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Cognitive motivational states impact quality of work life and job effectiveness via proactive behavior: a two-wave study of nurse managers

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Abstract

Purpose – This study examines whether nurse middle managers' proactive behavior mediates the relationship between cognitive motivational states (role breadth self-efficacy and positive emotions) and outcomes related to quality of work life (job satisfaction and job stress) and job effectiveness (innovative work behavior and job performance).

Design/methodology/approach – The study utilizes two-wave survey data from 152 nurse middle managers. Structural equation modeling was used to test whether proactive behavior mediates the effects of role breadth self-efficacy and positive emotions on both quality of work life and job effectiveness outcomes.

Findings – Findings indicate that cognitive motivational states (role breadth self-efficacy and positive emotions) significantly influence proactive behavior. Proactive behavior, in turn, enhances both quality of work life and job effectiveness. Additionally, proactive behavior was found to be the mechanism through which role breadth self-efficacy and positive emotions positively impact innovative work behavior.

Practical implications – These insights provide valuable guidance for hospital management and HR practitioners on how to foster nurse middle managers' proactivity, ultimately improving job performance and enhancing the quality of work life within healthcare organizations.

Originality/value – The study identifies proactive behavior as a key mediator in the relationship between cognitive motivational states and both work life quality and job effectiveness, emphasizing its role in driving innovative work behavior among nurse middle managers.

Keywords Proactive work behavior, Quality of work life, Innovative work behavior, Job performance, Cognitive motivational state

Paper type Research paper

INTRODUCTION

Proactive work behavior (PWB) is crucial for organizations, as highlighted by numerous studies (e.g. Crant, 2000). PWB is characterized as a self-initiated, anticipatory behavior aimed at introducing positive changes within the organization, situation, or oneself (Bindl and Parker, 2010). Extensive research has demonstrated its association with a range of positive organizational outcomes, including improved team performance, enhanced job satisfaction, and increased personal success (e.g. Crant, 2000). Given these benefits, there is growing recognition of the importance of PWB among nursing teams, staff, and managers, particularly as healthcare organizations face evolving challenges such as policy reforms, technological advancements, and changing work practices (Pierre et al., 2024). However, despite the increasing attention given to PWB, little is known about the specific cognitive motivational factors that drive nurse middle managers' PWB, creating a critical empirical and theoretical gap in the literature (Jankelova et al., 2021).

To address this gap, we draw on Parker et al.'s (2010) model of proactive motivation, which provides a comprehensive framework for understanding the cognitive drivers of PWB. This model is particularly relevant as it explains how internal motivational states, rather than external incentives, motivate individuals to proactively initiate and sustain workplace improvements. Parker et al. (2010)

identify three key motivational states that contribute to proactive behavior: a “can do” motivation, which reflects individuals’ perceived capability to engage in proactive action, a “reason to” motivation, which relates to individuals’ personal and situational reasons for engaging in PWB, and an “energized to” motivation, which encompasses affective and emotional states that sustain proactive efforts.

This study focuses specifically on the “can do” (role breadth self-efficacy) and “energized to” (positive emotions) motivational states because these are the most proximal antecedents of PWB (Bindl and Parker, 2010; Wang et al., 2022). RBSE and positive emotions are internally regulated and directly impact an individual’s likelihood to engage in PWB. Previous research suggests that individuals with high RBSE feel capable of initiating change, while positive emotions provide the psychological energy needed to sustain proactive efforts over time (Mustafa et al., 2023). In contrast, “reason to” motivation is often context-dependent and linked to broader organizational and situational factors such as job design, role expectations, or external rewards, which exert more indirect effects on PWB (Parker et al., 2010; Lee, 2024). Given our focus on nurse middle managers’ self-driven proactive tendencies, we prioritize the most direct and psychologically grounded antecedents in our model.

We also examine four key work-related outcomes of PWB: job performance, innovative work behavior (IWB), job satisfaction, and job stress.

PWB is widely associated with enhanced job performance and innovation, as proactive individuals actively seek improvements, introduce new ideas, and adapt effectively to workplace challenges (Cangialosi et al., 2024). Additionally, while PWB is linked to increased job satisfaction, recent studies suggest that proactive employees may also experience higher stress levels, depending on the demands and constraints of their work environment (Cangiano et al., 2019). These specific outcomes represent both the potential benefits and costs of PWB, allowing for a deeper understanding of its impact on nurse middle managers' work experience.

Based on Parker et al. (2010), this study seeks to address three key objectives. Examine psychological factors contributing to nurse middle managers' PWB, focusing on "can do" and "energized to" motivational states (i.e. role breadth self-efficacy and positive emotions) as proximal antecedents of PWB. Investigate the effects of nurse middle managers' PWB on job effectiveness (job performance and innovative work behavior) and quality of work life (QWL) indicators (job satisfaction and job stress). While PWB can lead to positive work-related outcomes, its effects on well-being remain complex, requiring further empirical exploration (Cangiano et al., 2019). Explore whether nurse middle managers' PWB mediates the relationship between their psychological states (RBSE and positive emotions) and their work outcomes (job performance, IWB, job stress, and job satisfaction).

