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▶ **To cite this version:**

Gaëlle Santin, Christine Cohidon, Marcel Goldberg, Ellen Imbernon. Depressive symptoms and atypical jobs in France, from the 2003 Decennial health survey.. American Journal of Industrial Medicine, 2009, 52 (10), pp.799-810. 10.1002/ajim.20744 . inserm-00425485

HAL Id: inserm-00425485

https://inserm.hal.science/inserm-00425485

Submitted on 29 Mar 2013

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Depressive symptoms and atypical jobs in France, from the 2003 Decennial health survey

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Abstract:

Background: The objective is to study the relations between depressive symptoms and atypical jobs in the working population in France and to determine if these associations might be linked with psychosocial and organizational constraints.

Methods: The data come from the 2003 decennial health survey and concern 11,895. Depressive symptoms were measured by the CES-D scale. Atypical jobs were defined by employment status (fixed-term or temporary job contract, permanent job contract, self-employed) and by part-time work during working life (involuntary or chosen). Working conditions related to atypical hours and psychosocial factors were also studied.

Results: For both sexes, involuntary part-time work was associated with a higher frequency of depressive symptoms, but part-time work by choice was not. Fixed-term contracts were associated with depressive symptoms only in women. All of these associations persisted after adjustment for psychosocial and organizational factors.

Conclusion: The associations between atypical jobs and depressive symptoms differ for job status according to sex and do not seem to be associated with the worst psychosocial working

conditions. The interpretation of these results is nonetheless limited in part by the cross-sectional nature of the survey.

Introduction

For several decades, in search of increased productivity and more competitiveness, companies in the industrialized countries have increased their use of flexible jobs. This type of job includes fixed-term or temporary job contracts, part-time jobs, and hiring self-employed or free-lance workers for specific tasks. Throughout this study, we will refer to these jobs as atypical, in contrast to full-time permanent jobs.

In French private law, fixed-term contracts have a maximum duration of 18 months and must theoretically be used by employers only to replace employees who are absent on leave or to cope with seasonal or occasional constraints. Nonetheless, between 1982 and 2002, the proportion of these contracts rose from 7% to 14% among women and from 5% to 9% among men [Dares 2005a]. Moreover, among employees with fixed-term contracts, 26% work part-time, while only 16% of people with permanent contracts do so [Dares 2005b].

Several epidemiologic studies have described associations between temporary jobs and health status. In a meta-analysis, Virtanen showed that workers with temporary employment, compared with those with permanent job contracts, appeared to be affected more often by psychological distress, musculoskeletal diseases and workplace accidents [Virtanen et al. 2005a]. In addition to the job insecurity associated with these contracts, one hypothesis that may explain these associations is that workers with these fixed-term (as well as part-time) contracts may be exposed to more difficult working conditions, in particular, to strong psychosocial constraints [Aronsson et al. 2002;Benach and Muntaner 2007;Kim et al. 2006;Stansfeld 2002;Virtanen et al. 2005b]. To our knowledgment, few data are thus far available to confirm this hypothesis.

Similarly, there are few epidemiologic studies of the associations between part-time work and health [Artazcoz et al. 2007] and their results are not always consistent [Bardasi and Francesconi 2004;Quinlan et al. 2001]. Several authors suggest that the issues might be better

understood if part-time work were differentiated according to whether the worker chose to work part-time or was compelled to [Bardasi and Francesconi 2004;Benach et al. 2004;Benavides et al. 2000]. Until now, this distinction has been rare in the epidemiologic literature.

The principal objective of our study is to describe the associations in the French working population between atypical jobs (employment status, part-time work experience) and depressive symptoms, while distinguishing between chosen and involuntary part-time work. A second stage of this work sought to determine if these associations might be associated with psychosocial or organizational constraints.

Population and methods

Study design

For this study, we used data from the decennial health survey conducted in 2002-2003 by the French National Institute for Statistical and Economic Studies (INSEE). The nationwide Decennial health survey is conducted in France every 10 years. The data studied here come from the fifth such survey by INSEE, in 2002-2003. It used unequal probability sampling of 25,021 homes, randomly selected from a database of homes included in the 1999 census questionnaire and another database of new homes constructed after 1999. Each home was considered a household. All adults in the home were questioned. The random selection of homes was stratified by region and by urban unit size. A sampling weight was associated with each person, based on the probability of his or her inclusion and on adjustments for non-response [Caron and Rousseau 2005].

Overall, 77.8% (16,848) households considered for the survey agreed to participate. Usable data came from 20,103 people aged 18 years or older.

Study population

The study population analyzed here was limited to people with jobs at the time of the survey. Approximately 82% of the eligible subjects in the labor force — 11,895 people — completed a usable questionnaire: 6232 men and 5663 women).

Data

Data collection procedures

Data collection lasted for one year. An investigator visited each home three times at one-month intervals and asked about living conditions, social and demographic status, health status, and drug use. In addition to the face-to-face interviews, self-administered questionnaires collected information about alcohol consumption, smoking, depressive symptoms, and working conditions.

