Workaholism and negative work-related incidents among nurses

Cecilie Schou ANDREASSEN[1], Ståle PALLESEN[2, 3]*, Bente E. MOEN[4],
Bjørn BJORVATN[2, 4], Siri WAAGE[2, 4] and Wilmar B. SCHAUFELI[5, 6]

[1]Department of Clinical Psychology, University of Bergen, Norway
[2]Norwegian Competence Center for Sleep Disorders, Haukeland University Hospital, Norway
[3]Department of Psychosocial Science, University of Bergen, Norway
[4]Department of Global Public Health and Primary Care, University of Bergen, Norway
[5]Research Unit Occupational & Organizational Psychology and Professional Learning, KU Leuven, Belgium
[6]Department of Psychology, Utrecht University, The Netherlands

Abstract: The present study comprised 1,781 nurses who participated in an investigation about working conditions, sleep, and health. They answered a questionnaire about age, sex, marital status, children living at home, work hours per week, number of night shifts last year, and total sleep duration and that also included a validated instrument assessing workaholism. In addition, they were asked to report on eight items concerning negative work-related incidents (dozed off at work, dozed while driving, harmed or nearly harmed self, harmed or nearly harmed patients/others, and harmed or nearly harmed equipment). Logistic regression analyses identified several predictors of these specific incidents: Low age (dozed at work, harmed and nearly harmed self, harmed and nearly harmed equipment), male sex (harmed and nearly harmed self, nearly harmed equipment), not living with children (harmed patients/others), low percentage of full-time equivalent (nearly harmed self and harmed patients/others), number of night shifts last year (dozed off at work and while driving, nearly harmed patients/others) and sleep duration (inversely related to dozed off at work and while driving, nearly harmed self). However, the most consistent predictor of negative work-related incidents was workaholism which was positively and significantly associated with all the eight incidents.

Key words: Negative work-related incidents, Nurses, Sleep, Workaholism, Work hours

Introduction

The workaholism construct was introduced by Oates[1] who named it after the word "alcoholism". Although workaholism, similarly to alcoholism, has negative connotations, different views prevail regarding the valence of this construct. Some scholars have mainly regarded workaholism as a positive phenomenon that is associated with work enjoyment and high work related effort[2, 3]. However, over the years the view of workaholism as a negative psychological state that causes several mental and somatic problems seems to be the dominating perspective[4]. Contemporary definitions of workaholism describe it as a chronic pattern of high work investment, long working hours, working beyond organizational expectations, and

an uncontrollable obsession and concern about work[5–7]. Workaholism has been linked to a wide range of negative outcomes, such as impaired health[8, 9], poor coping abilities[10], low job and life satisfaction[9], mental distress[11, 12] and work-family conflicts[13]. Specifically, workaholism has been linked to sleep problems cross-sectionally[14], and has further been shown to predict increased sleep onset latency longitudinally[12]. In terms of mental health a large survey demonstrated that workaholism was associated with several psychiatric disorders, such as attention deficit hyperactivity disorder, obsessive-compulsive disorder, and depression as well as anxiety in general[8].

Due to methodological limitations related to differences in operationalization and research samples, the exact prevalence of workaholism has not been established so far. Yet, a prevalence of 8.3% was reported based on a representative sample of Norwegian employees[15]. The two most contemporary instruments assessing workaholism are the Dutch Work Addiction Scale (DUWAS) consisting of two positively correlated subscales; Working excessively and Working compulsively[16] and the one-dimensional Bergen Work Addiction Scale (BWAS), which is based on an addiction paradigm[17].

So far limited empirical attention has been paid to the question of whether workaholism adds to the workplace—e.g. in terms of productivity and efficiency, which is in line with the view of some scholars[2, 3], or whether workaholism is detrimental—e.g. in terms of performance, work ability, presenteeism and sickness absence, which would be in line with the view of workaholism as a negative entity[4]. Relevant outcomes that in this realm could be investigated as potential consequences of workaholism are sickness absence, sickness presenteeism, work performance, and unwanted work-related incidents.

