

How Does Workaholism Affect Worker Health and Performance? The Mediating Role of Coping

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Abstract

Background The underlying mechanisms connecting workaholism on the one hand and ill-health and performance on the other hand have to date hardly been examined empirically.

Purpose The aim was to study the mediating role of coping (i.e., active coping and emotional discharge) in the relationship between workaholism, ill-health (i.e., psychological distress and physical complaints), and job performance.

Method A theory-based model was tested among 757 employees of a Japanese construction machinery company.

Results Workaholism was positively related to active coping, which was, in its turn, negatively associated with ill-health and positively with job performance. Workaholism was also positively related to emotional discharge, which was positively associated with ill-health. In addition, workaholism was positively and directly related to ill-health, whereas it was not significantly related to job performance.

Conclusion Workaholism is associated with both active coping and emotional discharge. Active coping leads to better health and performance, whereas emotional discharge leads to poor health. In addition, workaholism coincides with poor health. Since the costs for workaholics them-

selves (in terms of ill-health) are high, workaholism has on average adverse effects on health and performance.

Keywords Workaholism · Coping · Psychological distress · Physical complaints · Job performance

Introduction

In recent years, working conditions have been changing rapidly. For instance, clear role expectations at work are the exception rather than the rule, and the boundaries between work and personal life have become blurred [1]. In addition, with the advancement of communication technology, an increasing number of employees work outside the traditional office and beyond traditional work hours [2]. These changing work conditions call for a better understanding of *how* employees work (i.e., workaholism) and what the consequences are for employee psychological and physical health and job performance. This study focuses on the role of coping as a possible mediator of the relationship between workaholism and psychological and physical health and performance.

Workaholism

For the lay public, workaholism is synonymous with working long hours. However, conceiving workaholism exclusively in terms of the number of working hours is misleading because it neglects its addictive nature. A typical work addict is motivated by a strong internal drive that cannot be resisted rather than by external or contextual factors, such as financial problems, a poor marriage, organizational culture, supervisory pressure, or a strong desire for career advancement. This follows from the

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overview of earlier theory and research presented by Scott and her colleagues [3], who found three common characteristics of workaholism that feature across various definitions. First, workaholic people spend a great deal of time on work activities when given the discretion to do so—they work excessively hard. Second, they are reluctant to disengage from work and they persistently and frequently think about work when they are not working. This suggests that they are obsessed with their work—they are compulsive workers. The third common feature—they work beyond what is reasonably expected from them to meet organizational or economic requirements—is a specification of the first two features because it deals with a particular manifestation of working hard and compulsively.

Therefore, based on a conceptual analysis, Schaufeli and his colleagues [4] defined workaholism as the tendency to work excessively hard (the behavioral dimension) and being obsessed with work (the cognitive dimension), which manifests itself in working compulsively. This definition agrees with the most recent analysis of scholarly definitions that concludes that working hard at the expense of other important life roles and a strong internal drive to work are two key aspects of workaholism [2].

Previous studies revealed that workaholism is associated with ill-health and poor job performance [4–10]. For instance, Burke [11] showed that workaholic people reported higher levels of negative affect and burnout and lower levels of positive affect. However, most of previous research examined the direct relationship between workaholism and performance, neglecting the underlying processes accounting for this relationship. One notable exception is the study of Taris et al. [5] that examined work characteristics (such as job demands) as a mediator of the relationship between workaholism and ill-health. However, to date, few empirical studies have focused on the role of personal characteristics as mediators of this relationship.

The present study fills this gap by examining the association between workaholism and outcomes like ill-health and job performance in terms of personal characteristics. Specifically, this study conceptualizes coping as a mediator of the relationship between workaholism on the one hand and ill-health and performance on the other hand. Although coping is considered a key concept in psychological research on work stress [12, 13], the role of coping has been ignored in workaholism research.

The Hypothesized Model

Figure 1 shows the research model used in this study (please note that Fig. 1 also presents the results of structural equation modeling). Based on the notions discussed above and the coping resource model [14], it is assumed that workaholism affects the choice of coping strategies in stressful situations. In addition, depending on the way of coping, workaholism may have a positive or negative impact on employee ill-health and performance. In this study, we focused on active coping and emotional discharge among a wide range of coping strategies because these two forms of coping conceptually reflect the behavioral and/or cognitive efforts to manage stressful situations among workaholics. Active coping refers to attempts to come to grips with problems at work by cognitively analyzing the situation and/or by taking concrete actions to solve or overcome these problems [15]. Emotional discharge refers to openly venting one's negative emotions to others [16, 17].