Study data

Depressive symptoms

Depressive symptoms were assessed by the validated French version of the CES-D scale (Center for Epidemiological Studies - Depression Scale) [Fuhrer and Rouillon 1989]. It includes 20 items that explore symptoms of depression. These items, with ordinal Likert-type responses, have a value ranging from 0 to 3, from which a score from 0 to 60 can be calculated. People with scores above the threshold recommended in France (greater than 17 for men and 23 for women) were considered to have depressive symptoms.

Atypical jobs

Atypical jobs were defined according to employment status at the time of the survey and by a composite indicator about part-time work. Job status was defined in 4 categories: a temporary job contract (eg with a temporary agency), a fixed-term contract, a permanent job contract, and self-employment; in the multivariate analyses, because there were not enough temporary workers, they were pooled with the subjects with fixed-term contracts in a single category of non-permanent workers.

Several items about part-time work were collected in the survey: current part-time job, part-time by choice or not, total past duration of part-time work during the entire working life. Based on these three items, we constructed a composite part-time work experience indicator. Because men and women were not exposed to part-time work at the same frequency, a more detailed indicator was developed for the women. We considered the following categories: currently full-time and never worked part-time; currently full-time who has previously worked part-time, currently part-time by choice, and currently part-time involuntarily. Among women we further distinguished between those with past part-time work for up to and including or more than 60 months.

Psychosocial and organizational factors at work

- Psychosocial factors

Different psychosocial and organization factors were considered in the study: performance pay, possibility of learning at work, variety of work, control over the work process, sufficient resources for performing quality work, sufficient possibility of mutual assistance and cooperation at work, and the need to deal with the public. Time pressure was explored by the following variables: repetitive work with time pressure, frequent need to work fast (tight deadlines), need to do several things simultaneously, frequent interruption while working, and the need to not take one's eyes off one's work.

- Organizational factors

Finally, an indicator of non-standard hours was constructed based on the following working conditions: alternating shift work or a job that often required going to bed after midnight or waking up before 5 in the morning, or not sleeping at night.

Other factors considered in the analysis

Indicators of social situation were considered. Educational level was divided into 3 categories: no diploma, diploma less than high school diploma, diploma equal or greater than high school

diploma. Annual income by household consumption unit was classified according to percentiles (10th and 90th percentiles). Socioeconomic status was assessed as the social category according to the 1994 INSEE socioprofessional nomenclature [Insee 1994]. It covered the following groups: farmers, tradespeople and shopkeepers, managers and professionals, intermediate white-collar occupations, office and sales personnel and manual workers; the latter were categorized more precisely as unskilled or skilled. Supplementary health insurance was also considered as a social indicator; in France, except for several particular situations, the entire population has access to social coverage that covers a substantial part of their medical expenses. The other part may be covered by supplementary health insurance, purchased directly by individuals or through the intermediary of their employers. The lack of supplementary insurance is thus an indicator of low income. Finally, the total duration of unemployment was also studied (up to and including 12 months, less than 12 months, never).

Social, demographic, and personal informations included as adjustment variables were age, living with a partner (marital status, legal and otherwise), and having had a major life event before the age of 18 years (parents' death or divorce, poverty, etc.) or during the past year. Health risk behaviors were assessed by smoking status and excessive alcohol consumption; the latter was assessed by an adaptation of the CAGE questionnaire that, unlike the original version, refers to the previous year [Mayfield et al. 1974]. Because of the possible associations with depressive symptoms, the existence of at least one serious chronic disease was also included in the analyses. Finally, consumption of psychotropic medication the previous day was recorded.

Statistical analysis

All estimates (prevalence, odds ratios, and confidence intervals) and the statistical tests took the sampling plan into account, which makes it possible to extrapolate the results to the entire

working population in France. The actual numbers presented, on the other hand, are those of the sample. The analyses were conducted separately for men and women. The crude associations between the prevalence of depressive symptoms and each of the independent variables were assessed by Chi-square tests.

The question of whether depressive symptoms were associated with atypical jobs after consideration of social and demographic factors was approached in two stages:

- In view of the number of variables studied and of their correlations, in a first stage we conducted logistic regression by groups of variables: depressive symptoms and demographic variables, health variables, social variables, and finally atypical jobs. These made it possible to study the changes in the odds ratios and confidence intervals after adding and withdrawing variables belonging to the same group.
- In a second stage the variables associated with depressive symptoms at a p value of 10% during the preceding stage were included in the same model. Backward stepwise logistic regressions were performed and the variables of interest (employment status, part-time experience) as well as the variables associated with depressive symptoms at a threshold of 5% were included in the final model.

To determine if the associations between depressive symptoms and atypical jobs were linked to psychosocially difficult working conditions, we introduced the working conditions related to psychosocial and organizational factors and non-standard hours into the final model.