By exploring how specific cognitive motivational factors influence nurse middle managers' proactive behavior and its associated outcomes, this study aims to contribute valuable insights into the processes underpinning proactive leadership in healthcare. The findings have practical implications for nursing Human Resource Management (HRM), guiding the development of targeted strategies that foster PWB, enhance job effectiveness, and improve quality of work life. Ultimately, our research seeks to inform organizational practices that support nurse middle managers' psychological resources and proactive capabilities, thereby promoting sustained organizational innovation and effective healthcare management.

THEORETICAL BACKGROUND

Proactive work behavior (PWB)

PWB is defined as a behavior that is self-initiated, future-focused, and aimed at introducing positive change for oneself, the team, or the organization (Bindl and Parker, 2010). It involves envisioning the future, acting in advance of events, and anticipating possible outcomes (Bindl and Parker, 2010). PWB requires going beyond formal roles to improve various aspects, such as work methods, processes, internal functioning, and problem-solving (Fay et al., 2023). Often considered discretionary behavior due to its self-directed nature (Van Dyne and LePine, 1998), being proactive is challenging for employees (e.g. Wu and

Parker, 2017) because it requires them to act on their initiative without waiting for guidelines or directions from others (e.g. Parker et al., 2010). PWB include a set of behaviors such as voice behavior (i.e. speaking out), taking charge (i.e. bringing about change in the work area), and problem prevention (i.e. recognizing potential problems before they occur and to stopping them; Parker and Collins, 2010).

Motivational drivers of hospital middle managers' PWB

Individual dispositions (e.g. personality, knowledge, and abilities) and situational factors (e.g. job characteristics, supportive climate) are considered key antecedents of PWB (Smithikrai, 2022). However, empirical literature identifies that cognitive motivational states also play a role in the activation of PWB (Wang et al., 2022). Parker et al. (2010) proposed a model of proactive motivation that identifies three categories of motivational states that stimulate PWB: “can do”, “reason to” and “energized to”. They suggested that for individuals to be proactive, they must perceive themselves as capable of initiating proactive actions (can do), they must have a specific motivation to engage in such actions (reason to) or have sufficient energy to introduce proactive changes (energized to). Conversely, individuals can work in an unfavorable context, but if they feel capable of achieving proactive tasks, highly motivated to introduce change or energized to do so, this feeling can encourage them to engage in proactive tasks

(Lee, 2024). The literature indicates that cognitive motivational states are the most direct predictors of PWB (Bindl and Parker, 2010; Wang et al., 2022). Further, Parker et al. (2010) argued that various motivational states may coexist, which provide a versatile motivational framework to drive PWB. This study specifically examines two cognitive motivational states: “can do” (i.e. role breadth self-efficacy) and “energized to” (i.e. positive emotions).

Role breadth self-efficacy (RBSE) “can do” motivational state.

RBSE refers to “the extent to which people feel confident that they are able to carry out a broader and more proactive role, beyond traditional prescribed technical requirements” (Parker, 1998, p. 835). The role of RBSE as a predictor of proactive behavior has been theorized in several empirical studies (e.g. Wang et al., 2022). RBSE has been positively related to making suggesting and implementing ideas and to several PWBs such as taking charge, voice, individual innovation, problem solving, and problem prevention (e.g. Parker and Collins, 2010). While the impact of employees’ RBSE in the proactivity process is well documented, there has been limited attention given to understanding the psychological factors contributing to middle managers’ PWB in healthcare literature (Pierre et al., 2024). Additionally, despite its established role, the mechanisms through which RBSE translates into distinct forms of proactive behavior remain insufficiently theorized, limiting our understanding of how “can

do” motivation operates within broader motivational frameworks.

Building on Parker et al. (2010), we propose that nurse middle managers’ RBSE enhances their PWB. Specifically, we suggest that when nurse middle managers feel psychologically capable of implementing proactive changes and are confident in their responsibilities, they are more likely to engage in PWB, impact their work environment, identify novel opportunities, introduce innovative ideas, take calculated risks, and seek support to implement inventive initiatives despite potential challenges. Their feeling of RBSE boosts their confidence in their abilities and enhances their commitment to their work (Coun et al., 2021). This increased self-assurance allows them to pay closer attention to their work environment and processes, enabling them to identify areas for improvement (Mustafa et al., 2023).

H1: Nurse middle managers’ RBSE will be positively related to their PWB.

Positive emotions “energized to” cognitive motivational state.

Several studies have identified positive emotions as a proximal antecedent of proactive behavior (e.g. Ashkanasy, 2021). For instance, scholars found positive links between PWBs such as taking charge and voice (e.g. Grant, 2013). Additionally, when employees experience highly positive emotions, they are more likely to engage in proactive job crafting behaviors (e.g. initiating new projects). Parker and Wu (2014) have explained this by the fact that when individuals feel

positive affects, mood, or energy, this feeling can broaden thinking and result in more flexible cognitive processes.

