Files (1994–1996, 2004–2006), the authors [116] found that socially disadvantaged men had higher alcohol-attributable mortality in both years, but the differences polarized after the economic crisis.

As far as European studies are concerned, a study explored the connection between alcohol-related mortality, drinking behaviour, and macroeconomic conditions in Finland using both aggregate and microlevel data from 1975 to 2001 [117]. The results from the aggregate data reveal that an improvement in macroeconomic conditions measured by the employment-to-population rate produces a substantial decrease in alcohol mortality over the period of investigation. However, the great slump of the early 1990s is an

exception to this pattern. During that particular episode, alcohol mortality did indeed decline, coinciding with an unprecedented collapse in economic activity. These findings on overall alcohol mortality trends were confirmed by another Finnish study [118], which showed in addition a higher mortality risk attributable to alcohol-related conditions in those older than 45 and in the less educated. Congruently, a recent study on the health status of the Icelandic general population also demonstrated that during the Great Recession period (2007–2009), the crisis led to large and significant reductions in health-compromising behaviours, including a –2.6 % in drinking alcohol and a –3.4 % in smoking, largely attributable to increased prices and reduced wages [119]. Similarly, a British study used a nationwide representative sample of non-institutionalized white persons aged 20–60 years from seven waves of the Health Survey for England, 2004–2010 ($n = 36,525$), to assess trends in alcohol use and frequency before, during and after the recession and in association with unemployment, correcting for possible changes in sample composition and socio-demographic confounders. The primary analysis compared 2006/2007 with 2008/2009, following the official onset of the UK recession in early 2008. The authors [120] reported a significant decrease in frequent drinking, the number of units of alcohol imbibed on the heaviest drinking day, and the number of days that individuals reported drinking over the past week. However, among current drinkers who were unemployed there was a significantly elevated risk of binge drinking in 2009 and 2010 that was not previously observed in 2004–2008. Similar findings were obtained in a Canadian study, comparing data between 2003 and 2010. There, a one-point increase in the unemployment rate was associated with 0.15 % fewer drinks consumed in the past month and a 0.14 % decrease in part-month heavy drinking, specifically in male participants [121]. In Italy, although all-cause mortality remained stable and was not associated with economic fluctuations, alcohol consumption increased in 2009, the year with the worst real GDP decrease (–5.1 %) [122]. This is consistent with a Spanish study comparing 2006 and 2010 that found a significant rise of alcohol dependence and related disorders, specifically among those who experienced severe economic loss, e.g. unemployment [44]. In Sweden, the deep recession occurred earlier (1992–2006). During the following 6 years, there was an increase in the hazard of alcohol disease-related mortality, linear with duration of unemployment for women, while for men mortality peaked with middle-level of unemployment duration [123].

Alcohol use may play a more relevant role in suicidal behaviour during contractions [124]. Finally, a panel study on the short-term health consequences of the economic crisis using data from EU-23 countries found an overall decrease in the total rate of alcohol consumption and mortality due to cirrhosis and chronic liver diseases [125].

Whether illegal drug consumption and/or the number of users is likely to be affected by an economic recession is indeed relevant questions. Here, as in the case of alcohol or tobacco use, an increase in consumption could intuitively be expected, and, indeed, experiencing unemployment was associated with increased hazard of starting cannabis use in a US study [3]. But demand for drugs has certain features in common with the demand for other commodities, and capacity utilization can be affected by lower incomes or changes in the drug price. An interesting article reviewing the existing literature suggested that the downward trend in the price of illicit drugs in the last decade both in USA and Europe may have been accentuated in the current economic downturn [126]. Recessions could also lead drug users to prefer injection to other routes of administration, in order to maximize the effect of the substance [127]. Another article pointed out that drug demand responds slowly to exogenous shocks because it is dominated by dependent users whose behaviours are slow to change. Hence, although the cumulative effect of the global recession may be large, it is not likely to produce an abrupt step change in indicators driven by dependent use or total consumption [128]. However, wastewater analysis in two Italian cities reflects a deep impact of current economic downturn in the utilization of more expensive drugs, such as heroin or cocaine, and an increase of the consumption of cheaper substances (i.e. cannabis, methamphetamine), reflecting that the use of drugs can be indeed affected by income availability [129, 130].

Although there are little data available, empirical evidence suggests so far that there is an association of employment status and illicit drug use. A comprehensive review of the research up to 2010 clearly demonstrates that compared to employed individuals, unemployed individuals are more likely to use illicit drugs, and to have substance use disorders (abuse, dependence) [131]. Furthermore the probability of entering treatment increases when the unemployed drug user has a greater probability of finding a job and vice versa [132]. However, some of the results obtained in these studies vary widely; this is not surprising given the different methodological approaches being used (i.e. diagnostic definition and concept of “unemployed”). More recent studies confirm these findings. Data from the 2002 through 2010 Substance Abuse and Mental Health Services Administration (SAMHSA) sponsored National Survey on Drug Use and Health were analysed to examine the relationship of unemployment to substance misuse/disorders in the civilian, non-institutionalized US population ($n > 450,000$ across the eight included years). The results showed that in 2009, among ages 18 and older, unemployment was significantly related to substance misuse/disorders (illicit drug use, heavy alcohol use, tobacco use, and alcohol/drug disorders). For example, past month illicit

drug use was prevalent among 8.0 % in full-time employed, 11.5 % in part-time employed, and 17.0 % in unemployed. Further, although the numbers of unemployed people increased markedly in 2009, the relationship of unemployment to substance misuse and disorders remained generally consistent across 2002–2009 and among sex, race/ethnicity, geographic region, and age subgroups. Therefore, an increased number of unemployed people would result in an increased number of people with substance use disorder [133]. A different study examined the associations between different kinds of economic hardships—i.e. unemployment experience, measured decline in economic resources, and perceived decline in economic resources—and adoption of different negative health behaviours, such as cigarette smoking, harmful and hazardous alcohol consumption, or marijuana consumption, using population-based longitudinal data collected by the Michigan Recession and Recovery Study. The authors found that, net of the other hardships, having experienced unemployment was associated with an increased hazard of becoming a marijuana user, an objective decrease in economic resources was associated with greater hazard of starting to smoke cigarettes, and perceived decrease in economic resources was associated with an increased hazard of starting harmful drinking [3].

Use of alcohol and illegal drugs can be procyclical among youth, in contrast with findings in the opposite direction in the general adult population. A feebler economy leads to greater teenage marijuana and hard-drug use and some evidence that a weaker economy also leads to higher teenage alcohol use [134]. A similar process can occur with cigarette smoking [135]. The evidence also indicates that teenagers are more likely to sell drugs in weaker economies [136]. This suggests that access to illicit drugs is easier when the economy is weaker. An Australian study already mentioned also found that the recession should have encouraged young Australians aged 14–24 years to both drink and use cannabis more frequently [115].

The use of prescribed psychotropic substances can also be influenced by economic crises. Here, and given the data about a worsening in mental health status, an increased use should be expected. However, restrictive measures such as co-payment can have an opposite influence. A study assessed the impact of the 2008 Icelandic economic crisis on the population's use of sedative/hypnotics, anxiolytics, and antidepressants using data obtained from the Icelandic Pharmaceutical Database (IPD) from January 2006 through January 2010 on prevalence and incidence of use (per 1000 inhabitants) of sedative/hypnotics (ATC group N05C), anxiolytics (N05B), and antidepressants (N06A). Psychotropic drug use did not increase in the population of Iceland, except for a short-term increase of anxiolytic among men. The authors pointed out that new reimbursement rules were implemented in the wake of the crisis which probably

had stronger and more lasting effects on the trends in the time series than the crisis itself [137]. Similarly, a Portuguese study evaluated national-level psychotropic utilization to determine whether there were changes in consumption trend as a consequence of the economic crisis. Monthly data from 2000 to 2012 of psychotropic medications which were prescribed and dispensed in outpatient care in the National Health Service (NHS) were collected (ATC Index 2012 codes N05A, N05B, N06A, and N06CA). While psychotropic utilization has been increasing in Portugal over the last decade, no changes were observed since 2008 and the trend remained stable [138]. These results are in agreement with a previous European study concerning psychotropic consumption and economic crisis, in this case during the crisis of the early 80s, in eight EU countries. The analysis showed that only the use of tranquilizers did in fact increase during the economic recession. The use of hypnotics and sedatives, antidepressants, and neuroleptics did not change consistently in the eight countries studied. Variations in the severity of economic decline between countries do not explain different changes in use levels. However, variations in social security coverage did make a difference in terms of type of psychotropic drug prescribed [139], a fact confirmed in other studies [140].

Summary The relations between economic downfall and substance use patterns and consequences remain complex. Some trends can be found based upon the literature review as presented above. During periods of economic downfall alcohol use seems to decrease in the population, most likely due to pricing effects. However, there is an increase in binge drinking, alcohol-related harm, and dependence in a subsample of the population. Factors that mediate this risk are most probably: (a) duration of unemployment and severity of the economic loss, (b) pre-existing individual vulnerability for alcohol use disorders, (c) quality of the social and familial support network, (d) pre-existing economic disparities, augmented by economic crises, and (e) specifically men are more vulnerable to the alcohol effects of recessions. For illicit drug use, the relation between low socio-economic status and increased illicit drug use is consistent; the relation with economic crisis periods is far more inconsistent, probably because of the flexibility of the illegal market (i.e. availability, pricing, and different sort of drugs). Finally, economic downfall seems consistently associated with an increase in tobacco smoking in both adolescent and adult populations, without gender differences.

Suicide

The possibility that suicide rates might increase as a consequence of economic downturn has caused widespread and

deep concern in the context of the current global recession. As a consequence, suicide has been one of the most studied adverse health outcomes related to economic decline. While this research has not completely explained the intricate relationship between suicide, psychiatric disorders, and economic hardship, some relevant pieces of information have been produced and our task is now to summarize these results.

Following an excellent review by Catalano et al. [141], research on the effect of economic crises on suicidal behaviour can be classified into risk factor studies—typically comparing the suicidal behaviour of individuals exposed or not to undesirable job or financial experiences such as unemployment or debts—or research using population aggregates to measure the association over time between economic indicators—for example, unemployment rate—and incidence of pathology (“net effect studies”). Broadly, two main theories may explain an association between unemployment and suicide: a causative theory—i.e. job loss leads to the emergence of conditions (e.g. depression) that bring on suicide—or a selective theory—i.e. subjects who are more prone to commit suicide (e.g. those suffering from mental illnesses) are also more prone to lose their job—[142]. In fact, both theories could explain part of the observed data. From the social drift hypothesis, even in good economic condition, patients with severe psychiatric disorders are a very vulnerable population prone to drift into lower social status and unemployment. Therefore, they may be among the first to suffer from economic crisis and this indeed appears to happen in some European countries (i.e. Greece) during the current economic crisis [143].

Research on risk factor has been collected from case-control and longitudinal cohort studies conducted in several countries either within or without the context of an economic crisis [144–157]. Overall, the studies ascribe to a stress model theoretical explanation for the identified association between unemployment and suicidal behaviour after controlling for potential confounders factors such as age, sex, or socio-cultural level. Most of the studies, but not all—for example, see [158]—show evidence for a modest but significant association between unemployment and suicide. Other approaches have also been adopted. A Greek study with a cross-sectional methodology found an association between suicide and financial strain, but not with employment status [159]. However, in a 30-year interrupted time-series analysis of suicide in Greece, it has been shown that selected austerity-related events in Greece corresponded to statistically significant increases for suicides overall, as well as suicide among males and females [160]. Although the data support a relationship between the suicide rate and the socio-economic situation, this relationship may not be that of a direct cause and effect [161]. Efforts to elucidate the nature of the relationship between

unemployment, suicidal behaviour, and previous mental disorder have not produced enough clarity. Probably both causative and selective theories have a role when explaining the association.

As far as aggregated studies are concerned, research carried out in different countries has shown a positive association between unemployment and/or economic downturn periods and suicide rate. This countercyclical relationship emerges from time-series analysis of the USA [162–166], UK [167–169], Italy [170, 171], Greece [172], Russia [173], Spain [174–176], South Korea [177, 178], and Japan [179]. Several articles applying fixed-effects models in a number of countries have also found countercyclical effects for suicide [8, 23, 180–183]. However, some studies found either null [184–188] or even procyclical [189, 190] associations between suicide and economic situation.

Intended to sort out substantial differences in methodology and relative power for detecting associations that could account for conflicting results, several multinational studies have recently been published. During the 1990s, severe economic crisis Asian countries were greatly impacted and this coincided with a sharp increase in suicide rates. A study investigated the impact of the Asian economic crisis (1997–1998) on suicide in Japan, Hong Kong, South Korea, Taiwan, Singapore, and Thailand. Suicide and population data for the period 1985–2006 were extracted from the WHO's mortality database and Taiwanese mortality statistics. Sex-specific age-standardized suicide rates for adult population (15 years or over) were analysed using joint regression. Trends in divorce, marriage, unemployment, gross domestic product (GDP) per capita, and alcohol consumption were compared with trends in suicide rates graphically and using time-series analysis. Suicide mortality decreased in the late 1980s and early 1990s but subsequently increased markedly in all countries except Singapore, which had steadily declining suicide rates throughout the study period. Compared to 1997, male rates in 1998 rose by 39 % in Japan, 44 % in Hong Kong, and 45 % in Korea; rises in female rates were less marked. Male rates also rose in Thailand, but accurate data were incomplete. Increases in suicide rates were not seen in Taiwan and Singapore, where the economic crisis had a smaller impact on GDP and unemployment. Time-series analyses indicated that some of the crisis' impact on male suicides was attributable to increases in unemployment [191].

With reference to Europe, one study assessed the impact of unemployment rate on suicide rate in Western European countries between 2000 and 2010, and attempted to estimate the excess number of suicides attributable to the increase of unemployment during the 2008–2010 economic downturn. After controlling for sex and age, the unemployment–suicide association was assessed for each, and the excess number of suicides attributable to the increase of

unemployment was estimated. The presence of a confounding context effect (“crisis effect”) was also evaluated. A significant 0.3 % overall increase in suicide rate for a 10 % increase in unemployment rate (95 % CI 0.1–0.5 %) was highlighted, but this association was significant in only three countries. The association was modified inconsistently when adding a “crisis effect” into the model. The authors highlighted that the identified association between unemployment and suicide rates is weak, and its amplitude and sensitivity to the “crisis effect” vary across countries [192]. Another article addressed the short-term health effects of the current crisis in EU countries and also examined whether the effect differed between countries according to the level of social protection provided. The results indicated an overall procyclical decreased rates in mortality and alcohol consumption associated with higher unemployment rates, but a countercyclical increase in suicide rates. The level of social protection seemed to bumper the effect of the crises for both desirable and undesirable consequences [125, 193, 194]. Evolution of suicide rates was included among several health and mortality indicator in a study on eight European countries using data extracted from EUROSTAT for 2000–2010 to evaluate the impact of the economic crisis. A mixed approach of ecological and time-trend design was applied, including correlation analysis. The financial crisis had no visible effect on overall mortality in any of the eight countries until 2010 but suicide mortality increased in Germany (+5.3 %), Portugal (+5.2 %), Czech Republic (+7.6 %), Slovakia (+22.7 %), and Poland (+19.3 %). The effect of unemployment on suicide rates was higher in countries with lower social spending [195]. Another article contributes to the debate on how economic activity influences suicide mortality by exploring European regional from a panel data set of 275 regions in 29 European countries over the period 1999–2010. The sample covers the years of the European Monetary Union, including the economic crisis, starting in 2008. The results suggest that unemployment does have a significant influence on increasing suicides in Europe. In line with economic theory, this influence varies among gender and age groups. Males of working age—younger than 65 years—are particularly sensitive, while old-age suicide mortality does not vary with employment changes [196]. A very interesting paper analysed the unemployment–suicide link using time-series data for 30 European countries spanning the period 1960–2012, focusing on the effects of the Great Recession. Separate fixed-effects models were estimated for each of five welfare state regimes with different levels of unemployment protection (Eastern, Southern, Anglo-Saxon, Bismarckian, and Scandinavian). Results showed that unemployment rates increased most in country groups with the least developed social protection (Eastern and Southern Europe). Findings also suggest that it was also

in these country groups that increasing unemployment had the most detrimental impact on suicide. In contrast, the increase in unemployment in Scandinavia with the highest level of unemployment protection had no noticeable effect on suicides [197]. Data gathered from 29 European countries including the number of deaths by suicide in men and women and several economic data (unemployment rate, gross domestic product per capita, annual economic growth rate, and inflation rate) were analysed, finding a strong correlation between suicide rates and all economic indices except GPD per capita in men but only a correlation with unemployment in women. However, the increase in suicide rates occurred several months before the economic crisis emerged. Overall, this study confirms a general relationship between the economic environment and suicide rates; however, it does not support a clear causal relationship between the current economic crisis and an increase in the suicide rate [198]. Ending this serial of European works, a recent study focused on male suicide, since suicide increases seem to concentrate in men during the Great Recession in Europe. This work consisted of a cross-sectional analysis of 20 EU countries from 1981 to 2011 using multivariate statistical models adjusted for pre-existing time trends and country-fixed effects. Beside male suicidal rates, the authors investigated whether increases in unaffordable housing, household indebtedness, or job loss can account for population differences, as well as potential mitigating effects of several indicators of social protection (i.e. total social spending per capita, active work market programs, social capital, and monetary benefits). Interaction terms were used to evaluate modifying effects. Changes in levels of unaffordable housing had no effect on suicide rates ($p = 0.32$); in contrast, male suicide increases were significantly associated with each percentage point rise in male unemployment, by 0.94 % (95 % CI 0.51–1.36 %), and indebtedness, by 0.54 % (95 % CI 0.02–1.06 %). Spending on active labour market programs (ALMP) (0.26, 95 % CI 0.08–0.45 %) and high levels of social capital (0.048 %, 95 % CI 0.0096–0.087) moderated the unemployment–suicide association. There was no interaction of the volume of antidepressant prescriptions ($p = 0.51$), monetary benefits to unemployed persons ($p = 0.77$), or total social protection spending per capita ($p = 0.37$) [194].