The goodness of fit of the models was assessed by a Hosmer-Lemeshow test.

The analyses were performed with the SVY commands of STATA software [StataCorp 2006].

Results

Population description

The study population (n=11,895) was 55% men and 45% women. For both sexes, 75% of those with jobs had permanent job contracts. Short-term contracts (temporary and fixed-term)

were more frequent among women (12.2%) than men (9.6%). Lifetime, women had part-time jobs more often than men. Finally, approximately one third of the subjects had been unemployed at some point during their career (Table I).

The prevalence of depressive symptoms was 11.2% and did not differ by sex. Women with fixed-term contracts were more likely to have such symptoms than women with permanent job contracts (Table II); no such difference was observed in men. Both past experience of part-time work and involuntary current part-time work were associated with depressive symptoms, regardless of sex, as were the social indicators (educational level, annual income, social category) and depressive symptoms. Finally, among men, depressive symptoms affected especially those who did not have supplementary health insurance or who had ever been unemployed.

Depressive symptoms and atypical jobs

In the multivariate analyses (Table IV, model 1), we observed for women a gradient in the association between depressive symptoms and involuntary part-time work; those with involuntary part-time work or who had worked part-time for more than 60 months had the highest prevalence of depressive symptoms (OR=2.23 95% CI (1.28-3.90)). Compared with men who had never worked part-time, men working full time at the time of the survey who had ever worked part-time were also likely to have depressive symptoms (OR=1.35 95% CI (1.02-1.80)). (Table III, model 1) There was no significant association between depressive symptoms and involuntary part-time work in men, probably due to a lack of statistical power. Finally, among women, we observed no difference in depressive symptoms between those who worked part-time by choice and those who had never worked part-time; among men, the risks seem lower for those who chose a part-time job, but the diminution is not significant, perhaps because of the small number of men in this situation.

Compared with women with permanent job contracts, women with fixed-term contracts had depressive symptoms more often (OR=1.47 95% CI (1.04-2.09)) and self-employed women less often (OR=0.45 95% CI (0.23-0.88)).

For both sexes, we found a gradient in the association between depressive symptoms and educational level, with those with no diploma most affected. Of the socioeconomic variables, income and INSEE occupational category (least contributory) were not present in the final model. Men without supplementary health insurance were affected by depressive symptoms at the highest rate.

Other variables strongly related to depressive symptoms, regardless of sex, were consumption of psychotropic drugs, excessive consumption of alcohol, not living with a partner, and a major life event, either before the age of 18 or during the past year.

Depressive symptoms and atypical jobs after consideration of psychosocial and organizational factors at work

After adjustment for psychosocial and organizational factors, the associations between indicators of atypical jobs (part-time experience regardless of sex, employment status in women) and depressive symptoms persisted (table III, model 2 – table IV, model 2). We note nonetheless that working conditions attenuated the association between part-time work experience and depressive symptoms in women.

Discussion

Women have atypical jobs, specifically fixed-term contracts and part-time work, more often than men. This study shows associations between symptoms of depression and several indicators of atypical jobs. Regardless of sex, involuntary part-time work was associated with an increased frequency of depressive symptoms, while part-time work by choice was not. Moreover, fixed-term contracts were associated with depressive symptoms only in women.

All of these associations persisted after adjustment for psychosocial and organizational factors.

Strengths and limitations

The principal strength of our study is its use of several detailed indicators for defining atypical jobs: employment status including self-employed workers and workers with fixed-term contracts, as well as any lifetime part-time work and especially the choice for current part-time work. These results confirm the importance of this distinction, as some authors had suggested [Bardasi and Francesconi 2004;Benach et al. 2004;Benavides et al. 2000]. A second advantage is the consideration of factors associated with atypical jobs, especially working conditions, but also socioeconomic indicators such as income, INSEE occupational category (which indicates whether a job is manual labor or not), and supplementary health insurance coverage[Aronsson et al. 2002;Artazcoz et al. 2005;Artazcoz et al. 2007;Benach and Muntaner 2007;Fryers et al. 2003;Stansfeld et al. 1998]. We were thus able to explore the hypothesis that the associations observed between atypical jobs and depressive symptoms might be linked to especially difficult working conditions or to very marked social precarity. Finally, the survey design allows the extrapolation of our results to the entire French working population.

The major limitation of our study is its cross-sectional character, which makes it difficult to interpret the associations observed, especially because we cannot rule out the possibility that some people had atypical jobs because of their poor health status [Virtanen et al. 2002]. Moreover, because this was a self-reported survey, a bias due to health status may exist. This concerns principally the health data because the indicators of atypical jobs are factual. It is unusual to observe a similar prevalence of depressive symptoms in men and women [Cho et al. 1998;Plaisier et al. 2007;Rugulies et al. 2006;Stansfeld and Candy 2006]. This probably results from our use of the thresholds adopted in France for the CES-D (17 for men, 23 for

women). When we used the CES-D as a continuous score or applied the international cutoff (16 regardless of sex), the prevalence of depressive symptoms was higher in women than men (results not shown). This complementary analysis also found the same significant associations in most relations between depressive symptoms and the variables of interest or adjustment. We nonetheless chose to present our results with the recommended French cutoff points.