Regarding sickness absence, middle and high levels of workaholism (in contrast to low levels) were associated with an increased risk both related to mental health problems and other disorders[18]. This finding was supported by a mediation analysis of longitudinal data showing that workaholism was positively related to psychophysic strain, which, in turn, was related to lower levels of job performance and higher levels of sickness absence[19]. Interestingly, and partly in contrast to the aforementioned studies, one study showed that sickness presenteeism, defined as attending work whilst ill[20], was significantly and positively associated with workaholism[21].

In terms of work performance, one study showed that working excessively was positively associated with innovativeness[22]. Working compulsively was in the same study found to be positively associated with contextual performance, and negatively associated with innovativeness among employees. Furthermore, among self-employed workers, working excessively was positively associated with contextual performance and innovativeness, whereas working compulsively was negatively associated with both contextual performance and innovativeness[22]. In a longitudinal study workaholism was not significantly related to change in job performance over a 2-yr period[23]. The lack of association between workaholism and job performance is shown in other studies as well[24, 25]. A cross-sectional study, however, demonstrated a negative relationship between work job performance and workaholism[26]. In sum, a positive link between workaholism and sickness absence seems established, whereas the association between workaholism and work performance appears to be more ambiguous.

Studies on the association between workaholism and unwanted work-related incidents could cast more light on the workaholism-work behavior link. Therefore the current study focuses on these unwanted work-related incidents. Previous studies on nurses have shown that rotating work[27], mental health problems[28], excessive sleepiness[29], situations transferring patients out of or into bed[30], high job strain[31], low age[32], hours worked per week, female sex[33] and slippery grounds[34] are risk factors found to be associated with work-related accidents. Studies on other populations have in addition shown that short sleep duration is associated with an increased risk of work-related accidents[35].

However, no previous study has investigated the relationship between workaholism and negative work-related incidents despite the fact that workaholics typically work long hours[6], do shift work[36], report elevated levels of psychopathology[8], may have impaired job performance[26] and have a tendency to work while being sick[21].

Against this backdrop we investigated the relationship between workaholism and negative work-related incidents (e.g. dozing off at work and while driving, harmed and nearly harmed self, harmed and nearly harmed patients/others, harmed and nearly harmed equipment) in a large sample of nurses. We controlled for relevant demographic confounders (age, sex, marital status and living with children in the household) as well as percentage of full-time equivalent, number of night shifts and habitual sleep duration. We hypothesized that workaholism would be linked to an increased risk of negative work-related incidents.

Subjects and Methods

Design and procedure

The data in the present study stems from the Survey of Shiftwork, Sleep and Health (SUSSH) which is an ongoing longitudinal study with annual surveys among Norwegian nurses. The survey was initiated in 2008 when 6,000 nurses (600 letters returned due to wrong addresses), all members of the Norwegian Nurses Organization, were invited to participate. The invited nurses were randomly selected from five different strata based on how long ago they completed their nursing education. Specifically, 1,200 nurses from the following five strata were invited: 0–1.0 yr since completion of degree, 1.1–3 yr, 3.1–6 yr, 6.1–9 yr and 9.1–12 yr. A total of 2,059 nurses responded which amounts to a response rate of 38.1%. One year later (2009) 2,741 newly graduated nurses were invited to participate, of which 905 agreed, yielding a response rate of 33.0%. Together, these two groups formed the baseline cohort of the SUSSH. The present study is based on data from the first (2008/2009) wave of SUSSH and from the 2012 wave. As most relevant predictors were assessed in 2012 the current study should be regarded as cross-sectional. The response rate in 2012 (based on those who originally agreed to participate) was 75.1%. The SUSSH study was approved by the Regional Committee for Medical and Health Research Ethics, Health Region West, Norway in 2008 (case number 088.08) and by the Norwegian Data Inspectorate. All nurses signed a letter of consent before participating. In the letter it was stated that all data would be treated confidentially and that only researchers connected to SUSSH would have access to the data.

