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Gender differences in paid employment after retirement

Psychosocial working conditions and well-being

Electronic supplementary material

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Due to discontinuous working histories women are more likely to experience financial hardship, which is combined with different motivations to engage in paid employment after retirement (PEAR) compared to men [3, 8, 21]. Furthermore, men and women may take different types of PEAR [3] and gender inequalities concerning working conditions and occupational well-being might also be found in PEAR [2, 6, 24]; however, to the best of our knowledge this issue has not yet been investigated. Therefore, this study aimed to examine gender differences in working conditions and occupational well-being of workers in PEAR based on the example of employees of a Dutch temporary employment agency above 65 years of age.

Background

In the next decades the proportion of the non-working population will increase

due to ageing populations, posing serious strains on labor markets and pension systems [10]. Therefore, retention of the older workforce has gained increased attention and consequently retirement age in most European countries, including the Netherlands, has been gradually raised up to 67 years of age. In addition, Dutch voluntary early retirement schemes introduced in the 1970s to motivate older workers to choose for early retirement were substituted by flexible early retirement schemes in the 1990s and were fully abrogated in 2006 to promote work participation of the older workforce [12]. Furthermore, a growing number of individuals decide to continue or to restart PEAR (also termed bridge employment; [3, 13]). In the Netherlands, between 10% and 20% of persons aged between 65 and 70 years chose for PEAR in 2011, mainly opting for reduced working hours in employment relationships including employment agencies [12]. Several factors are discussed to influence the intention to engage in PEAR including: a) individual level predictors, such as gender, financial means and health and b) job and organizational variables, such as working conditions [3, 33]. In the Netherlands, men are more likely to engage in PEAR than women [12]. An underlying cause might involve traditional gender

roles (male breadwinner model; [21]); however, higher probabilities of working part time, discontinuous working histories and also the wage gap between men and women may push women to engage in PEAR [8, 21]. Furthermore, the labor sector in which women and men find PEAR (horizontal segregation) as well as hierarchical positions in the labor sector (vertical segregation) may differ similar to employment before retirement age [6]. This may lead to gender inequalities concerning working conditions for PEAR; however, to the best of our knowledge the specific issue of gender differences in working conditions and occupational well-being in PEAR has not yet been studied. Regarding employment before retirement age, previous research has gathered evidence that gender inequalities concerning working conditions still exist in modern societies: women were more likely to experience low job control, high emotional demands and more workplace violence, whereas men were more likely to experience high levels of physical and psychological demands and low support [2, 6, 24]. Concerning burnout and work engagement, two concepts that represent occupational well-being, previous results are mixed. A meta-analysis found that women were more likely to report burnout, especially emotional

exhaustion in the USA; however, those results were less conclusive for studies in European countries [25]. In addition, an international study only found weak gender effects on work engagement and results were further inconclusive depending on the country of the study sample [29].

To further examine and test previous findings on gender differences in working conditions and occupational well-being to employees in PEAR, this study used a longitudinal design with a study sample of Dutch employees of a temporary employment agency for workers above 65 years of age. It investigated gender and time specific changes in working conditions and occupational well-being over a time period of 1 year. This is of special importance to the field of gender-specific work design for older employees to increase their attachment to the labor market after retirement. Finally, the study explored sociodemographic differences between male and female workers in order to better understand determinants of gender inequality regarding working conditions and occupational well-being.

Occupational well-being has been described as a multidimensional construct with affective, motivational, behavioral, cognitive and psychosomatic dimensions. In contrast to general well-being it especially relates to the work context. As affective well-being was shown to be the most central dimension of occupational well-being [14], emotional exhaustion as well as work engagement were examined in this study. Work engagement has been defined as the antipode of burnout and represents a positive mental condition [28]. Furthermore, working conditions in terms of the job demand-control model by Karasek as a well-established model that has been associated with various health outcomes including self-rated health and sickness absence were examined [15, 17].

