Original article. Scand J Work Environ Health. 2018;44(2):183–191. doi:10.5271/sjweh.3694

Do resources buffer the prospective association of psychosocial work stress with depression? Longitudinal evidence from ageing workers [1]

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1. *Supplementary tables*
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Supplementary table S1. Items used to measure effort-reward imbalance, job strain, constraints, mastery and social support

Variable	Items
Effort Reward Imbalance	
Effort[a]	My job is physically demanding.
	I am under constant time pressure due to a heavy workload.
Reward[a]	I receive adequate support in difficult situations.
	I receive the recognition I deserve for my work.
	My salary is adequate.
	My job promotion prospects are poor.
	My job security is poor.
Job Strain	
Demands[a]	I am under constant time pressure due to a heavy workload.
	Considering the things I have to do at work, I have to work very fast.
	In my work I am free from conflicting demands that others make.
Control[a]	I have very little freedom to decide how I do my work.
	At work, I feel I have control over what happens in most situations.
	I have the opportunity to develop new skills.
Internal Resources	
Constraints[b]	I often feel helpless in dealing with the problems of life.
	Other people determine most of what I can and cannot do.
	What happens in my life is often beyond my control.
	I have little control over the things that happen to me.
	There is really no way I can solve the problems I have.
Mastery[b]	I can do just about anything I really set my mind to.
	When I really want to do something, I usually find a way to succeed at it.
	Whether or not I am able to get what I want is in my own hands.
	What happens to me in the future mostly depends on me.
	I can do the things that I want to do.
External Resources	
Social Support[c] (partner/spouse, children, family, friends)	How much do they really understand the way you feel about things?
	How much can you rely on them if you have a serious problem?
	How much can you open up to them if you need to talk about your worries?

Response categories: [a]Strongly disagree, Disagree, Agree, Strongly Agree [b]Strongly disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, Strongly agree [c]A lot, Some, A little, Not at all

Supplementary table S2a. Modification of the prospective association of psychosocial work stressors with depressive symptoms by social support (children) (RR = relative risks, Obs=Observations; 5473 Observations from 5 waves with n= 4575). Results based on log-binomial regression models.

	High support Obs with/without outcome	(% with outcome)	RR	(95% CI)	**Low support** Obs with/without outcome	(%with outcome)	RR	(95% CI)
No ERI	59/1395	(4.1%)	1		111/2338	(4.5%)	1.22 P=0.221	(0.89–1.66)
ERI	36/441	(7.6%)	1.83 P=0.003	(1.23–2.73)	113/980	(10.3%)	2.66 P<0.001	(1.96–3.61)
RRs (95% CI) for ERI within strata of support			1.83 P=0.003	(1.23–2.73)			2.19 P<0.001	(1.70–2.81)
Measure of effect modification on additive scale: RERI (95% CI) = 0.61 (-0.16–1.38) P=0.12 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 1.19 (0.75–1.92) P=0.46								
No job strain	61/1443	(4.1%)	1		134/2487	(5.1%)	1.35 P=0.047	(1.00–1.82)
Job strain	34/393	(8.0%)	1.82 P=0.004	(1.21–2.74)	90/831	(9.8%)	2.44 P<0.001	(1.78–3.34)
RRs (95% CI) for job strain within strata of support			1.82 P=0.004	(1.21–2.74)			1.81 P<0.001	(1.40–2.33)
Measure of effect modification on additive scale: RERI (95% CI) = 0.27 (0.54–1.07) P=0.51 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.99 (0.62–1.60) P=0.97								

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age and education.

Supplementary table S2b. Modification of the prospective association of psychosocial work stressors with depressive symptoms by social support (family) (RR = relative risks, Obs=Observations; 5473 Observations from 5 waves with n= 4575). Results based on log-binomial regression models.