Sample

The sample (*N*=1,781 nurses; 1,595 females and 177 males) in the present study consisted of those who participated in the first and in the 2012 survey and who confirmed that they were still (2012) working as nurses. The female preponderance in the current study is in accordance with the overall female-male-ratio among Norwegian nurses which according to Statistics Norway was 9.9% in 2012. Details about the sample can be found in Table 1.

Instruments

Demographics and work. Questions about sex and year of birth were asked in the first survey and used in the present study. Data about marital status (living alone or with a partner), having at least one child in the household (yes/no), status as nurse (still working), how many night shifts

Table 1. Descriptive statistics in terms of percentages or mean and standard deviation (SD) of the study variables among the nurses (N=1,743–1,776)

Variable	Percentage	Mean (SD)
Sex		
Women	90.00	
Men	10.00	
Age in 2012		36.1 (8.8)
Marital status		
Living with partner in 2012	74.30	
Living without partner in 2012	25.70	
Child in household		
Child in household in 2012	54.50	
No child in 2012	45.50	
Percentage of full-time equivalent		
>90	55.20	
76–90	17.70	
50–75	23.10	
<50	4.00	
Number of night shifts last year		27.6 (38.9)
Total sleep duration (h)		6.9 (1.6)
Bergen Work Addiction Scale		13.1 (4.8)

they had worked the last 12 months as well as percentage of full-time equivalent (<50%, 50–75%, 76–90% and >90%) were all collected in 2012.

Sleep duration. Habitual mean sleep duration in hours and minutes was reported by participants in 2012.

Bergen Work Addiction Scale (BWAS). Workaholism was assessed by the BWAS comprising 7 items, all reflecting general addiction criteria (i.e., salience, tolerance, mood modification, relapse, withdrawal, conflict, and problems) experienced during the past year (e.g., "become stressed if you have been prohibited from working"). Each item is answered on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). Higher scores reflect higher levels of workaholism[17]. The Cronbach's alpha of the BWAS in the 2012 survey was 0.84.

Work-related negative incidents. Eight items reflecting negative work-related incidents were included: 1) How many times during the last month have you dozed off involuntarily at work?, How many times during the last year have you: 2) Dozed off while driving to or from work?, 3) experienced work-related accidents that you felt responsible for, causing harm to yourself?, 4) experienced work-related near-accidents that you felt responsible for, potentially causing harm to yourself?, 5) experienced work-related accidents you felt responsible for, causing harm to patients/others? 6) experienced work-related near-

Table 2.   Mean number (and standard deviation; SD) and prevalences (at least one incident) and 95% confidence intervals (95% CI) of the eight different negative work-related incidents (N=1,746)

Negative work-related incidents	Mean (SD)	Prevalence (%)	95% CI
Dozed off involuntarily at work last month	1.00 (3.75)	25.5	23.4–27.5%
Dozed off while driving to/from work last year	0.84 (4.15)	14.2	12.6–15.8%
Harmed yourself last year	0.19 (0.87)	10.0	8.6–11.4%
Nearly harmed yourself last year	0.57 (1.93)	16.7	15.0–18.5%
Caused harm to patients/others last year	0.16 (0.84)	7.5	6.2–8.7%
Nearly caused harm to patients/others last year	0.72 (3.06)	21.1	19.2–23.1%
Caused harm to equipment last year	0.24 (1.02)	10.3	8.8–11.7%
Nearly caused harm to equipment last year	0.40 (1.92)	11.2	9.7–12.7%

accidents you felt responsible for, potentially causing harm to patients/others?, 7) experienced work-related accidents you felt responsible for, causing harm to equipment? and 8) experienced near-accidents you felt responsible for, potentially causing harm to equipment? The work-related incident items were included in the 2012 wave.