As a psychological scale, the CES-D has been criticized for its potential lack of specificity; it is important to note that it is not a diagnostic tool, only symptoms are assessed [Lovell 2000]. Moreover, some CES-D questions are associated with the subjects' social and occupational situation (for example, "do you have confidence in the future?"), which may tend to overestimate the prevalence of depression in insecure or precarious populations [Lovell 2000]. Finally, despite a large sample size, the analyses sometimes lack statistical power, as, for example, in studying part-time work in men or for distinguishing, as Bardasi does, very short-term jobs (seasonal work) [Bardasi and Francesconi 2004].

Comparison of the results with the international literature

The comparison of these results with those reported in the international literature is not simple, for two primary reasons. First, the definitions of atypical jobs may vary between countries. For example, in Korea, Kim defined a "standard" job as a full-time job lasting at least 3 months[Kim et al. 2006;Kim et al. 2008b], which is rather different from our definition of a typical job in France (permanent job contracts for full-time work). Moreover, the financial and social consequences of atypical jobs also differ according to country. In southern European countries such as France or Italy, social protection for employees with a fixed-term contract and/or part-time work is not as good as for full-time permanent employees (e.g., access to complementary health insurance is more difficult, and unemployment benefits are lower than their last salary). Atypical jobs are more frequent in other countries, Denmark for example, but continuity of income is also ensured in the case of a period of unemployment

[Cnis 2008]. Moreover, part-time work is generally more frequent in the countries of northern than southern Europe and women's part-time jobs are less likely to correspond to particular types of jobs [Cnis 2008]. A second difficulty in comparing our results with those of other international studies is due to the different tools used to measure mental health; they vary from a single question [Aronsson et al. 2002;Benach et al. 2004;Kim et al. 2006] to scales such as the GHQ [Artazcoz et al. 2005;Bardasi and Francesconi 2004]. Some points can nonetheless be discussed.

Our study shows an association between depressive symptoms and fixed-term jobs but only in women (interaction between sex and employment status statistically significant - result not shown). Few studies on health and atypical jobs present their results by sex; instead, most simply adjust for sex [Menendez et al. 2006]. Accordingly, the recent meta-analysis by Virtanen showed a significant association between temporary jobs (fixed-term contracts and temporary agency jobs) and depressive symptoms but without distinguishing the effect of gender [Virtanen et al. 2005a]. Nonetheless, among the studies conducted separately according to sex, several report these associations only among women [Kim et al. 2006;Kim et al. 2008a;Virtanen et al. 2002].

Several types of explanations are advanced. First, within the general category of atypical jobs, types of jobs differ according to sex [Kim et al. 2008a;Menendez et al. 2006;O'campo et al. 2004]. Segregation of the labor market may thus lead women more often than men towards those atypical jobs with the worst working conditions [Artazcoz et al. 2007;Menendez et al. 2006]. Menendez also reports that fixed-term contracts are often shorter for women than men. This is also the case in France [Bunel 2007]. . At the opposite, men have longer fixed-term contracts than women; furthermore, we hypothesize that men could be less invested emotionally than women in their job when this one is a fixed-term contract. In our study, working conditions were also worse for the women; those with fixed-term contracts were

affected by numerous psychosocial constraints more frequently than either men with fixed term contracts or women with permanent job contracts (results not presented). Women are less represented by trade unions, which may thus make less of an effort to improve their working conditions [Menendez et al. 2006]. Aronsson conducted a representative cross-sectional survey of Swedish workers that did not differentiate men and women but did distinguish between several forms of temporary jobs (replacements, seasonal job, temporary job on a specific project). He found that those most affected by mental health problems were those with fixed-term contracts hired to replace an absent employee or to deal with urgent work, and that mainly women are hired for these types of fixed-term contracts. He supposes that these jobs are associated with poorer working conditions (less involvement in the company, less training, stronger psychosocial constraints) and that this could affect the well-being of the workers [Aronsson et al. 2002]. Kim, like other authors, also offers as an explanation the fact that women must not only do their job but also manage their family life, to a greater degree than men [Artazcoz et al. 2007;Kim et al. 2006;Menendez et al. 2006]. In France fixed-term contracts engender uncertainty about income; the combination of managing family life and uncertainties about one's job and the problems the job can cause may well be factors related to poorer mental health among women. Finally, in France, numerous forms of atypical jobs have as a point in common their poorer access to occupational medicine, the principal aim of which is individual prevention of occupational risks [Davezies 1999]. Women, who often have temporary jobs of very short duration, may suffer more than men from this lack of access to occupational medicine

