



ORIGINAL ARTICLE

The effects of becoming an entrepreneur on the use of psychotropics among entrepreneurs and their spouses

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Abstract

Aims: Entering entrepreneurship (i.e. becoming an entrepreneur) is known to be a demanding activity with increased workload, financial uncertainty and increased levels of stress. However, there are no systematic studies on how entering entrepreneurship affects the people involved. **Methods:** The authors investigated prescriptions of psychotropics for 6,221 first-time entrepreneurs from 2001–2004 and their 2,381 spouses in the first two years after becoming entrepreneurs in a matched case-control study using linked data from three Danish national registries: The Danish database for Labor Market Research, the Danish Entrepreneurship database and the Danish Prescription database. **Results:** Entrepreneurs were more likely to fill prescriptions at pharmacies for sedatives/hypnotics (adjusted odds ratio (AOR): 1.45 [95% CI: 1.26–1.66], $p < .0001$). However, they were less likely to fill prescriptions for antidepressants (AOR: 0.74 [95% CI: 0.59–0.92] $p = 0.007$). Spouses of these entrepreneurs were also more likely to fill prescriptions for sedatives/hypnotics (AOR: 1.36 [95% CI: 1.10–1.67], $p = 0.005$). No difference in prescription of antidepressants was found for spouses. **Conclusions:** This study showed that there was a significant relation between entering entrepreneurship and receiving prescriptions for sedative/hypnotics both among the entrepreneurs themselves and their spouses, suggesting that entering entrepreneurship may be associated with increased stress for both the entrepreneurs and their families.

Key Words: Entrepreneurship, psychotropic drugs, stress, work load

Background

Every year around 2–4% of adult population join the ranks of entrepreneurs [1]. Becoming an entrepreneur remains a challenge that often involves giving up secure wage-work for a risk-bearing future with uncertain consequences for the family's future financial wellbeing [2]. Besides the economic risk, entrepreneurs are facing an increased workload, an increased divorce rate, and increased levels of stress [3–5]. The success rate is low; around 40% of new companies will fail within the first year and 60% within five years [6–8]. The first few years of entrepreneurship are the most challenging because of the time it takes for new businesses to adapt to business life and for the entrepreneurs and their family members to adapt to a new way of living.

Failure can have severe personal and financial consequences because entrepreneurs often have invested a significant amount of the family's financial resources in the firm.

Common symptoms of work stress are insomnia, tiredness, pain and stomach problems, which lead to activation of the hypothalamic-pituitary-adrenal axis (HPA) and an increased risk of subsequent depression [9–12]. However, a search in the Medline database did not yield any studies investigating how becoming an entrepreneur affects the mental health of entrepreneurs and their families or their use of psychotropic medications. The present study examines the use of psychotropics on an individual level for entrepreneurs and their spouses in the first year after entering entrepreneurship by using data from

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the Danish national prescription and labour market databases. We hypothesize that both entrepreneurs and their spouses will be more likely to receive a prescription for psychotropic medications (a proxy measure for distress) in the first few months after starting their new careers.

Methods

Registry data

This historical prospective study was approved by the Danish Data Protection Agency, National Board of Health and Statistics Denmark. Entrepreneurs were identified from the Danish Entrepreneurship database and demographic data were extracted from the Integrated Database for Labor Market Research (IDA), which covers information on the entire Danish population (1980–2006). Data on the use of psychotropics were extracted from the Danish Prescription database, which covers all prescriptions filled by pharmacies in Denmark. All databases were linked together with the use of the personal ID number and made available through a remote access to Statistics Denmark.

Participants

Two groups were selected. First, all new first-time entrepreneurs from 2001 through 2004 were identified ($n = 6,221$) and matched with 42,496 similar non-entrepreneurs. Entrepreneurs were matched to the closest non-entrepreneurs in Denmark based on their age, gender, marital status, region of residence, household income and household wealth. We matched each entrepreneur to a minimum of six and a maximum of seven controls. All entrepreneurs were matched. All participants were between 18 and 46 years old and had no prior history of being involved in entrepreneurship. We restricted the analyses to those younger than 46 years old to ensure availability of data about past entrepreneurial activities for most of an adult's working life [13]. Average age of entrepreneurs was 33 years (standard deviation [SD] = 6.3). Seventy-three per cent were males and 46% were married. They had on average 12.7 years of education (SD = 2.3). There was no significant difference between cases and controls in these characteristics.