Despite these findings in literature, recently scholars have acknowledged the need to address the impact of emotions on PWB (Ashkanasy, 2021). Notably, there is a gap regarding the influence of nurse middle managers' positive emotions in their proactivity process (Pierre et al., 2024). Moreover, the specific theoretical role of positive emotions within the proactive motivation framework remains underexplored, particularly in terms of how "energized to" states interact with other motivational pathways to sustain proactive engagement. Building on Parker et al. (2010) model, we posit that positive emotions significantly enhance nurse middle managers' PWB. We suggest that high levels of positive emotions among nurse middle managers act as a driving force for their engagement in PWB. We argue that this positive relationship can be explained by the fact that their positive emotions foster a deeper commitment to their work, sharpening their focus on the work environment and processes, which enables them to initiate proactive changes.

H2: Nurse middle managers' positive emotions will be positively related to their PWB.

Consequences of PWB

Nurse middle managers' PWB and QWL indicators.

According to Parker et al.'s (2010) proactive motivation model, nurse middle managers' proactive work behavior (PWB) positively influences their quality of work life (QWL) by reducing job stress and enhancing job satisfaction. By proactively identifying and resolving issues before they become problematic, nurse middle managers gain increased control over their work environment, reducing uncertainty and stress. Additionally, these proactive efforts provide psychological empowerment and fulfillment, enhancing their overall job satisfaction and contributing positively to their daily work experiences.

Several studies have found a positive relationship between PWB and indicators that are considered as QWL indicators (e.g. Coun et al., 2021). Yet, theoretical explanations of how PWB differentially contributes to either enriching or straining quality of work life remain underdeveloped, limiting the integration of QWL outcomes into proactive motivation models beyond surface-level associations. QWL refers to individuals' feelings about different dimensions of their jobs (Priyadarshani and Bhagat, 2014). One of the most significant positive outcomes highlighted in the literature is job satisfaction (Priyadarshani and Bhagat, 2014). Job satisfaction refers to "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1304).

The positive relationship between PWB and job satisfaction has been

extensively covered in the literature (e.g. Strauss et al., 2017). However, while research has often focused on the benefits of PWB, few scholars acknowledge that in certain conditions, PWB can also be harmful (e.g. Cangiano et al., 2019). Despite the well-documented “bright side” of PWB, its potential “dark side” has not been clearly studied, with findings to date still limited and sometimes conflicting. For instance, Bolino and Turnley (2005) report a positive association between PWB and job stress. On the contrary, Strauss et al. (2017) found that PWB is related to job stress only under certain conditions, such as high control motivation and low autonomous motivation, concluding that generally, PWB does not necessarily impact job stress and employee well-being. Cangiano et al. (2019) proposed a model analyzing the outcomes of PWB through two pathways: the energizing effects (vitality, competence) and the strain effects (anxiety, detachment). They found that positive and negative effects of PWB can coexist.

We theorize that nurse middle managers’ PWB enhances their QWL (i.e. increases job satisfaction and decreases stress). We propose that when nurse middle managers engage in proactive actions and implement new processes and changes in their work environment, this helps them to take control of their work, gain additional psychological resources (e.g. feelings of empowerment and meaningful work), and reduce or suppress stressors, thereby enhancing their job satisfaction (Mustafa et al., 2023). Furthermore, we suggest that being proactive

can help them cultivate a more positive work environment and improve their daily work experiences, leading to increased job satisfaction (Mustafa et al., 2023).

Additionally, by

anticipating problems before they occur, taking control to prevent their reoccurrence, scanning the work environment for improvements, and solving problems before they worsen, all these can contribute to reducing nurse middle managers' stress levels (Greenglass and Fiksenbaum, 2009). In line with Parker et al.'s (2010) proactive motivation framework, shaping one's environment in these proactive ways fosters greater control and agency, which can help nurse middle managers preempt workplace challenges before they escalate. By reducing uncertainty and mitigating potential stressors early, their proactive behaviors serve as a buffer against job-related strain, creating a more manageable and less pressurized work setting. This proactive management may help them to create a more manageable work environment, leading to more efficient management with less pressure, less uncertainty, and fewer negative feelings, which can contribute to decrease their stress level (Greenglass and Fiksenbaum, 2009).

H3. Nurse middle managers' PWB will be positively related to their job satisfaction.

H4. Nurse middle managers' PWB will be negatively related to their job stress.

PWB and indicators of job effectiveness.

PWB is generally linked to favorable results for employees, teams and organizations (e.g. Wang et al., 2022). Parker's model explains how PWB enhances job effectiveness, specifically innovative work behavior (IWB) and job performance. Proactive nurse middle managers regularly introduce innovative solutions, anticipate challenges, and implement improvements, creating an environment conducive to creativity and effective problem-solving (Déprez et al., 2020). Such proactive engagement not only promotes continuous innovation but also directly boosts their individual job performance by allowing them to effectively manage tasks and address organizational needs proactively (Ozkan-Canbolat et al., 2024).