We found, for both sexes, an association between depressive symptoms and both involuntary current part-time work and past part-time work (association not significant among men, probably because of lack of power). Consideration of part-time work is rare in studies of the associations between mental health and atypical jobs. The few existing studies tend to

conclude that there are no associations [Aronsson et al. 2002;Bardasi and Francesconi 2004;Benach et al. 2004]. Nonetheless, these studies do not distinguish part-time work chosen from that which is involuntary, and their authors agree that this is a limitation. To our knowledge, the experience of part-time work, including the aspects of choice and duration, has never been explored. Our results clearly show very different odds ratio according to whether the part-time work is or is not by choice, and this finding is true for both sexes. Part-time jobs in France are very disparate. The industries that use part-time workers most often are the individual service sector, health and social services, education, construction, and sales. The leading reason for working part-time is the inability to find a full-time job; this is therefore involuntary part-time work. Other reasons are a simultaneous training program for men and family reasons for women; both are more likely to explain part-time work by choice [Dares 2005b].

The statistics department of the ministry of labor (DARES) constructed a classification of part-time jobs that demonstrated the great diversity of this type of work (for example, part-time jobs by choice with permanent job contracts and regular hours or employees working part-time providing individual services less than 20 hours a week with irregular hours). This heterogeneity in part-time jobs leads to differences in income and work constraints, probably the same differences seen in the distinction between involuntary and chosen part-time work in terms of their associations with depressive symptoms. It is difficult to extend this interpretation further. We note nonetheless — and we will return to this later — that the association between involuntary part-time work and depressive symptoms persists after adjustment for working conditions.

Few studies have looked at this topic for self-employed workers. In our study, self-employed women had a prevalence of deprive symptoms one half that of women with fixed-term jobs. This result is not found in men. These results can be compared only imperfectly with the

European survey by Benach et al, which did not measure depressive symptoms but rather fatigue and stress at work [Benach et al. 2004]. According to this survey, self-employed workers of both sexes reported more general fatigue than workers with permanent job contracts. Our results in men, although not significant, point in this direction. For the results about women, we can hypothesize that, taking into account the problems related to income uncertainty and the self-employment taxes that these independent jobs entail, women who choose this type of activity have a particular psychological profile, while this may be less the case for men. Moreover, there were fewer than 100 women within each subcategory, and that may also affect the validity of the estimate.

For neither fixed-term contracts nor part-time work do our results suggest that the associations between depressive symptoms and atypical jobs might be explained by worse working conditions. That is, these associations persist after adjustment for some psychosocial constraints of work. The same is true for the social indicators such as income, social category, and supplementary health insurance. The psychosocial constraints explored here are obviously not exhaustive. They are for the most part proxies for dimensions explored by Karasek's model [Karasek 1979]. It is probable that other psychosocial factors at work, not explored here, such as inadequate recognition of efforts in these types of jobs, or global dissatisfaction with the tasks accomplished or even problems of professional ethics, play a role in these complex processes.

Conclusion

This study shows not only that atypical jobs are associated with depressive symptoms but also that they differ in men and women according to specific job status. These results are original in their consideration of the distinction between involuntary and voluntary part-time work, as well as in its study of factors associated with atypical jobs, such as psychosocial factors at work and social indicators. It seems us to be interesting to continue to take these indicators of

atypical work into account in epidemiologic studies of work-related inequalities in mental health and even in health in general. Moreover, this field of study still requires us to deepen our knowledge substantially, in particular of the underlying variables in these complex associations between mental health and atypical jobs.

References

Aronsson G, Gustafsson K, Dallner M. 2002. Work environment and health in different types of temporary jobs. Eur J Work Organ Psychol 11:151-175.

Artazcoz L, Benach J, Borrell C, Cortes I. 2005. Social inequalities in the impact of flexible employment on different domains of psychosocial health. J Epidemiol Community Health 59:761-767.

Artazcoz L, Borrell C, Cortes I, Escriba-Aguir V, Cascant L. 2007. Occupational epidemiology and work related inequalities in health: a gender perspective for two complementary approaches to work and health research. J Epidemiol Community Health 61 Suppl 2:ii39-ii45.

Bardasi E, Francesconi M. 2004. The impact of atypical employment on individual wellbeing: evidence from a panel of British workers. Soc Sci Med 58:1671-1688.

Benach J, Gimeno D, Benavides FG, Martinez JM, Torne MM. 2004. Types of employment and health in the European union: changes from 1995 to 2000. Eur J Public Health 14:314-321.

Benach J, Muntaner C. 2007. Precarious employment and health: developing a research agenda. J Epidemiol Community Health 61:276-277.

Benavides FG, Benach J, ez-Roux AV, Roman C. 2000. How do types of employment relate to health indicators? Findings from the second European survey on working conditions. J Epidemiol Community Health 54:494-501.