Statistical analyses

Statistical analyses were performed in SPSS, version 24. Univariate descriptive analyses of each study variable were conducted and results were calculated in terms of means and standard deviations or as percentages. As the distribution of the incident variables were skewed (most nurses did not report any incident) and since each single incident represents an unwanted occurrence, we decided to dichotomize these variables (0=not reported any incident, 1=reported incident). The incident items were not regarded as part of a reflective scale, hence their association with different independent variables were analyzed separately. The occurrence of the eight types of incidents was calculated together with the corresponding 95% confidence intervals. Finally, adjusted hierarchical logistic regression analyses were conducted. In these analyses each specific incident represented the dependent variable whereas age, sex, marital status, child in the household, percentage of full-time equivalent, number of night shifts last year, total sleep duration, and the composite score on the BWAS comprised the independent variables. The BWAS was entered as the sole independent variable in the second and final step of the logistic regression analyses in order to specifically identify the unique contribution of this variable. In order to ease interpretation of results all continuous variables (age, number of night shifts last year, total sleep duration and composite score on the BWAS) were transformed to z-scores/standardized scores before being entered into the regression analyses. All variables,

except age and sex (collected at wave 1), in the present paper were collected at the 2012 wave. The results shown below reflect models where all the independent variables were included simultaneously (adjusted). The percentage of full-time equivalent was dummy coded (so that >90% comprised the reference category). When the 95% confidence interval of the odds ratio do not include 1.00 the result is considered as statistical significant. Overall statistics for each model (step 1 without workaholism, the change from step 1 to step 2 when adding workaholism and the final model including all independent variables including workaholism) in terms of χ^2 and pseudo-R^2 (Cox & Snell R^2 and Nagelkerke R^2) were also calculated. The Cox & Snell R^2 functions as a coefficient of determination for binary response models. It is in line with maximum likelihood as an estimation model, is asymptotically independent of sample size and does not depend on the units used. However, the maximum value deviates often from 1 which poses a problem in terms of interpretation. The Nagelkerke R^2 was developed to overcome this problem and adjusts the maximum value of the Cox & Snell R^2 to 1 to ease the interpretation of the coefficient of determination for binary response models[37].

Results

The mean age of the sample in 2012 was 36.1 yr (SD=8.8). In 2012 the majority (74.3%) was living with a partner, had at least one child in their household (54.5%) and held a position of more than 90% of a full-time equivalent (55.2%) (Table 1).

The reported mean (number of incidents), standard deviations and prevalences (with 95% confidence intervals; 95% CI) of the different work-related incidents are depicted in Table 2. These prevalences ranged from 7.5% (caused harm to patients/others during the last year) to 25.5% (dozed

off involuntarily at work during the last month). A total of 53.7% (95 CI = 51.3−56.0%) of the nurses reported at least one type of negative work-related incident.

The results (Table 3) from the adjusted (for all independent variables) logistic regression analyses showed that age was inversely related to five negative work-related incidents (dozed off at work, harmed and nearly harmed self, harmed and nearly harmed equipment). Males had higher risk of becoming harmed and nearly harming self and nearly harming equipment, whereas not having children in the household was positively related to harming patients/others. Having a percentage of full-time equivalent of 90% or lower was positively associated with two types of negative work-related incidents (nearly harmed self and harmed patients/others) compared to the reference group (>90% full-time equivalent). Further, number of night shifts last year was positively associated with three negative work-related incidents (dozed off involuntarily at work and while driving, nearly harmed patients/others) whereas sleep duration was inversely and significantly related to three types (dozed off at work and while driving, nearly harmed self) of negative work-related incidents. Most importantly, workaholism was the most consistent predictor, as it was significantly and positively related to all of the eight negative work-related incidents.

