High Educ
https://doi.org/10.1007/s10734-018-0247-0

Workaholism and work–family conflict among university academics

Steffen Torp[1] · **Linda Lysfjord**[1] · **Hilde Hovda Midje**[1]

Abstract Because of governance and management changes in universities in recent decades, the working environment of university academics has changed. The objectives of this cross-sectional study were to investigate whether university academics are more workaholic and report more work–family conflicts than other university personnel and to provide empirical knowledge about the antecedents and outcomes of workaholism and work–family conflict among university academics. A questionnaire was used to collect data on job demands, job resources, workaholism and work–family conflict from 2186 university academics and 2551 technical and administrative personnel at 3 universities in Norway. The results show that academic personnel experienced more workaholism and work–family conflict than non-academic personnel. High job demands, especially high role overload, affected both workaholism and work–family conflict. Job resources had a marginal effect on both workaholism and work–family conflict. Workaholism was positively associated with work–family conflict and partly mediated the relationship between role overload and work–family conflict. It is not clear how job demands and workaholism interact with work–family conflict. Nevertheless, paying attention to the risks of workaholism and preventing it at all levels are important, since workaholism is associated with work–family conflict, which may adversely affect the health of the individual, the family and the workplace.

Keywords Workaholism · Job-family conflict · Engagement · Researchers · Health promotion

Introduction

As participants in working life, employees are offered experiences of coping, sense of community, appreciation and self-realization. Together with family life and domesticity, the

✉ Steffen Torp
steffen.torp@usn.no

[1] Department of Health, Social and Welfare Studies, University College of Southeast Norway, PO Box 4, N-3199 Borre, Norway

Published online: 10 March 2018

workplace is one of the most central settings for adults. Optimizing these two settings is important for optimizing the well-being of individuals and families.

Engagement and desire to work hard are valued assets in working life. However, for some people, work becomes an obsession and a compulsion. Such workers are often called workaholics (Andreassen 2013; Ng et al. 2007; Schaufeli et al. 2008, 2009). Workaholism has not been clearly defined, but most agree that it includes cognitive and behavioral dimensions. The cognitive dimension refers to being obsessed with work in the sense that the worker is motivated to work by a compulsive internal drive the worker cannot resist. The behavioral dimension is represented by putting much time and effort into work, far beyond what is expected to meet organizational or financial requirements (Clark et al. 2014; Schaufeli et al. 2008; Taris et al. 2010, 2014). Further, the worker maintains this excessive work although it results in several negative effects for the worker. Schaufeli et al. (2009a) hold that working compulsively is a more important characteristic for workaholics than is working excessively. Nevertheless, they emphasize that the combination of the two is central in workaholism. Workaholics and engaged workers both work excessively, but differ because the workaholics are driven by obsession, whereas engaged workers are driven by joy. Because of the lack of consistency in defining workaholism, little is known about its prevalence (Andreassen 2013). Estimates vary from 5% (Machlowitz 1980) to 25% (Robinson 2007) of the working population. In Norway, Andreassen et al. (2014) have estimated a prevalence of 8% using the Bergen Work Addiction Scale. Some workers claim to be happy with being obsessed by work, but in general, workaholism is associated with several negative outcomes such as low job satisfaction, stress, burnout and low mental and physical health (Clark et al. 2014; Midje et al. 2014; Schaufeli et al. 2009).

According to Kahn et al. (1964), work–family conflict is a form of conflict between roles in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participating in the work role makes participating in the family role more difficult and vice versa. Work–family conflict is related to individual depression, burnout, stress and physical health problems and affects job performance and satisfaction (Allen et al. 2000). Further, such conflict contributes to dysfunctional family relations (Matthiesen 2006) and negatively affects the health and well-being of family members (Bakker et al. 2008). Thus, work–family conflict has negative consequences for individuals, families and workplaces.

Although at different rates and intensities, European universities have experienced radical changes driven by demography and rising expectations of educational advancement since the early 1990s (Shattock 2008). The number of students has increased in all European countries, but the funding proportional to this increase has not been allocated. In addition, the universities that historically have been mainly funded by state authorities have been urged to generate a growing percentage of their funding from non-state sources and thereby connect more with society and the regeneration of local and regional economies (Askling 2001; Shattock 2008). The devolution of state authority and reduction of state regulations combined with dependence on external markets is expected to result in more adaptive, proactive and innovative universities (Clark 2003). These changes and expectations have resulted in organizational and cultural changes characterized by concentration of executive power at the institutional level, increased bureaucratization and "new public management" at the expense of the individual autonomy of faculty members and academic freedom (Dahl 1998; Gustavsson 2000; Shattock 2013). The boundaries between academics and other professions seem to have become more ambiguous, and studies investigating the working environment at universities in this period of organizational changes have shown that the academics report extended working hours and

teaching periods combined with increased pressure to publish research results and an expectation that they be more entrepreneurial than before (Egeland and Bergene 2012; Kinman 2001; Kyvik 2013; Teichler et al. 2013; Winefield et al. 2008). It has been claimed that working overtime is necessary to meet the expectations for scientific publications and is thereby required for pursuing an academic career (Egeland and Bergene 2012). In addition, university academics report high workload, increased stress and low job security (Egeland and Bergene 2012; Gillespie et al. 2001).

An organizational climate that both promotes and rewards workaholic behavior seems to enhance the chances of producing workaholics (Johnstone and Johnston 2005). Based on descriptions of the changes in the university sector in recent decades and the consequences these changes have had on the organizational culture and working environment (Shattock 2013), universities seem to have many conditions associated with both workaholic behavior, work–family conflict and poor mental health (Clark et al. 2014; Michel et al. 2011; Samad et al. 2015; Winefield et al. 2014). Thus, workaholism and work–family conflict seem likely to be overrepresented among university academics. To our knowledge, little research has been performed on the relationships between working environment, workaholism and work–family conflict among this group of workers.

This study's theoretical basis is the job demands–resources model (Bakker and Demerouti 2007; Hakanen and Roodt 2010; Molino et al. 2016). The model claims that health and disease develop through two separate, but related, processes. The disease process is mainly driven by high job demands (such as the pace of work, emotional demands and role conflicts) and mediated by burnout. The motivational process is mainly driven by job resources (such as social support, autonomy and challenging work tasks) and mediated by work engagement. There are reasons to believe that workaholism is part of the disease process rather than the motivational process (see hypotheses 2 and 3 below).

The aim of this study was to investigate relationships between working environment factors, workaholism and work–family conflict among academics working in universities. We had three hypotheses.

