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Ruth A. Parslow ^a; Anthony F. Jorm ^a; Helen Christensen ^a; Bryan Rodgers ^a; Lyndall Strazdins ^b; Rennie M. D'Souza ^b

^a Centre for Mental Health Research, Australian National University, Canberra, Australia ^b National Centre for Epidemiology and Population Health, Australian National University, Canberra, Australia

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The associations between work stress and mental health: A comparison of organizationally employed and self-employed workers

RUTH A. PARSLow†[★], ANTHONY F. JORM†,
HELEN CHRISTENSEN†, BRYAN RODGERS†,
LYNDALL STRAZDINS‡ and RENNIE M. D'SOUZA‡

† Centre for Mental Health Research, Australian National University, Canberra ACT 0200, Australia

‡ National Centre for Epidemiology and Population Health, Australian National University, Canberra, ACT 0200, Australia

Keywords: Work stress; Mental health; Self-employed; GP service use.

This study examined the associations between work stressors and mental health in organizationally employed and self-employed workers, and with the numbers of general practitioner (GP) services used by these two employment groups. The participants were selected from those already taking part in the PATH Through Life Project, in Australia. A total of 2275 men and women aged from 40 to 44 years participated in a community survey and were in the labour force at the time of the interview. Those who participated entered responses into a hand-held computer under the supervision of an interviewer. A total of 14.2% of the group identified themselves as self-employed. Respondents also provided details of their occupation and the extent to which they experienced work stressors. Some 72.6% of these participants gave consent for information on their use of GP services over a 12-month period to be obtained from national insurance records. We found that self-employed men and women reported more decision authority than the organizationally employed, while self-employed women also had more manageable job demands. Self-employment offered men no health benefit. However, women who were self-employed reported worse physical health than their organizationally employed counterparts. While work stress factors were most likely to be associated with the use of GP services by self-employed men, the use of those services by women was more strongly associated with their experiences of stress in organizational employment. Overall, self-employment was found to be associated with relatively few mental health benefits.

1. Introduction

Much of the research on work stress, drawing on the seminal work by Karasek (1979), has found that, within organizations, work stressors such as decision authority, skill discretion, job demands and job security vary with seniority of position held by the employee (Marmot *et al.*, 1991) and can impact on employees' physical and mental health. Those reporting higher levels of work stress have been found to have poorer cardiovascular health, poorer

[★]Author for correspondence. e-mail: ruth.parslow@anu.edu.au

self-reported health, more symptoms of depression and more sickness absences (Bosma *et al.*, 1997; Lerner, Levine, Malspeis, & D'Agostino, 1994; Marmot *et al.*, 1991; North, Syme, Feeney, Shipley, & Marmot, 1996; Stansfeld, Bosma, Hemingway, & Marmot, 1998; Stansfeld, Fuhrer, Shipley, & Marmot, 1999; Van der Doef & Maes, 1999). An organization's options for reducing the levels of work stress experienced by employees can include better recognition of factors that can trigger or exacerbate work stress and modification of tasks, schedules, management strategies and other aspects of the work environment (Cooper & Cartwright, 1997). The individual's options for reducing levels of work stress may be more limited and might include changing jobs within the organization or working for another organization. Self-employment is another option that is commonly perceived to offer a work environment with more manageable job demands, more decision authority and skills discretion, but brings with it more job insecurity, although the findings on this last issue are inconsistent (Hundley, 2001; Lewin-Epstein & Yuchtman-Yaar, 1991).

Due, perhaps, to this perception that work stressors experienced by the self-employed are minimal and are likely to have little impact on the health of this employment group, there has been comparatively little research on the impact of work stressors on the mental health of the self-employed. The findings from such research are also inconsistent. Eden (1973, 1975) found that self-employment provided more favourable job settings, greater freedom and autonomy at work, but offered few benefits in terms of increased job satisfaction or less job strain. Thompson, Kopelman, and Schriesheim (1992), on the other hand, found that self-employed male college graduates had higher levels of job satisfaction than their counterparts working for organizations. Ettner and Grzywacz (2001) concluded that the self-employed had more positive views of the effects of work on their health, although measures of that health were not taken. However, studies that have examined health measures of the self-employed have found that members of this workforce smoked more, were more obese and reported more psychosomatic health problems than workers employed in organizations (Jamal, 1997; Lewin-Epstein & Yuchtman-Yaar, 1991). Jamal (1997) also found no differences in levels of mental health of the self-employed and other workers. The generalizability of the findings from the last two of these studies is limited. In one case, the sample was small and targeted, while the other comprised only men. Neither study took account of the type of work undertaken by the self-employed.

