

Job insecurity and mental health: A meta-analytical review of the consequences of precarious work in clinical disorders

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Título: Incertidumbre laboral y salud mental: una revisión meta-analítica de las consecuencias del trabajo precario en trastornos mentales.

Resumen: Ante la creciente inestabilidad generada por la crisis económica mundial, la incertidumbre laboral vuelve a tomar relevancia en el estudio de la salud en el trabajo. Con el objetivo de analizar las consecuencias de la incertidumbre laboral en la salud mental, se aporta un documento referencial que recoge los avances realizados en la investigación empírica en el contexto actual. Esta revisión sistemática se realiza mediante la técnica meta-analítica a través de 56 muestras independientes con 53,405 participantes en total. El análisis ofrece una correlación significativa entre la incertidumbre laboral subjetiva y la salud mental. Así, se ha encontrado que la incertidumbre laboral guarda relación con el riesgo o presencia de depresión, ansiedad y cansancio emocional, así como con una baja satisfacción general con la vida. Así mismo, se realizan comparaciones internacionales, con resultados igualmente negativos en los trabajadores con independencia de la situación económica de los estados, y también se incorporaron aportaciones metodológicas y conceptuales sobre la calidad de las pruebas de medida utilizadas. De este modo, la incertidumbre laboral queda constatada como una problemática de primer orden para la salud mental de los trabajadores, generando efectos devastadores en todo tipo de perfiles profesionales y contextos económicos.

Palabras clave: incertidumbre laboral; salud mental; trabajo precario; meta-análisis; salud laboral.

Abstract: Faced with the growing instability resulting from the world economic crisis, job insecurity gains relevance in the study of occupational health. In order to analyse the consequences of job insecurity on mental health, a reference document is provided including the empirical research advances in the current framework. This systematic review follows a meta-analytical technique through 56 independent samples with 53,405 participants in total. The analysis offers a significant correlation between subjective job insecurity and mental health. Thus, it has been found that job insecurity is related to the risk or presence of depression, anxiety and emotional exhaustion, as well as to general low satisfaction with life, international comparisons are made, and negative results among workers regardless of the economic situation of the countries are highlighted, too. Moreover, methodological and conceptual contributions have been made in terms of the quality of the metrics applied. Job insecurity appears as a major problem for workers' mental health, generating devastating effects on all kind of professional profiles and economic contexts.

Keywords: job insecurity; mental health; precarious work; meta-analysis; occupational health.

Introduction

The primary goal of this systematic review is to analyse the relationship between job insecurity and mental health. To do so, a basic and specific reference document is drafted for research into this field, including studies from the last 10 years, in order to update the previously published systematic review related to job insecurity (Cheng & Chan, 2008); as well as to adapt the results to the changing social reality and to the advances of the growing research in this topic.

Secondly, job insecurity is studied as an indicator of the workers' subjective experience; through an international comparative analysis the aim is to verify the influence of the specific context of each country on the manifestation of job insecurity.

Finally, the analysis made responds to methodological and conceptual issues related to job insecurity, mainly taking into account the quality of the measurement tools used for its evaluation.

Thus, a relevant document is presented that is valid for researchers who focus on the study of job insecurity as well as for practical application in institutional and organizational environments.

The perceived job insecurity concept

Job insecurity is a construct with a recent tradition in the study of organizations. Its origins go back to the job climate and stress theories developed more than four decades ago (Greenhalgh & Rosenblatt, 1984). Sverke, Hellgren and Näswall (2006) state, in the historical overview of the concept, how classical studies on job climate and motivation (Hackman & Oldham, 1976; Rizzo, House, & Lirtzman, 1970) analyse the field of certainty in a motivating sense. The terms used then were "job security", occupational security or certainty. In fact, job security is currently found as yet another variable in the job climate scales. It was following the publication of the article entitled "Job Insecurity: Toward Conceptual Clarity" (Greenhalgh & Rosenblatt, 1984) that the systematic study of job insecurity started (Cheng & Chan, 2008; Lozza, Libreri, & Bosio, 2013; Muntaner et al., 2010; Pienaar, De Witte, Hellgren, & Sverke, 2013; Sverke et al., 2006). Greenhalgh and Rosenblatt (1984) review the hygiene-related theories of job security or certainty, encountering the obvious limitation that they had been formulated on an overcome job reality. From an individual-based approach, the authors start to understand the complexity of the work environment as "pressure" exerted on the individual and his "reactions", which inevitably takes them to this first approach of job insecurity as an expectation of loss. Thus, the authors understand job certainty or security as an ideal "need" which, if not reached, results in frustration for the worker. This led to the formulation of a theory on the bases

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of cognitive psychology, grounded in Thayer's job climate psychology (Thayer, 1967).

The job insecurity concept has been defined from different approaches in the last decades: Greenhalgh and Rosenblatt, in their pioneer work, define job insecurity as "perceived powerlessness to maintain desired continuity in a threatened job situation" (1984, p. 438). Later, other authors refer to the phenomenon as "one's expectations about continuity in a job situation" (Davy, Kinicki, & Scheck, 1997, p. 323); Sverke, Hellgren and Näswall focus their definition on the subjective component: "the subjectively experienced anticipation of a fundamental and involuntary event" (2002, p. 243). Also, Vander Elst, De Witte and De Cuyper in an international study refer to the concept as "the subjectively perceived and undesired possibility to lose the present job in the future" (2014, p. 365). Regardless of the approach, all the definitions share a common aspect: job insecurity is handled as a job stressor, always causing a negative impact on the worker and on his personal and organizational environments, highlighting again the fact that its origins lie in anticipating the involuntary and uncontrollable possibility of losing a job that one desires to keep.