Bunel, M. Analyser la relation entre CDD et CDI : emboîtement et durée des contrats. 82. 2007. Centre d'études de l'emploi.
Ref Type: Report

Caron, N. and Rousseau, S. Correction de la non-réponse et calage de l'enquête santé 2002. M0501. 2005. INSEE.
Ref Type: Report

Cho MJ, Nam JJ, Suh GH. 1998. Prevalence of symptoms of depression in a nationwide sample of Korean adults. Psychiatry Res 81:341-352.

Cnis. Emploi, chômage précarité. Mieux mesurer pour mieux débattre et agir. 108. 2008.
Ref Type: Report

Dares. Contrats à durée déterminée, intérim, apprentissage, contrats aidés : les emplois à statut particulier ont progressé entre 1982 et 2002. Premières informations Premières synthèses 14.2. 2005a.
Ref Type: Generic

Dares. Le travail à temps partiel. 23-6-2005b.
Ref Type: Report

Davezies P. 1999. Transformations des organisations du travail, nouvelles pathologies : défis à la clinique médicale. Arch Mal Prof Méd Travail 60:542-551.

Fryers T, Melzer D, Jenkins R. 2003. Social inequalities and the common mental disorders: a systematic review of the evidence. Soc Psychiatry Psychiatr Epidemiol 38:229-237.

Fuhrer R, Rouillon F. 1989. La version française de l'échelle CES-D (Center for Epidemiologic Studies-Depression Scale). Description et traduction de l'échelle d'autoévaluation. Psychiatr Psychobiol 4:163-166.

Insee. Nomenclature des professions et catégories socioprofessionnelles PCS. 2 ed. 1994. Insee.
Ref Type: Generic

Karasek RA. 1979. Job demands, job decision latitude, and mental Strain: implications for job redesign. Adm Sci Q 24:285-308.

Kim IH, Khang YH, Muntaner C, Chun H, Cho SI. 2008a. Gender, precarious work, and chronic diseases in South Korea. Am J Ind Med 51:748-757.

Kim IH, Muntaner C, Khang YH, Paek D, Cho SI. 2006. The relationship between nonstandard working and mental health in a representative sample of the South Korean population. Soc Sci Med 63:566-574.

Kim MH, Kim CY, Park JK, Kawachi I. 2008b. Is precarious employment damaging to self-rated health? Results of propensity score matching methods, using longitudinal data in South Korea. Soc Sci Med 67:1982-1994.

Lovell A. 2000. Les troubles mentaux. In: Leclerc A, Fassin D, Granjean H, Kaminski M, Lang T, editors. Les inégalités sociales de santé. Paris: Editions La Découverte.p 251-266.

Mayfield D, Mc Leod G, Hall P. 1974. The CAGE questionnaire: validation of a new alcoholism screening instrument. Am J Psychiatry 131:1121-1123.

Menendez M, Benach J, Muntaner C, Amable M, O'campo P. 2006. Is precarious employment more damaging to women's health than men's? Soc Sci Med.

O'campo P, Eaton WW, Muntaner C. 2004. Labor market experience, work organization, gender inequalities and health status: results from a prospective analysis of US employed women. Soc Sci Med 58:585-594.

Plaisier I, de Bruijn JG, de GR, ten HM, Beekman AT, Penninx BW. 2007. The contribution of working conditions and social support to the onset of depressive and anxiety disorders among male and female employees. Soc Sci Med 64:401-410.

Quinlan M, Mayhew C, Bohle P. 2001. The global expansion of precarious employment, work disorganization, and consequences for occupational health: a review of recent research. Int J Health Serv 31:335-414.

Rugulies R, Bultmann U, Aust B, Burr H. 2006. Psychosocial work environment and incidence of severe depressive symptoms: prospective findings from a 5-year follow-up of the Danish work environment cohort study. Am J Epidemiol 163:877-887.

Stansfeld S. 2002. Work, personality and mental health. Br J Psychiatry 181:96-98.

Stansfeld S, Candy B. 2006. Psychosocial work environment and mental health--a meta-analytic review. Scand J Work Environ Health 32:443-462.

Stansfeld SA, Head J, Marmot MG. 1998. Explaining social class differences in depression and well-being. Soc Psychiatry Psychiatr Epidemiol 33:1-9.

StataCorp. *Stata statistical Software: Release 9.0.* 2006. STATA.
Ref Type: Generic

Virtanen M, Kivimaki M, Joensuu M, Virtanen P, Elovainio M, Vahtera J. 2005a. Temporary employment and health: a review. Int J Epidemiol 34:610-622.

Virtanen P, Vahtera J, Kivimaki M, Liukkonen V, Virtanen M, Ferrie J. 2005b. Labor market trajectories and health: a four-year follow-up study of initially fixed-term employees. Am J Epidemiol 161:840-846.

Virtanen P, Vahtera J, Kivimaki M, Pentti J, Ferrie J. 2002. Employment security and health. J Epidemiol Community Health 56:569-574.

