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# Work stress and motivation in psychologists in the hospital setting: the role of primary cognitive appraisal

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## ABSTRACT

The aim of this study was to explore in a hospital setting the relationships between work motivation and stress among psychologists working in hospitals. The second aim was to identify the respective roles of threat appraisal and challenge appraisal in this population. We expected work stress to have a motivational impact in the workplace, with primary cognitive appraisal (e.g., threat or challenge) playing a crucial role. The study included a large sample of 430 French psychologists recruited in French hospitals with a mean age of  $33.68 \pm 8.73$  years. We assessed perceived work stress, work motivation, and primary cognitive appraisal. Analysis showed two main outcomes. First, perceived stress in the workplace impacts work motivation; specifically, the higher the perceived stress, the less motivation is self-determined. Second, threat cognitive appraisal has a direct and negative motivational impact, but also an indirect impact via perceived stress.

However, appraisal of work as a cognitive challenge also directly and positively impacts motivation in the workplace, without indirect effects. Finally, work stress, work motivation and primary cognitive appraisals are significantly related with the workplace. These relationships support complementarity with the Transactional Model of Stress and SDT motivational approach in a theoretical and practical perspective in the workplace.

## KEYWORDS

challenge/threat appraisal; hospital setting; psychologists; stress; work motivation

# 1. Introduction

Motivation is a central factor in the workplace (Gagné & Deci, 2005). Low work motivation can have major consequences on performance and engagement, can lead to burnout (Fernet et al., 2015; Trépanier et al., 2020) and may be influenced by environmental factors. This is the case of work stress (Deci et al., 2017), which we explore in the present study, conducted among psychologists working in hospitals. Cognitive appraisals, a well-known antecedent of stress, is also studied in relation to motivation.

The motivational approach of Self-Determination Theory (SDT, Deci & Ryan, 2002; Ryan & Deci, 2017) was first applied to a workplace context by Gagné and Deci (2005). The SDT approach has significantly contributed to improving our understanding of motivational processes and their consequences in the workplace. The SDT motivational approach proposes that social-contextual and individual differences are central factors impacting the motivational processes at work (Olafsen et al., 2018).

Self-Determination Theory (SDT, Deci & Ryan, 2002; Ryan & Deci, 2017) defines motivation as a hypothetical construct used to describe the internal and/or external forces that produce the initiation, direction, intensity, and persistence of behavior (Vallerand & Thill, 1993). This theoretical approach postulates the existence of different forms of motivation: Intrinsic Motivation (IM), Extrinsic Motivation (EM) and Amotivation (AM; Deci & Ryan, 2000) set on a self-determination continuum ranging from most to least. Intrinsic motivation refers to the practice of an activity for the enjoyment, interest or satisfaction generated by this activity. Three types of IM were identified: IM to know (i.e., engaging in an activity for the sake of learning, out of curiosity, for exploration purposes), IM toward accomplishments (i.e., engaging in an activity for enjoyment, satisfaction of achievement and accomplishment), IM to experience stimulation (i.e., engaging in an activity for the sensations associated with it; Pelletier et al., 1996). Extrinsic motivation refers to a set of behaviors performed for instrumental (external) reasons, broken down into four types. Activities or behaviors can be in line with personal life goals (EM with integrated regulation), be valuable, important to an individual (EM with identified regulation), based on internal pressures such as guilt (EM with introjected regulation) or for external reasons such as rewards, punishments or social pressures (EM with external regulation). Amotivation corresponds to the absence of intrinsic or

extrinsic motivation; people do not perceive any reason to perform the activity (Vallerand & Fortier, 1998).

As mentioned, said different forms of motivation are organized on a self-determination continuum. Intrinsic motivation occupies the highest level on the self-determination continuum, as behaviors are freely initiated by oneself. Other forms of self-determined motivation (integrated regulation, identified regulation) and non-self-determined forms of extrinsic motivation (introjected regulation, EM with external regulation) represent decreasing levels of self-determination. The lowest level on the self-determination continuum is represented by amotivation (Deci & Ryan, 2002). For individuals, the combination of these different forms of motivation (self-determined and non-self-determined motivations) determines their Self-Determination Index (SDI; Brault-Labbé & Dubé, 2010; R.J. Vallerand & Ratelle, 2002). SDT theory in workplace literature highlights two points: first, motivation acts as a pivotal factor in different variables (e.g., job performances, turnover intentions, absenteeism, burnout and well-being; Fernet et al., 2012; Olafsen et al., 2018); second, various social-contextual and individual-differences variables (job characteristics, job social climate) impact motivational processes at work (Deci et al., 2017; Trépanier et al., 2015, 2020). The topic of motivation therefore has relevance and wide-spanning application in the workplace. While stress and cognitive appraisal are of great interest in workplace research, their impacts on motivational processes in the workplace have not received sufficient empirical attention, particularly within an SDT approach and among psychologists working in hospitals.