The first distinction of the job insecurity concept appears between objective and subjective job insecurity (Hartley, Jacobson, Klandermans, & Van Vuuren, 1990). Objective job insecurity is linked to the observable structural variables (e.g. economic performance of the organization or variables of the country's economic situation). This perspective ends by equating the concept of job insecurity with the concept of precariousness in the most traditional sense: the one directly observable. Subjective job insecurity, on the other hand, focuses on people's experience, on how they experience or perceive the labour situation or status they are involved in.

Interest in the field of study of job insecurity has grown constantly, as flexible and changing labour relations have become an intrinsic element of the current labour market. It is assumed that job insecurity is not a transitory solution to adapt to a service-based economy, but rather that this way of organizing work is already a structural element (Crespo, Prieto Rodríguez, & Serrano Pascual, 2009), with important consequences for the well-being of workers (López-Araújo & Segovia, 2010; Pecino-Medina, Mañas-Rodríguez, Díaz-Fúnez, López-Puga, & Llopis-Marín, 2015; Serrano Rosa, Moya Albiol, & Salvador, 2009). This same approach proposed by Crespo and collaborators coincides with the approach defined by many authors, in different manners, over the last few years. Guy Standing (2012), with his *Precariat* concept, takes the neoliberalism concept to the classical framework of social confrontation and old renewed terminologies, where chronic instability is a common point for this new class. The organizations, the type of contracts (temporality, zero-hour contracts, partiality, etc.) and the quality of work have shifted in a new direction favouring insecurity (De Cuyper, Bernhard-Oettel, Berntson, Witte, & Alarco, 2008). The fact that the industrial sector has radically decreased in the western world, and has been replaced by the

proliferation of companies, most of them service sector SMEs (Nielsen, Kines, Pedersen, Andersen, & Andersen, 2015) implies the disappearance of the traditional meaning of a career as personal and professional evolution within one organization (Greenhalgh & Rosenblatt, 2010). Furthermore, the temporary nature of the work generated must be taken into account, as well as another element with perhaps a greater impact: the frequent use of hired labour through intermediary businesses (Mingorance-Arnáiz & Olmedo, 2015). In this framework, the culture of stability and evolution of the professional career within one organization has been replaced by the "portfolio career" highlighted by Kirkpatrick and Hoque (2005). A professional career based on flexibility, employability, self-employment, and lastly, the systemic implementation of job insecurity.

Going further into the subjective job insecurity perspective, different conceptual models of job insecurity arose. Thus, Borg and Elizur (1992) launched the distinction between cognitive dimension (the belief of one is going to lose one's job) and the affective dimension (fear of the loss). Later, a new dichotomy was added to job insecurity from the subjective perspective, differentiating between the qualitative and the quantitative dimensions (Hellgren, Sverke, & Isaksson, 1999). The quantitative dimension is defined as the fear of losing a job, whereas the qualitative one focuses on analysing the perception of losing quality in employment and the underlying quality of life; it would be a prediction on the consequences on a personal, family, organizational and social level resulting from the status deterioration. This dual qualitative and quantitative dimension is the main focus of the current research in this field.

The evaluation of the subjective job insecurity has been analysed by applying a large number of tests. One of the most frequently used scales today is Ashford's scale (Ashford, Lee, & Bobko, 1989), which is the starting point for other later scales like De Witte's scale (2000) and its variations (Kinnunen, Mauno, & Sitaloppi, 2011; Sora, Caballer, & Peiró, 2011; Vander Elst, De Witte, et al., 2014). Let us not forget, either, the scale by Borg and Elizur (1992), which measures the cognitive and affective dimension in 9 items, or Hellgren and collaborators' test (1999). But, undoubtedly, the most recurrent scale is the one designed by De Witte (2000). A large variety of different versions have resulted from this scale, with a variable number of items, in countries such as Holland, Sweden, Spain or the United Kingdom (Vander Elst, De Witte, et al., 2014). In addition to these tools, there is a wide variety of less used scales, and a concerning trend to use of *ad hoc* created questionnaires to assess job insecurity (Sverke et al., 2002).

The mental health concept

For this review we have handled a broad mental health concept in the line established by the World Health Organization (WHO): "Mental health refers to a broad array of activities directly or indirectly related to the mental well-being

component included in the WHO's definition of health: A state of complete physical, mental and social well-being, and not merely the absence of disease". It coincides with the same broad perspective of the American Psychiatric Association (APA), referring to the psychological disorder as a syndrome or behaviour with disruptive consequences for people's well-being and which hinder the normal development of daily functions.

Founded in the APA's diagnosis categories, in this case we shall focus on a selection of all the clinical disorders, previously Axis I. To establish a relationship between job insecurity and mental health we have compiled data and evidence evaluating anxiety disorders, depression, emotional exhaustion measured with the MBI scale (Maslach & Jackson, 1981), global mental health evaluations and general tests related to satisfaction with life. Only one psychological health variable (Cheng & Chan, 2008; Sverke et al., 2002) or psychological well-being variable (De Witte, Pienaar, & De Cuyper, 2016) was used in previous meta-analyses and systematic reviews. In this study, we analyse general psychological health measures, such as the GHQ, as well as specific disorder measures. According to the denomination of De Witte & col. (2016), the concept of psychological well-being in the proposed model refers to that set of global mental health evaluations.

Combining all these measures, this study proposes a mental health construct comprised of measures, grouped into five variables: psychological well-being, measurements on depression, anxiety, emotional exhaustion and satisfaction with life (Figure 1). Thus, the variable that we denominate "mental health" satisfies all the scores compiled.

