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Francesca Fiori, Francesca Rinesi, Daniele Spizzichino, Ginevra Di Giorgio



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Title

Employment Insecurity and Mental Health during the Economic Recession: An Analysis of the Young Adult Labour Force in Italy

Authors

Francesca Fiori, Francesca Rinesi, Daniele Spizzichino, Ginevra Di Giorgio

Affiliations

Francesca Fiori

ESRC Centre for Population Change – University of St Andrews (UK)

e-mail: ff20@st-andrews.ac.uk

Francesca Rinesi

ISTAT – Italian National Institute of Statistics

e-mail: rinesi@istat.it

Daniele Spizzichino

ISTAT – Italian National Institute of Statistics

e-mail: daspizzi@istat.it

Ginevra Di Giorgio

ISTAT – Italian National Institute of Statistics

e-mail: ginevra.digiorgio@istat.it

Corresponding author

Francesca Fiori

ESRC Centre for Population Change – University of St Andrews (UK)

Ladywell House, Ladywell Road, Edinburgh EH12 7TF, United Kingdom

E-mail: ff20@st-andrews.ac.uk

Tel. 44 01313144594

Fax. 44 01334463949

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Abstract

Background and objective: A growing body of scientific literature highlights the negative consequences of employment insecurity on several life domains. This study focuses on the young adult labour force in Italy, investigating the relationship between employment insecurity and mental health and whether this has changed after years of economic downturn. It enhances understanding by addressing differences in mental health according to several employment characteristics; and by exploring the role of respondents' economic situation and educational level.

Data and Methods: Data from a large-scale, nationally representative health survey are used to estimate the relationship between employment insecurity and the Mental Health Inventory (MHI), by means of multiple linear regressions.

Results and Conclusions: The study demonstrates that employment insecurity is associated with poorer mental health. Moreover, neither temporary workers nor unemployed individuals are a homogeneous group. Previous job experience is important in differentiating the mental health risks of unemployed individuals; and the effects on mental health vary according to occupational status and to the amount of time spent in a condition of insecurity. Further, the experience of financial difficulties partly explains the relationship between employment insecurity and mental health; and different mental health outcomes depend on respondents' educational level. Lastly, the risks of reporting poorer mental health were higher in 2013 than in 2005.

Keywords

Employment insecurity; mental health; young adult labour force; Italy; economic recession.

In recent decades, Western economies have undergone profound social, economic, and legislative transformations which have had a major impact on labour market organization. Employment insecurity has increased through both increased unemployment risks and the diffusion of so-called “*flexible*” employment – a large and heterogeneous set of contractual arrangements which share a number of features. Compared to conventional forms of employment, these arrangements are associated with greater insecurity, worse working conditions, lower pay, and fewer social protections. A growing body of social and health sciences literature has focused on the negative consequences of insecure employment on individuals’ occupational prospects; their private, family, and, social lives; and their well-being. The existing studies which have examined mental health outcomes have tended to focus on the risk of unemployment or the experience of job loss (Murphy & Athanasou, 1999; McKee-Ryan, Song, Wanberg, & Kinicki, 2005). A recent extensive review of the empirical literature on insecure unemployment (Paul & Moser, 2009) showed that on average people who were unemployed experienced more distress than people who had a job, although the strength of the association depended on the measure of mental health used. Furthermore, the negative effect of unemployment on mental health was found to be stronger in countries with a relatively low level of economic development, an unequal distribution of income, or a weak unemployment protection system. Gender, occupational status, and unemployment duration were found to be important mediators of the relationship between unemployment and psychological distress. The inclusion of longitudinal studies and natural experiments among the reviewed studies supported the assumption that unemployment was not only correlated with distress, but also caused it. However, while a mental health-related selection effect into unemployment was observed, the effect was weak.

In the early 2000s, Dooley (2003, p. 9) noted that “*a century of research on the mental health impact of employment status has documented the generally adverse effect of job loss. But this narrow focus on unemployment has largely ignored the social costs of other employment statuses.*” Other scholars expressed similar views (Benach, Benavides, Platt, Diez-Roux, & Muntaner, 2000; Benach, Amable, Muntaner, & Benavides, 2002; Benach & Muntaner, 2007), including a shift away from comparing people’s health based on whether they are employed or unemployed, and towards comparing the health of individuals based on whether they have a stable job, or are either unemployed or underemployed.