Study design and investigation methods

Study design and sample

A prospective design with 1 follow-up survey was used. A total of 6538 regis-

tered employees of a temporary employment agency for workers above 65 years of age in the Netherlands were asked to participate and to answer a standardized online questionnaire on their occupational well-being and working conditions. The employees had a mean age of 69.70 years and 74.80% were male. Data collection for wave 1 took place in 2011 and for wave 2 in 2012.

Measures

Participants were asked to rate their occupational well-being and working conditions by validated self-report measures. Emotional exhaustion was measured using the emotional exhaustion scale of a Dutch version of the Maslach burnout inventory consisting of five items [26, 27]. A sample item is "At the end of a working day I feel empty". Work engagement was measured with a short Dutch version of the validated Utrecht work engagement scale consisting of 17 items [28]. This scale consists of three sub-scales: vigor and dedication for and absorption in one's work with six, five and six items, respectively. A sample item is "At work I am full of energy". All items for both measures used a 7-point scale from 1 to 7, with high values representing high levels of emotional exhaustion and engagement. The reliability for all scales was good with Cronbach's alpha ranging between 0.81 and 0.92.

Working conditions in terms of job control and job demands were measured by using the validated Job Content Questionnaire, consisting of three items for job control and five items for job demands [16]. All items used a 4-point scale from 1 to 4. Sample items for job control and job demands are "I have a lot to say about what happens on my job" and "My job requires working very fast". Mean scores of the corresponding items for job control and job demands were calculated. Furthermore, job strain was calculated as the quotient of job demands and job control. High values represent high levels of job control, job demands and job strain. The reliability for job control was acceptable with Cronbach's alpha of 0.73, whereas the reliability for job demands

was poor with Cronbach's alpha of 0.55. Furthermore, information on sociodemographic characteristics was included in the study. Participants were asked about their age, gender, education (primary education; high school or advanced technical college certificate, apprenticeship, higher education), gross annual income (<24,000 €, 24,000–30,000 €, 30,001–36,000 €, 36,001–42,000 € and >42,000 €), number of hours per week working in their current occupation, number of years in paid employment before 65 years of age, number of years at current employer, type of occupation and marital status (married, relationship, cohabiting, divorced, widow or single).

Statistical analysis

Differences in the study variables between male and female participants and between employees participating at both waves and employees only participating at wave 1 were calculated, using t-tests for independent samples or χ^2 -tests. To measure gender differences in occupational well-being and working conditions over time, repeated measurement analyses of variances (ANOVA) were calculated. The respective study variable was used as the dependent variable, time as the within-subject variable and gender as the between-subject variable. To additionally control for covariables, repeated measures analyses of covariance (ANCOVA) were conducted using gross income, hours worked per week in the current occupation, years in paid employment before 65 years of age and marital status as covariables. For this analysis, marital status was dichotomized (1 = married, relationship, cohabiting and 2 = single, divorced, widowed). Statistical significance was assumed at a *p*-value <0.05. All analyses were performed using IBM SPSS Statistics 24.

Results

A total of 784 employees participated in wave 1 with a response rate of 11.99%. Of those participants 228 employees also participated in wave 2 (follow-up rate = 29.08%). Compared to employees participating in both waves, employees

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Gender differences in paid employment after retirement. Psychosocial working conditions and well-being

Abstract

Background. An increasing number of persons continue to work after retirement age. This decision is often different between men and women as well as working histories, sectors and hierarchical positions; however, whether gender differences in working conditions and occupational well-being also exist in paid employment after retirement (PEAR) has not yet been investigated.

Objective. This study aimed to examine gender differences in working conditions and well-being of workers in PEAR.

Material and methods. In this study 784 employees (23.5% female) aged 65 years and older who were contracted by a Dutch temporary employment agency, participated

in the baseline survey in 2011. Furthermore, a panel of 228 employees (25.9% female) participated again during a second wave in 2012. Job demands, job control, emotional exhaustion and job engagement were assessed at both time points by validated self-reporting measures.