1. Academics are more workaholic and will report more work–family conflicts than other university personnel.
2. Workaholism and work–family conflict among academics are primarily driven by the demands of the job.
3. Workaholism mediates the effects of work factors on work–family conflict among academics.

Methods

Material

We collected data by using an electronic questionnaire in 2014 among employees at the Norwegian University of Science and Technology, the University of Tromsø and some units of the University of Oslo. A total of 4490 university teachers and/or researchers (university academics) and 3974 technical and administrative personnel were invited; 2574 university academics (57%) and 3070 technical and administrative personnel (77%) returned the questionnaire. We excluded employees working part time and employees in leadership positions, and 2186 university academics and 2551 technical and administrative personnel were thereby included in this study ($n = 4737$).

Among the academics, 39% were women; 4% were younger than 30 years old, 25% 30–39 years, 29% 40–49 years, 24% 50–59 years and 19% 60 years or older; and 27% had been employed at the current university unit less than 5 years, 21% 5–9 years and 52% 10 years or more. Among the technical and administrative personnel, 57% were women, 8% were younger than 30 years old, 25% 30–39 years, 31% 40–49 years, 25% 50–59 years and 12% 60 years or older; and 32% had been employed at the current university unit less than 5 years, 23% 5–9 years and 45% 10 years or more.

Measures

Data were collected by using the KIWEST II (Knowledge Intensive Work Environment Study), a questionnaire developed specifically for use in the university sector (Undebakke et al. 2015). KIWEST II is an improved version of KIWEST I, which has shown satisfactory validity and reliability (Innstrand et al. 2015). The instrument includes indexes developed from well-known and standardized European and Nordic indexes.

We measured workaholism by using the Dutch Workaholism Scale (DUWAS; Schaufeli et al. 2009), comprising the two subscales "working excessively" and "working compulsively". We used them as a composite measure, as recommended by Schaufeli et al. (2009a). DUWAS has a four-point response scale: (almost) never; sometimes; often; (almost) always.

Work–family conflict was measured by using an instrument developed by Wayne et al. (2004). The instrument measures two directions of influence; family-to-work and work-to-family, and two valences; negative/conflict and positive/facilitation. Since we were interested in how work may negatively influence the university academics' family life, we used the four-item measure called "work–family conflict".

Except for the workaholism measure, all the questions in KIWEST II (including work–family conflict) have a five-point response scale including "strongly disagree", "disagree", "neither disagree nor agree", "agree" and "strongly agree". We recoded the questions so that a high score indicates a high level of the phenomenon in question. Table 1 includes all questions and indexes. In addition, we included a question on how many hours the employees worked per week over and beyond the agreed working hours.

Statistics

All multiple item variables were constructed by summing the scores and dividing the sum by the number of items included. The Cronbach's α of the indexes ranged from 0.75 (role conflict) to 0.96 (trust in the next administrative level; Table 1), indicating satisfactory internal reliability for all indexes (Nunnally and Bernstein 1994).

We performed descriptive analysis (Table 1), independent-sample t test, bivariate Pearson correlations (Table 2) and multivariate ordinary least square regression analysis (Tables 3 and 4). Except for the tests comparing academics and technical and administrative personnel, all the analysis includes only the academics. In addition to investigating mediation effects by using regression analysis in accordance with Baron and Kenny (1986), we analyzed mediation effects with the macro called PROCESS for SPSS provided by Hayes (Hayes 2016; Preacher and Hayes 2004) using a bootstrapping technique (5000 bootstrap samples), which enables the statistical significance of the mediation effects to be tested. We used IBM SPSS Statistics Version 24 to perform the analysis, and the significance level was set at 0.01.

Table 1 Questions, descriptive data and internal consistency of indexes among 2186 university academics

Indexes	Internal consistency (Cronbach's α)	Mean	Standard deviation	Questions included
Demands				
Dysfunctional support	0.87	2.08	0.72	People in my unit sometimes help me in a difficult situation, but combine this with reproaches
				People in my unit sometimes help me in a difficult situation, but support me reluctantly
				People in my unit sometimes help me in a difficult situation, but expect everlasting gratitude
				People in my unit sometimes help me in a difficult situation, but do not support in a way that is matter-of-factly
				People in my unit sometimes help me in a difficult situation, but do so with a reproachful tone or gaze
				People in my unit sometimes help me in a difficult situation, but indicate that I should have dealt with the problem myself
Interpersonal conflicts	0.88	2.47	1.05	My work is hampered by power struggles and territorial thinking in my unit
				In my unit, intrigues impair the work climate
				In my unit, there is a great deal of tension due to prestige and conflicts
Role conflict	0.75	2.48	0.75	I have to do things that I feel should be done differently
				I am often given assignments without adequate resources to complete them
				I frequently receive incompatible requests from two or more people
				My job involves tasks that are in conflict with my personal values
Role overload	0.82	3.63	0.87	I have enough time to do what is expected of me in my job
				I have to work under heavy time pressure quite often
				I frequently have too much to do at work
Resources – individual task completion				
Job autonomy	0.80	3.89	0.66	I have a sufficient degree of influence in my work
				I can make my own decisions on how to organize my work
				There is room for me to take my own initiatives at work
				I manage my work situation in the direction I want
Social support from supervisors	0.88	3.60	0.98	My immediate superior listens to me when I have problems at work
				My immediate superior gives me the help and support I need from her or him
				My immediate superior talks with me about how well I carry out my work
Resources – colleague fellowship				
Cohesion in work teams	0.75	3.45	0.82	In our unit, we stand together in trying to reach our performance goals
				I am happy with my unit's level of task commitment

Table 1 (continued)