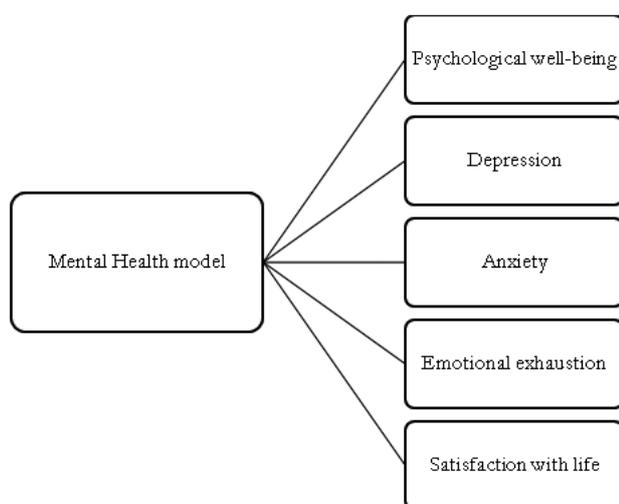


Figure 1. Mental health model designed for the study.

The current study

Scientific literature often addresses the impact of job insecurity on workers' mental health (Vander Elst, Näswall, Bernhard-Oettel, De Witte, & Sverke, 2016), but there is

currently no systematic review that focuses specifically and deeply on this relationship. While the previous meta-analyses (Cheng & Chan, 2008; Sverke et al., 2002) carried out a global diagnosis of the consequences of job insecurity, this study establishes three ground-breaking and priority objectives: (1) to clarify the direct relationship between job insecurity and psychological health, (2) to update the results of the existing reference meta-analyses with the recent research findings of the last decade, (3) study if job insecurity affects people from countries in the north and south of Europe in a different way, based on the differences in labour market and social circumstances of each territory, and (4) to evaluate the different types of job insecurity scales to determine their appropriate characteristics for a good evaluation of the phenomenon.

Respect to the first and second objective: Linked to work stress, insecurity is associated with to a negative impact on the workers' wellbeing and, therefore, on the productivity of the organizations (Sora, De Cuyper, Caballer, Peiró, & De Witte, 2013). Previous works (Cheng and Chan, 2008) analysed personal, organizational and social variables to demonstrate the negative correlation between job insecurity and work engaged, psychological well-being and even physical health. However, psychological well-being tends to be studied with a non-specific approach. Our study aims to offer a deeper approach of job insecurity and mental health, analysing specific disorders, such as depression or anxiety. D'Souza, Strazdins, Lim, Broom y Rodgers (2003), using an Australian sample, proposed studying stress and job insecurity, finding that both phenomena have a negative impact on mental health. Furthermore, this research is very clarifying to understand the job insecurity variable, as it defines working stress and job insecurity as two different constructs with different effects: regardless of the presence of stress, job insecurity multiplies the risk of depression and anxiety. Other studies have linked job insecurity with distress (Barnett & Brennan, 1997), emotional exhaustion (De Cuyper, Mäkikangas, Kinnunen, Mauno & De Witte, 2012; Vander Elst, Van den Broeck, De Cuyper & De Witte, 2014) or major depressive disorder (Wang, Patten, Currie, Sareen & Schmitz, 2012).

The research studies, mainly of a cognitive nature, on job insecurity do not present a great variety of paradigms, but rather a clear line of evolution, from the foundational article by Greenhalgh and Rosenblatt (1984) to the fruitful current wave of research studies (De Witte, et al., 2016; Låstad, Vander Elst, & De Witte, 2016; Vander Elst, Richter, et al., 2014; Vander Elst, Bosman, De Cuyper, Stouten, & De Witte, 2013; Vander Elst, De Witte, et al., 2014).

Cheng and Chan's meta-analysis (2008) is based on research prior to the changes in the global labour market resulting from the 2008 financial crisis. In order to continue this study, the research presented in this article focuses on the findings between 2005 and the first quarter of 2016, offering an updated and contextualized standpoint taking the world economic situation of the last decade.

In the framework of the general analysis on the impact of changes in the market caused by the financial crisis on mental health, this work aims to study more specifically and in greater depth the following issues: the increase in the use of psychotropic drugs in primary care (Sicras & Navarro-Artieda, 2015); the increase in the suicide rates (Antonakakis & Collins, 2014; Fowler, Gladden, Vagi, Barnes, & Frazier, 2015); the difficulty to access medical care (Cervero-Liceras, McKee, & Legido-Quigley, 2015; Kyriopoulos et al., 2014; Tambor et al., 2014), or the increase in drug abuse (Fox, Sweet, & Jensen, 2014). This work is based on a labour setting where employment is characterized by precariousness and instability. Between 14% and 25% of European workers feel insecure about their situation (De Witte & De Cuyper, 2015). In this framework, subjective job insecurity acts as a link between the deterioration of the labour situation (which would be the objective risk) and people's psychological well-being.

In relation to objective number 3: Economic research shows that differences between the so-called northern European countries and Southern European countries are found to be the source of social differences (Guillén, González-Begega, & Luque Balbona, 2016; Haliassos, 2016; Lafleur & Stanek, 2017; Rodriguez-Pose & von Berlepsch, 2014).

Given that the main differences are based on the economic situation and the labour market of these countries, we analysed the differential impact that the job insecurity could have in different economic contexts.

About objective number 4: The aim is to establish a theoretic contribution based on Sverke and col. (2002), trying to verify if tests of one single item are advisable to study job insecurity.