Lazarus and Folkman (1984) in their transactional model define stress as *'a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being'* (Lazarus & Folkman, 1984, p. 19). This definition goes on to highlight the important role of primary personal cognitive appraisals in the motivational process, which, along with secondary appraisal, determine coping responses and stress experience.

Lazarus and Folkman (1984, p. 31) defined cognitive appraisals as a *'process of categorizing an encounter, and its various facets, with respect to its significance for well-being'*. Two cognitive appraisals have been distinguished: primary and secondary. When a person is faced with a potential stressful event, primary cognitive appraisals consist in an individual evaluation of a situation, and the subjective assessment of situational demands (e.g., threat, challenge) to determine if the situation is personally stressful. Threat appraisals refer to potential stressful events perceived as leading to failure with harm or loss, whereas challenge appraisals lead to perception of the event as an opportunity for self-growth or mastery. Secondary cognitive appraisal follows on from primary cognitive appraisals and consists in evaluating the available personal resources and potential coping strategies in the face of the event perceived as stressful (Lazarus, 1991).

While the central and pivotal role of cognitive appraisal in the stress process has been widely confirmed in the literature (Bunk & Magley, 2013; Cortina & Magley, 2009; Gomes et al., 2013; Lazarus, 1995; Searle & Auton, 2015; Webster et al., 2011), few studies have investigated their roles in the motivational process. In line with the Lazarus model (R.S. Lazarus, 1999), Ntoumanis et al. (2009) highlighted the theoretical relationships and complementary between stress and motivation in health. In the present study, we

analyze the relationship between stress and motivation in the workplace in light of primary cognitive appraisals (e.g., threat, challenge). Threat appraisals are associated with superior negative consequences across numerous variables (e.g., academic performance, sport performance, cognitive performance, anxiety, emotions) compared to challenge appraisals (Blascovich et al., 2004; Drach-Zahavy & Erez, 2002; Ntoumanis et al., 2009; Seery et al., 2010; Vine et al., 2013). Little research has however examined the effect of threat and challenge appraisals on motivation, particularly in the hospital workplace. And yet, hospitals represent stressful environments with precarious working conditions for hospital staff (Hämmig, 2018).

We attempt to explain the relationship between stress and the motivational process in the workplace by mobilizing the Transactional Model of Stress (Lazarus & Folkman, 1984) and Self-Determination Theory (SDT, Deci & Ryan, 2002; Ryan & Deci, 2017). For this, the present research endeavors to contribute to a better understanding of work motivation in hospital settings by exploring the effect of work stress and its subjective assessment in terms of threat and challenge. The aims of this study were twofold:

H1- to explore the relationships between work motivation and stress among psychologists in French hospitals. We expected significant relationships between work motivation and work stress: the higher stress scores, the lower the self-determined motivation.

H2- to identify the respective effect of threat and challenge appraisals on stress and motivation in this context. We postulated that threat and challenge appraisals also have an effect on work motivation, one which is mediated by stress level: the more psychologists appraised their work as challenging, the less they would report stress, thus increasing their level of self-determined motivation. In contrast, the more psychologists appraised their workplace as being threatening, the more they reported stress, decreasing their level of self-determined motivation.

## **2. Materials and methods**

### ***2.1. Participants and procedure***

A total of 430 native French-speaking psychologists were recruited in French hospitals. The participants were composed of 388 (90.23%) females and 42 (9.77%) males with a mean age of  $33.68 \pm 8.73$  years. The recruitment process was carried out with the agreement of the French Society of Psychology (FSP) and the French Federation of Psychologists and Psychotherapists (FFPP) via their respective websites. Only professional psychologists working in French hospitals (public or private) could participate in the study. No other inclusion criteria were used. The assessment was performed using an online questionnaire. The participants were informed and gave their consent in the first part of questionnaire, after having read the general presentation and the aims of the study. Each psychologist participated individually and anonymously, and was informed of the possibility to refuse or to quit the study at any time. No financial compensation was given. The average completion time was between 15 and 20 minutes. This study followed the ethical guidelines of the Declaration of Helsinki.