We have undertaken a study examining levels of work stress experienced by 2275 men and women, either self-employed or working in organizations, who took part in the PATH Through Life Project, a large community-based study being undertaken by the Centre for Mental Health Research in Canberra, Australia. Survey participants provided information concerning sociodemographic measures, lifestyle and health. They also provided details of the type of job they had, allowing them to be grouped into three occupational groups: professional; white collar; and blue collar. Other work-related information obtained from participants included whether they worked for an organization or were self-employed and, if self-employed, whether they worked alone or employed other people. Scores for work stress measures of decision authority, job demands, skill discretion and job security were also obtained. For a subset of 1652 participants, we were able to access national insurance data on the number of visits they had made to general practitioners in the 6 months preceding and the 6 months following their PATH interview. These data allowed us to examine the extent to which occupational group and work stressors of organizationally employed and self-employed were associated with their levels of depressive and anxiety symptoms, and use of primary medical services. We were unable to find previous reports exploring the impact of work stress on medical service use by these two employment groups.

1.1. Hypotheses

1. *Hypothesis 1.* After occupational group was taken into account, those who were self-employed, either working alone or as employers of other workers, would report more job insecurity, but more decision authority, more skill discretion and fewer job demands than those in organizational employment. As a result, the self-employed would report fewer symptoms of mental health problems and use fewer GP services than those employed in organizations and this relationship between self-employment and reduced work stress would apply to both men and women.
2. *Hypothesis 2.* When all predictor variables were taken into account, self-employment, occupational group and work stressors would all contribute to explaining levels of mental health and GP service use by both men and women.

2. Methods

2.1. Participants

The PATH Through Life Project is a longitudinal study of residents living in the Australian Capital Territory and environs. Three age groups are being interviewed in this project: those aged 20–24 years, 40–44 years and 60–64 years. The present study focuses on participants aged 40–44 years on 1 January 2000—participants in this age group have the highest level of labour force participation and are most likely to be self-employed.

Potential participants were randomly selected from all enrollees aged 40–49 years listed on the Australian Electoral Rolls for Canberra in the Australian Capital Territory and adjacent town of Queanbeyan in New South Wales. Enrolment on these rolls is compulsory for all Australians aged 18 years and over. This 10-year age range was the minimum range then released for research purposes by the Australian Electoral Commission. All potential participants were sent an initial letter. Those who could be located, were in the required age range of 40–44 years, and agreed to participate were interviewed. Participants entered answers into a hand-held computer under the supervision of a professional interviewer. The number of potential participants able to be located and in the required age range, was 3919, of whom 2530 agreed to participate in the survey, giving a response rate of 64.4%.

2.2. Measurements

2.2.1. Labour force details: Data collected from participants included their labour force status, the type of position they held and whether or not they were self-employed. Using information provided by participants on their current job, they were then classified into three occupational groups: professional, white collar and blue collar. The types of occupations included in each of these groups are given in Table 1. Participants were asked to identify their employment sector from the following options: (1) employed by a government agency; (2) employed by a profit-making business; (3) employed by another organization; (4) self-employed or in business or practice for oneself; or (5) working without pay in a family business. Six respondents who described themselves as being in the last of these categories were excluded from the study. Participants identifying themselves as self-employed were then asked whether other workers were usually employed in their business, excluding themselves and any partners. This information allowed us to classify an

Table 1. Description of occupational groupings within the study sample, with number and percentage female and number and percentage self-employed.

Occupational group	Includes	N	Number of females (%)	Number (%) of self-employed and	
				working alone	employing others
Professional	1) Managers (generalist managers, specialist managers, farmers, farm managers); and 2) Professionals (professionals in building, engineering, science, business, information, health, education)	1201	537 (44.7)	72 (6.0)	80 (6.7)
White collar	1) Paraprofessionals (associate professionals in engineering, health, business, administration; managing supervisors in sales and service); and 2) Advanced, intermediate and elementary clerical and sales (secretaries, personal assistants; clerks, keyboard operators, receptionists, hospitality workers, sales representatives)	858	570 (66.4)	33 (3.8)	56 (6.5)
Blue collar	1) Tradespersons (persons with trades in mechanical engineering, automotive, electrical, construction, agriculture areas); 2) Intermediate production and transport (plant and machinery operators, road and rail transport drivers); and 3) Labourers (cleaners, factory labourers, labourers in mining, agricultural and food preparation industries)	216	38 (17.6)	48 (22.2)	34 (15.7)
All occupations		2275	1144 (50.3)	152 (6.7)	171 (7.5)

Classification of employment groups: Australian Bureau of Statistics, 2001.

individual as belonging to one of three employment types: (a) organizationally employed; (b) self-employed and working alone; or (c) self-employed and employing others.