A growing number of studies have demonstrated that PWB is related to indicators of employees' effectiveness at work. For instance, scholars have found that PWB is associated with job performance (e.g. Wang et al., 2022) and innovative work behavior (IWB; e.g. Cangialosi et al., 2024). To explain this relationship, several scholars have proposed that PWB is an important precondition and a driver of individual IWB (Déprez et al., 2021). However, little attention has been paid to how different forms of effectiveness, such as job performance versus innovation, may depend on distinct pathways within the proactive motivation model.

Therefore, in this study we investigate the role of nurse middle managers' PWB on their effectiveness. Specifically, we focus on job performance and IWB, theorizing that nurse middle managers' PWB is related to enhanced work effectiveness (i.e. increasing job performance and innovative work behavior). We propose that when nurse middle managers engage in proactive actions, by anticipating problems before they occur, taking control to prevent their reoccurrence, scanning the work environment for improvements, and solving problems before they worsen, all these can contribute to enhance nurse middle managers' performance and innovative work behavior.

H5. Nurse middle managers' PWB will be positively related to their job performance.

H6. Nurse middle managers' PWB will be positively related to their IWB.

H7. PWB will mediate the relationship between RBSE and job satisfaction (a), job stress (b), job performance (c), and IWB (d).

H8. PWB will mediate the relationship between positive emotions and job satisfaction (a), job stress (b), job performance (c), and IWB (d).

METHOD

Sample and procedure

To test our hypotheses, a multi-wave study was conducted among 479 hospital middle managers working in a French hospital. Participants completed

two online surveys, administered six months apart, to minimize the risk of common method variance by separating predictor and outcome variables across different time points. The surveys were distributed via an online platform, with participants receiving access links through email. Each questionnaire included assurances of confidentiality and clarified that the data would be used solely for research purposes.

At time 1 (T1), participants provided information on their cognitive motivational states (e.g. RBSE, positive emotions) and their PWB. At time 2 (T2), six months later, they were invited to provide information on QWL indicators as well as IWB and job performance. We choose the time lag of six months following previous studies suggesting that the effects of proactive behaviors become apparent after six months (e.g. Van Dyne and LePine, 1998). All participants had anonymous codes to couple their responses at the two-time point.

At time 1, we collected 321 responses (67.01%), and at T2, 290 (60.54%), subsequently, we were able to match 152 completed questionnaires (31.71%). Table 1 presents demographic characteristics of respondents. The mean age was 47.05 years ($SD = 8.08$) and ranged from 21 to 61 years 78.9% were women. The sample was mainly composed of healthcare managers (58.6%), hospital administrative managers (15.8%), and hospital technical managers (15.8%). Regarding job tenure, 24.3% had 2–5 years of experience in their function, 23%

had 6–10 years of experience, and 19.77% had 11–15 years of experience as middle managers (ranging from ≤ 1 to 36–40 years).

Measures

The scales used were originally developed in English. We used the standard back translation procedure (Brislin, 1980) to translate items from the English language into the French language.

Cognitive motivational states. We assessed positive emotions at work by using the six items from the shortened version of the Job-Related Affective Well-Being Scale (JAWS) of Schaufeli and Van Rhenen (2006). For each item, participants were asked to rate on a 5-point scale ranging from 1 (never) to 5 (very often) how often they have experienced each emotion in the past 30 days. A sample item is, “enthusiastic” ($\alpha = 0.80$). RBSE was assessed using the 10 items from Parker (1998) scale. For each item, respondents were invited to rate on a 5-point scale ranging from 1 (not all confident) to 5 (very confident) how confident they feel to carry out each of the 10 tasks mentioned. A sample item is, “. . . designing new procedures for your work area” ($\alpha = 0.87$).

PWB. Constructive voice behavior was measured using the five items of Maynes and Podsakoff (2014). A sample item is, “I regularly propose ideas for new or more effective work methods” ($\alpha = 0.93$). Taking charge was measured using Morrison and Phelps (1999) scale. An example of an item is, “I often try to

change how my job is executed in order to be more effective” ($\alpha = 0.84$). We measured problem prevention using the three items of Parker and Collins (2010). A sample item is, “I spend time planning how to prevent reoccurring problems” ($\alpha = 0.71$). Items for voice, taking charge, and problem prevention were rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

QWL indicators. QWL was assessed using two indicators: job satisfaction and job stress. Job satisfaction was measured using the three items of Cammann et al. (1983). Responses were given on a 5-point scale (1 = strongly disagree to 5 = strongly agree). An example of an item is, “All in all, I am satisfied with my job” ($\alpha = 0.76$). Perceived stress was assessed using the 10 items of Cohen and Williamson (1988). Items were rated on a 5-point scale ranging from 1 (never) to 5 (very often). An example of item is, “In the last month, how often have you felt nervous and stressed?” ($\alpha = 0.82$).