Table I - Description of the working population

	Men (n=6232)		**Women** (n=5663)	
	n	% or μ (◊)	n	% or μ (◊)
Age		39.9		40.1
Educational level				
No diploma	1341	27.2	1263	28.4
< High school	1984	33.5	1350	25.8
≥ High school	2907	39.3	3050	45.8
Annual income by household consumption unit				
Among the poorest 10% (<6700 €)	338	6.6	271	6.3
Among the 80% of people with an income between 6700 and 27400 €	4946	80.5	4588	81.9
Among the richest 10% (>27400 €)	948	12.9	804	11.8
Supplementary health insurance (yes)	5810	92.5	5398	94.3
Occupational category				
Farmers	227	4.1	118	2.6
Tradespeople, shopkeepers	415	7.4	166	3.3
Managers, professionals	1285	16.9	791	12.0
Intermediate white-collar occupations	1554	22.0	1522	22.5
Office and sales workers	735	12.7	2525	47.6
Skilled manual workers	1590	28.5	257	5.3
Unskilled manual workers	426	8.4	284	6.7
Lifetime duration of part-time work (in months)				
0	4358	68.6	4058	70.3
1-12	1359	22.5	946	17.1
> 12	515	8.9	659	12.6
Job status				
Temporary contract	122	2.3	74	1.6
Fixed-term contracts	421	7.3	5778	10.6
Permanent job contract	4838	76.7	4541	79.6
Self-employed	800	13.6	425	8.2
Part-time work experience				
Never part-time	5162	83.2	2673	47.2
Past part-time work; Currently full-time	735	12.8	1359	24.8
Currently part-time by choice	115	1.9	1017	13.1
Currently part-time, involuntary (M); Currently part-time, involuntary ≤ 60months (W)	95	2.1	279	5.9
Currently part-time, involuntary > 60 months (W)	-	-	194	4.2

Table II Depressive symptoms (DS) in people with jobs, according to social and demographic variables, life events, health, social situation, and type of contract

	Men (n=6082)		**Women** (n=5521)	
	n	% DS	n	% DS
Age		**		~
< 30 years	1113	11.8	986	9.5
30-39 years	1737	10.2	1665	9.1
40-49 years	1840	10.9	1709	11.6
≥ 50 years	1392	14.7	1161	12.0
Lives with a partner		***		***
No	1256	19.5	1339	16.9
Yes	4826	9.4	4182	8.2
Important life event before the age of 18 years		***		***
No	3857	8.7	3279	7.9
Yes	2167	17.1	2204	14.5
Life event in the past year		***		***
No	3387	7.2	2849	5.9
Yes	2637	17.5	2634	15.7
Serious chronic disease		***		***
No	5473	11.1	4961	10.0
Yes	609	17.4	560	15.8
Consumption of psychotropic medication the previous day		***		***
No	5953	10.9	5265	9.3
Yes	129	46.6	256	34.2
Smoking		**		**
Non-smoker	2611	10.0	3223	9.6
Ex-smoker	1231	11.5	706	8.5
Smoker, occasional smoker	2240	13.7	1592	13.4
Excessive alcohol consumption (CAGE)		***		***
No	4693	10.2	4040	9.8
Yes	689	20.0	240	40.5
Diploma		***		***
No diploma	1295	15.8	1215	13.5
< High school	1933	11.7	1315	11.3
≥ High school	2854	9.0	2991	8.3
Annual income by household consumption unit		~		**
Among the poorest 10% (<6700 €)	323	14.2	259	15.4
Among the 80% of people with an income between 6700 and 27400 €	4829	12.0	4477	10.7
Among the richest 10% (>27400€)	930	9.0	785	7.3

Occupational category		***		**
Farmers	223	13.5	116	10.4
Tradespeople, shopkeepers	403	13.6	159	4.0
Managers, professionals	1264	7.8	776	7.6
Intermediate white-collar occupations	1526	10.1	1495	8.6
Office and sales workers	714	15.7	2453	12.3
Skilled manual workers	1540	11.8	249	12.4
Unskilled manual workers	412	15.5	273	12.2
Supplementary health insurance		***		~
No	408	18.2	253	14.7
Yes	5674	11.2	5268	10.3
Lifetime total unemployment		**		
0 months	4263	10.8	3956	10.0
1-12 months	1323	12.7	925	11.0
> 12 months	496	16.6	640	13.0
Employment status				***
Temporary contract	115	13.7	72	10.1
Fixed-term contracts	410	14.6	563	15.3
Permanent job contract	4727	11.3	4427	10.4
Self-employed	779	12.5	415	6.0
Part-time work experience		***		***
Never part-time	5041	10.6	2600	9.0
Past part-time work; Currently full-time	716	15.7	1330	11.8
Currently part-time by choice	109	7.1	993	9.1
Currently part-time, involuntary (M); Currently part-time, involuntary ≤ 60 months (W)	92	24.6	269	17.1
Currently part-time, involuntary > 60 months (W)			190	19.3