Results. Female employees worked fewer years in paid employment before 65 years of age, were more likely to be single, divorced or widowed, had a smaller income and worked less hours during PEAR than men. In the baseline analysis, females reported less job control and higher job stress than men. No gender differences were found on emotional exhaustion, engagement or job

demands. Over the study period emotional exhaustion only increased in females. The longitudinal trend of job demands, control and engagement did not significantly differ between both sexes.

Conclusion. The results suggest that working conditions of PEAR are less favorable for women than for men. Furthermore, the longitudinal trend of emotional exhaustion seems to be more disadvantageous for women.

Keywords

Netherlands · Longitudinal study · Bridge employment · Emotional exhaustion · Older workers

Geschlechtsspezifische Unterschiede in der Erwerbstätigkeit nach Renteneintritt. Psychosoziale Arbeitsbedingungen und Wohlbefinden

Zusammenfassung

Hintergrund. Immer mehr Personen bleiben auch nach Renteneintritt erwerbstätig. Diese Entscheidung ist oft geschlechtsabhängig und, obwohl sich Männer und Frauen bezüglich Erwerbsbiografie, Arbeitsbranche und Position oft voneinander unterscheiden, gibt es bislang keine Studie zu geschlechtsspezifischen Unterschieden hinsichtlich Arbeitsbedingungen und Wohlbefinden bei Erwerbstätigkeit nach Renteneintritt.

Fragestellung. Ziel der Studie ist die Untersuchung geschlechtsspezifischer Unterschiede bezüglich psychosozialer Arbeitsbedingungen und Wohlbefinden bei Erwerbstätigkeit nach Renteneintritt.

Material und Methoden. An der ersten Befragungswelle 2011 nahmen 784 Angestellte einer niederländischen Zeitarbeitsagentur für

Beschäftigte über 65 Jahre (23,5% weiblich) teil. Ein Jahr später konnten 228 Teilnehmer (25,9% weiblich) erneut befragt werden. Sozioökonomische Variablen, Anforderungen, Kontrolle und Engagement bei der Arbeit sowie emotionale Erschöpfung wurden mithilfe validierter Selbstbeurteilungsskalen erhoben.

Ergebnisse. Frauen waren weniger Jahre vor ihrem 66. Lebensjahr erwerbstätig, häufiger ledig, verwitwet oder geschieden, hatten ein geringeres Einkommen und arbeiteten weniger Stunden während ihrer Beschäftigung nach Renteneintritt als Männer. Zur ersten Befragungswelle gaben Frauen weniger Kontrolle und höhere Arbeitsbelastungen an. Bezüglich emotionaler Erschöpfung, Anforderungen und Engagement wurden

keine signifikanten Unterschiede verzeichnet. Über den Studienverlauf nahm die emotionale Erschöpfung nur bei den Frauen zu. Es wurden keine weiteren signifikanten geschlechtsspezifischen Veränderungen beobachtet.

Schlussfolgerung. Die Ergebnisse weisen auf ungünstigere Arbeitsbedingungen bei Erwerbstätigkeit nach Renteneintritt für Frauen hin. Des Weiteren nahm das Wohlbefinden bei der Arbeit über den Studienverlauf bei Frauen einen ungünstigeren Verlauf.

Schlüsselwörter

Niederlande · Längsschnittuntersuchung · „Bridge employment“ · Emotionale Erschöpfung · Ältere Beschäftigte

only participating in wave 1 reported less overall work engagement (t-test for independent samples: $\Delta M = 0.29$, $t(df=782) = 3.162$, $p = 0.002$). When analyzing male and female participants separately, work engagement significantly differed only in males ($\Delta M = 0.29$, $t(df=598) = 2.701$, $p = 0.007$) but not in females ($\Delta M = 0.20$, $t(df=182) = 1.587$, $p = 0.114$). Regarding marital status, female employees participating in both

waves were less likely to be single, divorced or widowed than female employees only participating in the first wave (33.9% vs. 56.0%, $\chi^2(3) = 11.985$, $p = 0.007$). Regarding all other variables, no significant differences between respondents and drop-outs were observed (results shown in supplemental material 1).