Research on the health consequences of temporary employment is, indeed, relatively new. But the number of studies on this issue has risen steadily in the last two decades, partly in response to the significant changes in the labour markets of western economies, and partly because of growing concerns about the economic and social consequences of the diffusion of temporary and other non-standard work arrangements. At present, however, knowledge about the relationship between temporary employment and mental health is still limited, and the empirical evidence is mostly inconclusive. Virtanen et al.’s (2005) meta-analysis of 27 studies found an association between temporary employment and psychological morbidity, although the magnitude of the health risk depended on the degree of instability of the temporary employment, as well as on the context. Similarly, Artazcoz, Benach, Borrell and Cortes (2005) reported that the strength of the association increased with the degree of insecurity of the contractual arrangement, and varied across gender and social class. More recent studies also showed that temporary contracts were associated with negative psychological outcomes, even after accounting for potential selection effects (Cottini & Lucifora, 2010; Pirani & Salvini, 2015; Quesnel-Vallée, DeHaney, & Ciampi, 2010; Waenerlund, Virtanen, & Hammarström, 2011). In contrast, some studies found that temporary workers had better mental health than permanent employees (Liukkonen et al.,

2004), while others observed no significant differences in mental health between these groups (Bardasi & Francesconi, 2004 and Rodriguez, 2002, for Britain).

Discussing inconsistent findings, De Cuyper et al. (2008) highlighted the need for research designs which pay greater attention to the heterogeneity of the temporary workforce, as well as objective (working hours, contract duration) and subjective dimensions (volition and motives for accepting non-standard form of employment). They also called for the inclusion of mediators and/or moderators in analyses that can provide empirical evidence for explanations which have so far been largely speculative.

Although its scientific and societal relevance has been well documented, the relationship between employment insecurity and health in Italy has rarely been the focus of explicit investigation. A recent study by Pirani and Salvini (2015) is, to our knowledge, the only prominent exception. The authors used longitudinal data to assess the existence of a causal relationship, net of selection effects, between temporary employment and self-perceived health on a sample of employees of working age. Our study builds on this existing knowledge by focusing specifically on mental health among the young adult labour force in Italy. We use data from the Italian health survey to examine the situation of young adults in 2013, when the economic recession was still in full swing. We believe that the study of insecure labour market engagement and mental health is highly relevant for Italy, a country severely affected by the economic recession; and where, since the recession started, mental health has undergone the most pronounced deterioration among all of the health domains (ISTAT, 2014a).

Employment insecurity and mental health in Italy: Focus of the research and hypotheses

Since the 1990s, employment insecurity has become more acute in Italy, through both the increasing risk of unemployment and changes in employment conditions. New “atypical” or “flexible” forms of employment – which in most cases involve contracts of limited duration – have become increasingly common, particularly among the younger generations. At the same time, the grey zone in the Italian labour market between salaried and self-employed work has expanded, which is sometimes called bogus (or false) self-employment, as the worker is classified as being of a self-employed contractor, but the relationship between the worker and the employer mirrors that of salaried work (McKay, Jefferys, Paraskevopoulou, & Keles, 2012).

In 2005, the unemployment rate was 13.0% among young adults aged 15 to 34. In the same age group, temporary and atypical employment was very common, representing around one-quarter of total employment (ISTAT, 2005). Since the onset of the economic recession in 2008, the total unemployed population has increased 60%, with young adults contributing disproportionately to this rise. The unemployment rate for individuals aged 15 to 34 doubled from 11.7% in 2008 to 23.0% in 2013 (ISTAT, 2014b). Over the same period, the probability that young adults would become and remain employed decreased. Furthermore, permanent full-time employment has increasingly been replaced by atypical employment among individuals aged 15 to 29, and by part-time employment among adults aged 30 to 49 (ISTAT, 2013).

At the same time, increasing shares of young people have been experiencing problems related to mental health (anxiety, depression, food disorders, suicidal tendencies, drug and alcohol abuse). According to the most recent data, levels of psychological wellbeing among the Italian population worsened between 2005 and 2013, and young men aged 35 and under were the most affected segment of the population. Depressive syndromes were the most

frequently reported type of mental health problem, and financial difficulties and job loss were associated with increasing levels of psychological distress (ISTAT, 2014a).

In our study, we have chosen to focus explicitly on the younger segment of the population – i.e., on individuals aged 18 to 39 – as both participation in the labour market and mental health have worsened to a greater extent among younger adults than among older adults. There has been growing concern that the deterioration in economic and psychological well-being among young adults will have significant repercussions for important life course transitions, such as leaving the parental home, union formation, and childbearing (ISTAT, 2014c).

We complement existing knowledge about Italy in two ways. First, we extend the scope of our research to all young adults in the labour force by comparing permanent employment with temporary, self-, and unemployment. Second, we rely on a survey designed with the intent to measure the various component of health among the population in Italy, and we are thus able to focus explicitly on mental health.

The study addresses four main research questions:

1. Is there a significant relationship between greater employment insecurity and worse mental health among the youth labour force in Italy?
2. Which role do household financial circumstances play in the relationship between employment insecurity and mental health?
3. Does the relationship between employment insecurity and mental health vary by levels of educational qualification?
4. Has the relationship between employment insecurity and mental health changed since the onset of the economic recession?