Effectiveness indicators. IWB was assessed using the nine items of Janssen (2000). Responses were given on a 5-point scale ranging from 1 (never) to 5 (always). An example of an item is, “Transforming innovative ideas into useful applications” ($\alpha = 0.89$). To evaluate job performance, we used the seven items of Williams and Anderson (1991). Items were rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example of an item is, “I fulfil responsibilities specified in the job description” ($\alpha = 0.75$).

Control variables. We controlled the effects of age, gender, job tenure, and profession category since they have been shown to be related to proactive behavior (e.g. Cangialosi et al., 2024).

Data analysis

Preliminary analyses were conducted using SPSS23. Confirmatory factor analysis (CFA) with maximum likelihood (ML) estimation using Mplus8 (Muthen and Muthen, 2017) was carried out to test the distinctiveness among studied variables (i.e. RBSE, positive emotions, PWB, job satisfaction, job stress, IWB, job performance). PWB was assessed as a second-order factor regrouping three first-order factors: taking charge, voice, and problem prevention (Parker and Collins, 2010; Wu and Parker, 2017). To evaluate the best model fit, we compared the proposed model to alternative models.

Additionally, we examined the hypothesized research model using structural equation modeling (SEM) on Mplus8 (Muthen and Muthen, 2017). Due to the fact that the sample size- to-parameters ratio did not meet the standard requirements, mean scores were used for each construct, except for PWB, which was measured as a latent variable. The robustness of the model was evaluated using the Akaike information criterion (AIC), Bayesian information criteria (BIC), overall model chi-square (χ^2), degrees-of-freedom (df), Comparative fit index (CFI), Tucker-Lewis Index (TLI), root mean square error of approximation

(RMSEA), and standardized root mean square residual (SRMR) as key indicators of model fit. Literature suggests that CFI and TLI of 0.90 indicate an acceptable fit, and RMSEA and SRMR of 0.08 indicate an acceptable fit. The hypothesized seven-factor model (full mediation model without direct paths from cognitive motivational states to outcomes) was also compared to an alternative model (partial mediation model with direct paths from cognitive motivation states to outcomes) in order to find the best-fit model. The two models were compared via the chi-squared difference test ($\Delta\chi^2$). Analysis of indirect effects was carried out by following the four steps of Shrout and Bolger's (2002) procedure.

Results

Descriptive statistics

Table 2 reports the means, standard deviations, correlations of all study variables, and reliability of each construct. Cronbach's alpha values exceeded the acceptable limit of 0.70.

Confirmatory factor analysis.

We used CFA to assess the properties of the hypothesized seven-factor model. The proposed model showed an acceptable fit to the data ($\chi^2 = 927.13$; $df = 678$; CFI = 0.91; TLI = 0.90; RMSEA = 0.04; SRMR = 0.06). Additionally, we ran alternative models (i.e. six-factor model, five-factor model). The chi-square test difference indicated that the proposed model fits the data significantly better

than alternative models (Table 3).

Structural model, alternative models and hypothesis testing.

We employed Structural Equation Modeling (SEM) to test our hypotheses. We compared the proposed model (full mediation model) with an alternative model. As shown in Table 4, the hypothesized full mediation model (M1) presented an acceptable fit to the data ($\chi^2 = 324.29$; $df = 206$; $CFI = 0.91$; $TLI = 0.90$; $RMSEA = 0.06$; $SRMR = 0.06$). We then tested a partial mediation model (M2) that included direct paths from RBSE and positive emotions (T1) to QWL indicators, job performance, and IWB (T2). The partial mediation model (M2) also showed an acceptable fit to the data ($\chi^2 = 286.38$; $df = 198$; $CFI = 0.93$; $TLI = 0.92$; $RMSEA = 0.05$; $SRMR = 0.05$). However, analysis of the chi-square difference revealed that the partial mediation model (M2) yielded a significantly better fit to the data than the hypothesized full mediation model (M1) ($\chi^2(8) = 37.91$, $p < 0.01$). M2 lower AIC also confirmed that M2 was the best representation of the data. Thus, the addition of direct paths from RBSE and positive emotions (T1) to QWL indicators, job performance, and IWB (T2) significantly improved the model fit. In light of M2 parsimony over M1, we retained the partial mediation model (M2) as the best representation of the data. The significant standardized path coefficients are summarized in Figure 1.

Significant direct paths were found among several studied variables, as

hypothesized. The findings indicate that RBSE and positive emotions are related to PWB. Likewise, a significant relationship was found between PWB and IWB. Therefore, Hypotheses 1, 2, and 6 were supported, while Hypotheses 3, 4, and 5 were not supported. In addition, significant direct paths were found between positive emotions and QWL indicators, job performance, and IWB after a time lag of six months.

In accordance with the Shrout and Bolger (2002) procedure, we assessed the indirect effects, as the path from the independent variables “IV” (i.e. RBSE, positive emotions) to the mediator “M” (i.e. PWB) and the path from M to the dependent variables “DV” (i.e. IWB) were significant (Hayes, 2009) using bootstrap 95% confidence intervals.