Regarding the process linking workaholism, coping, ill-health (i.e., psychological distress and physical complaints), and job performance, we expect a positive relationship between workaholism and active coping (*hypothesis 1*). This is because they would invest more effort in solving the problems experienced in the workplace. In addition, we expect that active coping will have a negative relationship with ill-health and a positive one with performance (*hypothesis 2*). Since this

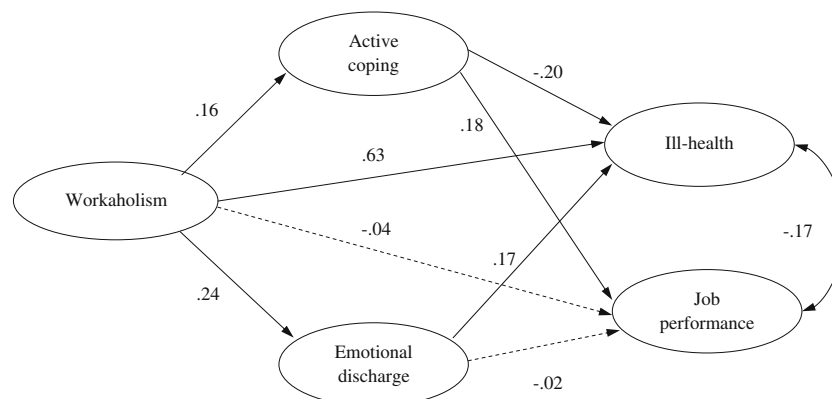


Fig. 1 Standardized solution (maximum likelihood estimates) of the hypothesized model. $N=757$. Note: Dotted lines represent nonsignificant paths ($p > 0.05$). Error terms were omitted for clarity

form of coping aims at solving the problem and improving the situation directly, it is likely to lead to lower psychological distress and physical complaints and better job performance [18–21].

As regards the process linking workaholism to ill-health and performance through emotional discharge, we expected a positive relationship between workaholism and emotional discharge (*hypothesis 3*). Workaholics are considered to be motivated by a strong internal drive that cannot be resisted. Thus, the primary purpose of their hard work is the avoidance and reduction of negative emotions (e.g., anxiety, guilt) that are experienced when not working—they are impatient with stressful situations. In addition, workaholic people feel that others do not work hard because they themselves work beyond what is reasonably expected from them to meet organizational or economic requirements and they perceive their coworkers as being less valuable to the organization than themselves and their coworkers' work to be of lower quality than their own work [22]. Therefore, workaholic people may more easily disclose negative emotions to others in stressful situations at work. Whereas this may result in an instant reduction of their own negative emotions, the relationship with their coworkers may well suffer, resulting in low social support and, hence, ill-health and poor performance (*hypothesis 4*).

In addition to these two mediating processes, our model included direct effects of workaholism on ill-health and performance. By definition, workaholic people spend an excessive amount of time on their work. This suggests that they have insufficient opportunity to recover from their excessive efforts [23], leaving them emotionally or cognitively exhausted over time [5]. In addition, they persistently and frequently think about work when they are not at work [5], which may result in sympathetic arousal and emotional distress. In line with this reasoning, workaholic people report relatively high levels of psychological distress and physical complaints [4–6, 9, 10]. As for performance, Schaufeli et al. [24] argued that workaholic people work hard rather than smart; they create difficulties for themselves and their coworkers, suffer from perfectionism, are rigid and inflexible, and do not delegate tasks to others. This suggests that workaholism is negatively associated with job performance. Hence, we expected that workaholism would have a direct and positive relationship with ill-health and a direct and negative relationship with performance (*hypothesis 5*).

Method

Participants

All participants worked at direct and indirect divisions of a construction machinery company in western Japan. Those

in the direct division were engaged in the production assembly line, whereas those in the indirect division were engaged in supportive tasks (e.g., supplementation of materials and clerical tasks). Participants were invited by the industrial health staff of the company to participate in the study. Before participating, all employees were informed about the objectives of the study by a pamphlet as well as by their supervisors. The study was approved by the ethics review board of Hiroshima University before starting the study.