In the second group, all spouses of new entrepreneurs from 2001 through 2004 were identified ($n = 2,381$) and matched to 16,704 spouses of non-entrepreneurs based on their age, gender, region of residence, household income and household wealth. We matched each spouse to a minimum of six and

a maximum of seven controls. All spouses were matched. All 19,085 spouses were between 18 and 46 years old and were on average 35 years old (SD = 5.6). Spouses with a history of entrepreneurial activity were excluded. Again, we restricted the sample to those younger than 46 years old, because this ensures that we have information about past entrepreneurial activities for the vast majority of the adult working life of the spouses. Twenty per cent of the spouses were male. They had on average 13.0 years of education (SD = 2.3) and 86% had their own income (were employed).

All participants filling psychotropic prescriptions at a pharmacy the year before entering entrepreneurship (from one year before to 90 days before) were excluded from the analysis to avoid including persons under possible current psychiatric treatment unrelated to entrepreneurship.

Measures and analysis

Drug types are classified according to the Anatomical Therapeutic Chemical (ATC) classification system maintained by the World Health Organization Collaborating Centre for Drug Statistics Methodology in Oslo, Norway [14]. Two types of medications were investigated: benzodiazepines (ATC: N05CF), benzodiazepine receptor antagonists (ATC: N05BA), e.g. zopiclone and zolpidem (in the text referred to as sedatives/hypnotics), and selective serotonin reuptake inhibitor (SSRI) antidepressants (ATC: N06AB) which were selected because they are often used as first-line treatment of insomnia and depressive symptoms, respectively [15,16]. Participants were defined as users of psychotropic medication if they filled at least one prescription at a pharmacy in the study period.

In the analyses we controlled for age (25 and younger, 26–35 and 36–45 years), gender, marital status, years of education (in natural logarithm scale), and number of children at three different age groups (in natural logarithm scale). In addition, we added a set of categorical variables to control for time effects between the four different cohorts of entrepreneurs (years 2001, 2002, 2003, 2004).

In analyses for entrepreneurs' psychotropic prescriptions, we fitted two sets of multivariate models – one not adjusting for a past history of medication use of the same kind and another set of models adjusting for past history of medication use. Past history of medication use was assessed using prescription data and covering the period from 1996 to one year before entering entrepreneurship.

In the analyses for spouses' psychotropic prescriptions, we also fitted two sets of models – one not

adjusting for the entrepreneurs' use of the same type of medication and another set adjusting for this variable. Both sets of models adjusted for the spouses' past history of filling prescriptions at pharmacies for the same type of medication from 1996 until one year before becoming entrepreneurs.

The study period was defined as the first 730 days (two years) following entry into entrepreneurship as well as the three months preceding entry as the efforts and planning to enter entrepreneurship starts well before the actual entry [17,18]. Planning and registering entry into entrepreneurship is a complicated and resource-consuming process, which is initiated before the registration date. This suggests that the build-up of stress might have been going on for some time when the firm is registered. We included the three preceding months to account for this preparatory phase. Multivariate logistic regression was used to assess the impact of entering entrepreneurship on the odds of filling a prescription for psychotropic medications at a pharmacy within the study period.

Results

Psychotropic prescriptions for entrepreneurs

Within the first two years of entrepreneurship and the three months before, 5.1% of entrepreneurs vs. 4.2%

of the controls filled prescriptions for at least one of the two types of medications. Results of the logistic regression for entrepreneurs are shown in Table I. Entrepreneurs were more likely to receive sedatives/hypnotics than matched controls, (Adjusted odds ratio (AOR): 1.45 [95% CI: 1.26–1.66], $p < 0.000$). The opposite result was found for antidepressants, where entrepreneurs had a lower odds of filling prescriptions (AOR: 0.74 [95% CI: 0.59–0.92] $p = 0.007$).

Men, married individuals and those with higher education were less likely to fill antidepressant prescriptions (Table I, model A). Individuals aged 36–45 had significantly higher odds than those aged 25 and younger in terms of filling prescriptions for antidepressants (Table I, model A). Having children had no effect on filling prescriptions for antidepressants.

The probability of filling sedatives/hypnotic prescriptions increased considerably with age. Men, married individuals and those with higher education were less likely to fill sedatives/hypnotic prescriptions (Table I, model C).

The associations of entering entrepreneurship with filling prescriptions for both medication types persisted in multivariate models adjusting for past history of filling prescriptions for the same types of medications (Table I, models B and D). The odds ratios associated with the past history of medication use were quite large and statistically significant

Table I. Predictors of filling psychotropic prescriptions among entrepreneurs.