In the first wave 76.53% and in the second wave 74.12% of all participants were

male. The sociodemographic characteristics at baseline of the study samples of waves 1 and 2 are presented in **Table 1**. There were no significant gender differences in age and education; however, female participants more frequently had a lower gross income, worked less hours per week in their current occupation, spent less years in paid employment before 65 years of age and were less often married than men.

Table 1 Sociodemographic characteristics of the study sample from waves 1 and 2 (for both waves, data surveyed at wave 1 is shown)

Variable	Characteristic	Wave 1 (all participants)						Wave 2 (participants excluding drop-outs)						
		All		Male		Female		All		Male		Female		Difference between male and female
		N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	
Age (M, SD)		783	69.2 (3.12)	599	69.3 (3.20)	184	68.8 (2.8)	228	69.0 (3.08)	169	69.3 (3.12)	59	68.4 (2.88)	t(226)=1.942, p=0.053
Marital status (%)	Married	563	71.8	487	81.2	76	41.3	172	75.4	137	81.1	35	59.3	$\chi^2(3)=138.465$, p=0.000
	Relationship, Cohabiting	67	8.6	49	8.2	18	9.8	15	6.6	11	6.5	4	6.8	$\chi^2(3)=15.850$, p=0.001
Highest professional degree (%)	Divorced, Widowed	100	12.8	38	6.3	62	33.7	27	11.8	12	7.1	15	25.4	
	Single	54	6.9	26	4.3	28	15.2	14	6.1	9	5.3	5	8.5	
	Primary education	229	29.2	169	28.2	60	32.6	63	27.6	41	24.3	22	37.3	$\chi^2(3)=5.683$, p=0.128
Gross income in € (%)	High school	125	16.0	95	15.9	30	16.3	39	17.1	32	18.9	7	11.9	
	Apprenticeship	125	15.9	96	16.0	29	15.8	41	18.0	34	20.1	7	11.9	
	Higher education	305	38.9	240	40.0	65	35.4	85	37.3	62	36.7	23	39.0	
Number of working hours per week in the current occupation (M, SD)	<24,000	291	37.1	207	34.5	84	45.7	86	44.3	55	37.9	31	63.3	$\chi^2(4)=12.198$, p=0.016
	24,000–30,000	132	16.8	94	15.7	38	20.7	39	20.1	29	20.0	10	20.4	
	30,001–36,000	104	13.3	92	15.3	12	6.5	32	16.5	28	19.3	4	8.2	
Number of working hours per week in the current occupation (M, SD)	36,001–42,000	58	7.4	53	8.8	5	2.7	16	8.2	14	9.7	2	4.1	
	>42,000	58	7.4	54	9.0	4	2.2	21	10.8	19	13.1	2	4.1	
	n. a.	141	17.9	100	16.7	41	22.3	224	13.63 (11.76)	165	14.56 (12.21)	59	11.00 (10.03)	t(223)=2.066, p=0.040

Working conditions were significantly correlated with occupational well-being (results shown in supplemental material 2). In **Table 2** gender differences at wave 1 are presented for occupational well-being and working conditions. As results were similar for all three sub-engagement scales, only overall engagement is reported. There were no significant differences in job demands and occupational well-being between male and female participants; however, female respondents reported less job control and higher job stress than men. When excluding employees who only participated in the first wave, those gender differences became insignificant (job control: $\Delta M=0.13$, $t(226)=1.271$, $p=0.205$; job strain: $\Delta M=0.15$, $t(226)=1.066$, $p=0.287$).

Changes in occupational well-being and working conditions from wave 1 to wave 2 are presented in **Table 3**. A repeated measures ANOVA was calculated to analyze gender and time effects from wave 1 to wave 2. There was a significant time-gender effect for emotional exhaustion in such a way that emotional exhaustion increased for women but not for men (**Fig. 1**). There were no further significant time-gender effects on the other outcome variables. Furthermore, there were significant main time effects for job control and job strain in such a way that job control increased and job strain decreased over time irrespective of gender (**Figs. 2 and 3**). Under control for variables that have shown significant gender differences (e.g. gross income, hours worked per week in the current occupation, years in paid employment before 65 years of age and marital status), the time-gender effect for emotional exhaustion slightly decreased but was still significant ($F(1,186)=4.065$, $p=0.045$). More working hours were associated with a decrease in emotional exhaustion ($F(1,168)=3.141$, $p=0.078$) thereby explaining in part the time-gender effect. All other covariables were not related to a change in emotional exhaustion (results shown in supplemental material 3).