Other studies have adopted a more global approach. An article examined how aggregate suicide rates at country level are affected by unemployment rates, depending on the different development levels, and estimated the fixed-effects model using panel data for 24 OECD countries for the period 1980–2002. The results showed a positive effect of unemployment rates, but only for higher-income level countries. In countries with lower-income levels, higher unemployment rates had a negative impact on suicide rates [199]. A systematic review and meta-analysis of

16 studies using population-based cohort or case–control designs, population-based ecological designs, or hospital-based clinical cohort or case–control designs showed that long-term unemployment is associated with a greater incidence of suicide. The risk is greatest in the first five years and persists at the lower but elevated levels up to 16 years after unemployment [200]. Another study assessed changes in suicide rates along the period 2000–2009 (including one complete year after the economic crisis started in 2008), in 27 European and 27 non-European countries, using the available from data the World Health Organization mortality database (53 countries) and for one (the USA) from the Center for Disease Control and Prevention. Unemployment was used as the main economic indicator. To calculate changes in trends in suicide rates and excess suicides related to the global economic crisis, assessment of time trends and estimation of the expected number of suicides (that is, what would have happened if the economic crisis had not occurred) and then quantification of deviation from these trends were performed. The results showed a rise in suicide after the 2008 global economic. There were important differences in men and women as well as in the age pattern in different groups of countries. The increases were mainly in men from the 27 European countries and 18 American countries studied. All age suicide rates in European and American men were, respectively, 4.2 and 6.4 % higher in 2009 than expected if past trends had continued. In contrast, there was no change in European women and a relatively smaller (2.3 %) increase in American women. In European countries, men aged 15–24 were most strongly affected, while men aged 45–64 were most affected in American countries. Rises in suicide rates seemed to be associated with the magnitude of increases in unemployment, although the association was weak, particularly for men and in countries with low prior unemployment rates [201]. In a similar study, authors analysed data for years 2000–2011 for suicide, population, and economy from the WHO mortality database and International Monetary Fund's world economic outlook database covering 63 countries. Interestingly, a higher suicide rate preceded approximately by 6 months a rise in unemployment. In all regions of the world, the relative risk of suicide associated with unemployment was elevated during the study period by about 20–30 %. Suicide associated with unemployment demands prevention strategies focused on the unemployed and on employment and its conditions, not only in the difficult economic times, but also in times of stable economy [202].

Summary Suicide is associated with lower socio-economic status and situations that usually accompany economic crisis, for example unemployment, evictions, and indebtedness. There are several factors which mediate this

association, particularly the presence of psychiatric disorders, both previous and related to the hardship. The existence of well-developed social protection and health services is also relevant. In this way, countries with a consolidated welfare state appears to be less exposed to adverse health outcomes related to economic decline. However, research has not elucidated completely the intricate relationship between suicide, psychiatric disorders, and economic hardship. The direction of causality is not well established, and different results emerge from different methodologies, particularly from studies on individual or aggregated data. It is even possible that these relationships are affected by the context, so that in times of crisis, there is an increase in the suicide rate, but a decrease in the strength of the association of suicidal behaviour with factors such as unemployment. In any case, the data underscore the importance of adopting adequate preventive policies.

Demand for psychiatric care

Prior to the start of the current economic crisis, there was clear evidence that Europe had a large number of patients in need of psychiatric care that were not receiving the necessary assistance. For example, as part of the European Study of Epidemiology of Mental Disorders (ESEMED) project, a cross-sectional survey was conducted of representative samples of the adult general population of Belgium, France, Germany, Italy, the Netherlands, and Spain ($n = 8796$). Mental disorders were assessed with the Composite International Diagnostic Interview 3.0. Individuals with a 12-month mental disorder that was disabling or that had led to use of services in the previous 12 months were considered in need of care. Results showed that about six per cent of the sample was defined as being in need of mental health care and nearly half (48 %) of these participants reported no formal healthcare use. In contrast, only 8 % of the people with diabetes had reported no use of services for their physical condition. In total, 3.1 % of the adult population had an unmet need for mental health care [27].

Intuitively, one could expect that recessions, at least as measured in terms of unemployment, would be accompanied by increase in mental health service utilization and reported prevalence of common psychiatric disorders (e.g. depression, anxiety, and alcohol-related disorders) [203].

However, research on demand for psychiatric care in time of economic crises remains controversial. There are some explanatory factors. First, demand for care seems to be very much influenced by the peculiarities of healthcare organization and provision of services. As an example, we can cite the result of a recent American study on healthcare spending, which confirms that the recent 2007–2009 recession had a dramatic effect on behavioural health spending,

with the effect most prominent for private, state, and local payers. During the recession behavioural health spending increased at a 4.6 % average annual rate, down from 6.1 % in 2004–2007. Average annual growth in private behavioural health spending during the recession slowed to 2.7 % from 7.2 % in 2004–2007. State and local behavioural health spending showed negative average annual growth, -1.2 %, during the recession, compared with 3.7 % increases in 2004–07. In contrast, federal behavioural health spending growth accelerated to 11.1 % during the recession, up from 7.2 % in 2004–2007. These behavioural health spending trends were driven largely by increased federal spending in Medicaid, declining private insurance enrolment, and severe state budget constraints [204]. As an example of the consequences of these policies, state policies designed to decrease Medicaid enrolment may have led to increased use of state psychiatric hospitals by former Medicaid enrollees with schizophrenia [205]. On the other hand, at least in some states, health insurance does not protect individuals from medical debt, and medical debt and lack of insurance coverage both predict reduced access to care [206]. These results are predictable in countries like the USA, where health insurance coverage is linked strongly to employment. And second, much of the epidemiological research on this topic could have serious methodological weaknesses. Many studies rely mainly on “second-hand” data; that is to say, on administrative indices and service contact rates. Area prevalence surveys carry the advantage that they do supply “first hand” data, but as a rule these will be valid for only short cross sections in time. Lifetime prevalence estimates, on the other hand, will be of little relevance in trying to establish the health consequences of economic fluctuations [19].

A Spanish study based on data from a Regional Cumulative Case Register found no evidence of significant increase in prevalence or incidence of any psychiatric diagnosis during the period 2000–2010. Moreover, the results showed a negative correlation of unemployment rate with psychiatric care demand [46]. However, the IMPACT study conducted in primary healthcare centres in Spain found a significant increase in common mental disorder during the current economic downturn. A total of 7940 patients in 2006–2007 and 5876 in 2010–2011 representing the Spanish consulting population were administered the Primary Care Evaluation of Mental Disorders (PRIME-MD) instrument to diagnose mental disorders. Between 2006 and 2010, mood disorders increased by 19 %, anxiety disorders by 8 %, and alcohol abuse disorders by 5 %. The most relevant factors accounting for this variation were household unemployment rate and mortgage payment difficulties [44]. A study assessed contact with any kind of mental health services and its relationship with individual and socio-ecological variables in three catchment areas from three different

Italian cities along a 6-month period in 2009. While a lower socio-economic status was associated with a greater use of services, unemployment was only associated with a greater use of daycare services, probably due to the higher rate of unemployment in patients with schizophrenia [207].

This finding of a decreased demand of psychiatric care during economic crises is not new. There are a number of studies that have linked previous recessions to lowered healthcare use [208], regardless of insurance status. Recently, a study assessed possible associations between economic downturn and changes in the magnitude of foregone health care related to social disparities. Data from the 2006 to 2010 waves of the US National Health Interview Study were used to examine levels of foregone medical, dental, and mental health care and prescribed medications. Differences were compared before the Great Recession of 2007–2009, during the early recession, and later in the recession and in its immediate wake. Results pointed out that foregone care rose for working-aged adults overall in the two recessionary periods compared with the pre-recession. Foregoing care was more common for some ethnic minorities and less-educated individuals in both pre-recession and recession periods [13]. Similarly, a US study examined the changes in healthcare utilization for mental health disorders among patients who were diagnosed with depressive and/or anxiety disorders during the Great Recession 2007–2009. Results showed that prescription drug utilization (e.g. antidepressants, psychotropic medications) increased significantly during the economic recession 2007–2009 for both females and males but physician visits for mental health disorders decreased during the same period [209].

It is difficult to elucidate the reasons for a possible lower demand for psychiatric care in times of economic crisis, but it is important to consider all forms of psychiatric care. For example, it has been described that an increase of job loss can be associated with an increase of the use of psychiatric care in emergency departments [210, 211] and also in the proportion of ED visits for suicide ideation [212]. On the other hand, affected individuals may fear the stigma associated with mental disorder impairs their opportunities for finding a job, or keeping it. For instance, a recent British paper reveals that discrimination against mentally ill people may be rising because of the economic crisis, particularly when trying to get a job [213]. Data from the Epidemiologic Catchment Area survey indicate that job loss increases the risk of antisocial behaviour and alcohol abuse but also that the fear of lay-off inhibits these behaviours among persons who remain employed when unemployment unexpectedly increases [214, 215]. Certainly, the availability, affordability, and access of mental health services and psychopharmacological treatments can play an important role in the use of services and treatments. For example, a

study examined how insurance status affects the utilization of prescription medication for mental health problems in Canada and found that insurance coverage and need for co-payment have an important relative impact on the likelihood of drug use for mental illness, particularly on the use of antipsychotics and mood-stabilizer substances [140]. Another study found that expansion of insurance coverage contributes to a decreased probability of a positive screening for depression in low income community dwellers [216]. Even in countries with reported universal health care with public funding coverage, economic downturns and associated budget cuts can deteriorate access to mental health care [217].

Summary The data suggest that the usual gap between the numbers of persons affected by psychiatric disorders and those treated appropriately increases in times of economic crisis. It is likely that the lack of accessibility to services and the austerity measures have a role in this. However, it is also possible that the increased stigma towards people with mental illness in times of crisis plays an important role.

Vulnerability factors

Working conditions

We have already addressed the issue of the relationship between unemployment and psychiatric morbidity, including suicidal behaviour. But in times of economic crisis, psychological distress can also affect people that have kept their jobs, as a consequence of fear of lay-off/downsizing, job instability, flexible work, lack of regulatory protection, or hardening of working conditions (e.g. increasing working hours, forced mobility, and lower wages) [218]. This erosion of “*standard*” working conditions—full-time, permanent jobs with benefits, etc.—has been enshrined in the overall concept of precarious employment [219].

The negative impacts of organizational downsizing and increased job insecurity on employee health have been highlighted in some reviews. Studies suggest increases in sickness absence, declining self-reported health, more self-reported job insecurity, and worse psychological well-being [220, 221]. While most studies suggest that organizational downsizing is bad for employee health, there have several methodological limitations. First, many studies rely on self-reported health, introducing a source of bias. Second, many studies of downsizing include those workers that are eventually laid off and only a few have focused on the effects of downsizing and job insecurity on “survivors” (employees who keep their jobs but with the threat of coming lay-offs

or poorer working conditions). Third, studies often do not account for the macroeconomic condition. Yet during periods of general economic uncertainty the effects of organizational downsizing on health may be different than those occurring in single, isolated events. Finally, when comparing stayers with leavers, it should have taken into account that workers that are laid off are also generally at higher risk of adverse health or health-related behaviour to begin with [222].

It is notable the controversial results between studies relying on self-reported data and those using incidence of new diagnosis. For example, a study examined four health outcomes—incident hypertension, diabetes, asthma/COPD, and depression—for a cohort of approximately 13,000 employees from a large multisite company, taking advantage of a large ongoing cohort study dating back to 1996. Results examined the health consequences of downsizing events on the remaining workforce in the context of the 2009 recession. Analysing data from health insurance claims, the authors reported evidence of an increased risk of developing hypertension for workers that remain working at plants where there was severe downsizing, but found no association between working at a high lay-off plant and acquiring a new diagnosis of depression [223]. In contrast, other studies using self-reported or indirect measures of psychological well-being—e.g. psychotropic drugs consumption—have found evidence that suggests that downsizing may pose mental health risks among remaining employees, especially in regard to the appearance of symptoms of anxiety and depression [57, 224–230], a finding coincident with the results of a British study that assessed the presence of clinically diagnosable depression using the revised Clinical Interview Schedule and ICD-10 research diagnostic criteria administered by well-trained lay interviewers, and found an increased likelihood of depression among those agreeing that their job security was poor [231]. These results suggest that workers may be reluctant to show any sign of stigmatized mental health conditions, even at the cost of no receiving appropriate health care. Given the estimations of losses in work productivity due to mental health problems [232], the possibility of increasing hidden psychological distress among employees may represent a substantial problem in times of economic crisis.

It should be noted that unemployment and job precariousness affect more severely people with mental health disorders compared with people without mental health problems and other chronic conditions [233–235], and this trend is likely to increase during recessions. A study evaluated unemployment rates among individuals with mental health problems before and during the current economic recession across Europe, using individual- and aggregate-level data collected from 27 EU countries in the Eurobarometer surveys of 2006 and 2010 [17]. Results showed that people

with mental health problems had a disadvantage in getting a job before the recession, and that this disparity increased following the onset of the crisis. Men and individuals with lower level of education are particularly disadvantaged. Another interesting finding of this study is that stigmatizing attitudes towards people with mental illness may be growing during the crisis. Individuals with mental health problems living in countries with higher levels of stigmatizing attitudes regarding dangerousness of people with mental illness were more vulnerable to unemployment in 2010, but not 2006, in support of other studies that suggested that attitudes to people with mental health problems may harden during periods of economic crisis [213, 236, 237].

Summary Precarious working conditions deteriorate mental health, particularly in times of economic crisis. People with mental health problems are disadvantaged in getting a job, and this difficulty increases with economic downturn.