Results from the 5,000 bootstrap replications showed that the hypothesized indirect effects were significant ($p < 0.05$) (Table 5). RBSE had a significant indirect effect on IWB (indirect effect = 0.21, 95% CI [0.08, 0.44]) via PWB, also positive emotions had a significant indirect effect on IWB (indirect effect = 0.10, 95% CI [0.03, 0.24]) via PWB. In addition, analysis of the direct effects revealed that the relationship between positive emotions and IWB was also significant. Taken together, these findings indicate that the hypothesis regarding the mediating role of PWB in the relationship between RBSE and IWB is fully supported (H7d), while other hypothesized indirect effects (H7a, b, c) are not supported. The

findings also indicate that the hypothesis regarding the mediating role of PWB in the relationship between positive emotions and IWB is partially supported (H8d), while other hypothesized indirect effects (H8a, b, c) are not supported.

DISCUSSION

Drawing on Parker et al. (2010) model, we posited that RBSE as a “can do” motivational state and positive emotions as an “energized to” motivational state are critical cognitive motivational factors that activate nurse middle managers’ PWB. We also suggest that nurse middle managers’ PWB, in turn enhances their QWL, such as increased their job satisfaction and decreased their job stress, and improved their effectiveness at work, including enhanced their IWB and job performance. Additionally, we propose that PWB mediates the relationship between proximal antecedents (i.e. RBSE and positive emotions) and outcomes (i.e. job satisfaction, job stress, job performance, and IWB).

Our findings underscore that both RBSE and positive emotions significantly enhance nurse middle managers’ PWB. Moreover, there exists a positive association between PWB and IWB, although no significant effect is observed on QWL indicators and job performance. Importantly, we found that PWB fully mediates the relationship between RBSE and IWB and serves as a partial mediator in the relationship between positive emotions and IWB. This study highlights the distinct roles of motivational states in activating their PWB.

Furthermore, our results demonstrate that positive emotions, as an “energized to” motivational state, can exert noteworthy and direct influences on both QWL indicators and job effectiveness.

In doing so, this study contributes new theoretical insights, while each of the studied constructs, RBSE, positive emotions, PWB, and work-related outcomes, has been previously examined, our integrative and time-lagged approach enables a more comprehensive understanding of the interplay between proximal motivational states and their downstream effects. Specifically, the findings advance the proactive motivation framework by demonstrating how “can do” and “energized to” states jointly operate to activate PWB and, in turn, selectively influence outcomes, with notable specificity for innovation-related behaviors. This sheds light on the differential pathways through which proactive behavior yields benefits and clarifies that its effects may not uniformly extend to all dimensions of work life.

Theoretical implications

Nurse middle managers’ PWB has been largely overlooked in empirical research, despite growing recognition of its critical role in fostering healthcare innovation, resilience, and service quality (Niskasaari et al., 2022). Our study addresses this gap by focusing on PWB, contributing to the literature on their innovativeness, performance, and QWL. To our knowledge, no prior research has

jointly examined cognitive motivational antecedents (i.e. role breadth self-efficacy and positive emotions), PWB, and their effects on both QWL and job effectiveness in a time-lagged model within the healthcare context. By doing so, this study extends the proactive motivation framework (Parker et al., 2010) and responds to recent calls for multi-dimensional models of PWB (Ashkanasy, 2021; Wang et al., 2022).

Consistent with theoretical expectations, we found that both “can do” (RBSE) and “energized to” (positive emotions) motivational states positively predicted PWB among nurse middle managers, in line with prior work suggesting that internal states are critical for self- initiated change (Bindl and Parker, 2010; Mustafa et al., 2023). Moreover, our results highlight that RBSE exerts a stronger influence than positive emotions on PWB, suggesting that confidence in one’s broader role capabilities may be particularly salient in structured, high- stakes settings like hospitals (Chen et al., 2018; Parker, 1998).

In addition, findings from this study indicate that nurse middle managers’ PWB has a significant positive effect on IWB. This finding aligns with previous research, which has consistently shown that PWB is crucial throughout the innovation process (Frese and Fay, 2001; Mustafa et al., 2023). For instance, D’eprez et al. (2021) found that PWB (i.e. voice behavior and taking charge) was strongly associated with IWB. Similarly, Odoardi et al. (2022) disclosed that

proactivity mediates the relationship between training practices and

IWB. Moreover, contrary to studies suggesting that PWB enhances job performance (Frese and Fay, 2001), we found no association between nurse middle managers' PWB and job performance. Similarly, no association was found between PWB and job satisfaction or job stress. This outcome suggests that the benefits of PWB may be more narrowly confined to innovation-related outcomes, rather than universally enhancing all work-related dimensions. Such a pattern aligns with arguments that proactivity can be highly task-focused, yielding more gains for creative processes but not necessarily extending to broader well-being or performance indicators (e.g. Dèprez et al., 2020). Future research could explore boundary conditions, such as organizational resources, leadership styles, or longer time frames, under which PWB influences job satisfaction and performance, thereby deepening our understanding of how and when proactivity translates into more different benefits for nurse middle managers.