Table 1 (Continued)

Variable	Characteristic	Wave 1 (all participants)						Wave 2 (participants excluding drop-outs)						
		All		Male		Female		All		Male		Female		Difference between male and female
		N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	N	M/% (SD)	
Number of years in paid employment <65 years of age (M, SD)		777	34.18 (16.07)	595	35.16 (16.58)	182	30.97 (13.84)	225	33.56 (16.53)	166	33.87 (17.79)	59	32.68 (12.42)	t(223) = 0.476, p = 0.634
Number of years at current employer? (M, SD)		635	4.239 (8.00)	491	4.04 (8.05)	144	4.91 (7.81)	182	4.84 (9.11)	139	4.36 (9.06)	43	6.37 (9.21)	t(180) = -1.268, p = 0.206
Type of occupation (%)		9	1.1	9	1.5	0	0	3	1.3	3	1.8	0	0	-
	Agriculture													
	Automation	23	2.9	19	3.2	4	2.2	6	2.6	3	1.8	3	5.1	
	Commercial	65	8.3	56	9.3	9	4.9	15	6.6	12	7.1	3	5.1	
	Retail	31	4.0	25	4.2	6	3.3	10	4.4	9	5.3	1	1.7	
	Facility, catering, security	76	9.7	59	9.8	17	9.2	24	10.5	16	9.5	8	13.6	
	Office, staff	139	17.7	90	15.0	49	26.6	41	18.0	22	13.0	19	32.2	
	Warehouse, production	45	5.7	44	7.3	1	0.5	15	6.6	15	8.9	0	0	
	Medical, welfare, care	48	6.1	26	4.3	22	12.0	12	5.3	8	4.7	4	6.8	
	Education, science	216	27.6	148	24.7	68	37.0	73	32.0	50	29.6	23	39.0	
	Technology	82	10.5	82	13.7	0	0	23	10.1	23	13.6	0	0	
	Transportation, delivery	143	18.2	135	22.5	8	4.3	45	19.7	42	24.9	3	5.1	
	Other	203	25.9	155	25.8	48	26.1	49	21.5	37	21.9	12	20.3	

Bold type indicates statistical significance
t t-test for independent samples, N number of participants, M mean, SD standard deviation

Discussion

This longitudinal study explored gender differences regarding working conditions and occupational well-being in a Dutch sample of bridge workers contracted by a temporary employment agency for workers above 65 years of age. Main findings were that at baseline women reported less job control and higher job strain than men. Regarding job demands, emotional exhaustion and work engagement, no gender differences were found. Over the study period of 1 year job control increased and job strain decreased for men and women. A gender-specific change over time was found for emotional exhaustion such that emotional exhaustion increased for female but not for male employees. No further time and gender effects were found for working conditions and work engagement.

The aforementioned results indicate that gender inequalities regarding working conditions can also appear in PEAR. In accordance with most studies that have concentrated on gender differences in younger study populations [5, 6, 22, 30], this study found that women in PEAR reported less job control than men. This may mainly be explained by vertical segregation, where women have lower hierarchical positions with less decision making than men [5, 6]. In addition, the observed gender differences in gross income, years in paid employment before 65 years of age and marital status in this sample point to financial disadvantages of the female subsample. This may have caused women to increasingly accept jobs with less favorable working conditions further explaining the gender differences in job control and job strain [23]. The results further showed that favorable working conditions in men and women increased over the study period. The majority of study participants in this analysis acquired a new job for employment after retirement. Over the study period employees might therefore have adapted to the new requirements of PEAR, leading to the perception of increased job control. In addition, more job control might have been gained due to increasing experience and job craft-