Financial pressure

Reasonable evidence exists of a relationship between being in debt and having mental health problems. Robust and representative studies indicate that (a) people with debts are more likely to have common mental health problems; and (b) people with common mental health problems are more likely to have debts than the general population. However, there is less evidence explaining how debt might act as a pathway into poorer mental health, or how mental health problems might lead to debt [238]. In one interpretation, people get into debt for a variety of reasons (e.g. gambling, substance abuse, compulsive shopping, marital or relationship breakdown, and redundancy), and these factors, alone or in combination, then increase the risk of anxiety and depression. In the converse interpretation, individuals with mental disorders are less likely than others to obtain or maintain employment, and may also find it difficult to apply for benefits and to budget, leading to indebtedness. Their debt may also be exacerbated by a failure to appreciate its degree. It is likely that both kinds of mechanisms occur—people with debts are more likely to have mental health problems and people with mental health problems are more likely to be in debt—and that both of them are exacerbated in time of economic crisis, but there is no conclusive evidence, however, of a causal relationship [239].

The existing research literature has some methodological caveats. For example, there is little consistency in the conceptualization and measurement of debt and many papers did not differentiate between different types of debt, making it difficult to make strong claims about the impact of each. Another limitation is restriction to the relationship

of debt with depression or with psychological distress. Most of the evidence on the relationship between indebtedness and poor mental health comes from UK, USA, Nordic countries, and Australia. Both housing debts [239–242], consumer debt [240, 243, 244], or mixed debt [245–250] has been moderately associated with common mental disorders—particularly depression and anxiety—and psychological distress. Being in housing arrears appears to have a more detrimental effect on mental health in medium or low income households [251]. Simply having a mortgage could be associated with higher rates of psychological distress [247, 252, 253]. The negative effect of debts on mental health or psychotropic medication use remains independently of socio-economic status, which affirms calls for more complete measures of SES [254–256]. These studies provide plausible evidence that debt may actually strongly mediate the long-known relationship between low income and common mental disorders [257].

A shortcoming of many studies was addressed by British research that used data from a random probability sample comprising 7461 respondents interviewed for the third national survey of psychiatric morbidity of adults in England carried out in 2007. The authors aimed to estimate the prevalence of “specific” mental disorders based on ICD-10 research diagnostic criteria by type of debt and quantify the additional influence of addictive behaviours. Results showed that adults in debt were three times more likely than those not in debts to have common mental disorder (38 vs. 13.9 %). The increased likelihood of mental disorders among those in arrears was found for all six conditions evaluated—generalized anxiety disorder, depression, obsessive–compulsive disorder, phobia, panic disorder, and mixed anxiety and depressive disorder—and was irrespective of source of debt—housing, utilities, and purchases on credit. The situation was exacerbated among those with addictive behaviours—alcohol or drug dependence or problem gambling. Those with multiple sources of debt and who had to obtain money from pawnbrokers and moneylenders had the highest rate of mental disorder, almost 50 % [239].

Some studies have assessed specifically the relationship between debt and suicide or self-harm. In a Finnish survey of 4868 people, the authors investigated whether difficulty repaying debts was associated with suicidal ideation (thinking about suicide) and suicide attempts in the general population. Asking about difficulties in the last or other debts, those experiencing debt repayment difficulties were more likely to have a probable mental health problem than those who were not (37 vs. 16 %). Thinking about suicide was also independently associated with difficulties repaying debt, although debt repayments were not independently associated with suicide attempts [247]. An Australian study conducted an analysis based on a survey data set of 5037

participants (aged 16 plus) from the South Australian Monitoring and Surveillance System. Defining debt as “spending more money than getting”, the authors found that people with debt had a greater likelihood of reporting suicidal thoughts than those without debt, even when other variables and influences were controlled for [258]. Analyses on samples of suicidal cohorts coming from Eastern Asia have identified indebtedness as an independent risk factor for suicide, particularly if associated with gambling and psychiatric problems [259–262]. Studies assessing self-harm have small samples and mixed results [263, 264].

Closely related to financial strain, housing instability has aroused great interest in the last decade because of its intended impact on mental health. Indeed, a defining feature of the USA and EU recent economic downturn has been the alarming rate of home foreclosure and other forms of housing uncertainty (e.g. homelessness, frequent moves, and crowded households). Historically, research on housing instability had focused on the health consequences of severe forms of housing instability among disadvantaged populations. Several studies found that homelessness [265–267] or crowding [268, 269] is associated with poorer physical and mental health. The number of studies on the health consequences of foreclosure has increased in recent years, as the mortgage crisis has unfolded. Having experienced mortgage repossession and being in the process of losing home have both been associated with a number on negative mental and physical health outcomes or psychological distress [270–274], and neglected health care because of financial difficulties [275]. Ecological studies also show that increases in neighbourhood-level foreclosure represent an important risk factor for depression [15].

An US study used data from the Michigan Recession and Recovery Study to measure a variety of housing instability types and assessed the association between these housing problems and self-rated health, depression, anxiety, and problematic alcohol use. Respondents who experienced homelessness and those who were behind on their mortgage or in foreclosure had a higher likelihood of reporting poor self-rated health. Respondents who experienced homelessness, were behind on their rent, or went through foreclosure recently were more likely to meet criteria for major or minor depression. Those who had recently moved for cost, fallen behind on their mortgage, or were in the foreclosure process, and those who completed a foreclosure recently were significantly more likely to report a recent anxiety attack. Finally, respondents who had been homeless recently were more likely to report harmful or hazardous alcohol use [20]. These results, coincident with other papers, suggest the existence of a gradient from stable housing; difficulties in paying, eviction, foreclosure, and homelessness as far as mental health consequences are concerned [270]. Most studies on foreclosure are based

on retrospective experiences of sufferers, but an interesting prospective US study analysed drawn data from the Detroit Neighborhoods and Health Study (DNHS), waves 1 and 2 (2008–2010) and found that exposure to foreclosure between waves 1 and 2 predicted symptoms of major depression and generalized anxiety disorder (DSM-IV) at wave 2, controlling for symptoms at wave 1. Even after adjusting for wave 1 symptoms, socio-demographic variables, lifetime history of psychiatric disorder at wave 1, and exposure to other financial stressors between waves 1 and 2, foreclosure was associated with an increased rate of symptoms of major depression and GAD [276]. Widespread housing default and particularly mortgage default and homelessness may have important public health implications.

Inequalities

The relationship between poverty and many health-related outcomes, including mental health, is indisputable: there is a socio-economic gradient, and mental health is not evenly distributed across society, with those who experience the highest levels of social disadvantage also experiencing poorer mental health than that of the more advantaged members. As economic turmoil increases the rate of poverty and widens the socio-economic gap across society, a higher rate of mental disorder and particularly of the so-called common mental disorders—i.e. depression and anxiety syndromes—is expected. Some population groups, for example, children, women, and middle age people, could be particularly vulnerable, although the elderly continue to be affected by the health effect of inequalities [277–279]. However, we need to understand better the causal relationships between social determinants and mental health, thereby clarifying which aspects of poverty are the key drivers of mental illness [280]. Aspects such as individual elections of lifestyle, exposure to risk factors, educational background, social cohesion, perception of collective unfairness—i.e. social comparisons arising from relative deprivation—access to mental health services, income inequalities among others have been put forward in different studies but it has not been possible to draw clear and generalizable conclusions. The task of elucidating these factors is difficult, given the nature of the available data. Given the impossibility of carrying out randomized controlled trials, we are stuck with observational data [36, 37, 42, 281–293]. For example, there is an ongoing debate about the influence on mental health of the level of inequality in different countries, according to their level of economic development. Probably, if we want to know whether aggregate-level income inequality has a direct effect on individual-level mental health, then the ideal data source would be multilevel time series with observations at both

the individual and aggregate level within one nation, state or local region—to control for all the confounding unobservable cultural and institutional factors that makes one country different from another—while allowing us to see what happens at the individual level (after controlling for individual-level exposure to risk factors) when aggregate-level income inequality changes. Multinational comparisons, however, are challenging given the difficulties of data comparability. As these kinds of data are often lacking, there is a very interesting area of research ahead.

Social connectedness

Social capital has recently emerged as an increasingly important concept in research and public health discourse [294]. While many definitions have been put forward to construe it, social capital is generally conceptualized as a way of describing social relationships within societies or groups of people. Particularly, social capital refers to the resources individuals have access to as a result of their social relationships. As a consequence, differential social capital generates differential socio-economic and health opportunities. Given the complexities of the social matrix, the theory of social capital has encompassed various divisions of the concept: ecological versus individual social capital, structural versus cognitive social capital, bridging versus bonding/linking social capital, among others. Its multifaceted nature along with the heterogeneity in definition and measurement has rendered synthesis of evidence challenging. In spite of diversities in the study of social capital, converging evidence has corroborated a link between its indices and health outcomes [295].

Three perspectives on the efficacy of social capital have been explored in the public health literature. A “social support” perspective argues that informal networks are central to objective and subjective welfare; an “inequality” thesis posits that widening economic disparities have eroded citizens’ sense of social justice and inclusion, which in turn has led to heightened anxiety and compromised rising life expectancies; a “political economy” approach sees the primary determinant of poor health outcomes as the socially and politically mediated exclusion from material resources. At least two systematic reviews have explored the links between social capital and mental well-being and have shown a positive association between the two [296, 297]. Similarly, other studies have drawn similar conclusions, justifying further the contribution of social capital in promoting mental health and preventing mental disorders [298, 299], although not all studies agree completely [300].

An epidemiological study conducted in 2009 in Sweden revealed an additive impact of low social and economic capital on poor health outcomes, including psychological distress, suggesting that any policy strategies employed

should target economic and social capital simultaneously [301]. Similarly, a study carried out in Greece showed that some aspects of social capital were inversely associated with lower rates of depression and anxiety, although this relationship was mediated by the intensity of the financial difficulties [302]. In line with this, reports addressing ways of mitigating the mental health effects of the financial crisis have stressed the importance of strengthening social capital [10, 303, 304].

Summary Precarious working conditions deteriorate mental health, particularly in times of economic crisis. Also, people with mental health problems are disadvantaged in getting a job, and this difficulty increases with economic downturn. Not surprisingly, indebtedness and housing instability in all its forms are associated with poorer mental health. However, causality remains elusive. There is an ongoing debate about the influence on mental health of the level of inequality and social connectedness in different countries, according to their level of economic development.

Recommendations

The current economic crisis presents an opportunity to strengthen policies that would not only mitigate the impact of the recession on mental health, but also help promote mental health at any point in the economic cycle. Investment in supports for well-being and mental health are just as relevant in times of economic thriving as in times of economic bust. Therefore, our recommendations address not only actions to be carried out in times of crisis, but also include suggestions to improve mental health in general terms. No doubt one of the best ways, if not the best, to prevent the harmful effects of crises on mental health is to have the population in “good shape” with regard to mental health. A healthy population will be more resilient to the damaging effects of crises, and thus, it is critical to invest in public health as a preventative measure [305].

We have focused on measures related to mental health, but being fully aware that our suggestions cannot be separated from general health and welfare policies. The health sector cannot achieve good mental health alone. Health systems aim to improve health and health-related well-being, but are always constrained by the resources available to them. They also need to be aware of the resources available in adjacent systems which can have such an impact on health, such as housing, employment, and education. Careful choices therefore have to be made about how to utilize what is available. One immediate corollary is to ask whether investment in the area of mental health promotion,

prevention, and intervention represent a good use of available resources. Obviously, a mental health perspective is predominant in this paper, but we will make any effort to be neutral and to justify our recommendations according to available evidence (Table 6).

The following areas of intervention and recommendations are suggested:

Welfare provision

Mental illness and poverty are considered to interact in a negative cycle; that is, not only is the risk of mental illness among people who live in poverty higher, but so too is the likelihood that those living with mental illness will drift into or remain in poverty. As a consequence, both the poor as well as people with mental disorders constitute vulnerable groups requiring targeted social and financial protection or assistance [306].

Accordingly, enhanced social protection systems are required to face persistent economic downturns. There is evidence that increased state welfare support can mitigate some of the mental health effects of economic downturns [12]. Given the depth of the present economic crisis and its duration, the resilience of social protection systems must be improved to enable them to continue providing protection to the entire population. Measures must be responsive to social needs of all generations and preserve the capacity of social protection to cushion any unequal impact of the crisis and to satisfactorily withstand economic shocks. Social support should be provided together with counselling services to those who are under relevant financial pressure (e.g. lose jobs or homes and indebtedness).

Maintaining income support

Using adequate income support measures can be an effective guarantee against precariousness and social exclusion. The overall effect of these measures impacts positively on household’s resilience to falling income and indebtedness, which in turn are related to an increase in mental health problems. Specific attention should be paid to address housing instability and children’s education. A strategy of prioritizing active employment and family promotion over passive income maintenance is advised [307].

Fighting unemployment and precarious working conditions

The relationship between unemployment and mental illness is complex, and it is difficult to identify the direction of causality; it is likely that there are pathways going in both directions. Despite this, the strong association of unemployment with depression and suicide warrants the development of programs to help people cope with joblessness

or regain employment [200]. There is now compelling evidence that employment exerts a protective influence on depression and general mental health [308] and that better unemployment protection systems mitigate the effect of unemployment on suicide [197].

A better design and integration of adequate income support, inclusive labour markets, and access to counselling services can substantially improve skills and employability of those outside the labour market. Particularly, active labour programs may be able to counteract some of the detrimental effects of recessions on mental health [309, 310]. These programs aim at improving prospects of finding rewarding employment and include employment services, labour market training, and special programs for specific vulnerable groups (e.g. aiming young people in transition from school to work apprenticeship-type training in regular educational settings offer most mental health benefits) [311]. They are based on the principles that both incentives and opportunities are needed to reduce the level of durable unemployment and the relevance of combining activation measures and investment in human capital to maintain workers' knowledge and skills. Market-relevant retraining combined with vocational rehabilitation is proven cost-effective way of to reinforce self-esteem and provide better opportunities for regaining or keeping employment [312].

Psychological support or counselling is recommended for those at risk of losing their jobs—or who have “survived” downsizing—as well as for the newly and long-term unemployed [311, 313, 314]. For those in precarious employment or struggling at work, selective or indicated preventive approaches could be applied, with likely cost-effectiveness [312, 315]. People affected by mental illness, disability, or socially stigmatized by any other reason should not be excluded from these programs, but rather actively included [316].

Addressing housing instability

Housing instability has been a characteristic of the Great Recession. Antiforeclosure programs should be launched so that fewer people who own homes will become homeless. If homelessness increases, Public Administrations and NGOs¹ should cooperate to provide in the short run more emergency shelters and transitional housing for homeless people. Programs to reduce homelessness and other forms of housing instability—i.e. concealed homelessness such as people moving in with relatives or friends—should be started [317].

¹ In many countries, this is a traditional area for NGOs' work.

Tackling inequalities

There is a danger that the direct effects of the crisis, along with the austerity measures taken to address it, could interact with, and worsen, existing inequalities of income and access to services. While tackling inequality is essentially a political task, it would still have consequences on mental health and, therefore, this task also lies within the responsibility of psychiatrists [318]. On the other hand, social inequalities may not be only economic. Promoting individual, family, and community connectedness and social integration (e.g. number of friends, high frequency of social contact, low levels of social isolation or loneliness); positive attachments to community organizations like trade unions, sports clubs or religious congregations; and formal relationships between support services and referring organizations help ensure services are actually delivered and support well-being. Social capital serves as protective factors against poor mental health and particularly suicidal thoughts and behaviours [299, 319].

Bearing in mind that the mental health of children and the elderly may be particularly affected by the economic crisis, family protection and parenting support programs can be mostly effective and efficient [320]. Moreover, depending on country cultural idiosyncrasies, supporting a specific social structure could be particularly relevant, for example the family in Southern European countries [321].