Database and methods

Database

The empirical analyses are based on sample data from the Health Conditions and Access to Health Services Survey, which is carried out periodically by the Italian National Institute of Statistics (ISTAT). It is a cross-sectional survey with a nationally representative sample of around 60,000 households (and nearly 120,000 individuals) per edition. In this study, we rely on the last two editions of the survey, which refer to the years 2005 and 2013.

This microdata are made publicly available by ISTAT for research purposes. Prior to public release, donor based imputation techniques are applied to adjust for partial non-response (ISTAT 2006). Our study did not require ethics committee approval, as ISTAT produces and disseminates only information collected in full compliance with the regulations pertaining to the privacy of respondents.

The samples

For the purposes of this study, we restricted our attention to the younger segment of the labour force. We thus selected women and men aged 18 to 39 and excluded from our samples economically inactive individuals (e.g., students and those who were looking after the household or family members). Moreover, and in order to avoid possible reverse causation effects, individuals who reported having multiple chronic conditions (three or more limiting long-term illnesses) or permanent disabilities were excluded from the analyses. The resulting samples consisted of 26,972 healthy and active individuals for the year 2005, and 20,432 for the year 2013.

Measures

Both editions of the ISTAT survey used the SF Health Survey (Ware, Snow, Kosinski, & Gandek, 1993), an internationally recognized tool developed to capture

information about functional health and well-being from the patient's point of view. The SF Health Survey measures eight health domains and provides psychometrically based summary scores of both physical and mental health.

Among the available measures, we chose to use the Mental Health Inventory (MHI). Because the MHI is specifically designed to measure anxiety, depression, and general distress, it corresponds well with our research aims. The scale is derived from answers to the following five questions: "*How much of the time during the last four weeks have you: (a) been a very nervous person?; (b) felt downhearted and blue?; (c) felt calm and peaceful?; (d) felt so down in the dumps that nothing could cheer you up?; and (e) been a happy person?*" For each question, respondents were asked to choose from a six-point Likert-type scale ranging from "*all of the time*" to "*none of the time*". The scoring for items (c) and (e) was reversed because they ask about positive feelings. The score for the MHI was computed by summing the scores of each question item. For ease of interpretation, the MHI was then transformed into a 0-100 scale using a transformation formula (Ware & Kosinski, 2001), with the highest possible score as 100.

Methods and models specification

Linear regression models were used to estimate the respondents' probability of reporting poor mental health. The outcome variable is the complement to 100 of the MHI, so that higher values denote poorer mental health status. Positive estimated β -coefficients indicate worse mental health compared to respondents in the reference category. All our analyses were stratified by gender.

With the intent of answering the first research question, we included in the model the core explanatory variable describing the respondents' *status in the labour market*. This was obtained by combining several items from the questionnaire (i.e., economic activity,

employment status, contract typology). The derived variable distinguishes between the following employment arrangements: *employee, permanent contract; employee, fixed-term contract; self-employed; atypical contract; in search of a new job; and in search of a first job*. Then, the core explanatory variable was refined with the addition of the information on the amount of time spent in the current labour force status (less than one year, one to two years, three years or more); and, for individuals in employment, occupational status (medium-high or low). We used the *suest (seemingly unrelated estimation)* procedure in Stata, developed by Weesie (1999), to determine whether there were significant differences by gender. Using this procedure, the coefficients and standard errors of the models were estimated simultaneously. The coefficients obtained did not differ from those obtained from separate estimations, but the standard errors were robust, which allowed for their direct comparison.

The models are adjusted for the following confounders: *gender, age (18-24, 25-29, 30-34, 35-39), area of residence (north, centre, south), living arrangements (in a couple with children, in a couple without children, lone parent, not in a family, living with parents) and educational qualification (tertiary, secondary, below secondary)*.

The second research question was addressed by adding to the models a variable capturing respondents' *perceived economic situation*. The variable was derived from the survey's question: "How would you judge the financial situation of your household over the past 12 months?" Answers to the original question were recoded into two categories: good (excellent and adequate) and not good (scarce and absolutely insufficient). First, we tested whether the *perceived economic situation* acted as a *mediator* of the relationship between employment insecurity and mental health. We used seemingly unrelated regression (UCLA, 2015), to estimate (a) status in the labour market and perceived economic situation predicting MHI; (b) status in the labour market predicting perceived economic situation. We then

computed both direct and indirect (mediated) effects, using a bootstrap procedure to test their significance. This approach allowed us to quantify the proportion of the effect of employment insecurity on mental health which was in fact mediated by respondents' perceived economic situation. Secondly, we explored whether perceived economic situation was also acting as a *moderator* of the negative relationship between employment insecurity and mental health. A further model specification thus included the interaction between *perceived economic situation* and *status in the labour market*.

The third research question focused on education, investigating its role as a *moderator* – rather than as a confounder – of the relationship between insecurity and mental health. The model included the interaction between status in the labour market and educational qualification.

Then, and with the aim of addressing our last research questions, we relied on data for two time periods (2005 and 2013).