276 studies from the last decade (up to the first quarter of 2016) were found during the search for research studies that associate job insecurity with well-being. A chronological analysis of these publications shows the growing relevance that job insecurity has acquired in the field of scientific research: between 2005 and 2014 the number of publications doubled, going from 19 in 2005 to 41 in 2014. Therefore, insecurity becomes one of the main study focal points in terms of precarious working conditions. In an international context in which precarious conditions are structural, the traditional objective indicators, such as temporary employment, salary or the type of working day, do little to explain the workers' reality, on their own. A subjective approach, like the one provided by job insecurity, represents an enriching and complementary perspective to understand the phenomenon of job insecurity and its impact in a larger and more explanatory manner.

Method

The meta-analytical technique was used in this research as a procedure to analyse all the literature related to our objective. The systematic review based on the meta-analysis technique is a suggestive research tool for psychology in particu-

lar, and the clinical field in general, as it is able to empirically and rigorously address a specific topic in scientific literature. In an emerging field of study like that of job insecurity, the meta-analysis is a magnificent technique (Gaddis & Foster, 2015; Schmidt & Hunter, 2014). In this case, the design followed the line of Cheng and Chan's model (Cheng & Chan, 2008), with the stages proposed by Botella-Ausina and Sánchez-Meca (2015) to create rigorous analyses, methodologically speaking. The phases are the following: (1) problem formulation; (2) search for studies; (3) coding of studies; (4) calculation of the effect size; (5) statistical analysis and interpretation, and (6) dissemination of results.

Search for literature and coding

As aforementioned, the search was limited to the last 10 years, between January 2005 and March 2016, through the main databases and scientific journals. In terms of the data bases used, keyword searches were performed (*job insecurity, health, mental health, measures, stress, well-being, depression, anxiety, burnout, psychological health*) on the Web of Science, Science Direct, Mental Health Abstracts and APA PsychNet. The articles selected for the meta-analysis belong to the following journals and publications: *11th International Strategic Management Conference; Applied Economics; Applied Psychology-an International Review; Psychologie Appliquée-Revue Internationale; Asia Pacific Journal of Management; Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement; Economic and Industrial Democracy; European Journal of Work and Organizational Psychology; Industrial Health; International Archives of Occupational and Environmental Health; International Journal of Human Resource Management; International Journal of Psychology; International Journal of Stress Management; Journal of Happiness Studies; Journal of Occupational and Environmental Medicine; Journal of Occupational Health Psychology; Journal of Personnel Psychology; Journal of Rational-Emotive and Cognitive-Behavior Therapy; Labour Economics; Psicothema; Safety Science; Scandinavian Journal of Psychology; Social Science & Medicine; South African Journal of Business Management; Southern African Business Review; Stress and Health, y Work and Stress*. In addition to the publications in journals, searches were performed in thesis repositories, congress minutes and scientific publications for informative purposes, in order to identify the largest number of studies related to the subject matter of the study.

The selection criteria for the articles were: (1) they should establish an empirical relationship between job insecurity and mental health according to the previous conceptualization, (2) the research projects should measure subjective job insecurity by means of a standardized test, (3) they should provide one or several mental health measurements with tests of psychological well-being, satisfaction with life, emotional exhaustion, anxiety or depression. Physical health measurements were excluded, as long as they were not an inventory of related psychosomatic symptoms, disorders or psychological diseases.

Cross-sectional and longitudinal studies were also taken into account; in the case of longitudinal studies, the data of the first measurement were extracted, thus following the steps of Cheng and Chan's meta-analysis (2008). Moreover, the selection was limited to studies published in English. Finally, the research studies selected should provide minimum methodological guarantees to be included in the analysis; sample data, territories where the study is performed, quality of the statistical tests used, clarity in the presentation of results, and data that could be converted into correlations or that would allow for the calculation of the effect size, such as correlations, means, standard deviations, *t* values, regressions or *F* statistics.

The coding process was subject to a table adapted to the subject matter, comprised of a total of 15 coding criteria clustered into 5 different sections. These sections are: (1) identification of the study, its authors and publication data, (2) conceptual research group, stating which mental health variable it measures, (3) design description, (4) sample data, and (5) results data.

Following the recommendation by Botella-Ausina and Sánchez-Meca's (2015), a parallel coding by two researchers, previously trained in the coding materials and the meta-analysis objectives, was performed. After the coding, the results obtained by both researchers were pooled and the closeness of agreement was calculated by means of the intra-class correlation coefficient ($ICC = .92$). The conclusion reached was that the measurements recorded by both judges are reliable.

Sample and quality of the studies

Of the 276 studies extracted, which related health, well-being and job insecurity, 74 that specifically focused on mental health and job insecurity were selected, to finally reach 33, from the last 10 years, methodologically valid and in the line with the objectives of the research project. 56 independent samples were coded (k) which fit in with the criteria highlighted, establishing an empirical relationship between job insecurity and mental health (Figure 2). A total of 53,405 participants were included in these 56 samples (k). The mental health construct comprised a sum of measurements in different variables: psychological well-being ($n = 28,347$), depression ($n = 16,684$), anxiety ($n = 2,677$), satisfaction with life ($n = 2,349$) and emotional exhaustion ($n = 3,350$).

The empirical research projects are spread out throughout several continents: Europe, America, Asia and Africa; the

largest number of the research projects, 41 out of the 56 samples, being concentrated in Europe. Moreover, 3 of the European studies were performed through several different countries.