Discussion

The present study investigated whether workaholism was a predictor of negative work-related incidents among nurses, after controlling for several potential confounders. Although all predictors except marital status were significantly related to some type of incident, the most consistent predictor was workaholism, which was significantly and positively related to *all* of the eight negative work-related incidents. Thus our hypothesis was supported by the results. There are several factors that may explain the relationship between workaholism and negative work-related incidents. Workaholics typically report elevated levels of work demands[38–40], which causes increased levels of mental and physical strain[19]. This may, in turn, increase the risk of negative work-related incidents. Workaholics also work more than non-workaholics[36] which seems to increase the risk of negative work-related incidents[41]. The fact that workaholics have a tendency to work despite being ill[20] might also explain the positive association between negative incidents and workaholism, as presenteeism has been shown to increase the risk of work-related accidents[42]. Moreover, workaholism has consistently been associated with impaired mental

health[8], which in nurses has been linked to increased accident proneness[43]. It has also been shown that workaholism is related to reduced recovery, especially following many work hours[44] which might increase the risk of occupational accidents. Another explanation for the present findings is that workaholism is associated with obsessiveness[45], which possibly could inflate the level of self-reported work-related incidents. It is concluded that workaholism is positively associated with an increased risk of reporting negative work-related incidents, and several mechanisms, as accounted for above, may explain this relationship.

When it comes to the variables that were controlled for in the analysis age was inversely related to five (dozed off at work, harmed and nearly harmed self, harmed and nearly harmed equipment) of the incidents. This might reflect an accident protective effect of experience and is in line with studies showing an inverse relationship between work-related accidents and length of employment[46]. Although a previous study shows that females nurses have a higher risk for needle stick injuries than male nurses[33]. Male nurses in the present study had a higher risk of reporting negative incidents (harmed and nearly harmed self and nearly harmed equipment) than female nurses. This agrees with studies showing that men are less concerned about occupational safety than women[47]. The relationship between sex and work-related incidents may also be a reflection of the fact that male and female nurses may work in different types of nursing jobs[48], which might influence their risk of experiencing negative work-related incidents.

Not having children in the household was associated with an increased risk of one incident (harmed patients/others). This finding is supported by studies showing that parenthood is associated with risk aversion[49]. At odds with another study on nurses showing a positive association between needle stick injuries and hours worked per week[33], percentage of full-time equivalent was in the present study inversely related to two (nearly harmed self and harmed patients/others) of the eight types of incidents (where >90% of full-time equivalent comprised the reference group). The findings from the present study may reflect "the healthy worker effect", implying that those with better health tend to stay in full-time work to a greater degree than those with poorer health[50], and that this also influences accident proneness. The discrepancy between the results from the study by Jahangiri *et al.*[33] and the present study may relate to the fact that the nurses in the former study had a very high mean hours (45.9) of work, whereas standard working hours for Norwegian nurses with full-time equivalent is 37.5 h per week and somewhat

Table 3.   Odds ratios (with 95% confidence interval) at step 2 for predictors of different negative work-related incidents and model parameters at step 1, change in model parameters at step 2 and final model parameters at step 2