2.2.2. *Work stressors*: Survey participants in the workforce were then asked 19 questions relating to their work situation covering decision authority, job demands and skill discretion. These questions matched those used in the Whitehall II study (Marmot *et al.*, 1991). Responses were scored from 1 to 4 with the highest score allocated to work circumstances in which the individual had more decision authority, higher levels of skill discretion and higher job demands. Other work-related information examined in this study included the number of hours usually worked per week and self-assessment of employment security and future employment opportunities. Answers to the last two questions, also scored from 1–4, were scored with higher ratings given to those who felt their position was more secure or that they could obtain another job relatively easily. The mean of these two scores was used as an overall measure of *employability security*, a term used to describe the employee's security in the current job and provision of skills in that job that enhance the likelihood of that worker obtaining future employment elsewhere (Oss, 2001).

2.2.3. *Socio-demographic and psychological measures*: Socio-demographic measures included gender, age, years of education and experience of any of six life events during the previous 6 months. Various researchers have found that work stressors have different impacts for men and women (Matthews, Hertzman, Ostry, & Power, 1998) and in our analyses these two groups were considered separately. Since work-family research has recognized the potential for household arrangements to affect work stress (Westman & Piotrkowski, 1999), household responsibilities were also taken into account. Household responsibility scores were derived from participants' responses to questions concerning the extent to which, in their household, they were responsible for four areas: household tasks; childcare; financial management; and providing money. For participants without children, their level of childcare responsibility was calculated as the mean of their scores for responsibilities in the other three areas.

2.2.4. *Psychological and health measures and medical service use*: Three health measures were used in these analyses: physical health as measured by the Medical Outcomes Study 12-item Short-Form Health Survey (SF-12; Ware, Kosinski, & Keller, 1996) and scores on Goldberg's depression and anxiety scales (Goldberg, Bridges, Duncan-Jones, & Grayson, 1988). The first of these was included in the analyses for two reasons: as a control measure, to allow us to examine the extent to which work stress affected mental health compared with physical health and, second, as a factor that would be expected to impact on participants' GP service use. Participants' experiences of chronic diseases could also be expected to affect service use. A count of chronic diseases was calculated for each participant in response to their reporting that they had any of the following: arthritis; heart trouble; cancer; thyroid disease; epilepsy; eye disease; respiratory problems; or diabetes. Participants' level of mastery in their life was also obtained using the mastery scale developed by Pearlin, Menaghan, Lieberman, & Mullan (1981). The last measure was included since we considered that the self-employed would be likely to feel more in control of their lives overall. Higher levels of mastery associated with such control are known to be linked to better mental health (Cole, Ibrahim, Shannon, Scott, & Eyles, 2002).

Records on participants' visits to GPs were also obtained. In Australia, the costs of most healthcare visits made to medical practitioners by Australians with citizenship or residency status are subsidized, either partly or totally, through the Australian Government-funded

universal health insurance scheme, Medicare. Information on the number of such visits is collected by the Health Insurance Commission. These data are used for administrative purposes and identify general practitioner and specialist services, but not the health problems addressed during each visit. These records cover most visits made to general practitioners but will not include a small number of services, paid for by patients but for which reimbursement had not been claimed in the 12 months following their visit. Medical services obtained by patients through workers' compensation arrangements are also not recorded as Medicare-funded visits. This type of care is likely to account for only a small number of visits made by participants in this study who were active members of the labour force at the time of their interview. All participants were asked if they would consent to researchers having access to information on the number of visits they made to GPs for specified periods before and after their PATH interview. Consent was obtained from 1652 survey participants, 72.6% of those in the workforce. Occupational groups and employment types reported by this subgroup were not statistically different from those of the total working group. Information on numbers of GP visits made by this subgroup during the 6 months preceding and the 6 months following their PATH interview was then obtained from the Health Insurance Commission.