Indexes	Internal consistency (Cronbach's α)	Mean	Standard deviation	Questions included
				This unit gives me ample opportunities to improve my personal performance
Social community at work	0.84	3.84	0.81	There is a good atmosphere between me and my colleagues
				There is a good sense of fellowship between the colleagues at my unit
				I feel that I am a part of a community in my unit
Inclusiveness and social responsibility	0.74	4.07	0.67	Men and women are treated as equals in my unit
				In my unit, there is room for employees of a different ethnic background or religion
				In my unit, there is room for older employees
				In my unit, there is room for employees with various illnesses or disabilities
Resources – organizational unit				
Goal clarity	0.77	3.53	0.77	What is expected of me at work is clearly expressed
				I have a clear understanding of which tasks constitute my job
				I feel that the objectives of my job are diffuse and unclear
Resources research and teaching	0.84	3.38	0.91	I get the administrative support I need for planning and implementing teaching and examinations
				I get the administrative support I need for my research
				I get the technical support I need for my research
				I get the support I need for internationalizing my research
Trust in unit management - own unit	0.84	3.81	0.77	I can trust information from my unit management
				My unit management withholds important information from the employees
				It is possible for the employees at my unit to express their views
				My unit management trusts the employees to do their work well
Trust in the next administrative level	0.96	3.39	0.88	I can expect the management at the next administrative level to treat me in a consistent and predictable way
				The management of the next administrative level is always reliable
				The management of the next administrative level is open and honest with me
				I am confident that I can trust the management of the next administrative level
				I have complete confidence in the management of the next administrative level
Dependent variables				
Workaholism	0.86	2.37	0.57	I seem to be in a hurry and racing against the clock
				I find myself continuing to work after my co-workers have called it quits
				I stay busy and keep many irons in the fire
				I spend more time working than on socializing with friends, on hobbies or on leisure activities

Table 1 (continued)

Indexes	Internal consistency (Cronbach's α)	Mean	Standard deviation	Questions included
				I find myself doing two or three things at one time, such as eating lunch and writing a memo, while talking on the telephone
				It is important to me to work hard even when I do not enjoy what I am doing
				I feel that there's something inside me that drives me to work hard
				I feel obligated to work hard, even when it is not enjoyable
				I feel guilty when I take time off work
				It is hard for me to relax when I am not working
Work–family conflict	0.81	3.17	0.86	My job reduces the effort I can give to activities at home
				Stress at work makes me irritable at home
				My job makes me feel too tired to do the things that need attention at home
				Job worries or problems distract me when I am at home

Ethics

The Norwegian Social Science Data Service approved the study. By returning the questionnaire, the participants gave written informed consent.

Results

Workaholism and work–family conflict among academics and technical and administrative personnel

On average, the academics worked 2.75 h more than the standard 37.5 h per week; the technical and administrative personnel worked 1.87 h more (Table 2). The mean score on workaholism was 2.37 for academics and 2.0 for technical and administrative personnel, indicating that more academics than technical and administrative personnel often or always worked excessively and compulsively. For the subscores of workaholism, working excessively and compulsively, the differences between the groups were similar to the total workaholism score. For work–family conflict, the average scores were 3.17 for academics and 2.84 for technical and administrative personnel, meaning that more academics than non-academics agreed or strongly agreed that work negatively affected their family life. Thus, the university academics scored higher on all the three outcome measures than the other university personnel did, and the differences between the groups were significant at $P < 0.001$. Regression analysis controlling for the effects of sex and age retained the significant differences (data not shown).

Working environment, workaholism and work–family conflict

Table 3 shows bivariate correlations between all variables included in the study. Almost all the correlations were statistically significant. In general, men reported less demands, more resources and less workaholism and work–family conflict than did women. Older and more experienced academics reported slightly higher demands and lower resources than did their younger colleagues. Seniority (years employed at the current university) was not significantly correlated with workaholism or work–family conflict. The correlations between the demands variables were positive and moderate to strong (r between 0.29 and 0.57) except for the correlation between dysfunctional support and role overload (Cohen 1992). Overall, the

Table 2 Differences between university academics ($n = 2186$) and technical and administrative personnel ($n = 2551$)

	All (SD)	Academics (SD)	Administrative and technical personnel (SD)	Mean difference	95% CI for difference
Overtime work (hours/week)	2.28 (0.91)	2.75 (0.92)	1.87 (0.67)	0.88	0.83 – 0.92
Workaholism (total)	2.17 (0.57)	2.37 (0.57)	2.00 (0.51)	0.37	0.34 – 0.40
Working excessively	2.33 (0.63)	2.56 (0.62)	2.13 (0.56)	0.43	0.40 – 0.46
Working compulsively	2.02 (0.61)	2.18 (0.62)	1.87 (0.57)	0.31	0.28 – 0.34
Work–family conflict	2.99 (0.88)	3.17 (0.86)	2.84 (0.87)	0.33	0.28 – 0.38

SD: standard deviation, CI: confidence interval

Table 3 Bivariate correlations (Pearson *r*) for all variables among university academics

	1	2	3	4	5	6	7	8	9
Background variables									
1. Sex (1 = female, 2 = male)	1								
2. Age	0.07*	1							
3. Seniority	0.09**	0.53**	1						
Demands									
4. Dysfunctional support	−0.01	0.00	−0.01	1					
5. Interpersonal conflicts	−0.09**	0.07*	0.11**	0.55**	1				
6. Role conflict	−0.05	0.05	0.09*	0.54**	0.57**	1			
7. Role overload	−0.11**	0.16**	0.23**	0.15**	0.29**	0.49*	1		
Resources – individual task completion									
8. Job autonomy	0.06*	−0.15**	−0.10**	−0.44**	−0.50**	−0.59**	−0.27**	1	
9. Social support from supervisors	0.05	−0.15**	−0.14**	−0.37**	−0.49**	−0.42**	−0.18**	0.48**	1
Resources – colleague fellowship									
10. Cohesion in work teams	0.04	−0.10**	−0.13**	−0.41**	−0.58**	−0.52**	−0.26**	0.54**	0.60**
11. Social community at work	−0.00	−0.11**	−0.08**	−0.47**	−0.62**	−0.48**	−0.16**	0.51**	0.56**
12. Inclusiveness and social responsibility	0.16**	−0.10**	−0.05	−0.44**	−0.47**	−0.43**	−0.15**	0.49**	0.46**
Resources – organizational unit									
13. Goal clarity	−0.04	0.03	−0.01	−0.38**	−0.44**	−0.55**	−0.26**	0.48**	0.46**
14. Resources: research and teaching	0.11**	−0.22**	−0.20**	−0.33**	−0.40**	−0.54**	−0.39**	0.49**	0.46**
15. Trust in unit management	0.07**	−0.08*	−0.07*	−0.48**	−0.60**	−0.52**	−0.19**	0.56**	0.64**
16. Trust in the next administrative level	0.06*	−0.08*	−0.09**	−0.28**	−0.36**	−0.42**	−0.19**	0.36**	0.41**
Dependent variables									
17. Workaholism	−0.06*	−0.01	0.02	0.21**	0.27**	0.41**	0.57**	−0.23**	−0.13**
18. Work–family conflict	−0.12**	−0.07*	−0.01	0.33**	0.39**	0.51**	0.55**	−0.35**	−0.25**

Table 3 (continued)