Mental health promotion and psychiatric care

As already mentioned, it is important to put the actions related to the maintenance or improvement of the mental health of the population in the context of overall public health initiatives. Given the diversity of responses to the economic crisis according to different European countries, it is interesting to remember that there are policies and interventions which favour public health, and therefore mental health, while others have dubious or harmful effects [322]. Economic crises represent a significant challenge to policy makers. Austerities regulations on health made in response to budget constrain typically come in a period when health and welfare systems may require more, not fewer, resources. Moreover, more disadvantageous and vulnerable people use heavily public services at times of crisis. Emigration of medical and other mental health specialists from countries with economic downturn may contribute to the undersupply of care for psychiatric patients. Arbitrary and widespread cuts may destabilize the entire health system, leading to inefficiencies, inequities, lack of access to essential services and higher long-term costs [303, 323].

Turning now to mental health, the first point to consider is the relevance of mental health as a source of well-being and economic prosperity of society. For example,

Table 6 Summary of recommendations according to levels of evidence

Roles	Measures	Evidence
Professionals	Maintain and improve professionalism, continuous professional development, and professional quality assurance	B
	Advocate for investment in mental health	B
	Advocate for patients/carers and promote empowerment	B
	Adopt an active role in leadership and management (prevent detrimental management at times of financial crisis)	C
	Promote mental health research, including economics	A
	Improve interprofessional and interdisciplinary communication	C
	Actively advise policy makers and influence political decisions (lobbying)	B
	Continue evolution of the psychiatric model (expand the biopsychosocial model)	C
	Promote education (including professional education and public education)	A
	Engage with the media	B
	Adapt clinical practice and professional education to address key areas during a crisis (e.g. anxiety, suicides, and substance misuse)	A
	Promote mental illness prevention and mental health promotion	A
	Society	Promote solidarity and mental capital (e.g. volunteerism and NGOs)
Fight stigma		A
Active advocacy/work with professionals		A
Public administration/policy makers	Tackle unemployment and insecure employment, safeguard workplace conditions and promote reemployment. Engage the labour market and safeguard workers' rights	A
	Reduce social and income inequality	A
	Alleviate debt, reduce poverty (especially target vulnerable populations, families with children, patients)	A
	Reduce homelessness and accommodation insecurity (regulate payday lenders and pawnbrokers, legislate against repossessions, support affordable social housing, insurance market reform, prevent overcrowding, regulate mortgage market, etc.)	A
	Antistigma legislation	A
	Support professional and advocate organizations	C
	Engage professional bodies for scientific advice	C
	Avoid mass privatization of the public sector, especially monopolies and basic amenities (e.g. water)	A
	Re-invest savings incurred through mental health system reforms back to mental health	B
	Encourage social capital building	A
	Culture-specific rationalization of measures	B
Health system	Prevent overt and covert privatization of the public mental health sector (e.g. link bed closure with development of community mental health services), and support good private sector partners and NGOs	B
	Promote community and primary care mental health	A
	Empower local mental health management, sectorization	A
	System quality assurance	A
	Support sensible cost-effectiveness	A
	Integrate governance (e.g. alleviate management/clinician management gap)	B
	Pre-empt and implement service restructuring to accommodate for key mental health needs in a crisis:	
	Vulnerable populations: e.g. children, elderly, families, physical health of the mentally ill	A
	Crisis-specific diagnoses: e.g. depression and anxiety, suicide, substance misuse	A
	Key areas: e.g. workplace (including "hidden" mental health morbidity), impoverished areas	A
	Outreach and support services: e.g. home treatment, emergency departments, primary care settings, community outreach	A
	Continue psychiatric reform: deinstitutionalization, community services	A
	Improve access to services	A
	Invest in prevention of mental illness and promotion of mental health, to improve both clinical effectiveness and cost-effectiveness	A

it has been estimated that the economic impact of mental health problems in EU countries is equivalent to a reduction of 3–4 % of the gross domestic product [324]. On the other hand, there is substantial evidence that mental health investments can be effective and save money [305, 325–328] contributing to cost-effectiveness and increased productivity in many ways and at many levels [329, 330] and producing a widespread benefit in society, not only in people affected by psychiatric disorders or their relatives [203]. Finally, it should be noted that meeting the mental health challenges of the economic crisis may require not only protecting spending on existing mental health services but also restructuring services and models of care to meet the needs of the population [305].

Taking these considerations into account, the following recommendations are endorsed:

Speeding up the processes to improve mental health care

Most of the European states restructured their mental health systems during the late decades of the past century, in response to the deinstitutionalization wave and new treatment philosophies [331]. This paradigm shift in psychiatric care occurred in Europe means that its operative goal moved from the medical and social management of people with severe mental disorders associated with disabilities to the specialized medical and psychological care of the whole population. This task can only be assumed by creating a community-oriented network of psychiatric services based on a principle of inclusion [332].

However, the process has not been homogeneous and varies considerably across countries. Scarcity of available resources, inequities in their distribution, and inefficiencies in their use pose the three main obstacles to better mental health care, especially in lower-income countries. Overall, government spending on mental health in most of the countries is far lower than is needed, based on the proportionate burden of mental disorders and the availability of cost-effective and affordable interventions. The poorest countries spend the lowest percentages of their overall health budgets on mental health. Not only are resources for mental health scarce, they are also inequitably distributed between countries, between regions, and within communities. Populations with high rates of socio-economic deprivation have the highest need for mental health care, but the lowest access to it [333]. Stigma about mental disorders also constrains use of available resources. Inefficiencies in the use of available resources for mental health care include locative and technical inefficiencies in financing mechanisms and interventions, and an overconcentration of resources in large still existing asylum-like institutions or hospitals [334]. Clearly, this scenario is likely to worsen considerably in the context of an economic crisis, and this

seems to have happened in some European countries during the Great Recession, precisely at the moment when a strengthening of mental health care was mostly needed [335].

The following goals are to be pursued: a) to continue or deepen the process of creating a network of community psychiatric services; b) to increase—or at least not to decrease—coverage of mental health services for the population; c) to promote cooperation and coordination with social services, particularly with those involved in attention of people most affected by the aftermath of economic turmoil; d) to encompass policies of deinstitutionalization and closing of long-term beds, if taken, with the creation of residential alternatives for people with disability from severe mental illness; e) to tackle stigma towards people affected by mental disorders; and f) to establish a cost-efficient portfolio of services and healthcare programs in accordance with the best available evidence [10, 12, 26, 303, 305, 315, 328].

Promoting the coordination or integration of primary care and psychiatric care

Primary care should constitute the first line of approach to mental health problems resulting from the economic crisis. The primary care approach increases access to mental health care and shifts the focus to prevention and early intervention which can be particularly useful in relation to reducing suicides and suicidal behaviour [336]. Even in economically “non-turbulent” times, primary care settings are the locale where up to 70 % of patients are diagnosed and treated for the most prevalent mental health conditions including anxiety, mood, and substance use disorders [337]. Furthermore, it is likely that the increase of people suffering from common mental disorders as a result of the crisis preferably come to seek help from primary care services, rather than specialized psychiatric services [44].

There is not a single way to maximize the cooperation of primary care and mental health services, and several collaborative or integrated models have been proposed, taking into account organizational peculiarities of healthcare delivery and financing [338, 339]. Recent systematic reviews found that these models constitute a cost-efficient strategy to improve mental and physical outcomes for a range of mental health conditions across diverse populations and primary care settings [340].

In the context of an economic shock, a number of specific programs should be included in the interface of primary and mental health care, namely: a) programs for prevention of suicidal thoughts and behaviours, b) group psychological support for unemployed and/or in debt people to promote mental health and increase reemployment rates, c) brief interventions for heavy drinkers, and d)

programs for addressing common mental disorders such as anxiety and depression [309, 310, 313, 341–344].

Emphasizing Illness prevention and Health promotion

Special emphasis needs to be assigned to mental illness prevention and mental health promotion in times of economic crisis. There are several reasons that support this assertion. The first one is about clinical effectiveness. There is a growing evidence of the clinical effectiveness of preventive psychiatry (mental illness prevention and mental health promotion), particularly with regard to interventions in children and adolescents [345, 346]. In the case of financial crises, a case may be made for preventive measures to be taken against future adversity. For instance, the population's resilience and positive mental health may be reinforced and thus reduce the number of those vulnerable to mental breakdowns or relapse. But even in an evolving financial crisis like the current one, secondary and tertiary preventive measures—such as welfare provision and availability of competent crisis services—could be effective in reducing morbidity longitudinally or even transgenerationally.

On the other hand, recent convincing evidence on the cost-effectiveness of illness prevention and health promotion has offered the necessary argument to support its investment, particularly in times of crisis [315, 330]. In order to make this investment pragmatic and proportionate to available funds, mental health professionals need to advise the authorities/management on priorities based on utilitarian logic. Psychiatric Associations, both locally and internationally, must be responsible for setting up such proactive advisory groups.

In addition, this preventive approach should also be applied to mental health and primary care services, chronically underfunded and seen as low priority, particularly when austerity measures are taken [347, 348]. Similarly, they receive the bulk of crisis-related morbidity and thus may risk delivering substandard care and can experience attritional phenomena like professional burnout [349]. It is important to emphasize that prevention and promotion can also be applied to services, both in terms of alleviating the bulk of service users as part of the crises' aftermath, but also by direct application of measures to produce resilient and competent systems and workers.

Adopting support and communication strategies

Psychiatry can actively facilitate resilience and support positive mental health through its role as the interface between medicine and the society. Through encouraging patient advocacy, it can empower people to be active participants in their own health care and the health service as

a whole. Psychiatry can champion solidarity, altruism, and social inclusion. Mental health professionals and advocates should communicate effectively these arguments to all stakeholders, including policy makers and the public.

The importance of the mental health agenda in economic crises needs to be raised with policy makers. The promotion of the mental health agenda is probably best achieved by advocacy through international organizations (e.g. WPA, EPA, WFMH...)² that may exert political leverage through lobbying interested parties (including national psychiatric associations, patient, and advocate organizations) and backed by evidence on effectiveness and cost-effectiveness. As an example, the opinion of experts in a given country is powerfully reinforced if it is supported by an independent international organization, free from conflicts of interest that often can appear at country level. Importantly, international organizations should have a cohesive and significant plan of implementation on a national and local level, synthesized on the basis of the capacity of mental health services to respond.

Among other stakeholders, it is particularly relevant to support managers on the ground, as reform during a financial crisis can be particularly challenging. Also, a close collaboration between media representatives and mental health experts as well as commonly agreed suicide reporting guidelines is needed to prevent media-related increases in suicides during times of economic hardship [350].

In parallel, antistigma media initiatives should continue to be supported and the case should be made for the positive effect of antistigma education on culture and quality of life. In addition to supporting patients and their families in their daily struggles, the antistigmatization of mental health services will help to raise their profile and hence retain and recruit competent personnel, in the public, and thus hopefully prevent their underfunding, particularly at times of economic difficulty [347, 348].

Direct or indirect stigmatization of mental illness and/or discrimination, particularly when committed by public figures or in policy documents, should be assertively challenged by mental health professionals, advocates, and their organizations. The main vehicle to achieve effective communication strategies would be through assigning regulatory rights to vigilant mental health organizations. They would be best placed to communicate at the highest level of leadership, that the preferential withdrawal of funds from mental health during a crisis constitutes a case of direct discrimination, especially when there is evidence suggesting that such withdrawal of funds would also be financially detrimental in the longer term.

² WPA: World Psychiatric Association; EPA: European Psychiatric Association; WFMH: World Federation of Mental Health.

Key unanswered questions and future directions

There is a clear and significant relationship between economic downturns and psychopathology including suicide, demand of care for mental health problems particularly at the primary care level, onset or exacerbation of mood disorders, anxiety, heavy drinking, and psychological distress. Despite some potential methodological flaws, across study locations, designs, quality, and indicators measured, the literature indicates that there is a connection between economic decline and psychiatric disorders. Unfavourable effects of economic crises most negatively affect the poor, less educated, and those affected by unemployment or another forms of financial strain. Such effects also occur in the overall population and the employed, suggesting that economic crises may have effects regardless of social standing and occupational status, and have a negative impact on mental health across different population subgroups.

While studies have concentrated on suicide rates, future research may examine other measures of psychopathology, as suicide is an extreme outcome and rare event. Given the relative dearth of recent empirical research on psychiatric disorders, there is room for new empirical research on how the current economic downturn influences population mental health, and to what extent policy makers take population mental health into consideration when devising economic recovery strategies. Although many articles suggest limitations of existing research and provide suggestions for future research, there is relatively little discussion of policy approaches to address the negative impact of economic crises on mental health. The few studies that addressed policy questions suggested that the development of social protection programs such as active labour programs, social support systems, protection for housing instability, and better access to mental health care is strongly needed.

Institutions like the European Psychiatric Association have a significant role in attempting to minimize the impact of the economic crisis on the mental health of European citizens, first, through the preparation of studies that objectively reflect the state of the question and second, by promoting the implementation of the recommendations emanating from them, at both European and national level.

Although governments may be reluctant to increase spending during a recession, expanded societal protection schemes have appeared to somewhat mitigate the negative impact of economic downturns on population mental health. Whereas it is important to be sceptical of findings from aggregate-level research, findings from empirical work on the relationship between economic decline and mental health indicate that health systems and policy makers should consider the health and social impact of economic downturns and develop policies and programs accordingly.

This paper has provided evidence suggesting that an improvement in the population's mental health can bring significant direct and indirect benefits, primarily with regard to individual and societal well-being, but also in economic terms. Therefore, any cost associated with the improvement of mental healthcare provision, research, education, etc., must be seen by policy makers as an investment with great potential for savings. Whereas all efforts should be made by healthcare professionals to quantify the outcomes of such interventions, it must be made clear that the return of such investment will not be fully quantifiable and that a certain degree of acceptance of the fact that the potential intangible benefits are significant is needed.

Compliance with ethical standards

Conflict of interest None of the above-listed authors declare any conflict of interest concerning this article.