Furthermore, findings from the present study contribute significantly to the PWB literature by highlighting the crucial role of PWB in fostering innovation. Specifically, we found that PWB fully mediates the relationship between feelings of capability (i.e. RBSE) and feelings of energy (i.e. positive emotions), influencing their IWB.

Practical implications

Our findings offer valuable insights to administrations and top management aiming at enhancing nurse middle managers' PWB and consequently performance and innovation. We found that cognitive psychological states, specifically RBSE and positive emotions, are significant antecedents that can enhance nurse middle managers' PWB and are subsequently associated with IWB.

For instance, governance and upper management can enhance feelings of capability by providing secure-base support, such as encouragement and availability without interference. Wu and Parker (2017) suggest that leaders' secure-base support "can cultivate employees' self- efficacy by persuading employees to believe that they have the competence to achieve their goals. Secure-base support also helps employees believe that they can face obstacles and that their efforts to bring about change will be appreciated, without unnecessary interference that can send signals of incompetence" (p. 10). Support for training to gain additional resources, improve working conditions, or reduce psychosocial risks can also be beneficial in enhancing nurse middle managers' PWB. To ensure this support, hospital administrators should implement a mentorship program in which experienced professionals mentor nurse middle managers, focusing on building proactivity through regular feedback, goal-setting, and shared reflection (Chassaing-Monjou et al., 2024).

Moreover, governance and upper management should strive to create

favorable work environments that foster positive emotions. This could include establishing informal discussion periods where middle managers can meet their peers and share experiences without hierarchical constraints. General managers, due to their hierarchical positions, often have little interaction with others and rarely seek help when faced with difficult or stressful situations. Allowing nurse middle managers to freely communicate with peers about their challenges, innovative solutions, management mistakes, and good practices could foster collective intelligence and reinforce a sense of belonging (Mustafa et al., 2023). Consequently, fostering collective belonging and positive interactions at work could significantly enhance nurse middle managers' well-being and positive feelings towards their jobs, ultimately benefiting healthcare institutions. Such actions could lead to an operational renewal of management, yielding long-term benefits also for healthcare organizations. Additionally, implementing an internal digital platform or online community of practice, where managers regularly share updates and collaborate on problem-solving, can create a strong, ongoing support network that enhances both innovation and well-being (Cangialosi et al., 2023).

Limitations

This study has a few limitations that should be mentioned. First, this study was conducted among hospital middle managers working in a single hospital in France. Therefore, future studies should include a larger and more geographically

diverse sample to expand the generalizability of the findings. Additionally, data was drawn from self-reported measures which could lead to common method bias. Although we introduced a temporal separation between the measurement of predictors and outcomes to provide control for method bias (Podsakoff et al., 2012), future studies should include different types of measures (e.g. supervisor reports).

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TABLES AND FIGURES

Table 1.

Sociodemographic data, frequency and percentage

Characteristics	Category	Frequency	Percentage %
Sex	Female	121	79.6
	Male	31	20.4
Age (M 5 47.1, SD 5 8.1)	$29 \leq x \leq 47$	75	49.3
	$48 \leq x \leq 61$	77	50.7
Executive role	Clinical	90	59.2
	Administrative	2	1.3
	Medico- technical	23	15.1
	Technical	9	5.9
	Socio- educational	27	17.8
	Overnight Care	1	0.7
Tenure (Years)	$x \leq 5$	49	32.5
	$6 \leq x \leq 15$	71	46.7
	$16 \leq x \leq 40$	32	20.8

Note(s): $N = 152$. M = average score, SD = standard deviation

Table 2. Means, correlations among variables and reliability coefficients

M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age ^a	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2. Gender ^a	–	–	–0.12	–	–	–	–	–	–	–	–	–	–	–
3. Tenure ^a	–	–	0.58**	–0.08	–	–	–	–	–	–	–	–	–	–
4. PC ^a	–	–	–0.18*	0.35**	–0.15	–	–	–	–	–	–	–	–	–
5. RBSE (T1)	4.16	0.61	–0.01	–0.09	0.06	–0.10	(0.87)	–	–	–	–	–	–	–
6. PE (T1)	3.61	0.58	–0.02	–0.14	–0.07	0.02	0.32**	(0.80)	–	–	–	–	–	–
7. VC (T1)	3.85	0.74	–0.14	–0.08	–0.07	0.11	0.57**	0.34**	(0.93)	–	–	–	–	–
8. TC (T1)	3.74	0.59	–0.01	–0.26**	–0.00	–0.11	0.50**	0.42**	0.63**	(0.84)	–	–	–	–
9. PP (T1)	4.01	0.57	–0.05	–0.21**	–0.03	–0.14	0.45**	0.24**	0.47**	0.61**	(0.71)	–	–	–
10. SAT (T2)	3.85	0.73	0.17**	–0.11	0.15	0.00	0.18*	0.43**	0.16*	0.28**	0.21**	(0.76)	–	–
11. STR (T2)	2.88	0.58	–0.19**	0.02	–0.17	0.00	–0.13	–0.40**	–0.16*	–0.23**	–0.17*	–0.56**	(0.82)	–
12. PERF (T2)	3.76	0.56	–0.02	–0.09	–0.01	0.07	0.16*	0.33**	0.18*	0.15	0.22**	0.49**	–0.48**	(0.75)
13. IWB (T2)	3.45	0.60	–0.03	–0.14	–0.01	–0.20	0.36**	0.38**	0.32**	0.44**	0.35**	0.30**	–0.26**	0.31** (0.89)