	SSRI antidepressants		Sedatives/hypnotics	
	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]
	(A)	(B)	(C)	(D)
Entrepreneur	0.74** [0.59,0.92]	0.73** [0.58,0.91]	1.45*** [1.26,1.66]	1.41*** [1.23,1.63]
History of medication		11.05*** [8.25,14.81]		7.94*** [6.61,9.55]
Age, 26–35 yrs	1.15 [0.91,1.46]	1.11 [0.88,1.41]	1.54*** [1.26,1.89]	1.49*** [1.22,1.83]
Age, 36–45 yrs	1.42** [1.10,1.84]	1.34* [1.04,1.73]	2.52*** [2.04,3.11]	2.29*** [1.85,2.83]
Men	0.53*** [0.47,0.61]	0.55*** [0.48,0.63]	0.55*** [0.49,0.61]	0.57*** [0.52,0.64]
Children 0–5 yrs, logged count	1.05 [0.87,1.27]	1.05 [0.86,1.27]	0.83* [0.72,0.96]	0.84* [0.73,0.97]
Children 6–13 yrs, logged count	1.03 [0.86,1.24]	1.03 [0.86,1.24]	0.92 [0.80,1.05]	0.93 [0.81,1.06]
Children 14–17 yrs, logged count	1.06 [0.77,1.47]	1.06 [0.77,1.47]	0.91 [0.73,1.14]	0.89 [0.71,1.12]
Education, yrs logged	0.67*** [0.57,0.78]	0.70*** [0.59,0.82]	0.84** [0.74,0.94]	0.85* [0.75,0.96]
Married	0.42*** [0.29,0.61]	0.44*** [0.30,0.65]	0.54*** [0.40,0.72]	0.56*** [0.41,0.75]
Year 2002	1.06 [0.86,1.30]	1.02 [0.83,1.26]	0.93 [0.80,1.09]	0.85* [0.73,1.00]
Year 2003	1.16 [0.95,1.41]	1.06 [0.87,1.30]	1.12 [0.97,1.30]	0.98 [0.84,1.13]
Year 2004	1.19 [0.99,1.44]	1.05 [0.87,1.28]	0.99 [0.86,1.14]	0.83* [0.71,0.96]
Pseudo R ²	0.02	0.04	0.02	0.05
Log-likelihood	–4,287	–4,202	–6,636	–6,458
Observations	48,717	48,717	48,717	48,717

Note. Logistic regression on the probability of receiving the two types of medication. Confidence intervals (CI) are reported in brackets. Number of children and years of education are naturally logged counts. The remaining variables are categorical. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table II. Predictors of filling psychotropic prescriptions among spouses of entrepreneurs.

	SSRI antidepressants		Sedatives/hypnotics	
	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]	Adjusted odds ratio [CI 95%]
	(E)	(F)	(G)	(H)
Entrepreneur's spouse	1.08 [0.82,1.41]	1.09 [0.83,1.43]	1.36** [1.10,1.67]	1.38** [1.12,1.71]
History of medication	11.06*** [7.46,16.40]	10.89*** [7.34,16.17]	7.74*** [5.92,10.12]	7.81*** [5.97,10.22]
Spouse on medication		1.54 [0.97,2.45]		2.81*** [2.19,3.61]
Age, 26–35 yrs	1.44 [0.88,2.35]	1.44 [0.89,2.35]	1.91** [1.21,3.01]	1.89** [1.20,2.98]
Age, 36–45 yrs	1.26 [0.75,2.12]	1.27 [0.76,2.13]	2.55*** [1.59,4.09]	2.49*** [1.55,4.00]
Men	0.61*** [0.46,0.81]	0.60*** [0.45,0.79]	0.72** [0.58,0.90]	0.70** [0.56,0.86]
Children 0–5 yrs, logged count	1.14 [0.89,1.46]	1.14 [0.89,1.46]	0.73** [0.60,0.89]	0.74** [0.61,0.91]
Children 6–13 yrs, logged count	1.23 [0.99,1.53]	1.22 [0.98,1.52]	1.08 [0.90,1.29]	1.07 [0.90,1.28]
Children 14–17 yrs, logged count	1.39 [0.97,2.00]	1.38 [0.97,1.98]	1.05 [0.80,1.39]	1.04 [0.79,1.38]
Education, yrs logged	0.49** [0.30,0.79]	0.49** [0.30,0.80]	0.48*** [0.31,0.73]	0.48*** [0.31,0.74]
In job/employment	0.70** [0.55,0.90]	0.71** [0.55,0.91]	0.71*** [0.58,0.87]	0.72** [0.59,0.88]
Year 2002	1.23 [0.93,1.63]	1.23 [0.92,1.62]	1.04 [0.83,1.30]	1.04 [0.83,1.30]
Year 2003	1.19 [0.90,1.56]	1.19 [0.90,1.56]	1.12 [0.90,1.38]	1.11 [0.89,1.38]
Year 2004	1.07 [0.82,1.40]	1.07 [0.81,1.40]	0.79* [0.64,0.99]	0.79* [0.63,0.98]
Pseudo R ²	0.04	0.04	0.05	0.06
Log-likelihood	–2,133	–2,132	–2,940	–2,913
Observations	19,085	19,085	19,085	19,085