Results

The relationship between employment insecurity and mental health

Table 1 approximately here

The results from the models estimated for the year 2013 revealed the existence of a strong association between respondents' status in the labour market and their mental health as gauged by the MHI (Table 1). Men were significantly lower than women on the MHI (23.4 ± 0.3 vs. 26.0 ± 0.4 , $t=9.88$, $p<0.001$). However, the association between employment insecurity and mental health was, net of the other control variables, more pronounced among men than among women.

Compared to employees with permanent contracts, workers in all of the other categories had significantly higher probabilities of being in poor mental health. In particular, unemployed respondents with previous work experience reported the worst mental health. Among all male respondents, the second highest coefficient was observed among those who were searching for a first job. Among the male respondents who were in employment, those who reported having the worst mental health were those in atypical employment, followed by those who were self-employed and those who were employed under a fixed-term contract. Being in atypical employment seems to have been particularly detrimental to the mental health of women, as the second highest coefficient was observed among these respondents. Compared to the female respondents with a permanent contract, women who had a fixed-term contact or were searching for a first job had poorer mental health, whereas the coefficient for women in self-employment was not statistically significant (Table 1, Model 1a).

The results for occupational status showed some distinct patterns across the two genders (Table 1, Model 1b). Among men, permanent employees and the self-employed were more likely to have reported being in poor mental health if they were in a low position. Conversely, the likelihood of reporting being in poor mental health was higher among men who were in fixed-term employment and had a higher occupational position. Among female respondents no differences in mental health were observed depending on whether they were in permanent employment or were self-employed with different occupational statuses. Conversely, among women in fixed-term employment, those in a low occupational position had worse mental health than their counterparts in higher positions.

The bottom section of Table 1 (Model 1c) displays the results for the variable status in the labour market, further refined to account for the time spent in the current status. For both genders, the likelihood of being in poor mental health varied according to the amount of time individuals spent in the (last) reported condition, although the patterns of men and women

often differed. Among men in self-employment, we observed a decreasing gradient in mental health risk according to the amount of time spent in that condition. Men in fixed-term employment were also more likely to have experienced a high degree of psychological distress at shorter durations (under one year), whereas the coefficients for longer durations did not differ statistically from those of respondents in permanent employment. On the other hand, women in fixed-term employment and in self-employment experienced greater psychological distress after one to two years. The association between atypical contractual arrangements and poor mental health was particularly pronounced during the first year among both men and women. Finally, when we look at unemployment durations, we see that male respondents who were searching for a new job had a lower risk of being in poor mental health after one to two years of searching for a job, and a higher risk after a longer period of unemployment. Among female respondents, the probability of reporting a high level of psychological distress peaked at shorter durations, and decreased thereafter.

The role of household financial circumstances

Table 2 approximately here

In Model 2a (Table 2), we tested whether the relationship between employment insecurity and mental health was significantly reduced when we accounted for the household financial circumstances, as measured by the respondents' perceived economic situation. Among both men and women, a difficult economic situation significantly increased the likelihood of being in poor mental health. Moreover, given the relationship between employment insecurity and poor economic conditions (results not shown, but available upon request), the inclusion of this factor in the model affected the size of all of the coefficients estimated for the variable *status in the labour market*, although they retained their statistical significance. Thus, relative to results of Model 1a (Table 1), we observed a reduction in the coefficients of fixed-term and atypical employment for both men and women. Accounting for

the perceived economic situation also reduced the coefficients estimated for respondents who were searching for a first or a new job. Self-employment is the only category that behaved differently: its effect increased when we controlled for the perceived economic situation.

The total share of the employment insecurity effect, which is mediated by the perceived economic situation, is 19% for men and 25% for women.

Table 3 approximately here

Then, we included in Model 2b (Table 3) the interaction between respondents' *perceived economic situation* and *status in the labour market*. The results confirmed that among the male respondents who reported that they were in a good economic situation, the pattern of poor mental health was associated with insecurity in the labour market. The only exception was among self-employed men, who were not significantly more likely than permanent employees to have reported a high degree of psychological distress. The results also confirmed that having few economic resources was associated with poor mental health, although this effect was less pronounced among men with fixed-term or atypical contracts than it was among men who were in permanent employment. Interestingly, among the female respondents who said they were in a good economic situation, only the women who were searching for a first job reported having significantly worse mental health than the women who were in permanent employment. Having few economic resources also had a detrimental effect on the mental health of women, particularly of women who had previous job experience but were unemployed.

The role of education

Table 4 approximately here

Table 4 displays the results from the estimation of the interaction between educational qualifications and employment insecurity, and its relationship with mental health. Among

both men and women in permanent employment, the results show that there were significant differences in the risk of being in poor mental health depending on whether they had high or low educational qualifications. Among more educated men, those in a less secure position had a statistically significant higher risk of being in poor mental health than men in permanent employment. Among women, this gap emerged only among those who were in fixed-term employment or searching for a new job. Having a low level of education was significantly associated with a higher risk of mental distress among unemployed men who were searching for a first or a new job. In contrast, the probability of reporting being in poorer psychological health was lower among men in fixed-term employment if they were less educated. No statistically significant interactions were observed in the female sample.