## **a. Measures**

### **i. Work Motivation**

The Revised Motivation at Work Scale (RMWS-20; Gagné & Forest, 2008) is a revised short version of the Work Motivation Scale (WMS-31; Blais et al., 1983). The RMWS is a 20-item self-report measure of motivation at work using responses to the question, 'Why are you currently working in this job?' Participants choose from items on a 7-point Likert scale ranging from 1 ('Does not correspond at all') to ('Corresponds exactly'). This scale assessed three forms of motivation: 1- *intrinsic motivation* (e.g., '*For the intense pleasure that I derive from this work*').), 2- *extrinsic motivation* including self-determined forms of extrinsic motivation (identified regulation, e.g., '*Because it is in this job that I prefer to pursue my career*').), and *non-self-determined* forms (introjected regulation, e.g., '*Because I absolutely want to be very good at this job, otherwise I would be disappointed*').; external regulation, e.g., '*Because it allows me to make money*').) and 3- *Amotivation* (e.g., '*I don't know, they set unrealistic working conditions for us*').). This scale was developed in French using the Self-Determination Theory (SDT) approach of motivation. All the items were summed to calculate a score for each subscale as well as a global Self-Determination Index (SDI) by weighting each type of motivation along the SDT continuum (Brault-Labbé & Dubé, 2010; R.J. Vallerand & Ratelle, 2002). In this study, the internal consistency for intrinsic motivation was  $\alpha = .83$ , EM with identified regulation:  $\alpha = .56$ , EM with introjected regulation:  $\alpha = .79$ , EM with external regulation:  $\alpha = .66$ , and Amotivation:  $\alpha = .69$ . The internal consistency for the whole scale was  $\alpha = .74$ .

### **ii. Perceived Stress**

The French version of the Perceived Stress Scale (PSS, Bruchon-Schweitzer, 2002; Cohen et al., 1983; Lesage et al., 2012) is a 14-item self-report measure of perceived stress which asks participants to report how they have felt at their workplace over the last month ('In the past month, how often have you [been/felt] upset in the workplace?') using a 5-point Likert scale ranging from 0 ('Never') to 5 ('Very Often'). This scale was developed in line with the transactional model of stress (Lazarus & Folkman, 1984). In the present study, the internal consistency for the scale was  $\alpha = .86$ .

### **iii. Primary appraisals**

The French version of the Cognitive Appraisal Scale (CAS, Berjot & Girault-Lidvan, 2009; Skinner & Brewer, 2002) is an 18-item self-report measure used to assess the trait primary cognitive appraisals. Eleven items assess threat appraisals (e.g., 'I'm concerned that others will be disappointed in my performance'), and 8-item challenge appraisals (e.g., 'I'm looking forward to testing my knowledge, skills, and abilities'). Participants answer on a 6-point Likert scale ranging from 1 ('Not at all') to 6 ('Very Much'). In this study, the internal consistency for threat appraisals was  $\alpha = .87$ ,  $\alpha = .78$  for challenge appraisals, and .83 for the whole scale.

## **b. Statistical analyses**

Statistical analyses were conducted using SPSS® software version 20 (IBM Corporation, Armonk NY, USA). First of all, preliminary analyses explored means, standard deviations and correlations between the study variables. Second, we conducted mediational analysis with PROCESS macro Model 4 (v3.2; Hayes, 2017) for SPSS 20 to test the

mediational role of stress in the relationship between cognitive appraisals and work motivation. Analyses were performed with a bootstrap sample size of 5,000.