2.3. Statistical methods

Research has already been undertaken on the impact of occupational status on work stressors and health (for example, Marmot *et al.*, 1991) and this topic was not explored in our analysis. Instead, we focused on the impact of self-employment on work stressors and health measures. Preliminary analyses compared mean scores for work stressors reported by participants of each employment type: organizational employment and self-employed. Regression analyses were then undertaken separately for men and women. We assessed the contribution of employment type, occupational group and work attributes in explaining participants' scores for SF-12 physical health, Goldberg's depression and anxiety scales and GP service use, after controlling for demographic and lifestyle factors. In each analysis, five subgroups of predictor variables were included sequentially in the regression model. The first group measured personal, lifestyle and some work-related factors that could affect mental health and included: years of education; life events experienced in the 6 months preceding the interview; level of household responsibility; hours worked per week; and whether working part-time. The second group concerned employment type and included two predictor variables (being self-employed, working alone and being self-employed, employing others), with those in organizational employment taken as the reference group. The third group of variables comprised two categorical variables indicating whether participants were in occupations classified as blue collar or white collar. The fourth group of variables covered the four measures of work stress: decision authority; skill discretion; job demands; and employability security. Finally, four predictor variables measuring the interactions between work stressors and being self-employed were added to the model. Initial testing of the dependent variables indicated that GP use followed a Poisson distribution and regression analysis of this measure used a Poisson regression model.

Contribution of employment type, occupational group, work stressors and interaction variables in explaining dependent variables were assessed using change in R^2 for linear regression and likelihood ratio tests for Poisson regressions. The final analyses examined associations between use of GP services and four blocks of predictor variables (employment type, occupational group, work stressors and work stress-by-self-employment interactions),

after taking into account demographic, lifestyle, mental and physical health measures. Analyses were undertaken using SPSS 11.5 and STATA 7 (Statacorp, 2001).

3. Results

3.1. Preliminary analysis

Of the 2275 participants in the workforce at the time of their survey, 324 described themselves as self-employed, of whom 171 employed others. Women were less likely to be self-employed with 4.5% of women working alone while self-employed and 6.0% self-employed and employing others, compared with 10.5% and 7.4% for men ($\chi^2_4 = 32.45$, $p < .001$). The distribution of employment type across the three occupational groups were significantly different ($\chi^2_4 = 126.2$, $p < .001$) with blue collar workers least likely to be employees (Table 1).

3.2. Tests of hypotheses

3.2.1. *Hypothesis 1:* The next analyses examined work stress and health measures for the three employment groups: organizationally employed; self-employed working alone; and self-employed and employing others. Mean measures for these three subgroups were estimated after controlling for occupational groups of participants and are given in Table 2. Hypothesis 1 was only partly supported. We found that men and women who were self-employed reported significantly higher levels of decision authority than their employee

Table 2. Mean measures of work stressors, mental and physical health and GP service use for self-employed who work alone, self-employed employing others, and those in organizational employment; controlling for occupational group.

Mean measures	Self-employed			$p^\dagger$
	Working alone	Employing others	Organizationally employed	
<i>Men</i>	($N = 84$)	($N = 119$)	($N = 927$)	
Decision authority score	3.56	3.63	3.17	< .001
Skill discretion score	3.23	3.29	3.22	.172
Job demands score	2.79	3.00	2.93	.715
Employability security score	2.74	2.96	2.77	.071
Mastery score	21.54	23.13	22.23	.390
SF-12 physical health	52.21	53.32	52.32	.312
Goldberg depression	2.09	2.27	2.21	.913
Goldberg anxiety	3.25	2.89	3.21	.401
GP services	4.53	3.38	3.80	.834
<i>Women</i>	($N = 69$)	($N = 52$)	($N = 1024$)	
Decision authority score	3.61	3.60	2.98	< .001
Skill discretion score	3.17	3.13	3.11	.288
Job demands score	2.56	2.77	2.83	< .001
Employability security score	2.88	2.93	2.87	.614
Mastery score	21.88	22.18	21.95	.873
SF-12 physical health	51.13	51.87	51.84	.606
Goldberg depression	2.61	2.50	2.44	.587
Goldberg anxiety	3.84	3.63	3.60	.538
GP services	4.51	3.88	4.31	.866

$^\dagger p$ obtained when comparing the two groups: organizationally employed and self-employed.

Table 3. Predictors of physical health, depressive and anxiety symptoms for men; controlling for education, mastery score, life events, household responsibilities and hours worked per week.