Employment insecurity and mental health before and during the economic recession

For the last analysis, we used data from the two survey years to compare the situation of young adults in 2013 and in 2005. Our goal was to determine whether the relationship between employment insecurity and mental health had changed after a period of protracted economic recession. The analysis was carried out on pooled data, including a dummy variable for survey year. On average, our outcome variable was higher in 2013 than in 2005 for both men and women: the mean score of MHI increased from 20.5 ± 0.3 to 23.4 ± 0.3 for men ($t=13.50$, $p<0.001$), and from 24.0 ± 0.3 to 26.0 ± 0.4 for women ($t=7.65$, $p<0.001$), denoting a deterioration in the mental health of the young adult labour force over time.

Table 5 approximately here

Model 4a showed that at least part of this difference could be explained by the relationship between employment insecurity and mental health, since the inclusion of the variable *status in the labour market* reduced the size of the difference between the two years for both men and women.

Table 6 approximately here

Model 4b was designed to improve our understanding of the effects of the economic downturn by including the interaction between *status in the labour market* and the *survey year*. The results indicated that mental health was not only worse in general in 2013 than in 2005, but that its relationship with insecure labour market attachment also became more pronounced over the period, at least for some categories of the labour force. In particular, unemployed men who were searching for a first job had a significantly higher risk of reporting poorer health in 2013 than in 2005. The risk was also higher for unemployed women who were searching for a first or a new job, and for women in fixed-term employment.

Discussion

In this article, we contributed to the study of the relationship between employment insecurity and mental health, focusing on Italy, a country with high and sustained levels of unemployment, as well as a very large share of the labour force in temporary and flexible employment. Specifically, the study advances our understanding of the relationship between employment insecurity and mental health by focusing explicitly on the population of younger adults in the labour force, and by examining in detail the profiles of the people who reported being in poor mental health.

Our study has several strengths. Since our analysis relied on a nationally representative and large-scale sample, we were able to focus on a select age group, while still making use of a very detailed classification of individuals' positions in the labour market. For the same reason, we were also able to stratify the analyses by gender. In addition, the survey's specific focus on health conditions allowed us to explore explicitly the issue of mental health and its relationship with employment insecurity. Finally, the two recent

samples allowed us to capture two ideal points in time – 2005 and 2013 – for investigating changes related to the economic recession. Thus, the study provides important insights into the relationship between employment insecurity and mental health among the young adult labour force in Italy.

Four research questions guided the analyses. The aim of the first question was to ascertain the existence of a relationship between young adults' status in the labour market and their mental health, and to gain a deeper understanding of this relationship by addressing the issue of heterogeneity within the labour force with respect to occupational status and time spent in the current labour force status. The second question investigated the role played by the household's financial circumstances in explaining the relationship between employment insecurity and mental health. The goal of the third research question was to assess whether the relationship varied depending on the respondents' educational levels. The fourth and last research question focused explicitly on the differences associated with the onset of the economic recession by comparing the mental health levels of young adults, and the relationship between employment insecurity and mental health, in 2005 and in 2013.

The view that unemployment and temporary employment are associated with higher levels of psychological malaise has largely been supported by the empirical literature (Paul & Moser, 2009; Virtanen et al., 2005). Yet to the best of our knowledge, only a few studies (Flint, Barker, Shelton, & Sacker, 2013) have compared permanent employment to the manifold expressions of insecure labour market engagements and worklessness. Our study demonstrated that, *ceteris paribus*, within the youth labour force in Italy, permanent employees have better psychological health than individuals in temporary or non-standard working arrangements, or in unemployment spells. The study further confirmed that neither temporary workers nor unemployed individuals are homogeneous groups, and thus should not be treated as such in empirical designs (De Cuyper et al., 2008). It therefore appears that

previous job experience is important in differentiating the mental health risks of unemployed individuals. Occupational status also matters, as individuals in lower positions tend to suffer more than others from psychological distress. This finding is consistent with the results of previous studies that found that individuals in high status occupations have greater access to financial and social resources, as well as better coping strategies (Schaufeli & van Yperen, 1992). Finally, the effects on mental health also vary according to the amount of time an individual spends in a condition of insecurity, with distress levels often peaking within the first two years of unemployment or temporary employment, and then declining as the individual adapts to the situation. Unemployed men with previous job experience are the only noteworthy exception, as their mental health deteriorates if they have been searching for a new job for more than three years.