References

1. European Parliament (2012) Workshop proceedings on mental health in times of economic crises. European Parliament. Directorate General for Internal Policies, Brussels
2. EUROSTAT (2014) People at risk of poverty or social exclusion. Brussels: EUROSTAT. European Commission, Source: Statistics Explained. http://epp.eurostat.ec.europa.eu/statistics_explained/. Accessed 29 Aug 2014
3. Kalousova L, Burgard SA (2014) Unemployment, measured and perceived decline of economic resources: contrasting three measures of recessionary hardships and their implications for adopting negative health behaviors. *Soc Sci Med* 106:28–34
4. Dore MH, Singh RG (2010) The global financial crisis and the Great Recession of 2007–2009. *Nonlinear Dynamics Psychol Life Sci* 14(3):317–342
5. Ruhm CJ (2009) Economic conditions and health behaviors: are recessions good for your health? *N C Med J* 70(4):328–329
6. Garcia M (2014) Mortality rates or sociomedical indicators? The work of the League of Nations on standardizing the effects of the Great Depression on health. *Health Policy Plan* 29(1):1–11
7. Stuckler D, Meissner C, Fishback P, Basu S, McKee M (2012) Banking crises and mortality during the Great Depression: evidence from US urban populations, 1929–1937. *J Epidemiol Community Health* 66(5):410–419
8. Tapia Granados JA, Diez Roux AV (2009) Life and death during the Great Depression. *Proc Natl Acad Sci USA* 106(41):17290–17295
9. Suhrcke M, McKee M, Stuckler D, Sauto AR, Tsoolova S, Mortensen J (2006) The contribution of health to the economy in the European Union. *Public Health* 120(11):994–1001
10. Wahlbeck K, McDaid D (2012) Actions to alleviate the mental health impact of the economic crisis. *World Psychiatry* 11(3):139–145
11. WHO Regional Office for Europe (2011) Impact of economic crises on mental health. WHO Regional Office for Europe, Copenhagen
12. Uutela A (2010) Economic crisis and mental health. *Curr Opin Psychiatry* 23(2):127–130

13. Burgard SA, Hawkins JM (2014) Race/ethnicity, educational attainment, and foregone health care in the United States in the 2007–2009 recession. *Am J Public Health* 104(2):e134–e140
14. Burns P, Gimpel J (2014) Economic insecurity. Prejudicial stereotypes, and public opinion on immigration policy. *Polit Sci Q* 115:201–225
15. Cagney KA, Browning CR, Iveniuk J, English N (2014) The onset of depression during the great recession: foreclosure and older adult mental health. *Am J Public Health* 104(3):498–505
16. Cui W, Zack MM (2013) Trends in health-related quality of life among adolescents in the United States, 2001–2010. *Prev Chronic Dis* 10:E111
17. Evans-Lacko S, Knapp M, McCrone P, Thornicroft G, Mojtabai R (2013) The mental health consequences of the recession: economic hardship and employment of people with mental health problems in 27 European countries. *PLoS One* 8(7):e69792
18. Vazquez ML, Vargas I, Aller MB (2014) The impact of the economic crisis on the health and healthcare of the immigrant population. *Gac Sanit* 28(Suppl 1):142–146
19. Cooper B (2011) Economic recession and mental health: an overview. *Neuropsychiatr* 25(3):113–117
20. Burgard SA, Seefeldt KS, Zelnor S (2012) Housing instability and health: findings from the Michigan Recession and Recovery Study. *Soc Sci Med* 75(12):2215–2224
21. Dooley D (2003) Unemployment, underemployment, and mental health: conceptualizing employment status as a continuum. *Am J Community Psychol* 32(1–2):9–20
22. Fitch C, Jenkins R, Hurlston M, Hamilton S, Davey R, Walker F (2009) Debt and mental health: an overview of selected evidence, key challenges, and available tools. *Ment Health Today* 23:26–31
23. Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M (2009) The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *Lancet* 374(9686):315–323
24. Dear M, Clark G, Clark S (1979) Economic cycles and mental health care policy: an examination of the macro-context for social service planning. *Soc Sci Med Med Econ* 13C(1):43–53
25. Lundberg O, Yngwe MA, Stjerne MK, Elstad JI, Ferrarini T, Kangas O et al (2008) The role of welfare state principles and generosity in social policy programmes for public health: an international comparative study. *Lancet* 372(9650):1633–1640
26. Zivin K, Paczkowski M, Galea S (2011) Economic downturns and population mental health: research findings, gaps, challenges and priorities. *Psychol Med* 41(7):1343–1348
27. Alonso J, Codony M, Kovess V, Angermeyer MC, Katz SJ, Haro JM et al (2007) Population level of unmet need for mental healthcare in Europe. *Br J Psychiatry* 190:299–306
28. Borges G, Nock MK, Haro Abad JM, Hwang I, Sampson NA, Alonso J et al (2010) Twelve-month prevalence of and risk factors for suicide attempts in the World Health Organization World Mental Health Surveys. *J Clin Psychiatry* 71(12):1617–1628
29. European Commission (2005) Green Paper. Improving the mental health of the population: towards a strategy on mental health for the European Union. European Commission. Directorate General of Health & Consumer Protection, Brussels
30. Borowy I (2008) Crisis as opportunity: international health work during the economic depression. *Dynamis* 28:29–51
31. McDaid D, Quaglio G, Correia de Campos A, Dario C, Van Woensel L, Karapiperis T et al (2013) Health protection in times of economic crisis: challenges and opportunities for Europe. *J Public Health Policy* 34(4):489–501
32. Urbanos R (2010) Health in all policies. Is the economic depression a time of opportunities? *Gac Sanit* 24(Suppl 1):7–11
33. Catalano R (1991) The health effects of economic insecurity. *Am J Public Health* 81(9):1148–1152
34. Dooley D, Catalano R (1980) Economic change as a cause of behavioral disorder. *Psychol Bull* 87(3):450–468
35. Molarius A, Berglund K, Eriksson C, Eriksson HG, Lindén-Bostrom M, Nordstrom E et al (2009) Mental health symptoms in relation to socio-economic conditions and lifestyle factors—a population-based study in Sweden. *BMC Public Health* 9:302
36. Fryers T, Melzer D, Jenkins R, Brugha T (2005) The distribution of the common mental disorders: social inequalities in Europe. *Clin Pract Epidemiol Ment Health* 5(1):14–26
37. Hong J, Knapp M, McGuire A (2011) Income-related inequalities in the prevalence of depression and suicidal behaviour: a 10-year trend following economic crisis. *World Psychiatry* 10(1):40–44
38. Li Z, Page A, Martin G, Taylor R (2011) Attributable risk of psychiatric and socio-economic factors for suicide from individual-level, population-based studies: a systematic review. *Soc Sci Med* 72(4):608–616
39. Alvarez-Galvez J, Rodero-Cosano ML, Motrico E, Salinas-Perez JA, Garcia-Alonso C, Salvador-Carulla L (2013) The impact of socio-economic status on self-rated health: study of 29 countries using European social surveys (2002–2008). *Int J Environ Res Public Health* 10(3):747–761
40. Melchior M, Chastang JF, Leclerc A, Ribet C, Rouillon F (2010) Low socioeconomic position and depression persistence: longitudinal results from the GAZEL cohort study. *Psychiatry Res* 177(1–2):92–96
41. Ostler K, Thompson C, Kinmonth AL, Peveler RC, Stevens L, Stevens A (2001) Influence of socio-economic deprivation on the prevalence and outcome of depression in primary care: the Hampshire Depression Project. *Br J Psychiatry* 178(1):12–17
42. Pickett KE, Wilkinson RG (2015) Income inequality and health: a causal review. *Soc Sci Med* 128C:316–326
43. Pinto-Meza A, Moneta MV, Alonso J, Angermeyer MC, Bruffaerts R, Caldas de Almeida JM et al (2013) Social inequalities in mental health: results from the EU contribution to the World Mental Health Surveys Initiative. *Soc Psychiatry Psychiatr Epidemiol* 48(2):173–181
44. Gili M, Roca M, Basu S, McKee M, Stuckler D (2013) The mental health risks of economic crisis in Spain: evidence from primary care centres, 2006 and 2010. *Eur J Public Health* 23(1):103–108
45. Bobes J, Iglesias Garcia C, Garcia-Portilla Gonzalez MP, Bascaran MT, Jimenez TL, Pelayo-Teran JM et al (2013) Changes in administrative prevalence of mental disorders over a 13-year period in Asturias (northern Spain). *Rev Psiquiatr Salud Ment* 6(2):60–66
46. Iglesias Garcia C, Saiz Martinez P, Garcia-Portilla Gonzalez MP, Bousoño Garcia M, Jimenez Trevino L, Sanchez Lasheras F et al (2014) Effects of the economic crisis on demand due to mental disorders in Asturias: data from the Asturias Cumulative Psychiatric Case Register (2000–2010). *Actas Esp Psiquiatr* 42(3):108
47. Astell-Burt T, Feng X (2013) Health and the 2008 economic recession: evidence from the United Kingdom. *PLoS One* 8(2):e56674
48. Katikireddi SV, Niedzwiedz CL, Popham F (2012) Trends in population mental health before and after the 2008 recession: a repeat cross-sectional analysis of the 1991–2010 Health Surveys of England. *BMJ Open* 2(5):1–9
49. Economou M, Madianos M, Peppou LE, Patelakis A, Stefanis CN (2013) Major depression in the era of economic crisis: a replication of a cross-sectional study across Greece. *J Affect Disord* 145(3):308–314
50. Madianos M, Economou M, Alexiou T, Stefanis C (2011) Depression and economic hardship across Greece in 2008 and

- 2009: two cross-sectional surveys nationwide. *Soc Psychiatry Psychiatr Epidemiol* 46(10):943–952
51. Hauksdottir A, McClure C, Jonsson SH, Olafsson O, Valdimarsdottir UA (2013) Increased stress among women following an economic collapse—a prospective cohort study. *Am J Epidemiol* 2013(02/15):979–988
 52. Urbanos-Garrido RM, Lopez-Valcarcel BG (2015) The influence of the economic crisis on the association between unemployment and health: an empirical analysis for Spain. *Eur J Health Econ* 16(2):175–184
 53. Bartoll X, Palencia L, Malmusi D, Suhrcke M, Borrell C (2014) The evolution of mental health in Spain during the economic crisis. *Eur J Public Health* 24(3):415–418
 54. Salvador-Carulla L, Roca M (2013) Mental health impact of the economic crisis in Spain. *Int Psychiatry* 10(1):8–10
 55. Lee S, Guo WJ, Tsang A, Mak AD, Wu J, Ng KL et al (2010) Evidence for the 2008 economic crisis exacerbating depression in Hong Kong. *J Affect Disord* 126(1–2):125–133
 56. Sargent-Cox K, Butterworth P, Anstey KJ (2011) The global financial crisis and psychological health in a sample of Australian older adults: a longitudinal study. *Soc Sci Med* 73(7):1105–1112
 57. Wang J, Smailes E, Sareen J, Fick GH, Schmitz N, Patten SB (2010) The prevalence of mental disorders in the working population over the period of global economic crisis. *Can J Psychiatry* 55(9):598–605
 58. Helms HM, Supple AJ, Su J, Rodriguez Y, Cavanaugh AM, Hengstebeck ND (2014) Economic pressure, cultural adaptation stress, and marital quality among Mexican-origin couples. *J Fam Psychol* 28(1):77–87
 59. Wickrama KA, Surjadi FF, Lorenz FO, Conger RD, Walker C (2012) Family Economic Hardship and Progression of Poor Mental Health in Middle-aged Husbands and Wives. *Fam Relat* 61(2):297–312
 60. Wickrama KA, Hwa KK, Lorenz FO, Conger RD, Surjadi FF (2010) Dynamics of family economic hardship and the progression of health problems of husbands and wives during the middle years: a perspective from rural Mid-West. *J Aging Health* 22(8):1132–1157
 61. Yeung W, Hofferth S (1998) Family adaptations to income and job loss in the U.S. *J Fam Econ Issues* 19(3):255–283
 62. McInerney M, Mellor JM, Nicholas LH (2013) Recession depression: mental health effects of the 2008 stock market crash. *J Health Econ* 32(6):1090–1104
 63. Deng J, Lian Y, Shen C, Chen Y, Zhang M, Wang YJ et al (2012) Adverse life event and risk of cognitive impairment: a 5-year prospective longitudinal study in Chongqing, China. *Eur J Neurol* 19(4):631–637
 64. Thekiso TB, Heron EA, Masood B, Murphy M, McLoughlin DM, Kennedy N (2013) Mauling of the “Celtic Tiger”: clinical characteristics and outcome of first-episode depression secondary to the economic recession in Ireland. *J Affect Disord* 151(2):455–460
 65. Catalano R, Dooley CD (1977) Economic predictors of depressed mood and stressful life events in a metropolitan community. *J Health Soc Behav* 18(3):292–307
 66. Dooley D, Catalano R (1979) Economic, life, and disorder changes: time-series analyses. *Am J Community Psychol* 7(4):381–396
 67. Dooley D, Catalano R, Jackson R, Brownell A (1981) Economic, life, and symptom changes in a nonmetropolitan community. *J Health Soc Behav* 22(2):144–154
 68. Rahmqvist M, Carstensen J (1998) Trend of psychological distress in a Swedish population from 1989 to 1995. *Scand J Soc Med* 26(3):214–222
 69. Viinamaki H, Hintikka J, Kontula O, Niskanen L, Koskela K (2000) Mental health at population level during an economic recession in Finland. *Nord J Psychiatry* 3:177–182
 70. Kim E, Jo SA, Hwang JY, Shin C, Kim DK, Woo EK et al (2005) A survey of depressive symptoms among South Korean adults after the Korean financial crisis of late 1997: prevalence and correlates. *Ann Epidemiol* 15(2):145–152
 71. Cho MJ, Nam JJ, Suh GH (1998) Prevalence of symptoms of depression in a nationwide sample of Korean adults. *Psychiatry Res* 81(3):341–352
 72. Ayers JW, Althouse BM, Allem JP, Childers MA, Zafar W, Latkin C et al (2012) Novel surveillance of psychological distress during the great recession. *J Affect Disord* 142(1–3):323–330
 73. Tefft N (2011) Insights on unemployment, unemployment insurance, and mental health. *J Health Econ* 30(2):258–264
 74. Economou M, Peppou LE, Louki E, Komporozos A, Mellou A, Stefanis C (2012) Depression telephone helpline: help seeking during the financial crisis. *Psychiatriki* 23(1):17–28
 75. Sivertsen B, Krokstad S, Overland S, Mykletun A (2009) The epidemiology of insomnia: associations with physical and mental health. The HUNT-2 study. *J Psychosom Res* 67(2):109–116
 76. Grandner MA, Patel NP, Gehrman PR, Xie D, Sha D, Weaver T et al (2010) Who gets the best sleep? Ethnic and socioeconomic factors related to sleep complaints. *Sleep Med* 11(5):470–478
 77. Lallukka T, Rahkonen O, Lahelma E, Arber S (2010) Sleep complaints in middle-aged women and men: the contribution of working conditions and work-family conflicts. *J Sleep Res* 19(3):466–477
 78. Lallukka T, Arber S, Rahkonen O, Lahelma E (2010) Complaints of insomnia among midlife employed people: the contribution of childhood and present socioeconomic circumstances. *Sleep Med* 11(9):828–836
 79. Lallukka T, Ferrie JE, Kivimaki M, Shipley MJ, Rahkonen O, Lahelma E (2012) Economic difficulties and subsequent sleep problems: evidence from British and Finnish occupational cohorts. *Sleep Med* 13(6):680–685
 80. Patel NP, Grandner MA, Xie D, Branas CC, Gooneratne N (2010) “Sleep disparity” in the population: poor sleep quality is strongly associated with poverty and ethnicity. *BMC Public Health* 10:475
 81. Sekine M, Chandola T, Martikainen P, Marmot M, Kagamimori S (2006) Work and family characteristics as determinants of socioeconomic and sex inequalities in sleep: the Japanese Civil Servants Study. *Sleep* 29(2):206–216
 82. Hyyppa MT, Kronholm E, Alanen E (1997) Quality of sleep during economic recession in Finland: a longitudinal cohort study. *Soc Sci Med* 45(5):731–738
 83. Talala KM, Martelin TP, Haukkala AH, Harkanen TT, Prattala RS (2012) Socio-economic differences in self-reported insomnia and stress in Finland from 1979 to 2002: a population-based repeated cross-sectional survey. *BMC Public Health* 12:650
 84. Dregan A, Armstrong D (2009) Age, cohort and period effects in the prevalence of sleep disturbances among older people: the impact of economic downturn. *Soc Sci Med* 69(10):1432–1438
 85. Hall M, Buysse DJ, Nofzinger EA, Reynolds CF III, Thompson W, Mazumdar S et al (2008) Financial strain is a significant correlate of sleep continuity disturbances in late-life. *Biol Psychol* 77(2):217–222
 86. Paine SJ, Gander PH, Harris R, Reid P (2004) Who reports insomnia? Relationships with age, sex, ethnicity, and socioeconomic deprivation. *Sleep* 27(6):1163–1169
 87. Roberts RE, Shema SJ, Kaplan GA (1999) Prospective data on sleep complaints and associated risk factors in an older cohort. *Psychosom Med* 61(2):188–196