	High support Obs with/without outcome	(% with outcome)	RR	(95% CI)	**Low support** Obs with/without outcome	(% with outcome)	RR	(95% CI)
No ERI	65/1546	(4.0%)	1		105/2187	(4.6%)	1.21 P=0.233	(0.89–1.65)
ERI	48/492	(8.9%)	2.21 P<0.001	(1.55–3.15)	101/929	(9.8%)	2.45 P<0.001	(1.81–3.32)
RRs (95% CI) for ERI within strata of support			2.21 P<0.001	(1.55–3.15)			2.03 P<0.001	(1.55–2.64)
Measure of effect modification on additive scale: RERI (95% CI) = 0.03 (-0.78–0.85) P=0.94 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.92 (0.59–1.43) P=0.71								
No job strain	71/1598	(4.3%)	1		124/2332	(5.1%)	1.24 P=0.141	(0.93–1.66)
Job strain	42/440	(8.7%)	1.94 P<0.001	(1.35–2.82)	82/784	(9.5%)	2.17 P<0.001	(1.60–2.95)
RRs (95% CI) for job strain within strata of support			1.94 P<0.001	(1.35–2.82)			1.75 P<0.001	(1.34–2.28)
Measure of effect modification on additive scale: RERI (95% CI) = -0.02 (-0.80–0.76) P=0.96 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.90 (0.57–1.41) P=0.64								

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age and education.

Supplementary table S2c. Modification of the prospective association of psychosocial work stressors with depressive symptoms by social support (spouse) (RR = relative risks, Obs=Observations; 5473 Observations from 5 waves with n= 4575). Results based on log-binomial regression models.

	High support				**Low support**			
	Obs with/without outcome	(% with outcome)	RR	(95% CI)	Obs with/without outcome	(% with outcome)	RR	(95% CI)
No ERI	36/1290	(2.7%)	1		134/2443	(5.2%)	1.78 P=0.002	(1.23–2.57)
ERI	23/366	(5.9%)	2.17 P=0.003	(1.31–3.59)	126/1055	(10.7%)	3.53 P<0.001	(2.45–5.09)
RRs (95% CI) for ERI within strata of support			2.17 P=0.002	(1.31–3.59)			1.99 P<0.001	(1.57–2.51)
Measure of effect modification on additive scale: RERI (95% CI) = 0.58 (-0.51–1.68) P=0.29 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.92 (0.52–1.60) P=0.76								
No job strain	39/1327	(2.9%)	1		156/2603	(5.7%)	1.84 P<0.001	(1.30–2.61)
Job strain	20/329	(5.7%)	1.90 P=0.017	(1.12–3.21)	104/895	(10.4%)	3.23 P<0.001	(2.23–4.67)
RRs (95% CI) for job strain within strata of support			1.90 P=0.017	(1.12–3.21)			1.75 P<0.001	(1.38–2.23)
Measure of effect modification on additive scale: RERI (95% CI) = -0.49 (-0.57–1.54) P=0.37 Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.92 (0.52–1.64) P=0.79								

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age and education.

Supplementary table S3a. Modification of the prospective association of psychosocial work stressors with depressive symptoms by mastery (RR=relative risks, Obs=Observations; 5454 Observations from 5 waves with n= 4561). Results based on log-binomial regression models.

	High mastery		**Low mastery**	
	Obs. with/without outcome (% with outcome)	RR (95% CI)	Obs. with/without outcome (% with outcome)	RR (95% CI)
No ERI	73/2096 (3.4%)	1	97/1625 (5.6%)	1.55 (1.16–2.07) P=0.003
ERI	45/615 (6.8%)	1.64 (1.14–2.37) P=0.008	103/800 (11.4%)	2.48 (1.87–3.28) P<0.001
RRs (95% CI) for ERI within strata of mastery		1.64 (1.14–2.37) P<0.008		1.59 (1.23–2.06) P<0.001
Measure of effect modification on additive scale: RERI (95% CI) = 0.28 (-0.44–0.99) P=0.45				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.97 (0.62–1.51) P=0.89				
No job strain	80/2090 (3.7%)	1	100/1615 (5.8%)	1.46 (1.11–1.94) P=0.007
Job strain	38/621 (5.8%)	1.30 (0.88–1.91) P=0.186	100/810 (11.0%)	2.20 (1.68–2.90) P<0.001
RRs (95% CI) for job strain within strata of mastery		1.30 (0.88–1.91) P=0.186		1.51 (1.16–1.96) P=0.002
Measure of effect modification on additive scale: RERI (95% CI) = 0.44 (-0.21–1.09) P=0.18				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 1.16 (0.73–1.85) P=0.53				

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age, education and depressive symptoms at baseline.

Supplementary table S3b. Modification of the prospective association of psychosocial work stressors with depressive symptoms by constraints (RR = relative risks, Obs=Observations; 5454 Observations from 5 waves with n= 4561). Results based on log-binomial regression models.