There are a number of pathways through which employment insecurity might affect the psychological wellbeing of the labour force. One of the mechanisms relates to the (current or expected) economic difficulties associated with the experience of being unemployed (Jahoda, 1981; Dooley, Fielding, & Levi, 1996), and to the comparatively low degree of protection offered by flexible contracts (Benach et al., 2000; Virtanen et al., 2005; De Cuyper et al., 2008). Our study of young adults in the Italian labour force has contributed to existing knowledge by testing whether and how the respondents' perceptions of their household financial circumstances might have affected the relationship between employment insecurity and mental health. As we expected, respondents who were unemployed or had a fixed-term or an atypical contract were more likely to report that their economic conditions were poor. We also found that the experience of having financial difficulties accounted for a significant proportion of the relationship between employment insecurity and health. Interestingly, this share was shown to be larger for women than for men, which might suggest that the pathways between insecurity and health differ between men and women. We could speculate that

because Italy is a male-breadwinner society, having a job might affect the psychological well-being of men more than that of women. Our finding that mental health risks were lower among men who reported that their economic conditions were poor but who were employed (albeit with a fixed-term or an atypical contract) provide partial support for this view. Finally, it should be noted that results for the self-employed were different, as the risk of poor mental health among these respondents was associated not with having insufficient resources, but with having ample resources.

In addition, our study investigated how education affects the link between employment and mental health. We found that, as expected, educational qualifications influenced the relationship between employment insecurity and mental health outcomes. Previous studies have argued that individuals with lower levels of education should be more negatively affected by job insecurity, given their poor social and financial resources (Cheng, Chen, Chen, & Chiang, 2005; Sverke, Hellgren, & Nashwall, 2002). At the same time, however, highly educated individuals may suffer from “status inconsistency”, which may be associated with increased psychological strain and an elevated risk of ill health (Schaufeli, 1992). Indeed, our results show that having a high level of education is not sufficient to protect individuals from the mental health risks associated with employment insecurity, as highly educated men and women were more likely to have reported experiencing mental health problems if they were in insecure labour market positions. Moreover, mental health risks were even more pronounced among less educated individuals, particularly men who were searching for a job. Low-educated men with fixed-term contracts, on the other hand, were less likely to have reported being in poor mental health. Overall, our findings suggest that individuals with a higher level of education may have been suffering from a mismatch between their skills and their position in the labour market. Less educated individuals faced greater mental health risks, but only if they were men and were unable to secure a job.

Several scholars have examined the potential health consequences of a large-scale economic recession, such as the current downturn (see, among others, Reeves, Stuckler, McKee, Gunnell, Chang, & Basu, 2012; De Vogli, Marmot, & Stuckler, 2013; Drydakis, 2015). The hypothesis that the worsening economic climate might have negatively affected the psychological wellbeing of the labour force is in line with our general finding that the risks of reporting being in poor mental health were higher in 2013 than in 2005, especially among the unemployed. This pattern seems to contradict the belief that “*unemployment hurts less the more of it there is around*” (Clark, 2003 p. 326); or, in other words, that unemployment becomes more socially acceptable and less stigmatising as a consequence of persistently elevated unemployment rates (Schaufeli & van Yperen, 1992; Sheeran, Abrams, & Orbell, 1995). However, the causal mechanisms of the deterioration in mental health are unclear. We might hypothesise that increased competition for each job at a time of prolonged economic recession generated greater stress and anxiety among unemployed people (Dooley, Catalano, & Rook, 1988; McKee-Ryan et al., 2005). Moreover, the mental health of unemployed people may have deteriorated as they experienced greater financial strain while searching for a job. This feeling may have been especially acute among Italians in 2013, as by that time the economic downturn had last about five years, and many unemployed people would have used up much of their personal and family savings (ISTAT, 2013). At the same time, however, the poor mental health reported by individuals in insecure labour force positions may have been an artefact of reverse causation effects. In times of economic recession, when unemployment rates – and thus the labour supply – increase, employers have more choice. Thus, individuals who are in poor health may find it more difficult than in the past to secure a job, or they may be forced to accept a less secure, poorly paid job.

Finally, our study investigated the relationship between employment insecurity and mental health separately for men and women. The existence of gender differences in mental

health outcomes, and the different relationships men and women have to unemployment and temporary employment, are a common thread in the literature. Most of these studies have shown that gender is a significant moderator of the distressing effect of unemployment (Paul & Moser, 2009). The ways in which temporary and non-standard employment might affect men and women are less clear. Some studies have found no sex differences in the impact of flexible employment on health (Kivimaki et al., 2003; Ferrie, Shipley, Stansfeld, & Marmot, 2002). However, other scholars have found smaller effects on women (Ferrie et al., 1995; Ferrie, 1998), while still others have argued that women's health may be disproportionately affected by temporary employment (Menendez, Benach, Muntaner, Amable, & O'Campo, 2007; Pirani & Salvini, 2015). The empirical analyses presented in this study have shown that, all other things being equal, women are more likely than men to report having mental health problems. However, both unemployment and insecure employment have been shown to be systematically more detrimental to the mental health of men than of women. This finding is not surprising, as it is related to the persistence of the male breadwinner model, according to which stable and gainful male employment is the most important prerequisite for family formation and economic independence.