Predictor	Dozed off at work	Dozed off while driving	Harmed yourself	Nearly harmed yourself	Harmed patients/ others	Nearly harmed patients/others	Harmed equipment	Nearly harmed equipment
Age[a]	**0.87 (0.76–0.99)**	1.06 (0.92–1.23)	**0.78 (0.64–0.94)**	**0.87 (0.75–1.01)**	0.87 (0.71–1.06)	0.94 (0.83–1.07)	**0.75 (0.62–0.92)**	**0.77 (0.64–0.92)**
Sex (1=Male, 2=Female)	0.78 (0.54–1.13)	1.24 (0.76–2.01)	**0.58 (0.36–0.94)**	**0.59 (0.39–0.89)**	0.70 (0.40–1.21)	0.82 (0.56–1.20)	0.72 (0.44–1.19)	**0.52 (0.33–0.81)**
Living with partner (1=yes, 2=no)	1.08 (0.81–1.43)	0.99 (0.70–1.41)	1.01 (0.68–1.49)	1.08 (0.78–1.49)	0.98 (0.54–1.51)	1.18 (0.89–1.56)	1.10 (0.75–1.62)	1.16 (0.81–1.68)
Children household (1=yes, 2=no)	1.17 (0.90–1.52)	0.81 (0.59–1.12)	1.07 (0.74–1.56)	1.30 (0.96–1.76)	**1.54 (1.02–2.32)**	1.31 (1.00–1.71)	1.11 (0.77–1.62)	1.17 (0.82–1.68)
Percentage of full-time equivalent[b]								
Less than 50%	1.00 (0.54–1.85)	1.26 (0.63–2.51)	1.85 (0.91–3.78)	1.47 (0.75–2.88)	1.37 (0.56–3.35)	1.27 (0.70–1.32)	1.03 (0.45–2.39)	0.78 (0.32–1.90)
50 to 75%	1.04 (0.77–1.41)	1.05 (0.73–1.50)	0.74 (0.46–1.17)	1.19 (0.83–1.70)	**1.63 (1.04–2.55)**	0.63 (0.70–1.32)	0.91 (0.59–1.41)	0.85 (0.55–1.30)
76 to 90%	1.10 (0.79–1.53)	0.77 (0.50–1.18)	1.04 (0.65–1.65)	**1.52 (1.05–2.20)**	1.26 (0.75–2.11)	1.12 (0.80–1.57)	1.14 (0.73–1.79)	1.24 (0.81–1.90)
Night shifts last year[a]	**1.74 (1.55–1.96)**	**1.31 (1.15–1.49)**	1.03 (0.87–1.22)	1.09 (0.96–1.25)	1.02 (0.85–1.22)	**1.16 (1.03–1.31)**	1.07 (0.91–1.26)	1.11 (0.95–1.29)
Total sleep duration (h)[a]	**0.72 (0.58–0.89)**	**0.71 (0.55–0.92)**	0.91 (0.69–1.20)	**0.72 (0.56–0.91)**	0.89 (0.65–1.21)	0.92 (0.75–1.12)	1.01 (0.85–1.20)	0.96 (0.77–1.21)
Workaholism score[a]	**1.27 (1.13–1.43)**	**1.35 (1.18–1.55)**	**1.64 (1.41–1.91)**	**1.72 (1.51–1.96)**	**1.44 (1.22–1.70)**	**1.46 (1.30–1.64)**	**1.55 (1.33–1.80)**	**1.55 (1.34–1.80)**
Model statistics step 1[c]								
χ^2 (df=9)	125.48 (*p*<0.001)	33.26 (*p*<0.001)	25.96 (*p*<0.05)	45.10 (*p*<0.001)	18.11 (*p*<0.05)	29.76 (*p*<0.001)	19.94 (*p*<0.05)	33.04 (*p*<0.001)
Cox & Snell R^2	7.30%	2.00%	1.60%	2.70%	1.10%	1.80%	1.20%	2.00%
Nagelkerke R^2	10.80%	3.60%	3.20%	4.50%	2.60%	2.80%	2.50%	3.90%
Δ Model statistics step 2[d]								
$\Delta\chi^2$ (df=1)	15.92 (*p*<0.001)	18.33 (*p*<0.001)	39.47 (*p*<0.001)	67.88 (*p*<0.001)	17.19 (*p*<0.001)	39.66 (*p*<0.001)	31.40 (*p*<0.001)	33.20 (*p*<0.001)
Δ Cox & Snell R^2	0.90%	1.10%	2.30%	3.90%	1.00%	2.30%	1.90%	2.00%
Δ Nagelkerke R^2	1.30%	2.00%	4.90%	6.70%	2.40%	3.20%	3.90%	3.90%
Final model statistics step 2[d]								
χ^2 (df=10)	141.40 (*p*<0.001)	51.59 (*p*<0.001)	65.43 (*p*<0.001)	112.98 (*p*<0.001)	35.29 (*p*<0.001)	69.41 (*p*<0.001)	51.35 (*p*<0.001)	66.23 (*p*<0.001)
Cox & Snell R^2	8.20%	3.10%	3.90%	6.60%	2.10%	4.10%	3.10%	4.00%
Nagelkerke R^2	12.10%	5.60%	8.10%	11.20%	5.00%	6.00%	6.40%	7.80%

[a]Inserted as *z*-score, [b]>90% of full-time equivalent comprised the reference group. Significant predictors are shown in bold, [c]without workaholism included in the model, [d]with workaholism included in the model.

less if the work schedule includes shift work.