Questionnaires were distributed to all employees ($N=969$) and 922 employees returned the questionnaires (95.1% response rate). Although participants enrolled in the study on a voluntary basis, their responses were not anonymous because the company requested us to send individual employees feedback on their own results. Missing data for one or more key study variables reduced this number to 757. Of these respondents, 709 (93.7%) were males and 48 females (6.3%); 563 (74.4%) were members of the direct division and 194 (25.6%) were members of the indirect division. The mean age of the sample was 37.8 years ($SD=12.8$).

Measures

The questionnaire tapped workaholism, coping, ill-health, and job performance. All scales were in Japanese and had been well-validated in previous research.

Workaholism Workaholism was measured with the Japanese version of Dutch Workaholism Scale [23]. The scale consists of two subscales: *working excessively* (e.g., “I stay busy and keep many irons in the fire”) and *working compulsively* (e.g., “I feel guilty when I take time off work”). Both subscales consist of five items that were rated on a four-point Likert scale (1 = “totally disagree”, 4 = “totally agree”). The reliability and validity of the Japanese version was confirmed by Schaufeli et al. [23], warranting its cross-cultural applicability. Although the scale score for working excessively in this study was low compared to Japanese norms [23] (10.4 ($SD=3.2$) vs. 11.6 ($SD=3.4$), $t(4,066)=15.66$, $p<0.001$), the score for working compulsively was higher than these norms (9.9 ($SD=3.2$) vs. 9.7 ($SD=2.9$), $t(4,066)=2.89$, $p<0.01$).

Coping Coping was assessed using the corresponding subscale of the Brief Scales for Coping Profile [17]. *Active coping* was assessed with the subscale of “Active solution” (three items, e.g., “I try to analyze the causes and solve the problem”) and *emotional discharge* with the subscale of “Emotional expression involving others” (three items, e.g., “I blame the person who has caused the situation”). Respondents were asked to indicate how often they used

the strategy described by each particular item, ranging from 1 = “almost never” to 4 = “very often”.

Ill-health Psychological distress and physical complaints were assessed using the corresponding subscales of the Brief Job Stress Questionnaire [25]. *Psychological distress* was measured by 15 items, mainly reflecting fatigue, anxiety, and depression. For instance, “I am completely exhausted”, “I feel ill at ease”, and “I feel depressed”. Each item was scored on a four-point Likert scale ranging from 1 = “strongly disagree” to 4 = “strongly agree”. *Physical complaints* were measured by means of 11 items, like “I have a pain in the back”. Each item was scored on a four-point Likert scale ranging from 1 = “strongly disagree” to 4 = “strongly agree”.

Job Performance Job performance was assessed using a single item from the World Health Organization Health and Work Performance Questionnaire [26]. Respondents were asked to rate their overall work performance during the past 4 weeks on a self-anchoring scale, with 0 representing the “worst possible work performance a person could have on this job” and 10 indicating “top work performance” on the job. We used this single-item self-report global scale because (1) a global index of overall job performance (single item measure) may be an inclusive and valid measure of job performance [26], (2) data on the objective performance of employees is difficult to obtain, and (3) alternative self-report measures of job performance focus on single occupations and include questions tailored to the unique demands of those occupations, meaning that these were not suitable for the present study. Note that whereas participants may well overestimate their own job performance, the present study does not focus on the participants' absolute performance scores. Rather, we are interested in the associations between performance and the other study variables, and it is difficult to see why this association would be biased by using a self-report measure of performance.

Possible Confounders As possible confounders, age, gender, and job section (direct/indirect) were included (cf. [8, 27, 28]).

Data Analysis

The participants' responses were analyzed with structural equation modeling techniques, using the AMOS 7 software package [29]. We analyzed the covariance matrix using maximum likelihood estimation. The goodness of fit of the models was evaluated using the following absolute goodness-of-fit indices (cf. [30]): (a) the χ^2 goodness of fit statistic, (b) the root mean square error of approximation

(RMSEA), and (c) the goodness-of-fit index (GFI). Since the χ^2 statistic is sensitive to sample size, i.e., the probability of rejecting a hypothesized model increases with sample size, the use of relative goodness-of-fit measures is strongly recommended [31]. Therefore, the nonnormed fit index (NNFI) was computed as well. Since the distribution of the GFI is unknown, no statistical test or critical value is available [30]. Values smaller than 0.08 for RMSEA are indicative of an acceptable fit, and values greater than 0.1 should lead to model rejection [32]. For NNFI, as a rule of thumb, values greater than 0.90 are considered to indicate good fit [33]. The scales introduced above were used as indicators of the latent factors. All latent factors had two or three indicators except for job performance which had only one indicator. We included correlations (correlated error terms) between ill-health and job performance because these concepts have often been shown to be negatively correlated [34–37]. The Sobel z test was used to examine the significance of the mediating effects.