To ensure the adequacy of the selected articles, an assessment of the quality of the studies was performed (Ferrería, Meca, Navarro, & Mateu, 2014). This quality control was undertaken by means of an *ad-hoc* test including 5 different criteria scored with 0 and 1, depending on whether or not they were fulfilled. 0 refers to a non-fulfilled criterion, and 1 to a fulfilled criterion. The quality criteria were: (1) whether the article specifies percentages of men and women in the sample; (2) if the type of contract of the subjects included in the study sample is specified; (3) if the sample includes at least 300 individuals; (4) if the tool to measure job insecurity is methodologically valid and its study has been considered in previous research (replicated quality), and (5) if the tool to measure mental health is methodologically valid and has been considered in previous research (replicated quality).

With regards to the first criteria, the one referring to the distinction between men and women, and the contractual nature of the research participants, whether the study performed a comparative analysis between groups and presented disaggregated results was not necessarily reflected, but rather, special attention was paid to the fact that methodologically the sample was sufficiently exposed so that the study could be replicated or compared with other similar studies. As for the criterion for the measurement tests, job insecurity or mental health scales, if the tests were methodologically poor they were rejected during processes prior to the screening. All the tests used in the research projects included in the meta-analysis offered reasonable validity and reliability degrees. However, some research studies have been identified that use measurement tools created *ad-hoc*, which, although they fulfil the methodological requirements, offer fewer guarantees due to their scarce presence in the research. Based on the opinion of experts, the studies that use instruments were determined and thus we have developed them as replicated quality (presence in previous research).

This quality analysis led to the calculation of a global score for each individual research used, also extracting the mean data 4.08 over a maximum of 5, with a standard deviation ($SD = .97$). This result ensures a selection of high quality articles for the meta-analysis, based on a conservative process during coding.

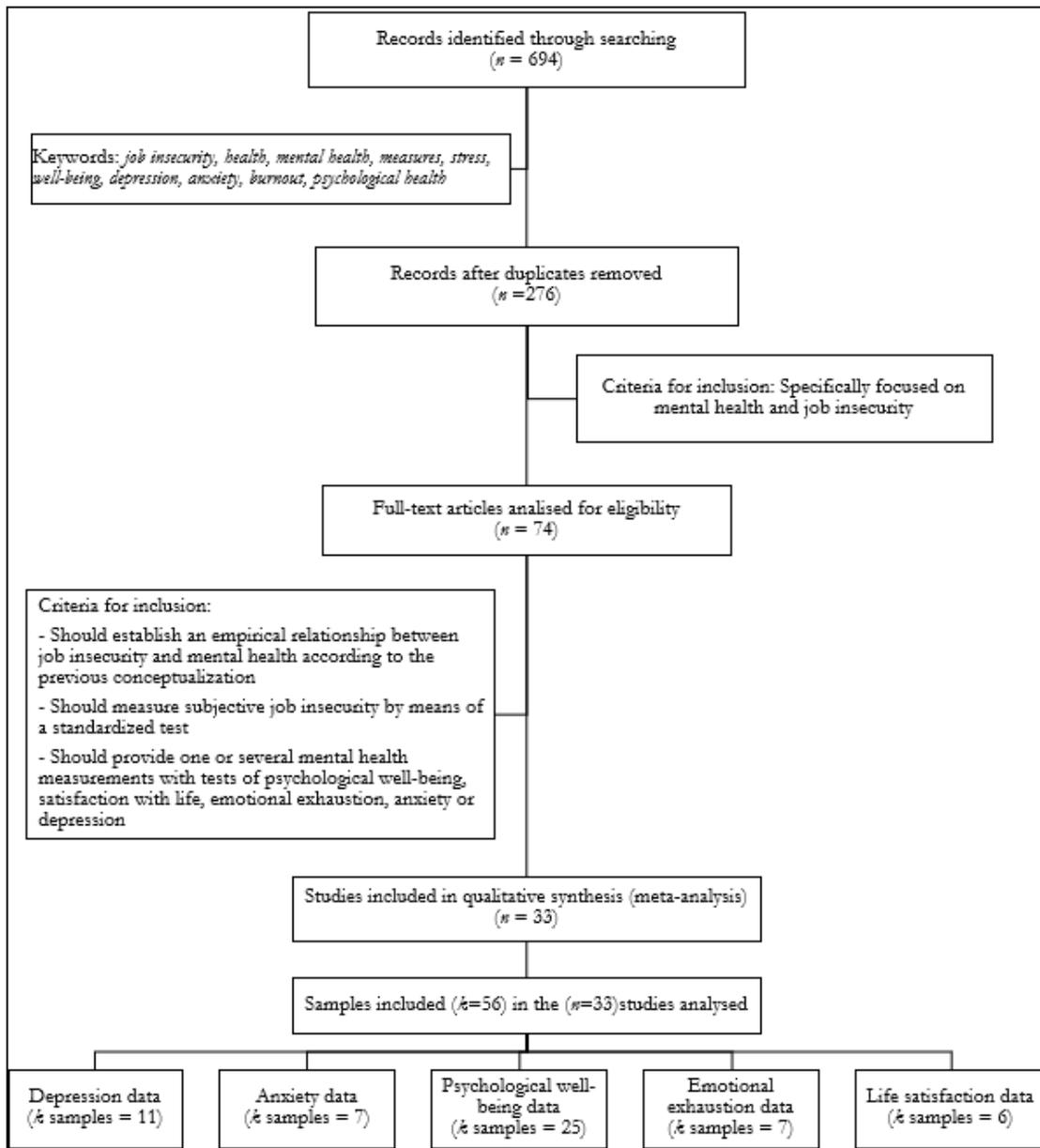


Figure 2. Flowchart of study selection process based on Prisma methodology.