Table 2 Occupational well-being and working conditions at wave 1

Variable	All (n = 784)	Male (n = 600)	Female (n = 184)	Differences between male and female
	M (SD)	M (SD)	M (SD)	t(df = 782) (p)
Emotional exhaustion	1.48 (0.53)	1.48 (0.53)	1.49 (0.55)	-0.242 (0.809)
Engagement	4.98 (1.20)	4.96 (1.21)	5.04 (1.19)	-0.808 (0.419)
Job demands	2.38 (0.47)	2.36 (0.47)	2.42 (0.49)	-1.473 (0.141)
Job control	2.91 (0.66)	2.94 (0.65)	2.82 (0.67)	2.275 (0.023)
Job strain	0.87 (0.32)	0.85 (0.30)	0.93 (0.39)	-2.909 (0.004)

Bold type indicates statistical significance

Scale range for emotional exhaustion and engagement from 1 = low to 7 = high, scale range for job demands and job control from 1 = low to 4 = high, job strain = Job demands/job control

t t-test for independent samples, n number of participants, M mean, SD standard deviation

Table 3 Change in occupational well-being and working conditions from wave 1 to wave 2

Variable	Time point	All (n = 228)	Male (n = 169)	Female (n = 59)	Effect of time and sex on study variables (repeated measures ANOVA)	
		M (SD)	M (SD)	M (SD)	Effect	F(df = 1,226) (p)
Emotional exhaustion	T1	1.44 (0.52)	1.44 (0.49)	1.44 (0.59)	Time	0.698 (0.404)
	T2	1.43 (0.52)	1.39 (0.47)	1.54 (0.63)	Gender	1.036 (0.310)
	T1-T2	0.01 (0.44)	0.05 (0.46)	-0.10 (0.36)	Time*Gender	4.943 (0.027)
Engagement	T1	5.19 (1.18)	5.17 (1.20)	5.25 (1.13)	Time	0.082 (0.775)
	T2	5.17 (1.09)	5.12 (1.10)	5.34 (1.04)	Gender	0.860 (0.355)
	T1-T2	0.02 (0.84)	0.06 (0.89)	-0.09 (0.68)	Time*Gender	1.454 (0.229)
Job demands	T1	2.35 (0.46)	2.34 (0.45)	2.39 (0.50)	Time	2.389 (0.124)
	T2	2.28 (0.45)	2.26 (0.45)	2.34 (0.46)	Gender	1.231 (0.268)
	T1-T2	0.06 (0.49)	0.07 (0.49)	0.04 (0.49)	Time*Gender	0.164 (0.686)
Job control	T1	2.89 (0.68)	2.92 (0.70)	2.79 (0.60)	Time	5.914 (0.016)
	T2	2.98 (0.67)	2.98 (0.65)	2.96 (0.73)	Gender	0.710 (0.400)
	T1-T2	-0.09 (0.63)	-0.06 (0.64)	-0.17 (0.59)	Time*Gender	1.305 (0.254)
Job strain	T1	0.86 (0.30)	0.85 (0.29)	0.90 (0.34)	Time	7.361 (0.007)
	T2	0.81 (0.25)	0.80 (0.26)	0.83 (0.20)	Gender	1.021 (0.313)
	T1-T2	0.06 (0.30)	0.05 (0.30)	0.07 (0.29)	Time*Gender	0.348 (0.556)

Analyses are not controlled for any covariables; scale range for emotional exhaustion and engagement from 1 = low to 7 = high, scale range for job demands and job control from 1 = low to 4 = high, job strain = job demands/job control

Bold type indicates statistical significance

n number of participants, M mean, SD standard deviation, T1 wave 1, T2 wave 2

ing [32]. Nevertheless, a selection bias cannot be excluded due to the high loss to follow-up rate, e.g. employees, whose working conditions worsened, may have quit their jobs and were missed in the analysis.