88. Anagnostopoulos DK, Soumaki E (2012) The impact of socioeconomic crisis on mental health of children and adolescents. *Psychiatriki* 23(1):13–16
89. Fernandez-Rivas A, Gonzalez-Torres MA (2013) The economic crisis in Spain and its impact on the mental health of children and adolescents. *Eur Child Adolesc Psychiatry* 22(9):583–586
90. Tamburlini G (2011) Economic crisis and child health. *Medico e Bambino* 8:505–509
91. Webb AA, Friedemann ML (1991) Six years after an economic crisis: child's anxiety and quality of peer relationships. *J Community Health Nurs* 8(4):233–243
92. Solantaus T, Leinonen J, Punamaki RL (2004) Children's mental health in times of economic recession: replication and extension of the family economic stress model in Finland. *Dev Psychol* 40(3):412–429
93. Marmot MG, Bell R (2009) How will the financial crisis affect health? *BMJ* 338:b1314
94. Paananen R, Santalahti P, Merikukka M, Ramo A, Wahlbeck K, Gissler M (2013) Socioeconomic and regional aspects in the use of specialized psychiatric care—a Finnish nationwide follow-up study. *Eur J Public Health* 23(3):372–377
95. Stein CH, Abraham KM, Bonar EE, Leith JE, Kraus SW, Hamill AC et al (2011) Family ties in tough times: how young adults and their parents view the U.S. economic crisis. *J Fam Psychol* 25(3):449–454
96. Wickrama KA, Conger RD, Lorenz FO, Jung T (2008) Family antecedents and consequences of trajectories of depressive symptoms from adolescence to young adulthood: a life course investigation. *J Health Soc Behav* 49(4):468–483
97. Wickrama KA, Conger RD, Lorenz FO, Martin M (2012) Continuity and discontinuity of depressed mood from late adolescence to young adulthood: the mediating and stabilizing roles of young adults' socioeconomic attainment. *J Adolesc* 35(3):648–658
98. Hammarstrom A (1994) Health consequences of youth unemployment—review from a gender perspective. *Soc Sci Med* 38(5):699–709
99. Freeman DG (1999) A note on 'Economic conditions and alcohol problems'. *J Health Econ* 18(5):661–670
100. Ruhm CJ (1995) Economic conditions and alcohol problems. *J Health Econ* 14(5):583–603
101. Eitner SL (1997) Measuring the human cost of a weak economy: does unemployment lead to alcohol abuse? *Soc Sci Med* 44(2):251–260
102. Ruhm CJ, Black WE (2002) Does drinking really decrease in bad times? *J Health Econ* 21(4):659–678
103. Dee TS (2001) Alcohol abuse and economic conditions: evidence from repeated cross-sections of individual-level data. *Health Econ* 10(3):257–270
104. Xu X (2013) The business cycle and health behaviors. *Soc Sci Med* 77:126–136
105. Pacula RL (2011) Substance use and recessions: what can be learned from economic analyses of alcohol? *Int J Drug Policy* 22(5):326–334
106. Davalos ME, Fang H, French MT (2012) Easing the pain of an economic downturn: macroeconomic conditions and excessive alcohol consumption. *Health Econ* 21(11):1318–1335
107. Mulia N, Zemore SE, Murphy R, Liu H, Catalano R (2014) Economic loss and alcohol consumption and problems during the 2008 to 2009 U.S. recession. *Alcohol Clin Exp Res* 38(4):1026–1034
108. Murphy RD, Zemore SE, Mulia N (2014) Housing instability and alcohol problems during the 2007–2009 US recession: the moderating role of perceived family support. *J Urban Health* 91(1):17–32
109. Vijayasiri G, Richman JA, Rospenda KM (2012) The Great Recession, somatic symptomatology and alcohol use and abuse. *Addict Behav* 37(9):1019–1024
110. Witbrodt J, Mulia N, Zemore SE, Kerr WC (2014) Racial/Ethnic disparities in alcohol-related problems: differences by gender and level of heavy drinking. *Alcohol Clin Exp Res* 38(6):1662–1670
111. Zemore SE, Karriker-Jaffe KJ, Mulia N (2013) Temporal trends and changing racial/ethnic disparities in alcohol problems: results from the 2000 to 2010 national alcohol surveys. *J Addict Res Ther* 28:4
112. Zemore SE, Mulia N, Jones-Webb RJ, Liu H, Schmidt L (2013) The 2008–2009 recession and alcohol outcomes: differential exposure and vulnerability for Black and Latino populations. *J Stud Alcohol Drugs* 74(1):9–20
113. Richman JA, Rospenda KM, Johnson TP, Cho YI, Vijayasira G, Cloninger L et al (2012) Drinking in the age of the Great Recession. *J Addict Dis* 31(2):158–172
114. Bor J, Basu S, Coutts A, McKee M, Stuckler D (2013) Alcohol use during the great recession of 2008–2009. *Alcohol Alcohol* 48(3):343–348
115. Chalmers J, Ritter A (2011) The business cycle and drug use in Australia: evidence from repeated cross-sections of individual level data. *Int J Drug Policy* 22(5):341–352
116. Shim E, Cho Y (2013) Widening social disparities in alcohol-attributable deaths among Korean men aged 40–59 years during the transitional period of the economic crisis (1995–2005). *Int J Public Health* 58(4):521–527
117. Johansson E, Bockerman P, Prattala R, Uutela A (2006) Alcohol-related mortality, drinking behavior, and business cycles: are slumps really dry seasons? *Eur J Health Econ* 7(3):215–220
118. Herttua K, Makela P, Martikainen P (2007) Differential trends in alcohol-related mortality: a register-based follow-up study in Finland in 1987–2003. *Alcohol Alcohol* 42(5):456–464
119. Asgeirsdottir TL, Cormann H, Noonan K, Olafsdottir T, Reichman NE (2014) Was the economic crisis of 2008 good for Icelanders? Impact on health behaviors. *Econ Hum Biol* 13:1–19
120. Harhay MO, Bor J, Basu S, McKee M, Mindell JS, Shelton NJ et al (2014) Differential impact of the economic recession on alcohol use among white British adults, 2004–2010. *Eur J Public Health* 24(3):410–415
121. Nandi A, Charters TJ, Strumpf EC, Heymann J, Harper S (2013) Economic conditions and health behaviours during the 'Great Recession'. *J Epidemiol Community Health* 67(12):1038–1046
122. Mattei G, Ferrari S, Pingani L, Rigatelli M (2014) Short-term effects of the 2008 Great Recession on the health of the Italian population: an ecological study. *Soc Psychiatry Psychiatr Epidemiol* 49(6):851–858
123. Garcy AM, Vagero D (2012) The length of unemployment predicts mortality, differently in men and women, and by cause of death: a six year mortality follow-up of the Swedish 1992–1996 recession. *Soc Sci Med* 74(12):1911–1920
124. Kaplan MS, Huguet N, Caetano R, Giesbrecht N, Kerr WC, McFarland BH (2015) Economic contraction, alcohol intoxication and suicide: analysis of the National Violent Death Reporting System. *Inj Prev* 21(1):35–41
125. Toffolutti V, Suhrcke M (2014) Assessing the short term health impact of the Great Recession in the European Union: a cross-country panel analysis. *Prev Med* 64:54–62
126. Bretteville-Jensen AL (2011) Illegal drug use and the economic recession—what can we learn from the existing research? *Int J Drug Policy* 22(5):353–359
127. Ben L, Bastianic T (2011) Economic constraint and modes of consumption of addictive goods. *Int J Drug Policy* 22(5):360–365

128. Caulkins JP (2011) The global recession's effect on drug demand—diluted by inertia. *Int J Drug Policy* 22(5):374–375
129. Castiglioni S, Zuccato E (2010) Illicit drugs in the environment: emerging contaminants and indicators of drug abuse. *Integr Environ Assess Manag* 6(1):186–187
130. Zuccato E, Castiglioni S, Tettamanti M, Olandese R, Bagnati R, Melis M, Fanelli R (2011) Changes in illicit drug consumption patterns in 2009 detected by wastewater analysis. *Drug Alcohol Depend* 118(2–3):464–469
131. Henkel D (2011) Unemployment and substance use: a review of the literature (1990–2010). *Curr Drug Abuse Rev* 4(1):4–27
132. Storti CC, De Grauwe P, Sabadash A, Montanari L (2011) Unemployment and drug treatment. *Int J Drug Policy* 22(5):366–373
133. Compton WM, Gfroerer J, Conway KP, Finger MS (2014) Unemployment and substance outcomes in the United States 2002–2010. *Drug Alcohol Depend* 1(142):350–353
134. Arkes J (2007) Does the economy affect teenage substance use? *Health Econ* 16(1):19–36
135. Arkes J (2012) How does youth cigarette use respond to weak economic periods? Implications for the current economic crisis. *Subst Use Misuse* 47(4):375–382
136. Arkes J (2011) Recessions and the participation of youth in the selling and use of illicit drugs. *Int J Drug Policy* 22(5):335–340
137. Almarsdottir AB, Karlsdottir AD, Gumundsson A, Halldorsson M, Gizurarson S (2011) Did the fall of the Icelandic banks affect psychotropic drug use in the population? *Pharmacoepidemiol Drug Saf* 20(Suppl. 1):S87–S88
138. Furtado C (2013) The effect of the financial crisis in the use of psychotropic drugs in Portugal. *Pharmacoepidemiol Drug Saf* 22:422–423
139. Ketting E (1989) Use of psychotropic drugs and economic recession in the EC-countries 1978–1987. In: Veenhoven R, Hagenaars A (eds) *Did the crisis really hurt? Effects of the 1980–1982 economic recession on satisfaction, mental health and mortality*. Universitaire Pers Rotterdam Netherlands, Rotterdam, pp 133–152
140. Mulvale G, Hurley J (2008) Insurance coverage and the treatment of mental illness: effect on medication and provider use. *J Ment Health Policy Econ* 11(4):177–199
141. Catalano R, Goldman-Mellor S, Saxton K, Margerison-Zilko C, Subbaraman M, LeWinn K et al (2011) The health effects of economic decline. *Annu Rev Public Health* 32:431–450
142. Dome P, Kapitany B, Faludi G, Gonda X, Rihmer Z (2013) Does economic environment influence the strength of the positive association between suicide and unemployment? *J Epidemiol Community Health* 67(12):1074–1075
143. Fountoulakis KN, Savopoulos C, Siamouli M, Zaggelidou E, Mageiria S, Iacovides A et al (2013) Trends in suicidality amid the economic crisis in Greece. *Eur Arch Psychiatry Clin Neurosci* 263(5):441–444
144. Agerbo E, Mortensen PB, Eriksson T, Qin P, Westergaard-Nielsen N (2001) Risk of suicide in relation to income level in people admitted to hospital with mental illness: nested case-control study. *BMJ* 322(7282):334–335
145. Agerbo E, Qin P, Mortensen PB (2006) Psychiatric illness, socioeconomic status, and marital status in people committing suicide: a matched case-sibling-control study. *J Epidemiol Community Health* 60(9):776–781
146. Blakely TA, Collings SC, Atkinson J (2003) Unemployment and suicide. Evidence for a causal association? *J Epidemiol Community Health* 57(8):594–600
147. Brown GK, Beck AT, Steer RA, Grisham JR (2000) Risk factors for suicide in psychiatric outpatients: a 20-year prospective study. *J Consult Clin Psychol* 68(3):371–377
148. Fergusson DM, Boden JM, Horwood LJ (2007) Unemployment and suicidal behavior in a New Zealand birth cohort: a fixed effects regression analysis. *Crisis* 28(2):95–101
149. Garcey AM, Vagero D (2013) Unemployment and suicide during and after a deep recession: a longitudinal study of 3.4 million Swedish men and women. *Am J Public Health* 103(6):1031–1038
150. Goldman-Mellor SJ, Caspi A, Harrington H, Hogan S, Nader-Raja S, Poulton R et al (2014) Suicide attempt in young people: a signal for long-term health care and social needs. *JAMA Psychiatry* 71(2):119–127
151. Khan MM, Mahmud S, Karim MS, Zaman M, Prince M (2008) Case-control study of suicide in Karachi, Pakistan. *Br J Psychiatry* 193(5):402–405
152. Kposowa AJ (2001) Unemployment and suicide: a cohort analysis of social factors predicting suicide in the US National Longitudinal Mortality Study. *Psychol Med* 31(1):127–138
153. Lewis G, Sloggett A (1998) Suicide, deprivation, and unemployment: record linkage study. *BMJ* 317(7168):1283–1286
154. Maki N, Martikainen P (2012) A register-based study on excess suicide mortality among unemployed men and women during different levels of unemployment in Finland. *J Epidemiol Community Health* 66(4):302–307
155. Mäkinen IH, Wasserman D (2009) Labour market, work environment and suicide. In: Wasserman D, Wasserman C (eds) *The Oxford textbook of suicidology and suicide prevention: a global perspective*. Oxford University Press, London, pp 221–230
156. Ostamo A, Lahelma E, Lonnqvist J (2001) Transitions of employment status among suicide attempters during a severe economic recession. *Soc Sci Med* 52(11):1741–1750
157. Qin P, Agerbo E, Mortensen PB (2003) Suicide risk in relation to socioeconomic, demographic, psychiatric, and familial factors: a national register-based study of all suicides in Denmark, 1981–1997. *Am J Psychiatry* 160(4):765–772
158. Yip PS, Caine ED (2011) Employment status and suicide: the complex relationships between changing unemployment rates and death rates. *J Epidemiol Community Health* 65(8):733–736
159. Economou M, Madianos M, Peppou LE, Theleritis C, Patelakis A, Stefanis C (2013) Suicidal ideation and reported suicide attempts in Greece during the economic crisis. *World Psychiatry* 12(1):53–59
160. Branias CC, Kastanaki AE, Michalodimitrakis M, Tzougas J, Kranioti EF, Theodorakis PN et al (2015) The impact of economic austerity and prosperity events on suicide in Greece: a 30-year interrupted time-series analysis. *BMJ Open* 5(1):e005619
161. Fountoulakis KN, Siamouli M, Grammatikopoulos IA, Koupidis SA, Siapera M, Theodorakis PN (2013) Economic crisis-related increased suicidality in Greece and Italy: a premature overinterpretation. *J Epidemiol Community Health* 67(4):379–380
162. Luo F, Florence CS, Quispe-Agnoli M, Ouyang L, Crosby AE (2011) Impact of business cycles on US suicide rates, 1928–2007. *Am J Public Health* 101(6):1139–1146
163. Phillips JA, Nugent CN (2014) Suicide and the Great Recession of 2007–2009: the role of economic factors in the 50 U.S. states. *Soc Sci Med* 116:22–31
164. Reeves A, Stuckler D, McKee M, Gunnell D, Chang SS, Basu S (2012) Increase in state suicide rates in the USA during economic recession. *Lancet* 380(9856):1813–1814
165. Wasserman IM (1984) The influence of economic business cycles on United States suicide rates. *Suicide Life Threat Behav* 14(3):143–156
166. Yang BJ (1992) The economy and suicide: a time-series study of the USA. *Am J Econ Sociol* 51:87–99