Results

Descriptive Statistics

The means, standard deviations, internal consistencies (Cronbach's alpha), and correlations between the study variables are displayed in Table 1. As can be seen, all variables have satisfactory reliabilities with Cronbach's alpha coefficients of 0.70 or higher.

Test of the Hypothesized Model

Figure 1¹ shows the results for the hypothesized model. All fit indices of the hypothesized model have values higher than 0.96, and the RMSEA has a value of 0.05 ($\chi^2(36)=96.62$, GFI=0.98, NNFI=0.96, RMSEA=0.05). Thus, the model fitted the data acceptably well.

In terms of the process connecting workaholism through active coping to ill-health and job performance, workaholism was positively related to active coping ($\beta=0.16$, $p<0.001$), which was in turn negatively associated with ill-health ($\beta=-0.20$, $p<0.001$) and positively associated with job performance ($\beta=0.18$, $p<0.001$). On the other hand, in terms of the line from workaholism through emotional discharge to ill-health, workaholism was positively related to emotional discharge ($\beta=0.24$, $p<0.001$), which was

¹ Preliminary analyses in which job demands were controlled for revealed the same pattern of results, i.e., the relationships among workaholism, active coping/emotional discharge, and ill-health/job performance, were virtually identical to the relationships presented in this paper.

Table 1 Means, SDs, Cronbach's alphas, and correlations of the variables used in the study ($N=757$)

Measures	Mean	SD	Alpha	2	3	4	5	6	7
1. Work excessively	10.4	3.2	0.70	0.49***	0.09*	0.18***	0.49***	0.38***	0.01
2. Work compulsively	9.9	3.2	0.71		0.14***	0.10**	0.35***	0.31***	-0.07*
3. Active coping	8.3	2.4	0.84			0.00	-0.10**	-0.09*	0.17***
4. Emotional discharge	4.3	1.6	0.73				0.27***	0.17***	-0.03
5. Psychological distress	39.1	10.6	0.93					0.68***	-0.17***
6. Physical complaints	19.5	6.5	0.89						-0.09*
7. Job performance	6.6	2.0	-						

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

positively associated with ill-health ($\beta=0.17$, $p<0.001$). However, emotional discharge was not significantly related to job performance ($\beta=-0.02$, $p>0.05$). Regarding the direct relationship between workaholism on the one hand and ill-health and performance on the other hand, workaholism was positively and significantly related to ill-health ($\beta=0.63$, $p<0.001$), whereas it was not significantly related to job performance ($\beta=-0.04$, n.s.).

Subsequently, we conducted an additional analysis to control for demographic variables (i.e., age, gender, and job section) as potential confounders. Each control variable was included in the model as a manifest variable simultaneously and was allowed to predict all model variables. After controlling for these confounding variables, the path coefficients of the variables presented in Fig. 1 were virtually the same as those of hypothesized model, but the model fit deteriorated ($\chi^2(39)=192.73$, GFI=0.97, NNFI=0.87, RMSEA=0.07). These results indicate that the control variables were only weakly associated with the variables included in Fig. 1.

In a final step, we examined the mediating effects of active coping and emotional discharge in the relationship between workaholism on the one hand and ill-health and performance on the other hand. Results of the Sobel test in the hypothesized model showed that the mediating effects of active coping were significant in the relationship between workaholism on the one hand and ill-health and job performance on the other hand ($z=2.83$, $p<0.01$, and $z=2.68$, $p<0.01$, respectively). The mediating effect of emotional discharge was significant in the relationship between workaholism and ill-health ($z=3.03$, $p<0.01$), whereas it was not significant in the relationship between workaholism and job performance ($z=0.45$, n.s.).

In sum, workaholism was positively related to active coping and emotional discharge (*hypotheses 1 and 3* supported). Active coping was related to better health and performance (*hypothesis 2* supported), whereas emotional discharge was related to poor health but not to job performance (*hypothesis 4* partially supported). In addition, workaholism was directly related to poor health but not to performance (*hypothesis 5* partially supported).