Gender differences regarding occupational well-being were relatively weak and insignificant except for a higher increase

of emotional exhaustion for women compared to men. This is in line with previous research on younger study populations, which only found small gender effects for emotional exhaustion in European countries and no gender effects for work engagement in the Netherlands [25, 29]; however, the larger increase of emotional exhaustion in women may have

been caused due to horizontal segregation, thus women working more often in service and person-related types of occupations and men working more often in industrial types of occupations [6]. This assumption is underlined by the fact that higher proportions of female participants were working in the medical, welfare, care, education and science sectors compared to higher proportions of male participants working in technology, transportation and delivery. Working in service and person-related types of occupations is often accompanied by higher emotional job demands. Considering that employees are likely to evaluate their work more positively during the start of a new job (also called honeymoon effects), higher emotional demands may have led to lagged effects on emotional exhaustion in women [19]. An increase in emotional exhaustion over time may have negative consequences for health and might decrease the likelihood to remain in the labor market [11, 20]. The study results indicate that especially female employees are likely to experience those consequences.

The study has several strengths: to the best of our knowledge this is one of the first studies that examined gender differences in respect to working conditions and well-being in PEAR. With that it provides first evidence that well-known work-related social inequalities due to gender differences can also be found in PEAR. Moreover, the study used a longitudinal design with a well-defined sample covering a wide variety of occupations, which allows conclusions about lagged effects and changes of working conditions and well-being in PEAR. A study period of 1 year has also been shown to be sufficient to detect significant changes in emotional exhaustion and engagement over time by previous research [19]. Nevertheless, when interpreting the findings several limitations have to be considered, such as sampling strategy, representativeness and high loss to follow-up. First, due to convenience sampling, the external validity of this study is limited; however, the study sample did not significantly differ in age and gender distribution to sample characteristics of similar Dutch studies with older employees in PEAR [12].