	10	11	12	13	14	15	16	17
Background variables								
1. Sex (1 = female, 2 = male)								
2. Age								
3. Seniority								
Demands								
4. Dysfunctional support								
5. Interpersonal conflicts								
6. Role conflict								
7. Role overload								
Resources – individual task completion								
8. Job autonomy								
9. Social support from supervisors								
Resources – colleague fellowship								
10. Cohesion in work teams	1							
11. Social community at work	0.68**	1						
12. Inclusiveness and social responsibility	0.51**	0.51**	1					
Resources – organizational unit								
13. Goal clarity	0.52**	0.45**	0.38**	1				
14. Resources: research and teaching	0.51**	0.43**	0.42**	0.43**	1			
15. Trust in unit management	0.59**	0.59**	0.54**	0.46**	0.48**	1		
16. Trust in the next administrative level	0.43**	0.39**	0.33**	0.34**	0.45**	0.47**	1	
Dependent variables								
17. Workaholism	−0.21**	−0.20**	−0.14**	−0.22**	−0.27**	−0.20**	−0.16**	1
18. Work–family conflict	−0.36**	−0.31**	−0.28**	−0.38**	−0.35**	−0.31**	−0.30**	0.57**

* $P < 0.01$, ** $P < 0.001$

resource variables were moderately to strongly positively correlated (r between 0.33 and 0.69). Most of the correlations between the demands and resources were negative and moderate to strong (r between −0.33 and −0.62).

Table 4 shows a regression analysis investigating the relationships between age, sex, working environment factors and workaholism among the university academics. Seniority is not included as a background variable since it did not show a significant bivariate correlation with the outcome variable or contribute significantly to the regression models when tested. Model 0 (bivariate analysis) shows that age did not significantly affect workaholism, whereas women reported slightly more workaholism than men. In addition, workers reporting high demands scored higher on workaholism than workers with low demands. Including age, sex and the demands variables in the regression model (model 1) changed the nonsignificant bivariate effect of age to a significant negative effect, whereas the significant effect of sex was reduced to nonsignificance. The positive effects of dysfunctional support, interpersonal conflicts and role conflict were reduced considerably, whereas role overload retained its strong regression coefficient ($\beta = 0.52$). These correlations did not change much when controlled for the effects of the resources (model 2).

Bivariately (Table 4, model 0), the resources were negatively and significantly correlated with workaholism, but these correlations were reduced to nonsignificant levels when controlled for the effect of the other variables included (model 2). The explained variance of age, sex and the demands and resource variables on workaholism was 35%.

Bivariately, being young and female and having high demands were significantly correlated with a high level of work–family conflict (Table 5, model 0). In model 1, including age, sex and the demand variables, the negative effect of age was increased and the positive effect of

Table 4 Linear multiple regression analysis with workaholism as the dependent variable

	Model 0[a]	Model 1[b]	Model 2[b]
Background variables			
Age	−0.01	−0.11**	−0.11**
Sex	−0.06*	0.03	0.01
Demands – individual task completion			
Dysfunctional support	0.21**	0.06	0.07
Interpersonal conflicts	0.27**	0.04	0.03
Role conflict	0.41**	0.11**	0.12*
Role overload	0.57**	0.52**	0.51**
Resources – individual task completion			
Job autonomy	−0.23**		−0.00
Social support from supervisors	−0.13**		0.06
Resources – colleague fellowship			
Cohesion in work teams	−0.21**		0.06
Social community at work	−0.20**		−0.08
Inclusiveness and social responsibility	−0.14**		0.01
Resources – organizational unit			
Goal clarity	−0.22**		0.02
Resources: research and teaching	−0.27**		−0.03
Trust in unit management – own unit	−0.20**		−0.02
Trust in next administrative level	−0.16**		0.03
R^2		0.36	0.35

*$P < 0.01$; ** $P < 0.001$

[a]Bivariate (Pearson r)

[b] Multivariate (standardized β), adjusted for the effects of the other variables included in the regression model

Table 5 Linear multiple regression analysis with work–family conflict as the dependent variable

	Model 0[a]	Model 1[b]	Model 2[b]	Model 3[b]
Background variables				
Age	−0.07*	−0.16**	−0.17**	−0.13**
Sex	0.12**	−0.03	−0.02	−0.03
Demands – individual task completion				
Dysfunctional support	0.33**	0.09**	0.08*	0.06
Interpersonal conflicts	0.39**	0.11**	0.06	0.05
Role conflict	0.51**	0.20**	0.14**	0.10*
Role overload	0.55**	0.43**	0.41**	0.26**
Resources – individual task completion				
Job autonomy	−0.35**		−0.03	−0.04
Social support from supervisors	−0.25**		0.03	0.02
Resources – colleague fellowship				
Cohesion in work teams	−0.36**		−0.03	−0.05
Social community at work	−0.31**		−0.05	−0.04
Inclusiveness and social responsibility	−0.28**		−0.03	−0.03
Resources – organizational unit				
Goal clarity	−0.38**		−0.08*	−0.09**
Resources research and teaching	−0.35**		0.01	0.01
Trust in unit management – own unit	−0.31**		0.08	0.08
Trust in next administrative level	−0.30**		−0.09*	−0.10**
Workaholism	0.57**			0.30**
R^2		0.32	0.42	0.47

*$P < 0.01$, **$P < 0.001$

[a]Bivariate (Pearson r)

[b] Multivariate (standardized β), adjusted for the effects of the other variables included in the regression model

sex was reduced to nonsignificance. The regression coefficients for the demands variables were reduced but remained significant (model 1), with role overload showing the strongest relationship. When controlled for the effect of the resource variables (model 2), the effects declined for all demand variables except for role overload, which retained its strong correlation with work–family conflict ($r = 0.42$).

The bivariate correlations (model 0) between job resources and work–family conflict were all significant and negative, with correlation coefficients between −0.24 (supervisor support) and −0.37 (goal clarity). When the resource variables were introduced in the regression model together with the demand variables, these regression coefficients declined considerably (model 2). The strongest correlations were shown for goal clarity and trust in the next administrative level, with significant regression coefficients of 0.08 and 0.09. Age, sex and the working environment variables explained 42% of the variance in the academics' work–family conflict, of which demands explained 41 percentage points.

Academics scoring high on workaholism experienced much more work–family conflict than academics scoring low ($r = 0.56$; Table 5, model 0). A rather strong correlation ($\beta = 0.30$) was retained when controlled for the effect of age, sex and the working environment factors (model 4).