Our study focused on young adults between the ages of 18 and 39 – a selected population of particular demographic and societal relevance, as people typically undergo a number of major life transitions at these ages. However, both employment insecurity and being in poor mental health might delay or preclude transitions to economic and residential independence, couple formation, and parenthood. Future research should further develop this path of inquiry, investigating in greater detail how the relationship between employment insecurity and mental health varies based on combinations of age, gender, and living arrangements.

Limitations

We are aware that there are certain limitations to our study, mostly in relation to its cross-sectional design. First, while we compare two time periods, we cannot make any claims regarding the causal effects of the economic recession. Our analyses demonstrated the persistence over time of a negative association between employment insecurity and mental well-being, and its intensification after a prolonged period of economic downturn. We cannot, however draw any firm conclusions regarding the underlying mechanisms on the basis of cross-sectional data only.

Second, we cannot entirely rule out the possibility that poor mental health selects individuals into unemployment and non-standard employment. However, we reduced the reverse causation effect by excluding young adults who reported having permanent disabilities or more than three chronic health conditions. In addition, previous studies, including a study for Italy (Pirani & Salvini, 2015), have shown that although the selection effects are clearly significant, they are usually weak, and cannot explain away the direct social causation effects (Paul & Moser, 2009).

Finally, the empirical analyses presented in this article are limited to individuals in the labour force, as our specific research interest was the assessment of a relationship between mental health and having an insecure position in the labour force among young adults in Italy. Preliminary analyses of our data showed that the mental health levels of respondents who were not in the labour force did not differ significantly on average from those reported by active respondents, and that the gender differences in the inactive population mirror those observed in the active population. Thus, the exclusion of young adults who were not active in the labour force should not have any implications for our findings. Nevertheless, future research might include individuals who are not in the labour force, paying particular attention to the sub-group of discouraged workers.

Conclusions

Although we make no claims of causality, our study demonstrated that there is a significant and positive association between employment insecurity and poor mental health among the young adult labour force in Italy, and that this relationship has become stronger after years of prolonged economic recession.

These results are noteworthy and raise concerns about the financial and societal costs of employment insecurity. Future social, labour, and public health policies should pay greater attention to the link between employment insecurity and mental health (Stuckler, Basu, Suhrcke, Coutts, & McKee, 2009; Reeves, Karanikolos, Mackenbach, & Stuckler, 2014); not only because of the direct consequences of unemployment and flexible employment on the health and well-being of the labour force and of the wider population they support, but also because of the repercussions of insecurity and psychological malaise for other life course transitions among young adults.

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Table 1: Effects of status in the labour market on MHI, by gender. Year 2013. Linear regression model: unstandardized coefficients and their significance.

	Men	Women	Men ≠ Women ⁱ
Model 1aⁱⁱ			
<i>Status in the labour market</i>			
Permanent employment	Reference	Reference	
Fixed-term employment	1.684**	2.547***	
Self-employment	2.317***	0.767	+
Atypical contract	2.763*	2.614*	
In search of a new job	7.798***	4.765***	***
In search of a first job	5.053***	2.392**	**
Model 1bⁱⁱ			
<i>Status in the labour market + occupational status</i>			
Permanent employment—Medium-High	Reference	Reference	
Permanent employment—Low	1.205*	0.637	
Fixed-term employment—Medium-High	2.913**	1.833*	
Fixed-term employment—Low	2.278**	3.747***	
Self-employment—Medium-High	2.964***	0.958	+
Self-employment—Low	3.079***	0.978	+
Atypical contracts	3.473**	2.806*	
In search of a new job	8.590***	5.047***	***
In search of first job	5.830***	2.675***	**
Model 1cⁱⁱ			
<i>Time spent in the current labour force status</i>			
Permanent employment	Reference	Reference	
Fixed-term employment <1 year	4.735***	2.435*	
Fixed-term employment 1-2 years	1.257	3.402**	
Fixed-term employment 3 years or more	0.113	2.308**	*
Self-employment <1 year	2.704	0.617	
Self-employment 1-2 years	2.696*	3.632 ⁺	
Self-employment 3 years or more	2.234***	0.357	*
Atypical contracts <1 year	4.332*	4.161 ⁺	
Atypical contracts 1-2 years	2.989	1.818	
Atypical contracts 3 years or more	1.659	2.208	
In search of a new job <1 year	8.013***	5.731***	
In search of a new job 1-2 years	7.312***	4.882***	*
In search of a new job 3 years or more	8.607***	4.323***	***
In search of first job	5.158***	2.499***	**

Note. Entries are unstandardized coefficients from linear regression models. ⁺ $p < 0.1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ⁱ Significance level of the test of differences between coefficients.

ⁱⁱ Adjusted for age-class, area of residence, living arrangement and educational qualification.