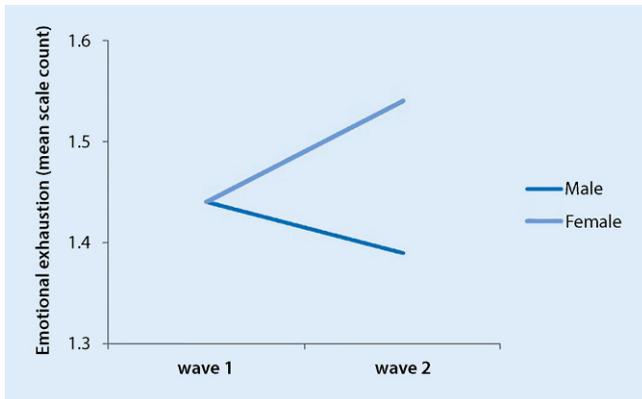


Fig. 1 ▲ Graph showing change in emotional exhaustion from wave 1 to wave 2

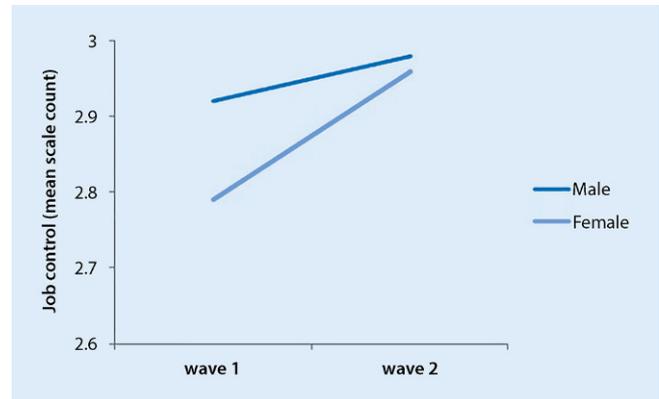


Fig. 2 ▲ Graph showing change in job control from wave 1 to wave 2

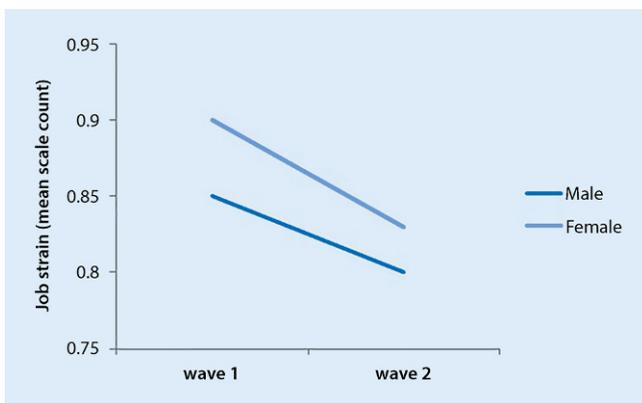


Fig. 3 ◀ Graph showing change in job strain from wave 1 to wave 2

Moreover, an employment relationship as in this sample is the most common form of work after retirement in the Netherlands [4]. This indicates that the study was able to cover the Dutch situation of older persons in PEAR. Nevertheless, a replication of the findings with a representative sample is desirable. Moreover, as gender equality, labor markets, pension and retirement legislation differ between countries straightforward conclusions regarding the situation outside the Netherlands cannot be drawn [3, 30]. Second, as with other longitudinal studies this study suffers from low response and high loss to follow-up rates, which may limit internal validity particularly regarding the observed gender differences. In older age groups, reduced Internet access, use and willingness to participate in online surveys can be underlying causes for low response rates; however, results on gender and education-specific response rates to online surveys are inconclusive [7, 31]. Furthermore,

similar age and gender distributions of the study sample compared to the total workforce of the temporary employment agency point to a low non-response bias due to those variables [23]. In addition, the drop-out analyses revealed that except for work engagement in men and marital status in women, there were no differences at baseline between employees who participated in both waves and those who participated only in the first wave. Considering that work engagement was lower in male drop-outs and that work engagement and emotional exhaustion are negatively correlated, it could be assumed that male drop-outs also experienced increased emotional exhaustion during the second wave. This may in part explain the finding of the different development of emotional exhaustion in men and women; however, a significant difference in emotional exhaustion between male employees who participated in both waves and those who participated in the first wave could not be found. Fur-

thermore, the significant results in men may be explained by higher sample sizes, as the absolute difference between drop-outs and respondents remained similar for men and women. When only analyzing employees who participated in both waves, gender differences in work engagement at baseline remained insignificant. It is therefore assumed that the low response and high loss to follow-up rates only pose low risks of serious selection bias but may have reduced the power to detect significant time and gender effects. In addition, the observed gender inequalities in working conditions and occupational well-being are similar to previous research results on younger working populations [6, 25, 29]. Third, it has to be considered that working conditions per se can predict the uptake of PEAR [3]. In line with previous research, high job control might have been one predictor for working after retirement in men but not in women. This fact may constitute one cause for the observed gender difference in job control [18]. Furthermore, the descriptive results point to differences in types of occupations between male and female participants but it was not possible to control for occupational groups due to the high number of different occupations. Nevertheless, no substantial differences in the study results were revealed when controlled for highest professional degree and income from which occupational socioeconomic status is derived [9]. Fourth, the reliability of the job demand scale was poor, which also limits the reliability of the job strain quo-

tient. As outlined earlier, this has also been observed in previous research suggesting that measurement errors could have occurred [16, 23]. Future research might apply different measures for job demands that have a proven better reliability and cover age-relevant demands as well [23].

In addition, and although a longitudinal design was used, previous research indicated that working conditions seemed to remain relatively stable [1]. Therefore, longitudinal research with longer and additional follow-ups is advisable but may be difficult to conduct as employees in PEAR may be more likely to quit employment during longer follow-ups.

Conclusion

The results of the study call for more research concerning determinants for gender inequalities regarding working conditions and occupational well-being during PEAR. Possible explanations include horizontal and vertical segregation as well as financial disadvantages that push women to accept jobs with precarious working conditions. Understanding such determinants in higher age may inform researchers, employers and policy makers about possibilities to counteract gender inequalities and to enhance well-being at work and eventually to increase the motivation of older employees to remain in PEAR.

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Compliance with ethical guidelines

Conflict of interest. J. Weber, A. de Lange and A. Müller declare that they have no competing interests.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1975 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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