Workaholism as a mediating factor

One aim of this study was to investigate whether workaholism mediates a possible effect of the working environment on work–family conflict. According to Baron and Kenny (1986),

investigating the mediation effect requires significant associations between the independent and dependent variable and significant associations between the proposed mediator and both the independent and the dependent variables. If the mediator fully mediates the effect of the independent variable on the dependent variable, the effect of the independent variable (working environment) on the dependent variable (work–family conflict) should decline to non-significance when controlled for the effect of the mediator (workaholism).

Table 4 shows that the statistically significant effect of role overload on work–family conflict remained significant when workaholism was introduced in the regression model, but it was reduced from a β value of 0.41 (model 2) to 0.26 (model 3). The effects of the other variables remained more or less the same. This indicates that workaholism partly mediates the effect of role overload on work–family conflict but does not mediate the effects of the other demands or resource variables. We confirmed this mediation effect by using the SPSS macro provided by Hayes (2016; 99% confidence interval = 0.12–0.20). We also tested whether role overload mediated the effect of workaholism on work–family conflict. This test showed a significant mediation effect (99% confidence interval = 0.11–0.21) of role overload on the effect of workaholism on work–family conflict. Thus, the relationships between these factors seem rather unclear, and causal relationships may be reciprocal.

Discussion

The hypotheses of this study were confirmed: 1) academics working at Norwegian universities report higher levels of workaholism and work–family conflict than their colleagues working as technical and administrative personnel; 2) the job demand role overload is the working environment factor most important for both workaholism and work–family conflict, whereas job resources have a marginal effect on these outcomes; and 3) the results indicate that workaholism partly mediates the effect of role overload on work–family conflict.

Academics versus technical and administrative personnel

Based on DUWAS, the mean scores on workaholism in our study were 2.37 among the academics and 2.00 among the technical and administrative personnel. A study in the Netherlands (Taris et al. 2012) compared the DUWAS scores of occupations. The results showed that construction workers (2.38) and farmers (2.35) scored highest on workaholism, and employees in public administration (2.09) and nurses (2.08) scored the lowest. Compared with these results, the mean score among academics in Norway was at the same level as those scoring the highest, and the technical and administrative personnel scored lower than the groups scoring low in the Netherlands. Since DUWAS does not provide a cut-off score on when a respondent is regarded as a workaholic, we cannot measure the prevalence of workaholism among the university employees. Nevertheless, since the academics' mean score is high compared with the occupational groups investigated by Taris et al. (2012), it seems plausible that the prevalence among university academics in Norway is higher than 8%, since that is what Andreassen et al. (2014) have estimated the prevalence to be among a general working population in Norway.

Working environment, workaholism and work–family conflict

We found that the university academics worked almost 3 h more than the standard 37.5-h working week and that they worked more than the other employees at the university.

Nevertheless, the university academics reported less overtime work than in another recent study on working hours in Norway's university sector, in which Egeland and Bergene (2012) showed that university academics worked on average 10 h more per week than a standard 37.5-h working week. We do not know why the results of these two studies differ, but one explanation may be that Egeland and Bergene registered working hours by using a diary, whereas we used a cross-sectional questionnaire survey. Respondents to a survey may underestimate the actual working hours. In addition, Egeland and Bergene collected information from many universities, whereas our study included respondents from only three universities. In accordance with the studies documenting organizational and working environment changes in universities the over recent decades (Shattock 2013; Teichler et al. 2013), Kyvik (2013) showed that academics in Norway constantly face higher demands and expectations with regard to scientific publications, but also regarding other types of work such as writing applications, participating in committees and performing administrative work. He finds further that the academics adapt to these increasing demands. It seems reasonable to assume that this may, in turn, lead to role overload and overtime work. Egeland and Bergene (2012) partly confirm this assumption, finding that academics in Norway experience that asserting themselves in research is not possible without working more than the standard working hours.

Although age and sex had rather modest effects on the outcome variables in this study, young academics seem to struggle more with work–family conflict than older colleagues. Bivariately, women reported more work–family conflict than men. This correlation was reduced to nonsignificance when controlled for the effect of demands, indicating that the gender effect is mediated by high job demands (Baron and Kenny 1986). Hogan et al. (2014), who examined gender differences in workaholism and work–life conflict among university academics in Ireland, found that female academics reported higher demands and more work–life conflict than men, whereas men and women did not differ in workaholism. Similar to our study, they also found that organizational resources did not result in less work–life conflict in either women nor men. Studies have shown that having children may result in work–family conflict (Behson 2002), but Hogan et al. (2014) did not confirm such a result. Unfortunately, our study did not include having children as a variable.

The results indicate that high role overload and role conflict affect workaholism and work–family conflict, whereas job resources contribute hardly anything when controlled for the effects of demands. This is confirmed by other studies showing that workaholism is positively correlated with high demands (Clark et al. 2014; Midje et al. 2014; Schaufeli et al. 2008, 2009b; Taris et al. 2005) and that role overload and role conflict are the strongest contributors. Mazzetti et al. (2014) highlight the organizational culture's role in developing workaholism and expressed special concern about "overtime culture" in enterprises. Claiming that universities have an established culture for overtime work seems reasonable, and this culture has probably not been weakened during decades of diversification and uncertainty within the university sector (Egeland and Bergene 2012; Kinman 2001; Shattock 2013). Although Mazzetti et al. (2014) emphasize the importance of the working culture or environment, they also find that personality is important and that the resulting motivation for achievement and perfectionism especially affect this kind of culture. Clark et al. (2014) state that the relationship between job demands and workaholism can be attributed to at least four aspects, all relevant for university academics: a) workaholics seeking enterprises and jobs with high demands; b) demanding work encourages workaholic behavior, c) workaholics create work and demands for themselves; and d) as a way of defending their strong relationship to work, the workaholic can ascribe more importance to various work demands than they actually have.

In accordance with what Midje et al. (2014) found among municipal middle managers, we found that job resources had virtually no effect on workaholism among the academics when we controlled for the effects of demands. The high effect of demands, the low effect of resources and a partial mediation effect of workaholism on the relationship between demands and work–family conflict confirm our expectation that workaholism is part of the disease process and not the motivational process as described in the job demands–resources model (Bakker and Demerouti 2007). Consequently, workaholism is not the same as and should not be confused with job engagement that is primarily driven by job resources.

As for workaholism, this study shows that high job demands are also strongly associated with work–family conflict among academics. Studies among other occupational groups have confirmed this result (Bakker et al. 2011; Mauno et al. 2007; Michel et al. 2011; Voydanoff 2004; Winefield et al. 2014).