Note. Logistic regression on the probability of receiving the two types of medication. Confidence intervals (CI) are reported in brackets. Number of children and years of education are naturally logged counts. The remaining variables are categorical. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

both for antidepressants and sedative/hypnotics, indicating that having filled prescriptions for these medications in the past is a significant predictor for filling prescriptions in future.

Psychotropic prescriptions for spouses of entrepreneurs

Within the first year from entering entrepreneurship, 6.7% of the entrepreneur spouses vs. 5.3% of the control spouses filled prescriptions for either sedatives/hypnotics or antidepressants. Spouses of entrepreneurs were significantly more likely to receive sedatives/hypnotics than other spouses as seen in Table II, model G (AOR: 1.36 [95% CI: 1.10–1.67], $p = 0.005$). No difference was found concerning the use of SSRI antidepressants. Male spouses, those with more education and employed spouses were less likely to receive antidepressant prescriptions.

The odds of filling sedatives/hypnotic prescriptions increased with age. Male spouses and spouses with more education and employed spouses were less likely to fill prescriptions for these medications. Furthermore, the number of younger children was associated with a smaller odds of taking sedative/hypnotics (Table II, model G).

Similar to the analyses for the entrepreneurs, in the analyses for the spouses, the past history of filling prescriptions for each type of medication was

associated with the increased odds of filling new prescriptions of the same type. Furthermore, filling prescriptions for sedative/hypnotics by the entrepreneurs was associated with a significant increase in the odds of filling a similar prescription by the spouses (Table II, model H).

Finally, in the analyses for both the entrepreneurs and their spouses smaller odds of filling prescriptions for sedative/hypnotics, but not antidepressants, was noted in 2004, which may represent a secular trend in prescription of these medications.

Discussion

This is the first study to use extensive national registry data for the investigation of the effect of entering entrepreneurship on the use of prescribed psychotropic medications. The mean age of the sample (33 years) and its gender distribution (75% male) were consistent with other studies of new entrepreneurs [1,19,20]. The major findings of this study are that entrepreneurs are more likely to fill prescriptions for sedatives/hypnotics than are matched controls, and that spouses of the same entrepreneurs are also more likely to fill prescriptions for sedatives/hypnotics when compared with their matched controls. As benzodiazepines, which comprise the majority of sedatives/

hypnotics, have indications for anxiety and insomnia [21], the increased use of these medications in this population may suggest higher levels of non-specific anxiety, tension and insomnia. Our results suggest that entering entrepreneurship has a significant effect on the mental health of not only the entrepreneurs themselves but their spouses as well. The increased level of prescriptions for sedative/hypnotic medications among the spouses was not explained away by the variable of filling prescriptions for the same medications by their entrepreneur spouses, which suggests that entering entrepreneurship has an effect on the spouses independent of its effects on entrepreneurs themselves.

It has previously been found that a lack of control over a significant situation may lead to health problems [17,22]. While spouses of new entrepreneurs are affected by the decision to enter entrepreneurship, they have limited control of and information about the situation. This could explain the considerable effect of this decision on the spouses.

Economic policy makers in the majority of Western world countries are focusing on entrepreneurs as key factor behind the creation of new jobs and prosperity. The increased use of psychotropics among entrepreneurs and their spouses is an unexpected side-effect of the focus on entrepreneurs as an engine of economic growth. These findings should lead to more focus on the mental health of new entrepreneurs and their spouses in this process. Further, improved guidance on how to enter entrepreneurship and manage the challenges during the first years might be beneficial for entrepreneurs, their spouses, and also the survival rate of the company. Psychological distress can potentially influence the entrepreneurs' abilities to manage their businesses effectively and it could be one of the explanations for why a large proportion of new entrepreneurs fail. If distress is successfully reduced, we would expect to see greater societal benefits from entrepreneurship with increased durability of entrepreneurs and reduced public health costs.