Discussion

Workaholism has been associated with ill-health (i.e., psychological distress and physical complaints) and poor job performance [4–6, 9, 10]. However, the mechanisms connecting workaholism, worker health, and performance have to date hardly been examined. This study focused on coping as a mediator of the relationship between workaholism on the one hand and ill-health and performance on the other hand. We expected that workaholic people would cope more actively than others (which could lead to better health and performance) and that they would more easily disclose their negative emotions than others (which could lead to poor health and performance due to lack of social support). Further, we expected direct relationships between workaholism on the one hand and ill-health and performance on the other hand; working excessively in a compulsive manner could lead to excessive fatigue, leading to ill-health (and, possibly, poor performance).

Our findings show that workaholism is both directly and indirectly (through active coping and emotional discharge) associated with ill-health. Specifically, (1) workaholism coincides with ill-health, (2) workaholism is associated with better health through active coping, and (3) workaholism is associated with poor health through emotional discharge. Since the adverse effects of workaholism (i.e., its direct effect and its indirect effect through emotional discharge) are much stronger than its favorable effect (i.e., the indirect effect through active coping), the strong adverse effects on health are not compensated for by their higher use of active coping strategies. Therefore, workaholic people will on average be less healthy than others.

Our findings also show that workaholism and performance are only weakly and indirectly connected through active coping. Although workaholic people may perform slightly better than others through their use of active coping strategies, this indirect effect is relatively small. Overall, although workaholic people may contribute slightly more to organizational performance than others, the costs for the workaholic people themselves (in terms of ill-health) are high.

Contrary to our expectations, emotional discharge was not significantly related to (poor) job performance. This unexpected result may result from the measurement of job performance. Although we measured *respondents'* performance, emotional discharge may have had adverse effects more on their *coworkers'* performance because coworkers would be bothered by having their workaholic colleague easily disclose negative emotions to them in stressful situations. Future research should examine the impact of workaholism (through coping) on organizational-level performance as well as individual-level one.

Limitations and Future Directions

The main limitations of this study are the following: First, this study was based on a cross-sectional design, meaning that no conclusion can be drawn about the causal order of the study variables. A multiwave design is needed to capture more fully the developmental aspects of the process of interest [38], for example, mediating effects of coping in the relationship between workaholism on the one hand and ill-health and job performance on the other hand. Second, this study was based on survey data with self-report measures. Thus, factors such as negative affectivity and social desirability may have affected the findings. Hence, our findings should be replicated with objective measures (e.g., objective performance, blood pressure, and immune function as physical health) in the future. Third, the study was conducted among Japanese employees in a construction machinery company. Generalization of the current results to other occupations and even to other countries awaits further empirical examination. For example, Kirmayer [39] mentioned that in some cultures, the suppression of distress could be a means of successful coping and, at the same time, might provide a mark of moral distinction. Because maintenance of social harmony is one of the most important values in Japanese society [40], emotional discharge may affect well-being among Japanese employees more strongly than the well-being of employees in other countries. Our findings should therefore be replicated in Western countries.

Practical Implications

Our findings suggest that workaholism is directly and strongly associated with ill-health. So, decreasing workaholism is a possible first step to improve employees' health. The organizational culture in which employees who work long hours are the "heroes" and who are thus displayed as role models should be replaced by a culture that stimulates working smart rather than hard and that values a healthy work-life balance. This is not easy to accomplish, though, because those who are in charge of that culture change are often work addicts themselves [41].

For employees who are at risk for workaholism, training programs which focus on time management and problem solving skills might be helpful because workaholics take on more work than they can handle and accept new tasks before completing previous ones [41]. In addition, employees should be encouraged to detach and recover from a hard day's work. A demanding work situation increases the need for recovery because it draws on an individual's resources [42]. Successive depletion of resources will result in negative effects, such as fatigue and, eventually, when no recovery occurs, in exhaustion. Distraction may help employees detach and recover from their work [21].

Our findings also suggest that workaholism is indirectly associated with ill-health through emotional discharge. So, for workaholics, programs which focus on assertiveness might be also helpful in order to deal adequately with their (negative) emotions experienced in the workplace [43].

Conclusion

This study clarified the internal process from workaholism to (ill-)health and performance. Workaholism is associated with both active coping and emotional discharge. Active coping leads to better health and performance, whereas emotional discharge leads to poor health. In addition, workaholism coincides with poor health. Since the costs for the workaholic people themselves (in terms of ill-health) are high, workaholism has on average adverse effects on health and performance.

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