Michel et al. (2011) point out that work–family conflict may be based on three factors; time-based conflicts, strain-based conflicts and behavior-based conflicts. It is reasonable to assume that all these factors are relevant to academics in universities. Role overload, showing the highest effect on work–family conflict in our study, is a typical strain-based conflict (Greenhaus and Beutell 1985) that may result in negative emotions and fatigue, and thereby increase the level of conflict between job and family (Voydanoff 2004).

Although job demands comprise the most important factor associated with work–family conflict, the two job resources goal clarity and trust regarding management may contribute to preventing work–family conflict or buffer the negative effect of job demands. This is comparable with the results from a study in the UK (Kinman and Jones 2008) showing better balance between job and family life among university academics scoring high on control, schedule flexibility and employer support, but these resources did not moderate the negative relationships between high job demands and work–family conflict. Likewise, Michel et al. (2011) found in a meta-analysis on work–family conflict that role clarity, which may relate to goal clarity, is associated with low scores on work–family conflict.

We find it interesting that job autonomy in our study did not substantially affect work–family conflict, and this result is actually in accordance with other studies showing ambiguous results. Michel et al. (2011) found that a high degree of autonomy is correlated with a low degree of work–family conflict, while another study (Blair-Loy 2009) shows that high autonomy is correlated with a high degree of work–family conflict. Blair-Loy (2009) claims that bureaucratic rigidity with low worker autonomy may buffer the effects of demanding customers that otherwise will invade one's family life or leisure time. A high degree of work-related freedom and autonomy can create difficulty in setting limits for oneself, and one could perhaps expect that workaholics are especially vulnerable to this because they are obsessed with work. The reason why we do not find that autonomy significantly affects work–family conflict may be that this factor can promote work–family conflict for some workers and prevent it for others, depending on both personality and work-related factors.

In addition to significant correlations between the working environment and work–family conflict, we found workaholism and work–family conflict highly correlated. We hypothesized that workaholism would mediate the effect of the working environment on work–family conflict. Both the regression analysis (Table 4) and the mediation analysis (Preacher and Hayes 2004) indicate that workaholism partly mediates the effect of role overload on work–family conflict, but we also found an indication of a mediation effect of role overload on the relationship between workaholism and work–family conflict. Workaholism did not have any mediation effect on the weak associations between resources and work–family conflict. As described above, it seems

reasonable to believe that workaholism may be caused by both personality and working culture and environment (Mazzetti et al. 2014; Molino et al. 2016). Based on this, one could assume that job demands may result in workaholic behavior that, in turn, may result in work–family conflict, but there may be a simultaneous process in which a workaholic personality results in excessive demands, with work–family conflict as a result. Our data support such an interpretation, as do the results of Molino et al. (2016), who also found a partial mediation effect of workaholism on how work demands affect work–family conflict.

Because of governance and management changes in the university sector driven by demography and political forces (Shattock 2008), the work situations of academics have changed (Shattock 2013; Teichler et al. 2013). These changes seem to result in increased role overload, role conflicts, working hours and perceived stress (Kinman 2001; Kwiek and Antonowitz 2013; McInnis 1999; Shattock 2013), factors that may force employees into workaholism and work–family conflicts. Although Norwegian academics report higher job satisfaction than academics in most other countries (Kwiek and Antonowitz 2013), professors in Norway are less satisfied with research funding and assistance than their colleagues elsewhere, and they claim more often that their working conditions have worsened in recent years (Bentley et al. 2010). It is important that the health and well-being of academics and their families be part of the decision basis when university governance and management is decided and organizational restructuring is discussed. At a lower organizational level, and more closely related to the issue of workaholism, it is important that managers, human resource personnel, health and safety personnel and physicians be aware of the difference between work engagement and workaholism. Otherwise, it may result not only in negative consequences for workers and their families, but also for the university. It is therefore important to focus on this issue by implementing preventive actions related to employee recruitment and health and safety policies. Further, personality traits might play a role, and initiating treatment for workaholic employees based on such techniques as motivational interviewing and cognitive therapy is therefore relevant (Andreassen et al. 2013).

Limitations

KIWEST II is constructed from standardized and validated indexes derived from other well-known instruments, but some indexes and questions have been slightly revised to fit the work tasks and situation of university personnel (Undebakke et al. 2015). The instrument has documented satisfactory validity and reliability (Innstrand et al. 2015). Also in our study, the indexes showed satisfactory internal reliability (Nunnally and Bernstein 1994).

The most important methodological limitation of this study is the cross-sectional design, resulting in difficulty in drawing conclusions on causal relationships. Nevertheless, Theorell and Hasselhorn (2005) argue that the cross-sectional design is useful to identify risks and groups at risk when a field has been poorly investigated. We argue that workaholism among academics is such a field. Another limitation is that we collected self-reported data only. Self-reported data on all variables may overestimate correlations because of common method variance (Conway 2002). A factor that may balance such an overestimation of correlations may be that the rather homogeneous sample in this study may lead to restricted variance and thereby underestimate correlations. In addition, it has been shown that workers experiencing role overload and work–family conflict are more often nonrespondents than other workers are (Vercruyssen et al. 2011), which will result in underreporting and reduced variance for these factors.

An important limitation of this study is that we do not know what kind of families the respondents had: that is, whether they were married, had children or had caring duties for older people or others. In addition, we measured work–family conflict by using the Wayne et al. (2004) measure on general work–family conflict. By using a more comprehensive instrument, we would have been able to obtain information about the kind of conflicts with which the academics struggled: that is, whether the conflict was primarily behavioral, mental or related to time devoted to work at the expense of the family (Greenhaus and Beutell 1985).

The response rate among the academics was 57%, and the respondents may differ from the nonrespondents. Nevertheless, a large population-based health study in Norway investigating differences between respondents and nonrespondents (Søgaard et al. 2004) demonstrated modest differences only in prevalence estimates and sociodemographic distribution and not the relationships between independent and dependent variables. We believe the results of this study are representative for university academics in Norway and that they may also be relevant for university academics in other countries.

Conclusion

This study shows that university academics report a higher level of workaholism than do other employees at the university. High job demands, workaholism and work–family conflict are positively correlated among the university academics, but how these factors affect each other is unclear. Workaholism has not been very well investigated or understood. The antecedents and outcomes of this condition need to be further investigated with better study designs than ours. Intervention studies modifying behavior, the working environment and organizational factors are needed. University leaders responsible for education and research, human resources personnel, employee representatives and occupational health services should give priority to preventing workaholism, work–family conflict and poor health among university academics at the system, group and individual levels. Succeeding in this quest requires that politicians and university councils adequately fund universities and that university governance and management support positive development in universities that provides leaders and managers real opportunities to create job demands and working environments that promote the health and well-being of university academics.