Meta-analytical procedure

A joint meta-analysis was performed with the variables, health, anxiety, depression, emotional exhaustion, well-being and satisfaction with life, in order to obtain the average effect size of the relationship of each of the variables with job insecurity.

Pearson's correlation was taken as measurement among the variables studied to find the size effect. When this data could not be obtained from the articles, the Odds Ratio or the mean differences were taken into account. The correlations were transformed to Fisher's Z , and transformed again into correlations to facilitate the interpretation of the results.

The Odds Ratio and the mean differences were converted into Pearson's correlation, so that, finally, all means on the same scale.

Later, the mean effect size of each variable was obtained, as well as its confidence interval with a CI of 95%, and the null hypothesis that there is no relationship between the study variable and the job insecurity was tested by means of the Z statistic test. Then, Cochran's Q was calculated as well as the heterogeneity I^2 index. The criteria of Botella-Ausina and Sánchez-Meca (2015) were applied to select the model to perform the meta-analysis.

Finally, different potential qualitative moderators were studied, testing heterogeneity of the different subgroups of

the moderators by means of the Q_B test. The variables taken into consideration were the type of job insecurity measurement (just one item as opposed to one scale), the job insecurity scale used, and the area in the case of the studies performed in Europe (North or South).

The coding of articles was carried out by means of the Microsoft Excel 2016 program, and the statistical data with the Comprehensive Meta Analysis program, version 3.0 (Borenstein, Hedges, Higgins, & Rothstein, 2009).

Results

Following the interpretation of the I^2 value by Huedo-Medina, Sánchez-Meca, Marín-Martínez, and Botella (2006), the heterogeneity obtained for the cluster of variables was high ($Q(55) = 434.35; p < .001; I^2 = 87.33\%$). Taking the observed heterogeneity values into account, the total number of samples greater than 30 ($k = 56$), and the fact that the effect sizes follow a normal distribution according to Kolgomorov-

Smirnov's test ($D = .091; p > .05$), the random effects model has been adopted.

Table 1 shows that the mean effect size was statistically significant for the relationship between job insecurity and the mental health construct addressed ($r = .21$). In this case the mental health metrics chosen were the ones used to create the model, comprising a total of 56 independent samples and 53,405 participants. No significant differences were found among the variables that make up the construct with relation to the mean effect size, which renders coherence to the health model used.

In addition, a statistically significant effect size was found between each of the variables measured in mental health and the job insecurity measurement (Table 1). This occurred both in the case of depression ($r = .21$), and with relation to emotional exhaustion ($r = .27$), anxiety ($r = .17$) and satisfaction with life ($r = .25$).

The results obtained showed the existence of moderating variables in this relationship. A mixed effects model was adopted to study them.

Table 1. Relationship between job insecurity and the mental health construct, as well as the health variables that make it up.

Criterion Variable	<i>k</i>	<i>N</i>	<i>r</i>	95% <i>IC</i> Lower	95% <i>IC</i> Upper	\bar{z}	<i>p</i>	<i>I</i> ² (% de heterogeneity)	<i>Q</i> (between group)	<i>p</i>
Mental health	56	53,405	.21	.19	.24	16.97	.00**	87.34	3,26	.51
Depression	11	16,684	.21	.16	.25	8.45	.00**	76.81		
Anxiety	7	2,677	.17	.09	.24	4.44	.00**	72.24		
Emotional exhaustion	7	3,350	.27	.14	.39	4.14	.00**	91.02		
Life satisfaction	6	2,349	.25	.14	.35	4.57	.00**	91.78		
Psychological well-being	25	28,347	.22	.19	.25	12.73	.00**	88.06		

Note: * $p < .05$, ** $p < .01$.

The measurement tool as a moderating variable

In this case the decision was taken to compare the results on using job insecurity measurements with 1 item and with more than one, due the declining trend to use one-item tests. It was shown that there is a statistically significant difference between the results when using 1 item job insecurity measurements and several item measurements ($Q(1) = 6.46; p < .05$).

On eliminating studies with 1 item measurement tests, a stronger relationship was also observed in the correlations between health and job insecurity: the effect size between the global construct of mental health and job insecurity on eliminating studies with 1 item tests amounted to ($r = .24$), as opposed to ($r = .21$) when the studies taken into account included all kind of tests to assess job insecurity (Table 2).

When repeating this exercise using the variables, which make up the health model, in a disaggregated manner, a stronger effect size was found in depression: correlation ($r = .23$) without the 1 item tests, as opposed to ($r = .21$) including all measurements: these results were maintained with the psychological well-being variable, with an effect size ($r = .24$) on excluding 1 item measurements as opposed to ($r = .22$) total. The emotional exhaustion case is worth noting, with a significant mean effect size ($r = .39$) on excluding the 1 item measurements ($r = .27$) and taking into account all the tests. In the case of the satisfaction with life variable, the effect size was not influenced by the type of tools, and it was only in the case of the anxiety measurement that a lower correlation was identified: ($r = .15$) without the 1 item tests ($r = .17$) and taking all the tests into account.

Table 2. Role of moderating variables in the relationship between job insecurity and mental health.

Moderator		<i>k</i>	<i>r</i>	95% <i>IC</i> Lower	95% <i>IC</i> Upper	\bar{z}	<i>p</i>	<i>Q</i> (between group)	<i>p</i>
Job Insecurity Scale	1 item	10	.17	.13	.21	8	.00**	6.46	.01*
	more than 1 item	46	.23	.20	.26	13.91	.00**		
Sample origin	North of Europe	30	.20	.16	.23	10.47	.00**	1.43	.23
	South of Europe	8	.25	.17	.34	5.64	.00**		

Note: * $p < .05$, ** $p < .01$.

