

Work organization and mental health problems in PhD students

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Why care mental health in PhDs?

- Output from PhDs
 - Scientific papers
 - Preparation for academic career
- Soft cost due to mental illness
 - Bad effect for research team
 - Determining 'hard' outcome
- Quitting before graduating
 - 30%-50% dropout threatens the quality to academic industry
 - Losing economic competition by lacking of trained researchers

Mental problems in PhDs compared to other high educated people

RR = $\frac{PhD\%}{other\%}$, General Health questionnaire (GHQ)
 2+: psychological distress; 4+: psychiatric disorder

Table 4

Prevalence of common mental health problems in PhD students compared to three comparison groups, Flanders, 2013: %, risk ratio adjusted for age and gender (RR), 95% confidence interval (CI).

Source Year of survey	PhD students	Comparison group 1: Highly educated general population			Comparison group 2: Highly educated employees			Comparison group 3: Higher education students		
	SJR 2013 N = 3659	HIS 2013 N = 769 ^a			HIS 2013 N = 592			HIS 2001, 2004, 2008, 2013 N = 333 ^b		
	%	%	RR	CI	%	RR	CI	%	RR	CI
<u>Felt under constant strain</u>	<u>40.81</u>	27.47	1.38	(1.18–1.62)	26.69	1.43	(1.20–1.70)	30.21	1.16	(0.96–1.42)
Unhappy and depressed	30.30	13.60	2.09	(1.65–2.65)	12.31	2.22	(1.70–2.91)	18.48	1.42	(1.09–1.84)
Lost sleep over worry	28.33	18.13	1.62	(1.32–2.01)	17.16	1.70	(1.35–2.15)	18.13	1.35	(1.03–1.76)
Could not overcome difficulties	26.11	12.00	2.36	(1.82–3.06)	10.57	2.71	(2.01–3.64)	12.69	1.85	(1.35–2.54)
Not enjoying day-to-day activities	25.41	13.07	2.21	(1.74–2.82)	12.31	2.39	(1.82–3.13)	10.88	1.68	(1.19–2.38)
Lost confidence in self	24.35	7.95	3.48	(2.52–4.79)	7.56	3.54	(2.47–5.06)	10.24	2.04	(1.43–2.91)
Not playing a useful role	22.46	9.20	2.33	(1.73–3.15)	8.15	2.54	(1.80–3.59)	10.88	1.78	(1.26–2.53)
Could not concentrate	21.74	10.67	1.94	(1.48–2.54)	9.01	2.14	(1.56–2.92)	10.57	1.53	(1.07–2.20)
Not feeling happy, all things considered	21.15	11.11	2.15	(1.64–2.81)	9.43	2.41	(1.77–3.29)	11.45	1.49	(1.05–2.10)
Felt worthless	16.17	5.30	3.40	(2.29–5.07)	4.30	4.11	(2.57–6.59)	4.22	3.16	(1.82–5.48)
Could not make decisions	14.95	6.00	2.74	(1.87–4.02)	5.03	2.97	(1.91–4.62)	6.04	2.16	(1.35–3.48)
Could not face problems	13.36	4.27	3.69	(2.39–5.68)	3.81	3.82	(2.34–6.24)	4.24	2.42	(1.38–4.25)
<u>GHQ2+</u>	<u>51.11</u>	26.80	1.90	(1.62–2.22)	24.96	2.02	(1.69–2.41)	30.61	1.53	(1.27–1.84)
GHQ3+	39.53	18.40	2.26	(1.85–2.75)	16.12	2.56	(2.03–3.22)	22.21	1.63	(1.29–2.06)
GHQ4+	31.84	14.00	2.43	(1.92–3.08)	11.79	2.84	(2.15–3.74)	14.55	1.85	(1.38–2.49)

^a Including 14 PhDs.

^b Including 1 PhD student.

OR: odds ratio between work and mental health.

RW: relative weight

	OR	95% CI	Sign	RW	% RW
Constant	0.089		***	-	-
-					
Work context					
Job demands	1.896	(1.495-2.406)	***	0.0353	25.8
Job control	0.784	(0.627-0.981)	*	0.0079	5.8
Scientific discipline			n.s.	n.s.	-
Sciences (ref)	-	-	-	-	-
Biomedical sciences	0.812	(0.638-1.032)	n.s.	n.s.	-
Applied sciences	1.104	(0.851-1.433)	n.s.	n.s.	-
Humanities	0.994	(0.724-1.364)	n.s.	n.s.	-
Social sciences	0.889	(0.700-1.154)	n.s.	n.s.	-
Type of appointment			n.s.	n.s.	-
Assistant lectureship (ref)	-	-	-	-	-
Scholarship	1.256	(0.992-1.591)	n.s.	n.s.	-
Research project	1.321	(1.032-1.693)	*	0.0010	0.7
No funding by university	1.133	(0.816-1.572)	n.s.	n.s.	-
Other	1.334	(0.929-1.945)	n.s.	n.s.	-
Don't know	1.644	(1.064-2.540)	*	0.0007	0.5
PhD phase			*	0.0024	1.8
Initiating (ref)	-	-	-	-	-
Executing	0.739	(0.602-0.907)	**	0.0024	1.8
Finishing	0.805	(0.621-1.043)	n.s.	n.s.	-
Leadership style: inspirational	0.868	(0.798-0.943)	***	0.0103	7.5
Leadership style: autocratic	0.968	(0.896-1.046)	n.s.	n.s.	-
Leadership style: laissez-faire	1.084	(1.015-1.158)	*	0.0039	2.9
High interest in an academic career	0.824	(0.699-0.972)	*	0.0022	1.6
Perception of high chance of an academic career	1.064	(0.903-1.254)	n.s.	n.s.	-
Positive perception of career outside academia	0.849	(0.765-0.943)	**	0.0067	4.9
Organizational context					
Team conflict	1.057	(0.936-1.194)	n.s.	n.s.	-
Closed team decision making	1.100	(0.995-1.216)	n.s.	n.s.	-
Family-work conflict	1.206	(1.083-1.344)	***	0.0139	10.2
Work-family conflict	1.521	(1.363-1.697)	***	0.0467	34.1
Sociodemographics					
Female	1.336	(1.130-1.579)	***	0.0036	2.6
Age	0.994	(0.971-1.017)	n.s.	n.s.	-
Partner	0.779	(0.651-0.932)	**	0.0022	1.6
Children	0.824	(0.626-1.084)	n.s.	n.s.	-

- Causes for mental health problems of PhDs:
1. work-family conflict
 2. job demand (physical, social, organizational aspects of job that require sustained physical or mental effort.)
 3. family-work conflict