References

Allen, T. D., Herst, D. E. L., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: a review and agenda for future research. *Journal of Occupational Health Psychology, 5*, 278–308. https://doi.org/10.1037//1076-899B.5.2.278.

Andreassen, C. S. (2013). Arbeidsnarkomani – en oversikt [Workaholism – an overview]. *Tidsskrift for den Norske Psykologforening, 50*, 650–663.

Andreassen, C. S., Griffiths, M. D., Hetland, J., Kravina, L., Jensen, F., & Pallesen, S. (2014). The prevalence of workaholism: a survey study in a nationally representative sample of Norwegian employees. *PLoS One, 9*, 1–10. https://doi.org/10.1371/journal.pone.0102446.

Andreassen, C. S., Hetland, J., & Pallesen, S. (2013). Workaholism and work – family spillover in a cross-occupational sample. *European Journal of Work and Organizational Psychology, 22*, 78–87. https://doi.org/10.1080/1359432X.2011.626201.

Askling, B. (2001). Higher education and academic staff in a period of policy and system change. *Higher Education, 41*, 157–181.

Bakker, A. B., & Demerouti, E. (2007). The job demands–resources model: state of the art. *Journal of Managerial Psychology, 22*, 309–328.

Bakker, A. B., Demerouti, E., & Dollard, M. (2008). How job demands affect partners' experience of exhaustion: integrating work–family conflict and crossover theory. *Journal of Applied Psychology, 93*, 901–911. https://doi.org/10.1037/0021-9010.93.4.901.

Bakker, A. B., ten Brummelhuis, L. L., Prins, J. T., & van der Heijden, F. M. (2011). Applying the job demands–resources model to the work–home interface: a study among medical residents and their partners. *Journal of Vocational Behavior, 79*, 170–180. https://doi.org/10.1016/j.jvb.2010.12.004.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.

Behson, S. J. (2002). Coping with family to work conflict: the role of informal work accommodations to family. *Journal of Occupational Health Psychology, 7*, 324–341.

Bentley, P., Kyvik, S., Vabø, A., & Waagene, E. (2010). *Forskningsvilkår ved norske universiteter i et internasjonalt perspektiv. En undersøkelse av 7 land. [Research conditions at Norwegian universities in an international perspective: a survey in 7 countries.]*. Oslo: Nifu-Step (report 8/2010).

Blair-Loy, M. (2009). Work without end? Scheduling flexibility and work-to-family conflict among stockbrokers. *Work and Occupations, 36*, 279–317. https://doi.org/10.1177/0730888409343912.

Clark, B. R. (2003). *Sustaining change in universities. Continuities in case studies and concepts*. Maidenhead: Open University Press and Society for Research into Higher Education.

Clark, M., Michel, J., Zhdanova, L., Pui, S., & Baltes, B. (2014). All work no play? A meta-analytic examination of the correlates and outcomes of workaholism. *Journal of Management, 42*, 1836–1873. https://doi.org/10.1177/0149206314522301.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.

Conway, J. (2002). Method variance and method bias in industrial and organizational psychology. In S. Rogelberg (Ed.), *Handbook of research methods in organizational psychology* (pp. 344–365). Malden: Blackwell.

Dahl, S. (1998). *University autonomy and academic freedom: A Swedish perspective*. Stockholm: Swedish Association of University Teachers.

Egeland, C., & Bergene, A. C. (2012). *Tidsbruk, arbeidstid, og tidskonflikter i den norske universitets- og høgskolesektoren* [Time use, working hours and time conflicts in universities in Norway]. Oslo: Work Research Institute (report 1/2012).

Gillespie, N. A., Walsh, M., Winefield, A. H., Dua, J., & Stough, C. (2001). Occupational stress in universities: staff perceptions of the causes, consequences and moderators of stress. *Work and Stress, 15*, 53–72. https://doi.org/10.1080/02678370117944.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*, 76–88. https://doi.org/10.5465/AMR.1985.4277352.

Gustavsson, S. (2000). Bekämpandet av universiteten [Thew fight against universities]. In M. Fridlund & U. Sandström (Ed.), Universitetets värden: Bidrag til till den forskningspolitiske debatten [The university's world: A contribution to the debate about research policy]. Stockholm: SNS Förlag.

Hakanen, J., & Roodt, G. (2010). Using the job demands–resources model to predict engagement: Analyzing a conceptual model. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 85–101). New York: Psychology Press.

Hayes, A. F. (2016). My macros and code for SPSS and SAS. Retrieved from http://www.afhayes.com/spss-sas-and-mplus-macros-and-code.html.

Hogan, V., Hogan, M., Hodgins, M., Kinman, G., & Bunting, B. (2014). An examination of gender differences in the impact of individual and organisational factors on work hours, work-life conflict and psychological strain in academics. *Irish Journal of Psychology, 35*, 133–150.

Innstrand, S. T., Christensen, M., Undebakke, K. G., & Svarva, K. (2015). The presentation and preliminary validation of KIWEST using a large sample of Norwegian university staff. *Scandinavian Journal of Public Health, 43*, 855–866. https://doi.org/10.1177/1403494815600562.

Johnstone, A., & Johnston, L. (2005). The relationship between organizational climate, occupational type and workaholism. *New Zealand Journal of Psychology, 34*, 181–188.

Kahn, R. L., Wolfe, D. M., Quinn, R., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational stress*. New York: Wiley.

Kinman, G. (2001). Pressure points: a review of research on stressors and strains in UK academics. *Educational Psychology, 21*, 473–491. https://doi.org/10.1080/01443410120090849.

Kinman, G., & Jones, F. (2008). A life beyond work? Job demands, work–life balance, and wellbeing in UK academics. *Journal of Human Behavior in the Social Environment, 17*, 41–60. https://doi.org/10.1080/10911350802165478.

Kyvik, S. (2013). The academic researcher role: enhancing expectations and improved performance. *Higher Education, 65*, 525–538. https://doi.org/10.1007/s10734-012-9561-0.

Kwiek, M., & Antonowitz, D. (2013). Academic work, working conditions and job satisfaction. In U. Teichler & E. A. Höhle (Eds.), *The work situation of the academic profession in Europe: Findings of a survey in twelve countries* (pp. 37–54). London: Springer.