Table 2: Model 2a: Mediation analysis of the effects of perceived economic situation on the relationship between status in the labour market and MHI, by gender, 2013.

Model 2aⁱ	Men		Women	
	Direct effects	Indirect effects	Direct effects	Indirect effects
<i>Perceived economic situation</i>				
Good	Reference		Reference	
Bad	4.483***		4.837***	
<i>Status in the labour market</i>				
Permanent employment	Reference	Reference	Reference	Reference
Fixed-term employment	1.004*	0.681***	2.107***	0.440***
Self-employment	2.529***	-0.212**	0.790	-0.023
Atypical contract	1.963 ⁺	0.800***	1.912 ⁺	0.702***
In search of a new job	6.593***	1.205***	3.680***	1.086***
In search of a first job	3.811***	1.242***	1.388*	1.005***
Ratio indirect to direct effects	0.23		0.32	
% of total effect mediated by perceived economic situation	0.19		0.25	

Note. Entries are unstandardized coefficients from linear regression models.

⁺ $p < 0.1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ⁱAdjusted for age-class, area of residence, living arrangement and educational qualification.

Table 3: Model 2b: Interaction effects on MHI between status in the labour market and perceived economic situation, by gender, 2013.

Model 2b ⁱ	Men		Women	
	Good	Bad	Good	Bad
<i>Status in the labour market:</i>				
Permanent employment	Reference	4.718***	Reference	4.472***
Fixed-term employment	4.191**	-2.141*	-0.264	1.705
Self-employment	1.560	0.752	1.457	-0.522
Atypical contract	7.453*	-3.698 ⁺	4.561	-1.824
In search of a new job	5.265***	0.756	1.093	1.685 ⁺
In search of a first job	5.745**	-1.212	3.236 ⁺	-1.099

Note. Entries are unstandardized coefficients from linear regression models.

⁺ $p < 0.1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ⁱAdjusted for age-class, area of residence, living arrangement and educational qualification.

Table 4: Model 3: Interaction effects on MHI between status in the labour market and educational qualification, by gender, 2013.

Model 3ⁱ	Men			Women		
	<i>Educational qualification</i>			<i>Educational qualification</i>		
<i>Status in the labour market</i>	High	Medium	Low	High	Medium	Low
Permanent employment	Reference	0.298	1.913**	Reference	0.263	1.529 ⁺
Fixed-term employment	3.789**	-1.765	-3.508*	1.871*	0.893	1.173
Self-employment	2.381*	-0.080	-0.066	0.344	1.694	-2.079
Atypical contract	4.498*	-3.142	-1.180	1.941	1.210	0.578
In search of a new job	5.415***	2.504	2.717 ⁺	5.481***	-1.288	-0.221
In search of a first job	2.745*	1.657	4.432**	1.789	0.859	0.608

Note. Entries are unstandardized coefficients from linear regression models.

⁺ $p < 0.1$. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

ⁱAdjusted for age-class, area of residence, living arrangements.

Table 5: Model 4a: Effects of status in the labour market and survey year on MHI, by gender, pooled data for years 2005 and 2013.

Model 4aⁱ	Men		Women	
<i>Survey year</i>				
2005	Reference	Reference	Reference	Reference
2013	3.175***	2.462***	2.079***	1.677***
<i>Status in the labour market</i>				
Permanent employment		Ref.		Ref.
Fixed-term employment		2.197***		1.947***
Self-employment		2.318***		0.785*
Atypical contract		2.541***		2.323***
In search of a new job		7.543***		3.960***
In search of a first job		4.535***		1.284**

Note. Entries are unstandardized coefficients from linear regression models. ⁺ $p < 0.1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ⁱAdjusted for age-class, area of residence, living arrangement and educational qualifications.

Table 6: Model 4b: Effects of the interaction between status in the labour market and survey year on MHI, by gender, pooled data for years 2005 and 2013.

Model 4b ⁱ	Men		Women	
	<i>Survey year</i>		<i>Survey year</i>	
	2005	2013	2005	2013
<i>Status in the labour market</i>				
Permanent employment	Reference	2.325***	Reference	0.992**
Fixed-term employment	2.575***	-0.757	1.345**	1.396*
Self-employment	2.329***	-0.040	0.785	0.018
Atypical contract	2.356***	0.589	1.975**	0.911
In search of a new job	6.885***	1.058	3.015***	1.716*
In search of a first job	3.844***	1.399*	0.307	2.167**

Note. Entries are unstandardized coefficients from linear regression models.

⁺ $p < 0.1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ⁱAdjusted for age-class, area of residence, living arrangement and educational qualifications.

Research highlights

We focus on the young adult labour force in Italy during the economic recession.

Employment insecurity is associated with poorer mental health.

Financial difficulties partly explain the effect of employment insecurity.

Different mental health outcomes depend on respondents' educational level.

Risks of reporting poorer mental health were higher in 2013 than in 2005.