167. Barr B, Taylor-Robinson D, Scott-Samuel A, McKee M, Stuckler D (2012) Suicides associated with the 2008–2010 economic recession in England: time trend analysis. *BMJ* 345:e5142
168. Gunnell D, Middleton N, Whitley E, Dorling D, Frankel S (2003) Why are suicide rates rising in young men but falling in the elderly?—a time-series analysis of trends in England and Wales 1950–1998. *Soc Sci Med* 57(4):595–611
169. Thomas K, Gunnell D (2010) Suicide in England and Wales 1861–2007: a time-trends analysis. *Int J Epidemiol* 39(6):1464–1475
170. De Vogli R, Vieno A, Lenzi M (2014) Mortality due to mental and behavioral disorders associated with the Great Recession (2008–2010) in Italy: a time trend analysis. *Eur J Public Health* 24(3):419–421
171. Pompili M, Vichi M, Innamorati M, Lester D, Yang B, De Leo D et al (2014) Suicide in Italy during a time of economic recession: some recent data related to age and gender based on a nationwide register study. *Health Soc Care Community* 22(4):361–367
172. Kontaxakis V, Papanastasiou T, Havaki-Kontaxaki B, Tsouvelas G, Giotakos O, Papadimitriou GN (2013) Suicide in Greece: 2001–2011. *Psychiatriki* 24(3):170–174
173. Men T, Brennan P, Boffetta P, Zaridze D (2003) Russian mortality trends for 1991–2001: analysis by cause and region. *BMJ* 327(7421):964
174. Alvaro-Meca A, Kneib T, Gil-Prieto R, Gil de Miguel A (2013) Epidemiology of suicide in Spain, 1981–2008: a spatiotemporal analysis. *Public Health* 127(4):380–385
175. Lopez Bernal JA, Gasparrini A, Artundo CM, McKee M (2013) The effect of the late 2000s financial crisis on suicides in Spain: an interrupted time-series analysis. *Eur J Public Health* 23(5):732–736
176. Tapia Granados JA (2005) Recessions and mortality in Spain, 1980–1997. *Eur J Popul* 21:393–422
177. Chan CH, Caine ED, You S, Fu KW, Chang SS, Yip PS (2014) Suicide rates among working-age adults in South Korea before and after the 2008 economic crisis. *J Epidemiol Community Health* 68(3):246–252
178. Kwon JW, Chun H, Cho SI (2009) A closer look at the increase in suicide rates in South Korea from 1986–2005. *BMC Public Health* 9:72
179. Koo J, Cox WM (2008) An economic interpretation of suicide cycles in Japan. *Contemp Econ Policy* 26:162–174
180. Harper S, Charters T, Strumpf EC, Nandi A (2013) The effect of recessions on suicide mortality in the United States. *Am J Epidemiol* 177(suppl 11):S108
181. Ruhm CJ (2000) Are Recessions Good For Your Health? *Q J Econ* 115(2):617–650
182. Tapia Granados JA (2005) Increasing mortality during the expansions of the US economy, 1900–1996. *Int J Epidemiol* 34(6):1194–1202
183. Tapia Granados JA (2008) Macroeconomic fluctuations and mortality in Postwar Japan. 2:323–343
184. Miret M, Caballero FF, Huerta-Ramirez R, Moneta MV, Olaya B, Chatterji S et al (2014) Factors associated with suicidal ideation and attempts in Spain for different age groups. Prevalence before and after the onset of the economic crisis. *J Affect Disord* 163:1–9
185. Nandi A, Prescott MR, Cerda M, Vlahov D, Tardiff KJ, Galea S (2012) Economic conditions and suicide rates in New York City. *Am J Epidemiol* 175(6):527–535
186. Oskarsson H, Bjarnadottir S (2013) Suicides and the economic crisis: the icelandic experience. *Eur Psychiatry* 28(S1):1–2
187. Ostamo A, Lonnqvist J (2001) Attempted suicide rates and trends during a period of severe economic recession in Helsinki, 1989–1997. *Soc Psychiatry Psychiatr Epidemiol* 36(7):354–360
188. Saurina C, Bragulat B, Saez M, Lopez-Casasnovas G (2013) A conditional model for estimating the increase in suicides associated with the 2008–2010 economic recession in England. *J Epidemiol Community Health* 67(9):779–787
189. Barstad A (2008) Explaining changing suicide rates in Norway 1948–2004: the role of social integration. *Soc Indic Res* 87:47–64
190. Neumayer E (2004) Recessions lower (some) mortality rates: evidence from Germany. *Soc Sci Med* 58(6):1037–1047
191. Chang SS, Gunnell D, Sterne JA, Lu TH, Cheng AT (2009) Was the economic crisis 1997–1998 responsible for rising suicide rates in East/Southeast Asia? A time-trend analysis for Japan, Hong Kong, South Korea, Taiwan, Singapore and Thailand. *Soc Sci Med* 68(7):1322–1331
192. Laanani M, Ghosn W, Jouglu E, Rey G (2015) Impact of unemployment variations on suicide mortality in Western European countries (2000–2010). *J Epidemiol Community Health* 69(2):103–109
193. Haw C, Hawton K, Gunnell D, Platt S (2015) Economic recession and suicidal behaviour: possible mechanisms and ameliorating factors. *Int J Soc Psychiatry* 61(1):73–81
194. Reeves A, McKee M, Gunnell D, Chang SS, Basu S, Barr B et al (2015) Economic shocks, resilience, and male suicides in the Great Recession: cross-national analysis of 20 EU countries. *Eur J Public Health* 25(3):404–409
195. Baumbach A, Gulis G (2014) Impact of financial crisis on selected health outcomes in Europe. *Eur J Public Health* 24(3):399–403
196. Breuer C (2015) Unemployment and suicide mortality: evidence from regional panel data in Europe. *Health Econ* 24(8):936–950
197. Norstrom T, Gronqvist H (2015) The Great Recession, unemployment and suicide. *J Epidemiol Community Health* 69(2):110–116
198. Fountoulakis KN, Kawohl W, Theodorakis PN, Kerkhof AJ, Navickas A, Hoschl C et al (2014) Relationship of suicide rates to economic variables in Europe: 2000–2011. *Br J Psychiatry* 205(6):486–496
199. Noh YH (2009) Does unemployment increase suicide rates? The OECD panel evidence. *J Econ Psychol* 30(4):575–582
200. Milner A, Page A, LaMontagne AD (2013) Long-term unemployment and suicide: a systematic review and meta-analysis. *PLoS One* 8(1):e51333
201. Chang SS, Stuckler D, Yip P, Gunnell D (2013) Impact of 2008 global economic crisis on suicide: time trend study in 54 countries. *BMJ* 347:f5239
202. Nordt C, Warnke I, Seifritz E, Kawohl W (2015) Modelling suicide and unemployment: a longitudinal analysis covering 63 countries, 2000–2011. *Lancet Psychiatry* 2(3):239–245
203. McDaid D, Knapp M (2010) Black-skies planning? Prioritising mental health services in times of austerity. *Br J Psychiatry* 196(6):423–424
204. Levit KR, Mark TL, Coffey RM, Frankel S, Santora P, Vandivort-Warren R et al (2013) Federal spending on behavioral health accelerated during recession as individuals lost employer insurance. *Health Aff (Millwood)* 32(5):952–962
205. McFarland BH, Collins JC (2011) Medicaid cutbacks and state psychiatric hospitalization of patients with schizophrenia. *Psychiatr Serv* 62(8):871–877
206. Herman PM, Rissi JJ, Walsh ME (2011) Health insurance status, medical debt, and their impact on access to care in Arizona. *Am J Public Health* 101(8):1437–1443
207. Donisi V, Tedeschi F, Percudani M, Fiorillo A, Confalonieri L, De Rosa C et al (2013) Prediction of community mental health service utilization by individual and ecological level socio-economic factors. *Psychiatry Res* 209(3):691–698
208. Kim H, Chung WJ, Song YJ, Kang DR, Yi JJ, Nam CM (2003) Changes in morbidity and medical care utilization after the

- recent economic crisis in the Republic of Korea. *Bull World Health Organ* 81(8):567–572
209. Chen J, Dagher R (2014) Gender and race/ethnicity differences in mental health care use before and during the great recession. *J Behav Health Serv Res* 1(April):1–12
 210. Catalano R, McConnell W, Forster P, McFarland B, Thornton D (2003) Psychiatric emergency services and the system of care. *Psychiatr Serv* 54(3):351–355
 211. Weaver JD (1983) Economic recession and increases in mental health emergencies. *J Ment Health Adm* 10(2):28–31
 212. Gladden R, Vagi K, Patel N, Lipskiy N, Benoit S, English R et al (2011) Monitoring emergency department (ED) visits for suicide ideation and attempts during the us economic recession using biosense 2008–2009. *Am J Epidemiol* 173(Suppl 11):S291
 213. Corker E, Hamilton S, Henderson C, Weeks C, Pinfold V, Rose D et al (2013) Experiences of discrimination among people using mental health services in England 2008–2011. *Br J Psychiatry Suppl* 55:s58–s63
 214. Catalano R, Dooley D, Novaco RW, Wilson G, Hough R (1993) Using ECA survey data to examine the effect of job layoffs on violent behavior. *Hosp Community Psychiatry* 44(9):874–879
 215. Catalano R, Dooley D, Wilson G, Hough R (1993) Job loss and alcohol abuse: a test using data from the Epidemiologic Catchment Area project. *J Health Soc Behav* 34(3):215–225
 216. Baicker K, Taubman SL, Allen HL, Bernstein M, Gruber JH, Newhouse JP et al (2013) The Oregon experiment—effects of Medicaid on clinical outcomes. *N Engl J Med* 368(18):1713–1722
 217. Neroutsos E, Pachi A, Fiste M, Kontomina E, Bisbiki E, Lytra N (2013) Assessment on the impact of financial crisis on the access to mental health services in Greece. *Eur Arch Psychiatry Clin Neurosci* 1(Suppl 1):S89
 218. Novo M, Hammarstrom A, Janlert U (2001) Do high levels of unemployment influence the health of those who are not unemployed? A gendered comparison of young men and women during boom and recession. *Soc Sci Med* 53(3):293–303
 219. Benach J, Vives A, Amable M, Vanroelen C, Tarafa G, Muntaner C (2014) Precarious employment: understanding an emerging social determinant of health. *Annu Rev Public Health* 35:229–253
 220. Davis JA, Savage G, Stewart RT (2003) Organizational downsizing: a review of literature for planning and research. *J Healthc Manag* 48(3):181–199
 221. Quinlan M, Bohle P (2009) Overstretched and unreciprocated commitment: reviewing research on the occupational health and safety effects of downsizing and job insecurity. *Int J Health Serv* 39(1):1–44
 222. Bockerman P, Ilmakunnas P (2009) Unemployment and self-assessed health: evidence from panel data. *Health Econ* 18(2):161–179
 223. Modrek S, Cullen MR (2013) Job insecurity during recessions: effects on survivors' work stress. *BMC Public Health* 13:929
 224. Avcin BA, Kucina AU, Sarotar BN, Radovanovic M, Plesnicar BK (2011) The present global financial and economic crisis poses an additional risk factor for mental health problems on the employees. *Psychiatr Danub* 23(Suppl 1):S142–S148
 225. Burgard SA, Brand JE, House JS (2009) Perceived job insecurity and worker health in the United States. *Soc Sci Med* 69(5):777–785
 226. Burgard SA, Kalousova L, Seefeldt KS (2012) Perceived job insecurity and health: the Michigan Recession and Recovery Study. *J Occup Environ Med* 54(9):1101–1106
 227. Hellgren J, Sverke M, Isaksson K (1999) A two-dimensional approach to job insecurity: consequences for employee attitudes and well-being. *Eur J Work Organ Psychol* 8:179–195
 228. Hellgren J, Sverke M (2003) Does job insecurity lead to impaired well-being or vice versa? Estimation of cross-lagged effects using latent variable modelling. *J Organ Behav* 24:215–236
 229. Kivimaki M, Honkonen T, Wahlbeck K, Elovainio M, Pentti J, Klaukka T et al (2007) Organisational downsizing and increased use of psychotropic drugs among employees who remain in employment. *J Epidemiol Community Health* 61(2):154–158
 230. Snorraddottir A, Vilhjalmsdottir R, Rafnsdottir GL, Tomasson K (2013) Financial crisis and collapsed banks: psychological distress and work related factors among surviving employees—a nation-wide study. *Am J Ind Med* 56(9):1095–1106
 231. Meltzer H, Bebbington P, Brugha T, Jenkins R, McManus S, Stansfeld S (2010) Job insecurity, socio-economic circumstances and depression. *Psychol Med* 40(8):1401–1407
 232. Hilton MF, Scuffham PA, Vecchio N, Whiteford HA (2010) Using the interaction of mental health symptoms and treatment status to estimate lost employee productivity. *Aust N Z J Psychiatry* 44(2):151–161
 233. Chatterji P, Alegria M, Lu M, Takeuchi D (2007) Psychiatric disorders and labor market outcomes: evidence from the National Latino and Asian American Study. *Health Econ* 16(10):1069–1090
 234. Thomas C, Benzeval M, Stansfeld SA (2005) Employment transitions and mental health: an analysis from the British household panel survey. *J Epidemiol Community Health* 59(3):243–249
 235. Zhang W, Zhao X, Harris A (2009) Chronic diseases and labour force participation in Australia. *J Health Econ* 28:91–108
 236. Angermeyer MC, Matschinger H, Schomerus G (2013) Public attitudes towards people with depression in times of uncertainty: results from three population surveys in Germany. *Soc Psychiatry Psychiatr Epidemiol* 48(9):1513–1518
 237. Evans-Lacko S, Henderson C, Thornicroft G (2013) Public knowledge, attitudes and behaviour regarding people with mental illness in England 2009–2012. *Br J Psychiatry* 202:s51–s57
 238. Jenkins R, Fitch C, Hurlston M, Walker F (2009) Recession, debt and mental health: challenges and solutions. *Ment Health Fam Med* 6(2):85–90
 239. Meltzer H, Bebbington P, Brugha T, Farrell M, Jenkins R (2013) The relationship between personal debt and specific common mental disorders. *Eur J Public Health* 23(1):108–113
 240. Brown S, Taylor K, Price S (2005) Debt and distress: evaluating the psychological cost of credit. *J Econ Psychol* 26:642–663
 241. Nettleton S, Burrows R (1998) Mortgage debt, insecure home ownership and health: an exploratory analysis. *Social Health Illn* 20:731–753
 242. Taylor MP, Pevalin DJ, Todd J (2007) The psychological costs of unsustainable housing commitments. *Psychol Med* 37(7):1027–1036
 243. Drentea P (2000) Age, debt and anxiety. *J Health Soc Behav* 41(4):437–450
 244. Drentea P, Lavrakas PJ (2000) Over the limit: the association among health, race and debt. *Soc Sci Med* 50(4):517–529
 245. Bridges S, Disney R (2010) Debt and depression. *J Health Econ* 29(3):388–403
 246. Cooper C, Bebbington PE, Meltzer H, Bhugra T, Jenkins R, Farrell M, King M (2008) Depression and common mental disorders in lone parents: results of the 2000 National Psychiatric Morbidity Survey. *Psychol Med* 38(3):335–342
 247. Hintikka J, Kontula O, Saarinen P, Tanskanen A, Koskela K, Viinamaki H (1998) Debt and suicidal behaviour in the Finnish general population. *Acta Psychiatr Scand* 98(6):493–496
 248. Jenkins R, Bhugra D, Bebbington P, Brugha T, Farrell M, Coid J et al (2008) Debt, income and mental disorder in the general population. *Psychol Med* 38(10):1485–1493