### 3. Results

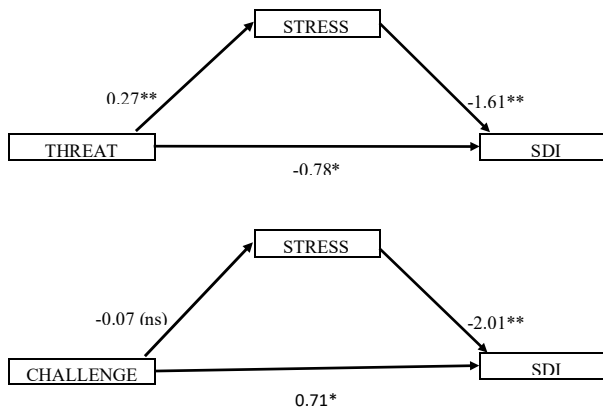
#### a. Preliminary analyses

Table 1 depicts the means, standard deviations and correlations for all variables in the study. Work motivation and stress were significantly correlated: while intrinsic motivation and the most self-determined extrinsic forms of motivation (e.g., IM) were negatively correlated with stress scores, scores for the least self-determined forms of extrinsic motivation were positively correlated with stress. Overall, SDI was negatively correlated with stress scores. In addition, threat cognitive appraisals were significantly and positively correlated with stress scores; no correlation was found between challenge cognitive appraisals and stress. Cognitive appraisals were also correlated with SDI, positively for challenge appraisals and negatively for threat appraisals.

**Table 1.** Descriptive statistics and correlations for all variable.

	M	SD	1	2	3	4	5	6	7	8	9
1. Age	33.68	8.73									
2. Threat	2.61	0.91	-.12*								
3. Challenge	3.16	0.7	-0.05	.14**							
4. Stress	2.56	0.61	-.15**	.40**	-0.08						
5. IM	5.79	0.94	-0.03	-0.09	.24**	-.19**					
6. EM Identified Regulation	5.46	0.87	-.12*	.12*	.33**	0.04	.54**				
7. EM Extrojected Regulation	1.45	0.57	-0.09	.22**	0.05	.24**	-.17**	0.06			
8. EM External Regulation	3.28	1.16	-.30**	.30**	.18**	.27**	-0.03	.33**	.37**		
9. AM	1.31	0.53	-0.01	.22**	0.06	.11*	-.33**	-.14**	.37**	.25**	
10. SDI	12.69	4.85	0.05	-.23**	.12*	-.26**	.83**	.45**	-.53**	-.37**	-.69**

Note. n = 430; \*p < .05, \*\*p < .01; M: mean; SD: standard deviation; AM: amotivation; EM: extrinsic motivation; IM: intrinsic motivation; SDI: Self-Determination Index.



**Figure 1.** Illustration of mediational models with stress as mediator in the relationship between cognitive appraisal and work motivation. Note.  $n = 430$ ;  $*p < .05$ ,  $**p < .01$ ; SDI: Self-Determination Index.

## ***b. Mediation effects***

The mediational role of stress in the relationship between cognitive appraisals and SDI was examined with the PROCESS macro (Hayes, 2017). Consistent with the mediational analyses reported in Figure 1, two mediational models were tested: one with challenge as a predictor, and one with threat as a predictor. The effect of threat cognitive appraisals on SDI was direct and mediated by perceived stress, while the effect of challenge cognitive appraisals on SDI was only direct. The direct effect of threat cognitive appraisals on SDI was indeed significant ( $B = -0.78$ ,  $S.E. = 0.27$ ,  $95\% CI = [-1.31; -0.25]$ ), as was the indirect effect of threat cognitive appraisals on SDI via Stress ( $B = -0.42$ ,  $S.E. = 0.13$ ,  $95\% CI = [-0.69; -0.19]$ ). In addition, the total effect was significant ( $B = -1.21$ ,  $S.E. = 0.25$ ,  $95\% CI = [-1.70; -0.71]$ ). Conversely, the direct effect of challenge cognitive appraisals on SDI was significant ( $B = 0.71$ ,  $S.E. = 0.32$ ,  $95\% CI = [0.69; 1.33]$ ), but the indirect effect of challenge on SDI via Stress ( $B = 0.14$ ,  $S.E. = 0.10$ ,  $95\% CI = [0.29; 0.36]$ ) was not. In addition, the total effect was significant ( $B = 0.84$ ,  $S.E. = 0.33$ ,  $95\% CI = [0.19; 1.49]$ ).