In turn, it was shown that in 25 of the 46 samples analysed, using tests with more than 1 item, the De Witte (2000) job insecurity measurement scale was used in some of its multiple variants. Bearing this situation in mind, the authors identified differences between De Witte's test and other standardized scales to measure insecurity. However, the analysis did not highlight statistically significant differences between the use of one scale or another, whenever measurement instruments of more than 1 item were chosen ($Q(1) = .16; p > .05$).

North and South of Europe as a moderating variable

Territoriality was also evaluated as a mediating variable. In total, 38 of the 56 studies are located in Europe and thus, differences were sought between workers in the North and the South of the continent. Based on this idea, the countries were grouped between North and South following Haliasos's studies (2016) as follows: the Northern cluster included Austria, Belgium, Finland, Germany, Norway, Sweden and UK.; the Southern cluster included the Mediterranean countries with studies in Italy, Turkey and Spain.

Firstly, it was observed that by isolating the sample of the European population, the job insecurity variable maintains a significant effect size with relation to the global construct of mental health ($r = .21$), the same figure as obtained in the total of studies ($r = .21$). However, there were no significant differences between the scores obtained in the countries of Northern Europe and the countries of Southern Europe ($Q(1) = 1.43; p > .05$).

Discussion

The main aim of this research has been verified because the meta-analysis performed has identified a positive relationship between job insecurity and mental health deterioration. This relationship is maintained with the main psychological disorders subject to study. Cheng and Chan (2008) found a significant mean effect size between job insecurity and mental health ($r = -.28$), that is replicated in very similar terms in this meta-analysis ten years later ($r = .21$). However, the measurement proposed by Cheng and Chan in their holistic approach to the consequences of job insecurity was unitary, mental health included as "psychological health", without specifying the use of a mental health model applied to their approach. The same relationship is established with the previous meta-analysis on the consequences of job insecurity developed by Sverke and col. (2002). This study also formulated the relationship between mental health and job insecurity but again with a general mental health measurement lacking a deeper conceptual definition.

Thus, the propositional element of this meta-analysis is to specify a more detailed analysis of mental health with relation to job insecurity, compared with those available in previous studies. The approach we propose has been specifically designed to analyse mental health, considering different re-

current disorders during the evaluation process (depression, anxiety, emotional exhaustion and satisfaction with life). In all the cases, the correspondence has been maintained.

About depression, the results show an especially strong link, and hardly addressed in literature, between job insecurity and risk or appearance of depression. It establishes the same relationship between job insecurity and anxiety. There is no consensus about the relationship between job insecurity, and depression and anxiety. Nella and collaborators (2015) also analysed the anxiety and depression variables on a small sample in the case of the Greek population after the civil servants' cuts in 2015. In this case, the prevalence of anxiety was greater than that of depression, which is opposed to what our results have shown. The research by D'Souza, Strazdins, Lim, Broom and Rodgers (2003), however, does support the relationship highlighted in our data: job insecurity maintains a stronger link with the appearance of depression than with that of anxiety.. The Turkish nursing guild also contributes in the same direction (Boya, Demiral, Ergor, Akvardar, & De Witte, 2008). In this case, the risk of anxiety and depression is compared to quantitative and qualitative job insecurity, providing disaggregated data. Again, a significant relationship is shown between job insecurity and both disorders. Moreover, in both cases, quantitative and qualitative job insecurity, the relationship is more intense with the appearance of depression than with anxiety symptoms.

Recently, Piccoli and De Witte (2015) published a study showing a direct relationship between job insecurity and emotional exhaustion, as established in the mental health model used in this meta-analysis. There are many articles establishing a link between job insecurity and burnout (Bitmiş & Ergeneli, 2015; De Cuyper, Schreurs, Vander Elst, Baillien, & De Witte, 2014; Pienaar et al., 2013; van Zyl, van Eeden, & Rothmann, 2013). The results of our analysis show that job insecurity does, indeed, have an impact on emotional exhaustion. If we consider burnout as one of the main problems of current employment, we can conclude that tackling job insecurity represents a very useful preventive and an interventive measure on burn-out. The research conducted in 2015 (Piccoli & De Witte, 2015) proposes a model to associate emotional exhaustion and insecurity taking into account the non-compliance with the psychological contract, understanding job insecurity, in this case, as the result of the contingency between the duties of the employee and of the employer. In terms of intervention, the direct relationship between job insecurity and emotional exhaustion can be monitored by means of an affective organizational commitment (Öztürk, Karagonlar, & Emirza, 2016), which is interesting and appropriate for the new HR management.

Satisfaction with life is another health variable analysed. This, moreover, is the one that shows a greater effect size in the analyses, and thus, it is disproportionately affected by job insecurity. Mauno, Ruokolainen, and Kinnunen (2013) study, in different age groups, the relationship between satisfaction with life and resilience due to the stress resulting from job instability. These are the two main results rendered by this

research: firstly, satisfaction with life is negatively affected in a scenario of working instability; secondly, the youth have greater resilience than older workers. The conclusion reached coincides with the premise we have upheld in this research: the professional career has increased its instability, and whereas for the youth this is less noticeable as it is what they have known in their job performance, the older profiles are more affected because they are facing a change in paradigm in their job status, which is also beyond their control. There is a whole generation facing a change in the labour socializing process.