	Low constraints		**High constraints**	
	Obs with/without outcome (% with outcome)	RR (95% CI)	Obs with/without outcome (% with outcome)	RR (95% CI)
No ERI	93/2733 (3.3%)	1	77/988 (7.2%)	1.65(1.24–2.21) P<0.001
ERI	56/787 (6.6%)	1.64(1.19–2.25) P=0.002	92/628 (12.8%)	2.55(1.93–3.39) P<0.001
RRs (95% CI) for ERI within strata of constraints		1.64(1.19–2.25) P<0.002		1.54(1.17–2.04) P<0.002
Measure of effect modification on additive scale: RERI (95% CI) = 0.26 (-0.47–0.98) P=0.49				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.94 (0.62–1.43) P=0.77				
No job strain	96/2692 (3.4%)	1	84/1013 (7.7%)	1.65 (1.24–2.20) P<0.001
Job strain	53/828 (6.0%)	1.43 (1.03–1.98) P=0.032	85/603 (12.4%)	2.35 (1.77–3.11) P<0.001
RRs (95% CI) for job strain within strata of constraints		1.43 (1.03–1.98) P=0.032		1.42 (1.07–1.88) P=0.015
Measure of effect modification on additive scale: RERI (95% CI) = 0.27 (-0.42–0.95) P=0.45				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.99 (0.65–1.52) P=0.98				

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age, education and depressive symptoms at baseline.

Supplementary table S3c. Modification of the prospective association of psychosocial work stressors with depressive symptoms by social support (friends) (RR = relative risks, Obs=Observations; 5454 Observations from 5 waves with n= 4561). Results based on poisson regression models.

	High social support		**Low social support**	
	Obs with/without outcome (% with outcome)	RR (95% CI)	Obs with/without outcome (% with outcome)	RR (95% CI)
No ERI	69/1704 (3.9%)	1	101/2017 (4.8%)	1.32 (0.98–1.76) P=0.066
ERI	41/546 (7.0%)	1.42 (0.98–2.04) P=0.063	107/869 (11.0%)	2.44 (1.82–3.26) P<0.001
RRs (95% CI) for ERI within strata of social support		1.42 (0.98–2.04) P=0.063		1.85 (1.43–2.40) P<0.001
Measure of effect modification on additive scale: RERI (95% CI) = 0.70 (0.05–1.36) P=0.04				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 1.31 (0.84–2.05) P=0.24				
No job strain	68/1692 (3.9%)	1	112/2013 (5.3%)	1.49 (1.12–2.00) P=0.006
Job Strain	42/558 (7.0%)	1.54 (1.06–2.23) P=0.024	96/873 (9.9%)	2.20 (1.64–2.97) P<0.001
RRs (95% CI) for job strain within strata of social support		1.54 (1.06–2.23) P=0.024		1.47 (1.14–1.91) P=0.004
Measure of effect modification on additive scale: RERI (95% CI) = 0.17 (-0.52–0.86) P=0.63				
Measure of effect modification on multiplicative scale: ratio of RRs (95% CI) = 0.96 (0.61–1.50) P=0.85				

Note. Results are based on two separate analyses: the first one assessed effect modification on the additive scale and the second on a multiplicative scale. Cluster-robust standard errors were used to take the clustering of observations within individuals into account.
RRs are adjusted for gender, age, education and depressive symptoms at baseline.

Supplementary table S4. Correlation matrix for work stressors and resources

	Effort	Reward	Demands	Control	Constraints	Mastery	SocialSupport (Spouse)	SocialSupport (Children)	SocialSupport (Family)	SocialSupport (Friends)
Effort	1.0									
Reward	-0.2796	1.0								
Demands	0.6681	-0.3434	1.0							
Control	-0.3066	0.6262	-0.3587	1.0						
Constraints	-0.0762	0.2072	-0.0959	0.2097	1.0					
Mastery	0.1936	-0.2741	0.1744	-0.2804	-0.2383	1.0				
SocSup(Spouse)	-0.0973	0.1811	-0.0766	0.1825	-0.1706	-0.3325	1.0			
SocSup(Children)	-0.1023	0.1653	-0.1096	0.1369	-0.1281	0.1534	0.1878	1.0		
SocSup(Family)	-0.0508	0.1375	-0.0643	0.0941	-0.1344	0.1367	0.1343	0.3794	1.0	
SocSup(Friends)	-0.0996	0.1451	-0.0864	0.1442	-0.2383	0.1017	0.0877	0.2750	0.2884	1.0