Predictor variable	SF-12 physical health		Goldberg Depression Score		Goldberg Anxiety Score	
	$\beta^\dagger$	ΔR^2	$\beta^\dagger$	ΔR^2	$\beta^\dagger$	ΔR^2
<i>Employment type</i>						
Self-employed, working alone	-.224		-.261		-.276	
Self-employed, employing others	-.216	< .01	-.295	< .01	-.310	< .01
<i>Occupational group</i>						
White collar	.015		.024		.014	
Blue collar	.014	< .01	-.024	< .01	-.045	< .01
<i>Work stress measures</i>						
Decision authority	.011		-.017		-.007	
Skill discretion	.001		-.130***		-.095*	
Job demands	-.023		.154***		.212***	
Employability security	.018	< .01	-.101***	.039***	-.113***	.055***
<i>Interaction terms</i>						
Self-employed by:						
Decision authority	.210		.328		.466	
Skill discretion	.067		-.129		-.167	
Job demands	.013		.068		.090	
Employability security	.043	< .01	.136	< .01	.006	< .01

* $p < .05$; ** $p < .01$; *** $p < .001$. † Standardized beta from final regression equation with all variables entered simultaneously.

Table 4. Predictors of physical health, depressive and anxiety symptoms for women; controlling for education, mastery score, life events, household responsibilities and hours worked per week.

Predictor variable	SF-12 physical health		Goldberg Depression Score		Goldberg Anxiety Score	
	$\beta^{\dagger}$	ΔR^2	$\beta^{\dagger}$	ΔR^2	$\beta^{\dagger}$	ΔR^2
<i>Employment type</i>						
Self-employed, working alone	-.671**		.271		.105	
Self-employed, employing others	-.569**	< .01	.216	< .01	.069	< .01
<i>Occupational group</i>						
White collar	-.012		-.003		-.063	
Blue collar	-.005	< .01	.002	< .01	.004	< .01
<i>Work stress measures</i>						
Decision authority	-.009		.054		.031	
Skill discretion	.023		-.180***		-.123**	
Job demands	-.095**		.180***		.221***	
Employability security	.065*	.011**	-.106***	.047***	-.090**	.045***
<i>Interaction terms</i>						
Self-employed by:						
Decision authority	.465		-.499*		-.137	
Skill discretion	.177		.069		.001	
Job demands	.175		-.013		-.112	
Employability security	.026	< .01	.129	< .01	.153	< .01

* $p < .05$; ** $p < .01$; *** $p < .001$. † Standardized β from final regression equation with all variables entered simultaneously.

Table 5. Predictors of GP services obtained in past 12 months by men and women; controlling for physical and mental health, education, mastery score, life events, household responsibilities and hours worked per week.

Predictor variable	Men		Women	
	Incidence Rate Ratio [†]	Model χ^2	Incidence Rate Ratio [†]	Model χ^2
<i>Employment type</i>				
Self-employed, working alone	1.06		.79	
Self-employed, employing others	.84	3.43	.72	.95
<i>Occupational group</i>				
White collar	1.03		1.07	
Blue collar	.88	6.24*	1.21	4.00
<i>Work stress measures</i>				
Decision authority	1.02		.87***	
Skill discretion	1.01		1.08	
Job demands	.99		1.04	
Employability security	.96	4.60	.99	43.19***
<i>Interaction terms</i>				
Self-employed by:				
Decision authority	.90		1.30	
Skill discretion	1.07		.78*	
Job demands	.90		.99	
Employability security	1.24**	11.91*	1.07	7.27

* $p < .05$; ** $p < .01$; *** $p < .001$.
[†]Incidence Rate Ratio from Poisson regression analysis with all variables entered simultaneously.

counterparts, while women who were self-employed also reported that their job demands were more manageable. However, neither skill diversity nor employability security differed significantly between the self-employed and those working for organizations. Similarly we found no significant differences in general physical health, as measured by the SF-12, or their levels of depressive or anxiety symptoms. Both groups also obtained comparable numbers of GP services over the 12-month period.

3.2.2. Hypothesis 2: Our second hypothesis was that employment type, occupational group and work stressors would all contribute to explaining levels of mental health of, and GP services used by, both men and women. To test this hypothesis, we undertook separate hierarchical regression analyses for male and female participants. We assessed the contribution of being self-employed and working alone, being self-employed and employing others, occupational group, work attributes and interaction variables in explaining participants' scores for SF-12 physical health and their levels of depressive and anxiety symptoms. The results of these analyses are given in Tables 3 and 4. Similar analyses were then undertaken to identify factors associated with making visits to a GP with additional predictor variables included in the equations: SF-12 measures of mental and physical health and count of chronic diseases.