Note(s): $N = 1=2$. PC = Profession category; RBSE = role breadth self-efficacy; PE = Positive emotions; VC = Voice; TC = Taking charge; PP = Problem prevention;

SAT = Job satisfaction; STR = Job stress; PERF = Job performance; IWB = innovative work behavior

^a Categorical variable

* $p < 0.05$, ** $p < 0.001$

Reliability coefficients for the scales are in parentheses along the diagonal

Source(s): Authors' own work

Table 3. Confirmatory factor analyses

Model	AIC	BIC	χ^2	df	$\Delta\chi^2$	Δ df	RMSEA	CFI	TLI	SRMR
Hypothesized seven factor model	12380.00	12806.37	927.13*	678	–	–	0.04	0.91	0.90	0.06
Six factor model combining RBSE and PE	12533.80	12942.02	1092.92*	684	165.85*	6	0.06	0.86	0.84	0.08
Five factor model combining RBSE and PE; and SAT and STR	12553.11	12946.22	1122.24*	689	195.11*	11	0.06	0.85	0.84	0.08
Five factor model combining RBSE and PE; and PERF and IWB	12659.51	13052.62	1228.64*	689	301.51*	11	0.07	0.81	0.80	0.09
Four factor model combining RBSE and PE; and SAT and STR; and PERF and IWB	12676.19	13057.20	1253.31*	693	326.18*	15	0.07	0.80	0.79	0.09
Three factor model combining RBSE and PE; and SAT, STR, PERF and IWB	12948.06	13320.00	1531.19*	696	604.06*	18	0.08	0.71	0.69	0.10
Two factor model combining RBSE, PE and PWB; and SAT, STR, PERF and IWB	13232.65	13589.46	1825.77*	701	898.64*	23	0.10	0.61	0.59	0.11
Two factor model combining RBSE and PE; and PWB, SAT, STR, PERF and IWB	13640.78	13997.59	2233.90*	701	1306.77*	23	0.12	0.47	0.44	0.13
<i>Single factor model with all items</i>	13735.37	14089.16	2330.49*	702	1403.36*	24	0.12	0.44	0.41	0.13

Note(s): $N = 152$; $*p < 0.001$

AIC = Akaike Information Criterion. BIC = Bayesian Information Criteria. χ^2 = Chi-square value; df = degree of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = standardized root mean square residual; RBSE = Role breadth self-efficacy; PE = Positive emotions; PWB = proactive work behavior; SAT = Job satisfaction; STR = Job stress, PERF = Job performance; IWB = Innovative behavior

Source(s): Authors' own work

Table 4. Indices of fit of structural model and alternative model

Model	AIC	BIC	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	CFI	TLI	SRMR
M1 Full mediation	4601.50	4800.64	324.29	206	- model	-	0.06	0.91	0.90	0.06
M2 Partial mediation	4579.60	4802.87	286.38	198	37.91*	8	0.05	0.93	0.92	0.05

Note(s): $N = 5152$; * $p < 0.001$; AIC = Akaike Information Criterion; BIC = Bayesian Information Criteria; χ^2 = Chi-square value; df = degree of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = standardized root mean square residual

Table 5. Bootstrap (5,000) analyses of indirect, direct and total effects results, and 95% CI

Relation		Point estimate	Point estimate and bootstrapping bias-corrected 95% CI
RBSE → PWB → IWB	Indirect effect	0.21*	[0.08, 0.44]
	Direct effect	0.06	[-0.20, 0.30]
	Total effect	0.27*	[0.08, 0.44]
PE → PWB → IWB	Indirect effect	0.10*	[0.03, 0.24]
	Direct effect	0.18*	[0.02, 0.33]
	Total effect	0.28**	[0.15, 0.44]

Note(s): $N = 5152$; ** $p < 0.001$, * $p < 0.05$, Confidence intervals (CI) are in brackets

RBSE = Role breadth self-efficacy; PE = positive emotions; PWB = proactive work behavior; IWB = innovative behavior

Source(s): Authors' own work

Figure 1.

Structural model with standardized path coefficients. Note. $N = 5152$; ** $p < 0.001$.