Machlowitz, M. (1980). *Workaholics: Living with them, working with them*. Reading: Addison-Wesley.

Matthiesen, S. B. (2006). Lenket til jobben. Om arbeidsnarkomani og familieliv [Chained to the job. About workaholism and family life]. In A. Rones & S. B. Matthiesen (Eds.), *I klem eller balanse? Om arbeid, stress og familieliv [Squeezed or in balance? About work, stress and family life]*. Bergen: Fagbokforlaget.

Mauno, S., Kinnunen, U., & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: a longitudinal study. *Journal of Vocational Behavior, 70*, 149–171.

Mazzetti, G., Schaufeli, W. B., & Guglielmi, D. (2014). Are workaholics born or made? Relations of workaholism with person characteristics and overwork climate. *International Journal of Stress Management, 21*, 227–254.

McInnis, C. (1999). *The work roles of academics in Australian universities*. Melbourne: Department of Education, Training and Youth Affairs.

Michel, J. S., Kotrba, L. M., Mitchelson, J. K., & Baltes, B. B. (2011). Antecedents of work–family conflict: a meta analytic review. *Journal of Organizational Behavior, 32*, 689–725. https://doi.org/10.1002/job.695.

Midje, H., Nafstad, I., Syse, J., & Torp, S. (2014). Workaholism and mental health problems among municipal middle managers in Norway. *Journal of Occupational and Environmental Medicine, 56*, 1042–1051. https://doi.org/10.1097/JOM.0000000000000223.

Molino, M., Bakker, A., & Ghislieri, C. (2016). The role of workaholism in the job demands–resources model. *Anxiety, Stress and Coping, 29*, 400–414.

Ng, T., Sorensen, K., & Feldman, D. (2007). Dimensions, antecedents, and consequences of workaholism: a conceptual integration and extension. *Journal of Organizational Behavior, 28*, 111–136. https://doi.org/10.1002/job.424.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers, 36*, 717–731.

Robinson, B. E. (2007). *Chained to the desk: A guidebook for workaholics their partners and children, and the clinicians who treat them*. New York: New York University Press.

Samad, A., Reaburn, P., & Di Milia, L. (2015). The contribution of job strain, social support and working hours in explaining work-family conflict. *Asia Pacific Journal of Human Resources, 53*, 281–295.

Schaufeli, W. B., Bakker, A. B., van der Heijden, F. M., & Prins, J. T. (2009a). Workaholism among medical residents: it is the combination of working excessively and compulsively that counts. *International Journal of Stress Management, 16*, 249–272. https://doi.org/10.1037/a0017537.

Schaufeli, W. B., Bakker, A. B., van der Heijden, F. M., & Prins, J. T. (2009b). Workaholism, burnout and well-being among junior doctors. The mediating role of role conflict. *Work and Stress, 23*, 155–172. https://doi.org/10.1080/02678370902834021.

Schaufeli, W. B., Shimazu, A., & Taris, T. (2009). Being driven to work excessively hard: the evaluation of a two-factor measure of workaholism in the Netherlands and Japan. *Cross-Cultural Research, 43*, 320–348. https://doi.org/10.1177/1069397109337239.

Schaufeli, W. B., Taris, T., & van Rehnen, W. (2008). Workaholism, burnout, and work engagement: three of a kind or three different kinds of employee well-being? *Applied Psychology, 57*, 173–203. https://doi.org/10.1111/j1464-0597.2007.00285.x.

Shattock, M. (2008). Entrepreneurialism and organizational change in higher education. In M. Shattock (Ed.), *Entrepreneurialism in universities and the knowledge economy: Diversification and organizational change in European higher education*. Maidenhead: Society for Research into Higher Education and McGraw Hill Education.

Shattock, M. (2013). University governance, leadership and management in a decade of diversification and uncertainty. *Higher Education Quarterly, 67*(3), 217–233.

Søgaard, A., Selmer, R., Bjertnes, E., & Thelle, D. (2004). The Oslo health study: the impact of self-selection in a large, population-based survey. *International Journal of Equity in Health, 3*, 3. https://doi.org/10.1186/1475-9276-3-3.

Taris, T., Schaufeli, W. B., & Shimazu, A. (2010). The push and pull of work: The difference between workaholism and work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 39–53). New York: Psychology Press.

Taris, T., Schaufeli, W. B., & Verhoeven, L. (2005). Workaholism in the Netherlands: measurement and implications for job strain and work–nonwork conflict. *Applied Psychology, 54*, 37–60. https://doi.org/10.1111/j.1464-0597.2005.00195.x.

Taris, T., van Beek, I., & Schaufeli, W. B. (2012). Demographic and occupational correlates of workaholism. *Psychological Reports, 110*, 547–554. https://doi.org/10.2466/03.09.17.PRO.110.2.547-554.

Taris, T., van Beek, I., & Schaufeli, W. B. (2014). The beauty versus the beast: On the motives of engaged and workaholic employees. In I. Harpaz & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes and future directions* (pp. 121–139). New York: Taylor & Francis/Routledge.

Teichler, U., Arimoto, A., & Cummings, W. K. (2013). *The changing academic profession. Major findings of a comparative survey*. London: Springer.

Theorell, T., & Hasselhorn, H. M. (2005). On cross-sectional questionnaire studies of relationships between psychosocial conditions at work and health – Are they reliable? *International Archives of Occupational and Environmental Health, 78*, 517–522.

Undebakke, K. G., Innstrand, S. T., Anthun, K. S., & Christensen, M. (2015). The ARK intervention programme: who – what – how. Trondheim: Centre for Health Promotion Research HIST/NTNU. Retrieved from https://www.ntnu.no/documents/34221120/0/2015_01_ARK_web.pdf

Vercruyssen, A., Roose, H., & Van de Putte, B. (2011). Underestimating busyness: indications of nonresponse bias due to work–family conflict and time pressure. *Social Science Research, 40*, 1691–1701. https://doi.org/10.1016/j.ssresearch.2011.06.004.

Voydanoff, P. (2004). The effect of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398–412.

Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work–family experience: relationships of the big five to work–family conflict and facilitation. *Journal of Vocational Behavior, 64*, 108–130.

Winefield, A. H., Boyd, C., Saebel, J., & Pignata, S. (2008). *Job stress in university staff: An Australian research study*. Bowen Hills: Australian Academic Press.

Winefield, H. R., Boyd, C., & Winefield, A. H. (2014). Work–family conflict and well-being in university employees. *Journal of Psychology, 148*, 683–697. https://doi.org/10.1080/00223980.2013.822343.