Again, this hypothesis was partly supported. When groups of predictor variables were considered, work stress measures comprised the only group of predictor variables to contribute to explaining depressive and anxiety symptoms for men and women. Both men and women with less skill discretion, more job demands and less employability security reported more anxiety and depressive symptoms. Work stressors were also associated with women's physical health. Those with more manageable job demands and higher levels of

employability security reported better physical health, while women who were self-employed reported worse physical health. Work stressors further affected self-employed women with level of decision authority being inversely related to the number of depressive symptoms they reported.

Both occupational group and work stress-by-self-employed interaction variables helped to explain men's use of GP services (Table 5). Self-employed men with more employability security were more likely to have seen a GP. Women's use of GP services was significantly associated with measures of work stress, specifically with having less decision authority. Self-employed women with less skill discretion were also more likely to have visited their GP during the 12-month period.

4. Discussion

In this paper, we report on a study that has examined the impact of employment category, occupational group and work stressors on the mental health and service use of a community sample of 2275 Australian adults aged 40 to 44 years, of whom 324 were self-employed.

4.1. *Work stress and health of self-employed and organizationally employed*

As might be expected, both male and female respondents who were self-employed reported that they had considerably more authority over the decision-making processes in their workplace while self-employed women also reported that their job demands were more manageable. In their study of salaried and self-employed men, Lewin-Epstein and Yuchtmann-Yaar (1991) found that the self-employed had significantly higher levels of work stress, although details on the derivation of their score are not provided. Jamal (1997) also found that the self-employed reported more job stress. In both studies, the number of self-employed was smaller than that included in the present study (131 and 70, respectively).

We found no differences between self-employed and organizationally employed in their physical health or their levels of depressive or anxiety symptoms, findings that partly agree with those of Jamal (1997) who found no differences in mental health between these two groups. He did, however, report that self-employed had significantly more psychosomatic health problems than those not employed in this way. In our study, the self-employed and organizationally employed used comparable levels of GP services over a 12-month period, whereas previously the self-employed have been found to use significantly fewer physician services (Lewin-Epstein and Yuchtmann-Yaar, 1991). Of course, this finding may partly reflect the impact of differences in healthcare systems between Australia and Israel.

4.2. *Associations between work stress and health and GP service use*

4.2.1. *Male participants:* After controlling for personal attributes and employment type, we found no differences between self-employed and organizationally employed men in their levels of physical health, depressive and anxiety symptoms and GP service use. While men had better mental health when they had jobs offering more skill discretion, fewer job demands and more employability security, these benefits were not found for self-employed men in particular.

In comparison with organizationally employed men, work stressors in a setting of self-employment contributed significantly to explaining self-employed men's use of GP care. Men who were self-employed and also had more employability security were more likely to use such services. Since we found no significant differences in the health measures of

these two groups, this finding suggests that self-employed men with less secure work arrangements may be reluctant to give up time during working hours to seek medical care. In Australia, such services can be difficult to access outside of standard working hours (Department of Health and Ageing, 2001). Alternatively, it may be that self-employed men in secure jobs find it easier to take time off to visit a GP during regular working hours.

4.2.2. Female participants: The associations between work stressors and the mental health of employed women were comparable to those associations in their male counterparts. In addition, women's physical health was negatively associated with two work stressors: having high job demands and low employability security, findings that have been reported previously (Ferrie, Shipley, Stansfeld, & Marmot, 2002). Women who were self-employed also had poorer physical health while self-employed women with less decision authority had more depressive symptoms. These associations between women having poorer physical health and reporting more work stress when self-employed have not been previously reported in the few studies undertaken on this labour force group. Identifying possible reasons for these findings will need further examination.

We found that work stressors also contributed significantly to explaining women's use of medical services: women with less decision authority used significantly more GP services. One stressor, having less skill discretion, also had a small association with self-employed women's use of primary care. These differences could reflect specific attributes of the working preferences on women in our study and, again, their explanation would need further examination.

A further issue to be considered in the light of these findings is that self-employment has traditionally been most commonly selected by those in trades; that is, blue collar workers, the majority of whom are men. It may be that working arrangements that suit the preferences and obligations of self-employed men working in other occupational groups and self-employed women still need to be developed.

4.2.3. Conclusions: Work stressors that were experienced in settings of self-employment but not organizational employment were positively associated with the use of GP services by men, whereas in women the use of such services was more strongly related to their experiences of stress in organizational employment.

We found no direct positive associations between self-employment and mental health for either men or women, and a negative association between self-employment and physical health for women. Overall, self-employment was associated with relatively few mental health benefits.

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