Our results are consistent with other studies on the impact of change in work conditions on the mental health of the workers. For example, Virtanen et al. found an increased prescription rate among employees with increased workload [16]. Furthermore, changes in the work organization, e.g. downsizing or expanding, have been associated with an impact on the health of employees [23–25]. Kivimäki et al. found that downsizing was correlated with an increased use of psychotropics among the employees remaining in the downsized companies [23].

We did, however, find the reverse effect for antidepressant prescriptions; entrepreneurs had lower

likelihoods of filling prescriptions for these medications. This pattern of medication use is puzzling. Why should new entrepreneurs have a lower odds of using antidepressant medications? It is possible that new entrepreneurs are distinguished from the general population by greater motivation, self-confidence and hope – characteristics that mitigate against development of depression and anxiety and, hence the use of antidepressants. Thus, the new entrepreneurs might be a more resilient group than a random sample from the general population. We did not, however, find that entrepreneurs are more or less likely to have received antidepressants in the past compared to their controls (data not shown), which could be an indicator of a history of psychopathology. Furthermore, analyses adjusting for past history of antidepressant prescriptions did not affect the relationship of entering entrepreneurship and filling new prescriptions for antidepressants. This could imply that the self-selection is less of an issue. However, our study did not include any direct measures of psychopathology or personality. Future studies need to assess those characteristics of new entrepreneurs that may explain less use of antidepressants in this population.

The results of this study should be interpreted in the context of its limitations. First, the outcome of this study was filling of prescriptions for sedative/hypnotic and antidepressant medications, which are proxy measures for mental health problems. These are, however, only imperfect proxy measures for distress. Mental problems might be experienced for some time before patients seek medical assistance. In this period, they might self-medicate with alcohol or illicit drugs. If this is the case, we are underestimating the association of job transition with distress and the effects would likely have been stronger if we were able to measure distress directly. The use of over-the-counter stress-related medications, consumption of alcohol or illicit drugs are not assessed in the medication registry data. In addition, the prevalence of mental health problems among the study population might be underestimated because entrepreneurs might be less prone to seek medical help due to an increased workload and stress [26]. Future studies need to directly assess the impact of entering entrepreneurship on psychiatric diagnoses or symptoms. Second, our study shows the association of filling a prescription at a pharmacy and entering entrepreneurship. Some individuals who receive a prescription for a medication may choose not to fill these prescriptions at pharmacy. These records are not included in the register data. Furthermore, not all individuals who fill a prescription use the medications as prescribed. In extreme cases, they might even

pass it on to family members or sell it [27,28]. Third, the healthcare systems and the conditions for entering entrepreneurship differ between countries. Therefore, the results may not generalize to other settings. In some countries, entering entrepreneurship leads to loss of health insurance, which further complicates generalization. In Denmark, all inhabitants have public health insurance and therefore the results show the more direct effect of entering entrepreneurship. Fourth, even though the time from registering a company until the first prescription was rather short in this study, it is worth emphasizing that the efforts to start up firms begin long before the registration date [27]. Finally, this study was observational, therefore no strong causal inferences can be drawn from these data.

Despite these limitations, these data represent a first attempt to assess the mental health impact of entering entrepreneurship using administrative data from a national registry. Attention to health and mental health needs of new entrepreneurs and their families and providing appropriate support and guidance to reduce the adverse effects of this important transition might increase the chances of survival for the new businesses and decrease the negative impact on the lives of the entrepreneurs and their families. The impact of entering entrepreneurship on families might be especially prominent in smaller companies where family members often personally help or provide financial support, making them more vulnerable to the daily stress associated with these new ventures [5].