The development of mental disorders related to job insecurity may find an answer in the frustration resulting from an uncontrollable situation (Warr, 1987); the truth is that there are authors who state that in these cases, proactive coping mechanisms are not a protection guarantee, either (Stiglbauer & Batinic, 2015). There is the belief that precarious work may have the same or a worse impact on health than unemployment (Crespo et al., 2009; Torraco, 2016). One of the most accurate approaches when establishing an empirical hypothesis is based on the studies that have aimed at adapting the deprivation model (Jahoda, 1982) to job insecurity. It has been empirically shown that the expectation of losing latent working functions has similar effects on health as those of the real loss that occurs with unemployment (Vander Elst et al., 2016). Thus, the fact that the impact on mental health caused by unemployment is comparable to the impact resulting from a job insecurity situation is supported. This is a concerning fact as it poses the need to fully reassess the institutional social protection systems based on the presumption that the first protection measure for the citizenship is access to employment, which should not be taken for granted at any level: neither at health level, nor, in general terms at a protection level against social vulnerability.

These findings also show that job insecurity plays a moderating role in the mental health status, which is affected by a large number of intervening variables. Some of them are related to the working environment, with variables that go from the salary to job satisfaction or intensification, and other external variables such as family support or social media.

Measuring job insecurity in a reliable manner

One of the main conclusions reached by Sverke & col. (2002) in their meta-analysis on job insecurity argued that the 1 item job insecurity measurements do not are not an appropriate methodology. As there is still a tendency to use the 1 item tests, we have decided to submit this methodological issue to test. The conclusion reached is the same: the 1 item tests are not an appropriate measurement to fully evaluate job insecurity.

During the research selection process, it has been demonstrated that there is a certain tendency to use the 1 item measurements in the data compiled by national bodies from different countries (Klandermans, Hesselink, & Van Vuuren, 2010; Otterbach & Sousa-Poza, 2016). A possible

hypothesis would be that the root of the problem is semantic. The concept of job insecurity, coined in the field of psychological research, is designed as a construct with a long track record in literature and validated measurement tests, which is the sense in which the concept is used in this research. However, in English, the term, job insecurity, is used on a daily basis, simply to express a doubt on the future of employment. The use of the term in this sense could result in measurements of just one direct question in different surveys. Anyhow, the methodological validity of this praxis is of little use for the psychological study of job insecurity as a measurable problem among workers.

Although De Witte's test (2000) is the most widely used validated test, which has different versions in terms of the number of items and adaptation contexts (Kinnunen et al., 2011; Sora et al., 2011; Vander Elst, De Witte, et al., 2014), it has already been mentioned that there are many standardized tests developed by different theoretical approaches, countries and research teams. One could question whether the quality level of these tests is sufficient, and that is why the results obtained from De Witte's test and its derivatives were compared to the results obtained with other standardized tests with more than 1 item. No significant differences were found, rendering coherence and rigour to the scientific study on job insecurity. Now, it could be stated that job insecurity is a perfectly measurable variable in labour contexts, on which one can and should intervene.

Differences between the North and South of Europe and their consequences

There is no question about the continuous deterioration in European workers' health and well-being (Arroyo, Renart, & Saez, 2015; Karanikolos et al., 2013). The macroeconomic indicators of the analysis of the financial analysis have shown how the countries of the so-called "South of Europe", for example, Spain, Greece, Italy or Cyprus, have suffered its effects more violently, lagging behind the economies of the North of Europe (Haliassos, 2016). This situation leads to believe that the workers in the South of Europe live a more negative life than who live in the North of Europe, but our analyses have not identified these differences in terms of experiencing job insecurity. The main models explaining job insecurity (Anderson & Pontusson, 2007) refer to the macroeconomic context as a variable that determines the phenomenon; however, the macroeconomic indicator, in general terms, does not seem to be a good predictor to analyse the psychological status of workers. Standing (2012), in his holistic analysis of the current labour situation, shows that merely economic indicators do not correspond to better working conditions.

Conclusions and limitations

Thus, the relationship between worker's job insecurity and mental health the current framework has been demonstrated.

Moreover, enough basis has been provided to endorse the feasibility of the job insecurity construct, which has reached a growing systematic study level in the last decades. Some of the critical conceptual and methodological issues in the request into job insecurity have been systematically studied, and some limitations have been identified.

The first limitation is that there is not a large number of studies that empirically relate job insecurity and specific psychological disorders, beyond very general well-being measures. What is more concerning is the fact that almost all the research studies included in this systematic review have been performed on general population and mainly homogeneous samples. What is missing here are comparative studies by age groups, specific professional sectors and, mainly, gender studies. There are very few studies that focus on comparative samples in an international sphere. Finally, and although there is a growing tendency towards using standardized tests to evaluate insecurity, one can often find analysis

with 1 item measurements or with several item tests that are not standardized.

In terms of purely conceptual elements regarding job insecurity, the concept has been developed almost entirely from a perspective that focuses on the individual's traits, whose theoretical bases are ground in cognitive psychology. What is missing is a psychosocial approach providing new components to the study of insecurity in order to identify more variables involved in the phenomenon. This study highlights some hints in this direction proposing, as a way of example, conducting a more detailed analysis of the social components that intervene in the workers' psychological sphere, with a more in-depth study than the studies that only provide numerical data: analysing the contractual legislation, business habits, the organizational culture and the psychological contract, among other aspects, to render a more comprehensive explanation. It is a priority to focus the study on the relational factors of the intervening workers both inside the labour context and outside it.

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- (* Studies included in the meta-analysis)

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