*p<0.05, **p<0.01, ***p<0.001 NB: NS differs according to sex (M=11.8%; F=10.4%):

Table III – Men - model 1: OR for depressive symptoms according to indicators of atypical jobs adjusted for social and demographic variables, life events, health, and social situation

Table III – Men - model 2: OR for depressive symptoms according to indicators of atypical jobs adjusted for social and demographic variables, life events, health, and social situation and for psychosocial constraints

		Model 1 (n=5240)			**Model 2** (n=4771)		
		n	**OR**	**95% CI**	**n**	**OR**	**95% CI**
Employment status	Permanent job contract	4143	1		3814	1	
	Self-employed	672	1.23	0.89-1.71	584	0.99	0.69-1.42
	Fixed-term contract	425	0.80	0.55-1.18	373	0.92	0.60-1.43
Part-time work experience	Never part-time	4442	1		4048	1	
	Past part-time work; Currently full-time	621	1.35	1.02-1.80	572	1.51	1.10-2.08
	Currently part-time by choice	93	0.58	0.24-1.41	82	0.54	0.19-1.60
	Currently part-time, involuntary (M); Currently part-time, involuntary ≤ 60 months (W)	84	1.63	0.88-3.04	69	1.70	0.80-3.60
	Currently part-time, involuntary > 60 months (W)	-	-	-	-	-	-
Diploma	≥ High school	2543	1		2369	1	
	< High school	1658	1.52	1.19-1.93	1497	1.32	1.01-1.73
	No diploma	1039	1.91	1.46-2.49	905	1.49	1.09-2.01
Supplementary health insurance	Yes	4917	1		-	-	-
	No	323	1.63	1.12-2.38	-	-	-
Often obliged to do several things simultaneously	No	-	-	-	1362	1	
	Concerned, not difficult	-	-	-	1992	0.97	0.71-1.94
	Concerned, difficult	-	-	-	1417	1.40	1.01-1.94
Not able to interrupt work	No	-	-	-	3755	1	
	Concerned, not difficult	-	-	-	571	0.85	0.57-1.29
	Concerned, difficult	-	-	-	445	1.65	1.16-2.35
Varied work	Yes	-	-	-	4093	1	
	No				678	1.36	1.00-1.86
Resources to do good work	Yes	-	-	-	4085	1	
	No	-	-	-	686	1.41	1.02-1.94
Mutual assistance sufficient	Yes	-	-	-	4007	1	
	No	-	-	-	764	1.79	1.32-2.44
Must cope with the demands of the public	No	-	-	-	2238	1	
	Concerned, not difficult	-	-	-	1444	1.06	0.78-1.43
	Concerned, difficult	-	-	-	1089	1.68	1.25-2.26

Table IV – Women - model 1: OR for depressive symptoms according to indicators of atypical jobs adjusted for social and demographic variables, life events, health, and social situation

Table IV – Women - model 2: OR for depressive symptoms according to indicators of atypical jobs adjusted for social and demographic variables, life events, health, and social situation and for psychosocial constraints

		Model 1 (n=4152)			**Model 2** (n=3703)		
		n	**OR**	**95% CI**	**n**	**OR**	**95% CI**
Employment status	Permanent job contract	3391	1		3042	1	
	Self-employed	316	0.45	0.23-0.88	282	0.39	0.18-0.82
	Fixed-term contract	445	1.47	1.04-2.09	379	2.04	1.41-2.96
Part-time work experience	Never part-time	1994	1		1796	1	
	Past part-time work; Currently full-time	1071	1.12	0.83-1.51	969	1.13	0.82-1.55
	Currently part-time by choice	761	1.01	0.70-1.46	665	1.03	0.69-1.53
	Currently part-time, involuntary (M); Currently part-time, involuntary ≤ 60 months (W)	195	1.82	1.12-2.97	161	1.64	0.93-2.88
	Currently part-time, involuntary > 60 months (W)	131	2.23	1.28-3.90	112	1.97	1.04-3.73
Diploma	≥ High school	2384	1		2182	1	
	< High school	935	1.57	1.17-2.09	823	1.36	0.98-1.90
	No diploma	833	1.78	1.33-2.40	698	1.73	1.22-2.44
Often required to rush	No	-	-	-	1224	1	
	Concerned, not difficult	-	-	-	1354	0.56	0.39-0.82
	Concerned, difficult	-	-	-	1125	0.87	0.56-1.34
Often obliged to do several things simultaneously	No	-	-	-	1045	1	
	Concerned, not difficult	-	-	-	1559	1.54	1.05-2.27
	Concerned, difficult	-	-	-	1099	2.58	1.67-4.01
Work enables learning	Yes	-	-	-	3106	1	
	No	-	-	-	597	1.84	1.35-2.52
Can make decisions about work process	Yes	-	-	-	3038	1	
	No	-	-	-	665	1.55	1.14-2.10