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References

- [1] Delmar F, Davidsson P. Where do they come from? Prevalence and characteristics of nascent entrepreneurs. *Entrepreneurship and Reg Dev* 2000;12(1):1–23.
- [2] Hytti U. New meanings for entrepreneurs: from risk-taking heroes to safe-seeking professionals. *J Organiz Change Manage* 2005;18(6):594–611.
- [3] Jalovaara M. Socio-economic status and divorce in first marriages in Finland 1991–93. *Population Studies* 2001;55(2):119–33.
- [4] Harris JA, Saltstone R, Fraboni M. An evaluation of the job stress questionnaire with a sample of entrepreneurs. *J Business and Psychol* 1999;13(3):447–55.
- [5] Verheul I, Thurik R. Start-up capital: does gender matter? *Small Business Economics* 2001;16(4):329–46.
- [6] Taylor MP. The survival of the fittest: an analysis of self-employment duration in Britain. *Economic J* 1999;109(March):C140–55.
- [7] Dahl M, Reichstein T. Are you experienced? Prior experience and the survival of new organizations. *Industry and Innovation* 2007;14(5):497–511.
- [8] Freeman J, Carroll GR, Hannan MT. The liability of newness: age dependence in organizational death rates. *Am Sociol Rev* 1983;48(5):692–710.
- [9] Checkley S. The neuroendocrinology of depression and chronic stress. *Br Med Bull* 1996;52(3):597–617.
- [10] Krantz G, Berntsson L, Lundberg U. Total workload, work stress and perceived symptoms in Swedish male and female white-collar employees. *Eur J Public Health* 2005;15(2):209–14.
- [11] Rugulies R, Bultmann U, Aust B, Burr H. 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* 2006;163(10):877–87.
- [12] Melchior M, Caspi A, Milne BJ, Danese A, Poulton R, Moffitt TE. Work stress precipitates depression and anxiety in young, working women and men. *Psychol Med* 2007;37(8):1119–29.
- [13] Sørensen J. Bureacracy and entrepreneurship: workplace effects on entrepreneurial entry. *Admin Sci Quart* 2007;52(3):387–412.
- [14] World Health Organization. World Health Organization, collaborating centre. *Drug Statistics Methodology*; 2007.
- [15] Pelfrene E, Vlerick P, Moreau M, Mak RP, Kornitzer M, De Backer G. Use of benzodiazepine drugs and perceived job stress in a cohort of working men and women in Belgium. Results from the BELSTRESS-study. *Social Sci Med* 2004;59:433–42.
- [16] Virtanen M, Honkonen T, Kivimaki M, Ahola K, Vahtera J, Aromaa A, Lonnqvist J. Work stress, mental health and antidepressant medication findings from the Health 2000 Study. *J Affect Disord* 2007;98(3):189–197.
- [17] Wieclaw J, Agerbo E, Mortensen PB, Burr H, Tuchsén F, Bonde JP. Psychosocial working conditions and the risk of depression and anxiety disorders in the Danish workforce. *BMC Public Health* 2008;8:280.
- [18] Sørensen J, Sorenson O. From conception to birth: opportunity perception and resource mobilization. *Adv Strat Manage* 2003;20:89–117.
- [19] Harada N. Who succeeds as an entrepreneur? An analysis of the post-entry performance of new firms in Japan. *Japan and the World Economy* 2003;15(2):211–22.
- [20] Bennett R, Dann S. The changing experience of Australian female entrepreneurs. *Gender, Work and Organization* 2000;7(2):75–83.
- [21] Lader M. Effectiveness of benzodiazepines: do they work or not? *Expert Rev Neurother* 2008;8(8):1189–91.
- [22] McEwen BS. Protective and damaging effects of stress mediators. *N Engl J Med* 1998;338(3):171–9.
- [23] Kivimaki M, Honkonen T, Wahlbeck K, Elovainio M, Pentti J, Klaukka T, et al. Organisational downsizing and increased use of psychotropic drugs among employees who remain in employment. *J Epidemiol Community Health* 2007;61(2):154–8.
- [24] Kivimaki M, Vahtera J, Pentti J, Ferrie JE. Factors underlying the effect of organisational downsizing on health of employees: longitudinal cohort study. *BMJ* 2000;320(7240):971–5.
- [25] Westerlund H, Ferrie J, Hagberg J, Jeding K, Oxenstierna G, Theorell T. Workplace expansion, long-term sickness

- absence, and hospital admission. *Lancet* 2004;363(9416):1193–7.
- [26] Cameron L, Leventhal EA, Leventhal H. Seeking medical care in response to symptoms and life stress. *Psychosom Med* 1995;57(1):37–47.
- [27] Byrne N, Regan C, Howard L. Administrative registers in psychiatric research: a systematic review of validity studies. *Acta Psychiatr Scand* 2005;112(6):409–14.
- [28] Parker G. Register now: validity later. *Acta Psychiatr Scand* 2005;112(6):407–8.

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