249. Selenko E, Batinic B (2011) Beyond debt. A moderator analysis of the relationship between perceived financial strain and mental health. *Soc Sci Med* 73(12):1725–1732
250. Skapinakis P, Weich S, Lewis G, Singleton N, Araya R (2006) Socio-economic position and common mental disorders. Longitudinal study in the general population in the UK. *Br J Psychiatry* 189:109–117
251. Bentley R, Baker E, Mason K, Subramanian SV, Kavanagh AM (2011) Association between housing affordability and mental health: a longitudinal analysis of a nationally representative household survey in Australia. *Am J Epidemiol* 174(7):753–760
252. Cairney J, Boyle MH (2004) Home ownership, mortgages and psychological distress. *Housing studies* 19:161–174
253. Viinamaki H, Kontula O, Niskanen L, Koskela K (1995) The association between economic and social factors and mental health in Finland. *Acta Psychiatr Scand* 92(3):208–213
254. Drentea P, Reynolds JR (2012) Neither a borrower nor a lender be: the relative importance of debt and SES for mental health among older adults. *J Aging Health* 24(4):673–695
255. Mauramo E, Lallukka T, Laaksonen M, Martikainen P, Rahkonen O, Lahelma E (2012) Past and present socioeconomic circumstances and psychotropic medication: a register-linkage study. *J Epidemiol Community Health* 66(12):1143–1151
256. Zimmerman FJ, Katon W (2005) Socioeconomic status, depression disparities, and financial strain: what lies behind the income-depression relationship? *Health Econ* 14(12):1197–1215
257. Turunen E, Hiilamo H (2014) Health effects of indebtedness: a systematic review. *BMC Public Health* 14:489
258. Taylor A, Grande E, Gill T, Fisher L, Goldney R (2007) Detecting determinants of suicidal ideation: south Australian surveillance system results. *Int J Public Health* 52:142–152
259. Chen EY, Chan WS, Wong PW, Chan SS, Chan CL, Law YW et al (2006) Suicide in Hong Kong: a case-control psychological autopsy study. *Psychol Med* 36(6):815–825
260. Chen EY, Chan WS, Chan SS, Liu KY, Chan CL, Wong PW et al (2007) A cluster analysis of the circumstances of death in suicides in Hong Kong. *Suicide Life Threat Behav* 37(5):576–584
261. Wong PW, Chan WS, Chen EY, Chan SS, Law YW, Yip PS (2008) Suicide among adults aged 30–49: a psychological autopsy study in Hong Kong. *BMC Public Health* 8:147
262. Yip PS, Yang KC, Ip BY, Law YW, Watson R (2007) Financial debt and suicide in Hong Kong SAR. *J Appl Soc Psychol* 37:2788–2799
263. Hatcher S (1994) Debt and deliberate self-poisoning. *Br J Psychiatry* 164(1):111–114
264. Taylor SJ (1994) Debt and deliberate self-harm. *Br J Psychiatry* 164(6):848–849
265. Hwang SW (2001) Homelessness and health. *CMAJ* 164(2):229–233
266. Shaw M (2004) Housing and public health. *Annu Rev Public Health* 25:397–418
267. Van Laere I, De Wit M, Klazinga N (2009) Preventing evictions as a potential public health intervention: characteristics and social medical risk factors of households at risk in Amsterdam. *Scand J Public Health* 37(7):697–705
268. Evans GW, Palsane MN, Lepore SJ, Martin J (1989) Residential density and psychological health: the mediating effects of social support. *J Pers Soc Psychol* 57(6):994–999
269. Gove WR, Hughes M, Galle OR (1979) Overcrowding in the home: an empirical investigation of its possible pathological consequences. *Am Sociol Rev* 44(1):59–80
270. Cannuscio CC, Alley DE, Pagan JA, Soldo B, Krasny S, Shardell M et al (2012) Housing strain, mortgage foreclosure, and health. *Nurs Outlook* 60(3):134–142, 142
271. Pevalin DJ (2009) Housing repossessions, evictions and common mental illness in the UK: results from a household panel study. *J Epidemiol Community Health* 63(11):949–951
272. Phinney R, Danziger S, Pollack HA, Seefeldt K (2007) Housing instability among current and former welfare recipients. *Am J Public Health* 97(5):832–837
273. Pollack CE, Lynch J (2009) Health status of people undergoing foreclosure in the Philadelphia region. *Am J Public Health* 99(10):1833–1839
274. Ross LM, Squires GD (2011) The personal costs of subprime lending and the foreclosure crisis: a matter of trust, insecurity, and institutional deception. *Soc Sci Q* 92:140–163
275. Alley DE, Lloyd J, Pagan JA, Pollack CE, Shardell M, Cannuscio C (2011) Mortgage delinquency and changes in access to health resources and depressive symptoms in a nationally representative cohort of Americans older than 50 years. *Am J Public Health* 101(12):2293–2298
276. McLaughlin KA, Nandi A, Keyes KM, Uddin M, Aiello AE, Galea S et al (2012) Home foreclosure and risk of psychiatric morbidity during the recent financial crisis. *Psychol Med* 42(7):1441–1448
277. Barriuso-Lapresa L, Hernando-Arizaleta L, Rajmil L (2012) Social inequalities in mental health and health-related quality of life in children in Spain. *Pediatrics* 130(3):e528–e535
278. Lang IA, Llewellyn DJ, Hubbard RE, Langa KM, Melzer D (2011) Income and the midlife peak in common mental disorder prevalence. *Psychol Med* 41(7):1365–1372
279. Rueda S, Artazcoz L, Navarro V (2008) Health inequalities among the elderly in western Europe. *J Epidemiol Community Health* 62(6):492–498
280. Burns JK (2009) Mental health and inequity: a human rights approach to inequality, discrimination, and mental disability. *Health Hum Rights* 11(2):19–31
281. Amaddeo F, Jones J (2007) What is the impact of socio-economic inequalities on the use of mental health services? *Epidemiol Psychiatr Soc* 16(1):16–19
282. Bosma H, Gerritsma A, Klabbers G, van den Akker M (2012) Perceived unfairness and socioeconomic inequalities in functional decline: the Dutch SMILE prospective cohort study. *BMC Public Health* 12:818
283. Gunasekara FI, Carter K, McKenzie S (2013) Income-related health inequalities in working age men and women in Australia and New Zealand. *Aust N Z J Public Health* 37(3):211–217
284. Have M, Oldehinkel A, Vollebergh W, Ormel J (2003) Does educational background explain inequalities in care service use for mental health problems in the Dutch general population? *Acta Psychiatr Scand* 107(3):178–187
285. Henderson C, Thornicroft G, Glover G (1998) Inequalities in mental health. *Br J Psychiatry* 173:105–109
286. Kondo N (2012) Socioeconomic disparities and health: impacts and pathways. *J Epidemiol* 22(1):2–6
287. Kurtze N, Eikemo TA, Kamphuis CB (2013) Educational inequalities in general and mental health: differential contribution of physical activity, smoking, alcohol consumption and diet. *Eur J Public Health* 23(2):223–229
288. LaMontagne AD, Keegel T, Vallance D, Ostry A, Wolfe R (2008) Job strain—attributable depression in a sample of working Australians: assessing the contribution to health inequalities. *BMC Public Health* 8:181
289. Lynch JW, Kaplan GA (1997) Understanding how inequality in the distribution of income affects health. *J Health Psychol* 2(3):297–314
290. Mangalore R, Knapp M (2012) Income-related inequalities in common mental disorders among ethnic minorities in England. *Soc Psychiatry Psychiatr Epidemiol* 47(3):351–359

291. Moser K (2001) Inequalities in treated heart disease and mental illness in England and Wales, 1994–1998. *Br J Gen Pract* 51(467):438–444
292. Ngui EM, Khasakhala L, Ndeti D, Roberts LW (2010) Mental disorders, health inequalities and ethics: a global perspective. *Int Rev Psychiatry* 22(3):235–244
293. Szreter S (2003) The population health approach in historical perspective. *Am J Public Health* 93(3):421–431
294. Kawachi I (2010) Social capital and health. In: Bird CE, Conrad P, Fremont AM, Timmermans S (eds) *Handbook of medical sociology*. Vanderbilt University Press, Tennessee, pp 18–32
295. Szreter S, Woolcock M (2003) Health by association? Social capital, social theory and the political economy of public health. *Int J Epidemiol* 33:1–18
296. De Silva MJ, McKenzie K, Harpham T, Huttly SR (2005) Social capital and mental illness: a systematic review. *J Epidemiol Community Health* 59(8):619–627
297. Nyqvist F, Forsman AK, Giuntoli G, Cattani M (2013) Social capital as a resource for mental well-being in older people: a systematic review. *Aging Ment Health* 17(4):394–410
298. Forsman AK, Nyqvist F, Wahlbeck K (2011) Cognitive components of social capital and mental health status among older adults: a population-based cross-sectional study. *Scand J Public Health* 39(7):757–765
299. Han S, Lee HS (2013) Individual, household and administrative area levels of social capital and their associations with mental health: a multi-level analysis of cross-sectional evidence. *Int J Soc Psychiatry* 59(7):716–723
300. Cutrona CE, Russell DW, Hessling RM, Brown PA, Murry V (2000) Direct and moderating effects of community context on the psychological well-being of African American women. *J Pers Soc Psychol* 79(6):1088–1101
301. Ahnquist J, Wamala SP, Lindstrom M (2012) Social determinants of health—a question of social or economic capital? Interaction effects of socioeconomic factors on health outcomes. *Soc Sci Med* 74(6):930–939
302. Economou M, Madianos M, Peppou LE, Souliotis K, Patelakis A, Stefanis C (2014) Cognitive social capital and mental illness during economic crisis: a nationwide population-based study in Greece. *Soc Sci Med* 100:141–147
303. Christodoulou NG, Christodoulou GN (2013) Financial crises: impact on mental health and suggested responses. *Psychother Psychosom* 82(5):279–284
304. Christodoulou NG, Christodoulou GN (2013) Management of the psychosocial effects of economic crises. *World Psychiatry* 12(2):178
305. World Health Organization (2011) *Impact of economic crises on mental health*. World Health Organization, Copenhagen
306. World Health Organization (2010) *Mental health and development: targeting people with mental health conditions as a vulnerable group*. World Health Organization, Geneva
307. Diamond P, Lodge G (2013) *European welfare states after the crisis*. Foundation for European Progressive Studies, London
308. van der Noordt M, IJzelenberg H, Droomers M, Proper KI (2014). Health effects of employment: a systematic review of prospective studies. *Occup Environ Med* 71(10):730–736
309. Vinokur AD, Schul Y, Vuori J, Price RH (2000) Two years after a job loss: long-term impact of the JOBS program on reemployment and mental health. *J Occup Health Psychol* 5(1):32–47
310. Vuori J, Silvenen J, Vinokur AD, Price RH (2002) The Työhoon Job Search Program in Finland: benefits for the unemployed with risk of depression or discouragement. *J Occup Health Psychol* 7(1):5–19
311. Morrell SL, Taylor RJ, Kerr CB (1998) Jobless. Unemployment and young people's health. *Med J Aust* 168(5):236–240
312. Waddell G, Burton AK, Kendall NAS (2008) *Vocational rehabilitation What works, for whom, and when?*. Vocational Rehabilitation Working Group, London
313. Proudfoot J, Gray J, Carson J, Guest D, Dunn G (1999) Psychological training improves mental health and job-finding among unemployed people. *Int Arch Occup Environ Health* 72(Suppl):S40–S42
314. Rose VK, Perz J, Harris E (2012) Vocationally oriented cognitive behavioural training for the very long-term unemployed. *Occup Med (Lond)* 62(4):298–300
315. Knapp M, McDaid D, Parsonage M (2011) *Mental health prevention and promotion. The economic case*. Department of Health, London
316. Marino LA, Dixon LB (2014) An update on supported employment for people with severe mental illness. *Curr Opin Psychiatry* 27(3):210–215
317. Phua KL (2011) Can we learn from history? Policy responses and strategies to meet health care needs in times of severe economic crisis. *Open Public Health J* 4:1–5
318. Christodoulou GN, Christodoulou NG (2013) The financial crisis and its impact on mental health. *Psychiatriki* 24(2):95–98
319. Smith ND, Kawachi I (2014) State-level social capital and suicide mortality in the 50 U.S. states. *Soc Sci Med* 120:269–277
320. McDaid D, Park AL (2011) Investing in mental health and well-being: findings from the DataPrev project. *Health Promot Int* 26(Suppl 1):i108–i139
321. Christodoulou GN, Ploumpidis DN, Christodoulou NG, Anagnostopoulos DC (2012) The state of psychiatry in Greece. *Int Rev Psychiatry* 24(4):301–306
322. Mladovsky P, Srivastava D, Cylus J, Karanikolos M, Thomson S, McKee M (2012) Health policy responses to the financial crisis in Europe. WHO Regional Office for Europe, Copenhagen
323. Knapp M (2012) Mental health in an age of austerity. *Evid Based Ment Health* 15(3):54–55
324. Gabriel P, Liimatainen MR (2000) *Mental health in the workplace: introduction*. International Labour Office, Geneva
325. Chisholm D, Sanderson K, Ayuso-Mateos JL, Saxena S (2004) Reducing the global burden of depression: population-level analysis of intervention cost-effectiveness in 14 world regions. *Br J Psychiatry* 184:393–403
326. Vos T, Haby MM, Magnus A, Mihalopoulos C, Andrews G, Carter R (2005) Assessing cost-effectiveness in mental health: helping policy-makers prioritize and plan health services. *Aust N Z J Psychiatry* 39(8):701–712
327. World Health Organization (2006) *Dollars, DALYs and decisions: economic aspects of the mental health system*. World Health Organization, Geneva
328. World Health Organization (2006) *Economic aspects of the mental health system: key messages to health planners and policy makers*. World Health Organization, Geneva
329. Department of Health (2011) *No health without mental health: a cross-government mental health outcomes strategy for people of all ages*. Department of Health, London (UK)
330. Weehuizen R (2008) *Mental capital. The economic significance of mental health*. Universitaire Pers Maastricht, Maastricht
331. Knapp M, Beecham J, McDaid D, Matosevic T, Smith M (2011) The economic consequences of deinstitutionalisation of mental health services: lessons from a systematic review of European experience. *Health Soc Care Community* 19(2):113–125
332. Novella EJ (2010) Mental health care in the aftermath of deinstitutionalization: a retrospective and prospective view. *Health Care Anal* 18(3):222–238
333. World Health Organization (2014) *Mental Health Atlas 2014*. WHO, Geneva

334. Saxena S, Thornicroft G, Knapp M, Whiteford H (2007) Resources for mental health: scarcity, inequity, and inefficiency. *Lancet* 370(9590):878–889
335. Karanikolos M, Mladovsky P, Cylus J, Thomson S, Basu S, Stuckler D et al (2013) Financial crisis, austerity, and health in Europe. *Lancet* 381(9874):1323–1331
336. Pirkola S, Sund R, Sailas E, Wahlbeck K (2009) Community mental-health services and suicide rate in Finland: a nationwide small-area analysis. *Lancet* 373(9658):147–153
337. Wang PS, Aguilar-Gaxiola S, Alonso J, Angermeyer MC, Borges G, Bromet EJ et al (2007) Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *Lancet* 370(9590):841–850
338. Goodrich DE, Kilbourne AM, Nord KM, Bauer MS (2013) Mental health collaborative care and its role in primary care settings. *Curr Psychiatry Rep* 15(8):383
339. Thielke S, Vannoy S, Unutzer J (2007) Integrating mental health and primary care. *Prim Care* 34(3):571–592, vii
340. Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS (2012) Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care settings: systematic review and meta-analysis. *Am J Psychiatry* 169(8):790–804
341. Hales CM, Randhawa G (2004) Screening and behavioral counseling interventions in primary care to reduce alcohol misuse. *Am Fam Physician* 70(9):1743–1744
342. McDowell AK, Lineberry TW, Bostwick JM (2011) Practical suicide-risk management for the busy primary care physician. *Mayo Clin Proc* 86(8):792–800
343. Saini P, While D, Chantler K, Windfuhr K, Kapur N (2014) Assessment and management of suicide risk in primary care. *Crisis* 35(6):415–425
344. Vuori J, Price RH, Mutanen P, Malmberg-Heimonen I (2005) Effective group training techniques in job-search training. *J Occup Health Psychol* 10(3):261–275
345. Jané-Llopis E, Barry M, Hosman C, Patel V (2005) Mental health promotion works: a review. *Promot Educ* 12(2):9–25
346. Min JA, Lee CU, Lee C (2013) Mental health promotion and illness prevention: a challenge for psychiatrists. *Psychiatry Investig* 10(4):307–316
347. Jamison KR (2006) The many stigmas of mental illness. *Lancet* 367(9509):533–534
348. Schomerus G, Matschinger H, Angermeyer MC (2006) Preferences of the public regarding cutbacks in expenditure for patient care: are there indications of discrimination against those with mental disorders? *Soc Psychiatry Psychiatr Epidemiol* 41(5):369–377
349. Solberg IB, Tomasson K, Aasland O, Tyssen R (2014) Cross-national comparison of job satisfaction in doctors during economic recession. *Occup Med (Lond)* 64(8):595–600
350. Niederkrotenthaler T, Sonneck G (2007) Assessing the impact of media guidelines for reporting on suicides in Austria: interrupted time series analysis. *Aust N Z J Psychiatry* 41(5):419–428