However, the results may also reflect that those with the highest full-time equivalent have gained more experience, which may be accident protective, than those with lower full-time equivalent positions. The fact that number of night shifts last year was associated with an increased risk of negative incidents (dozed off at work and while driving, nearly harmed patients/others) which fits well with previous research[28, 51, 52] and probably is a manifestation of circadian influences on work ability[53], as well as elevated sleepiness in night workers[54]. Finally, the results showed that sleep duration was inversely related to three (dozed off at work and while driving, nearly harmed self) of eight work-related incident types. This agrees with other studies[35, 55] and is also in accordance with studies showing that short sleep impairs cognitive function[56] and consequently increases the risk of erroneous actions[57]. Based on the results from the present study it seems conceivable that workaholism may negatively influence work-related incidents through mental and physical strain, poor sleep, long working hours, presenteeism, and/or comorbid mental health problems.

Although workaholism did not explain much variance of the negative work-related incidents it was overall the strongest and most potent predictor. Hence, interventions aiming to reduce workaholism both at the organizational level (e.g. decreasing workload and external pressure[58]), and the individual level (e.g. counseling[59] and revalidating self against non-work activities[60]) may also have positive effects on nurses' accident proneness.

Strengths and limitations

To our knowledge, this is the first study which has investigated the relationship between workaholism and negative work-related incidents, and as such contributes significantly to the field. The sample size was large and provided sufficient statistical power to the analyses. It should also be noted as an asset that we controlled for several relevant variables in the analyses (percentage of full-time equivalent, number of night shifts last year, and total sleep duration). A final asset of the present study was the use of a well-validated instrument assessing workaholism[17].

In terms of limitations it should be noted that the study sample had a large female preponderance (although representative for Norwegian nurses in terms of sex), which limits the generalizability of the findings. Future studies should therefore be conducted in samples with a higher proportion of male workers in order to support the present findings. The low response rate in the first wave of SUSSH is a further limitation. As all participants were nurses the results cannot be generalized to other working populations without reservations. The demographic, work-related and workaholism variables explained a limited proportion of the variance in work-related incidents, which arguably may limit the practical implications of the findings. Workaholism was assessed with the BWAS that conceptualizes workaholism as an addiction. It is possible that other operationalizations of workaholism could have given other results, although the BWAS has been shown to have a large conceptual overlap with other workaholism measures[7]. It should also be noted that the items assessing the negative work-related incidents were constructed for the purpose of the present study. Although they might have high face validity, information about their specific psychometric properties is lacking. Hence, future studies should more thoroughly investigate the validity of these items. Moreover, it should also be noted that the seriousness of the incidents in question was not addressed. As dichotomizing the dependent variables was conducted due to the fact that each single incident represented an unwanted occurrence and because of the skewed distribution of responses, it should still be noted that this approach restricted the variance of the dependent variables. In addition, although confidentiality was ensured, we cannot rule out that some nurses answered in line with a social desirability bias[61] and consequently underreported the occurrence of work-related incidents. The cross-sectional design of the present study entails another limitation as the results may be influenced by the common method bias[62]. Both due to this and obsessiveness associated with workaholism, which may influence accident reporting[45], future studies should aim to assess negative work-related incidents with objective indicators or supervisor ratings.

Conclusions

Workaholism is consistently and positively associated with negative work-related incidents, even after controlling for various demographic and work related variables, and sleep duration. Future studies should investigate the longitudinal relationship between workaholism and negative work-related incidents. Observational studies looking into specific work-related behaviors of workaholics could shed further light on the association between workaholism and negative work-related incidents. Overall the present study attests to the perspective of workaholism as a negative state of mind.

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