## **4. Discussion**

This original study reports novel outcomes from a sample of psychologists concerning the relationships between workplace stress and work motivation in light of cognitive appraisals. The present study provides two main contributions to the previous literature. First, the existence of significant relationships between work stress and work motivation in hospital workplaces: when perceived stress increases, self-determined motivation decreases. This result is consistent with prior studies demonstrating the motivational impact in the workplace of various environmental variables such as stress in the workplace (Deci et al., 2017; Ntoumanis et al., 2009; Trépanier et al., 2015, 2020). Second, our study clearly identifies cognitive appraisal as a pivotal mechanism in the relationship between stress and motivation. Stress impacts the motivation of staff, and cognitive appraisals participate in the perception of an event as stressful, in turn affecting motivation. These results are consistent with the literature, which portrays cognitive



appraisals as a central and pivotal variable in the stress process (Bunk & Magley, 2013; Cortina & Magley, 2009; Gomes et al., 2013; Lazarus, 1995; Searle & Auton, 2015; Webster et al., 2011). This study's original contribution to stress and motivation literature lies however in the sequence including cognitive appraisals (e.g., threat), work stress, and work motivation. This mediational sequence provides a better understanding of how events at work affect work motivation. These findings also support the complementarity of the Transactional Model of Stress and SDT motivational approach, potentially improving researchers' understanding of the relationships between stress and motivation in the workplace from a theoretical and practical perspective.

In line with Lazarus (1991), our results demonstrated that the interpretation of stressful events as a threat is central to the stress process, determining the level of perceived stress. The threat level and perceived stress level simultaneously contribute to decreasing self-determined motivation and increasing non-self-determined motivation at work. Contrary to threat appraisal, the interpretation of stressful events as a 'challenge' contributes directly to motivational orientation without stress mediation. These results support the role of primary cognitive appraisal in stress, revealing the importance of the personal significance of workplace events for work motivation.

Our findings also highlight the fact that primary cognitive appraisals in the workplace are crucial for the characterization of stressful events, determining the level of perceived stress. However, primary cognitive appraisals are based on the personal significance and relevance of an event, and consist of a subjective assessment of the situation. This subjective assessment is the result of the integration of different individual (memory, belief, emotion, personality) and environmental (job characteristics, job social climate) variables. The person-environment transaction approach of Lazarus and Folkman (1984) is reinforced in workplace contexts. In addition, the motivation impact of cognitive appraisal and perceived stress support an integrative approach between the person-environment transaction model of stress and motivation from an SDT perspective. This integrative approach to stressful events in the workplace and its consequences could be used in treatments based on problem-focused coping strategies. For example, the Basic Psychological Needs (BPN, Ryan & Deci, 2017) postulates can be used to resolve environmental stressful events (e.g., job climate) and their personal significance in order to regulate one's motivation and well-being in the workplace.

The present findings have also practical implications in management at the work organization and individual levels. First, managers could redesign work organizations and the context of work to make workplaces more efficient, and seek to prevent or curb situations interpretable as threat situations. Second, managers or practitioners could design interventions (e.g., psychoeducation program) to promote their activities as more of a challenge than a threat, and help to develop coping strategies when facing stressful events in the workplace.

The results of this study are not without limitations. First, this study was only composed of volunteer psychologists from the hospital that accepted to participate in the online survey. In the future, a larger healthcare worker group (e.g., including nurses, physicians) could be recruited into the sample. The sample was also composed in large part by female participants. Nevertheless, this proportion is representative of the gender distribution of psychologists in France. The second limitation is the lack of socio-environmental variables related to the workplace environment, though we can consider

our study as a pilot study on this specific population. Third, all variables in this research were assessed with self-reported measures; objective measures could be introduced in future research.

In future research, it would be of value to identify whether the results can be replicated among a sample of healthcare workers in a hospital with high levels of burnout, as burnout is often described as a chronic stress or 'stress pathology' (Boudoukha et al., 2013; Maslach et al., 2001). New findings could provide a practical framework for managers and practitioners to prevent stressful situations perceived as a threat in the workplace, thereby aiding in the management of stressful situations perceived as a threat.

## 5. Conclusion

This study supports the motivational impact of stress in the workplace and in a specific population: psychologists. Furthermore, the crucial role of primary cognitive appraisal was also revealed, in particular the negative motivational consequences of stressful workplace events interpreted as a threat. By contrast, challenge cognitive appraisal was found to benefit work motivation. This study encourages and supports the role of cognitive appraisal and motivation in the workplace context. Further complementary research based on a longitudinal design is needed to expand these results to burned-out professionals and replicate the present study by considering workplace socio-environmental variables.

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