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## ORIGINAL ARTICLE

# Nature, predictors, and outcomes of Nurses' trajectories of harmonious and obsessive passion

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## Abstract

This study sought to achieve a dynamic person-centered understanding of the various harmonious and obsessive work passion trajectories observed among a sample of nurses, as well as the connections between these two types of work passion trajectories. Moreover, it sought to document the predictive role of workload, unfairness, harassment, and supervisor support in relation to these harmonious and obsessive passion trajectories, as well as the implications of these trajectories for a variety of outcomes related to attitude (i.e., turnover intention), psychological health (i.e., perceived psychological health and work fatigue), and behaviors (i.e., work performance, presenteeism, and absenteeism). A sample of 622 nurses was surveyed six times over a period of five months. Our results revealed that harmonious and obsessive passion trajectories matched five primary profiles, similar across the two types of work passion. Workload, unfairness, harassment, and supervisor support were associated with these trajectories in a way that mainly supported our expectations. Trajectories characterized by higher levels of harmonious passion and lower levels of

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obsessive passion were associated with higher levels of perceived psychological health and work performance, and with lower levels of work fatigue, turnover intention, presenteeism, and absenteeism. Conversely, trajectories characterized by lower levels of harmonious passion and higher levels of obsessive passion were associated with the most negative outcomes.

#### KEYWORDS

growth mixture modeling (GMM), job demands, perceived supervisor support, performance, profiles, psychological health, trajectories, turnover, work passion

## INTRODUCTION

The Dualistic Model of Passion (DMP; Vallerand, 2010, 2015; Vallerand et al., 2003) defines passion as a strong inclination toward a specific activity, such as work (Vallerand, 2015; Vallerand & Houliort, 2019). Passionate workers invest substantial effort and time in their work, consider it central to their identity, love it, and regard it as important (Vallerand & Houliort, 2019). However, not all forms of passion are equally desirable. The DMP (Vallerand, 2015; Vallerand & Houliort, 2019) highlights the need to differentiate passion based on its harmonious (HP; a strong psychological investment in an activity [job] that is freely chosen by the individual) or obsessive (OP; strong psychological investment in an activity [job] that is driven by internal or external contingencies associated with the activity) nature. Although OP is associated with controlled forms of motivation (i.e., introjected and external regulations; Deci et al., 2017; Gillet, Morin, et al., 2023), harmoniously and obsessively passionate employees, unlike those only motivated for introjected reasons (e.g., internal pressure, guilt), enjoy their work and can be driven by both intrinsic (e.g., pleasure, interest) and extrinsic (e.g., recognition, esteem) motives (Gillet, Vallerand, et al., 2023). Research has generally reported well-differentiated associations between these two forms of passion and a variety of predictors and outcomes (e.g., Gillet, Morin, et al., 2023; Wan et al., 2022, 2023), in addition to showing that the benefits of passion tended to be accompanied by undesirable consequences when this passion became obsessive (e.g., Gillet, Vallerand, et al., 2023; Morin, Gillet, Chénard-Poirier, et al., 2023). These conclusions are also known to extend to nurses (Donahue et al., 2012; Trépanier et al., 2014), which are the target of the present study.

The present study aims to improve our understanding of the evolution of HP and OP among nurses, as well as the likely drivers of work passion trajectories falling under the control of organizations and managers. More precisely, we rely on longitudinal person-centered analyses (Cheyroux et al., 2023; Gillet, Morin, Huart, et al., 2018; Morin & Litalien, 2019) specifically designed to help identify different types (or profiles) of HP and OP trajectories most commonly observed within the current sample of employees, as well as the connections between HP and OP trajectories. To better understand the drivers and implications of these trajectories, we also consider their dynamic time-structured associations with a series of predictors (i.e., workload, unfairness, harassment, and supervisor support) and outcomes related to nurses' work attitude

(i.e., turnover intention), psychological health (i.e., perceived psychological health and work fatigue), and behaviors (i.e., work performance, presenteeism, and absenteeism). In doing so, this study seeks to improve our understanding of the mechanisms involved in the evolution of HP and OP trajectories, thereby hoping to guide the development of interventions designed to support the development of more desirable work passion trajectories.

Understanding these mechanisms to guide intervention is particularly important for nurses, who routinely face many difficulties in their daily work (e.g., stress, fatigue, absenteeism, overtime, work overload, dehumanization, lack of recognition; Türkmen Keskin & Özduyan Kiliç, 2024). These difficulties push many nurses to leave their occupation (e.g., Duffield et al., 2014), leading the World Health Organization (2016) to anticipate a shortage of 18 million healthcare employees by 2030. Yet, the availability of trained nurses is a critical factor for effective patient care (National Academies of Sciences, Engineering, and Medicine, 2020), making it urgent to find ways to devise interventions likely to help nurses better navigate their challenging occupation, maximize their well-being, and support retention (Foster et al., 2024). As noted, passionate workers tend to display higher levels of motivation, well-being, functioning, and retention (Vallerand & Houliort, 2019), highlighting the relevance of interventions seeking to support the development of work passion as one possible solution to these multiple challenges facing healthcare organizations (e.g., El-Gazar et al., 2023). By seeking to better capture the variety of work passion trajectories observed among the current sample of nurses, to assess their relative desirability for a variety of outcomes, and to document the possible role of predictors of more desirable trajectories falling under the control of organizations, we hope to inform this ongoing discussion of how best support nurses' retention and well-being.

However, although our focus is placed on nurses, previous studies suggest that drivers and benefits of work passion seem to generalize to most employees, regardless of their work context or occupation (Vallerand, 2015; Vallerand & Houliort, 2019). Moreover, nurses are not the only ones facing difficult working conditions (e.g., teachers, soldiers), suggesting that our results might be relevant across occupations, with a particular emphasis on those having to face high levels of job demands (e.g., workload, unfairness, harassment) with insufficient resources (Bakker & Demerouti, 2017).

## **A PERSON-CENTERED PERSPECTIVE ON WORK PASSION TRAJECTORIES**

Like many other psychological constructs reflecting how individuals interact or connect with their environment (Hofmans et al., 2021), employees' passion for their work is usually conceptualized as a dynamic phenomenon that fluctuates over time, differs across types of individuals, and shares time-structured associations with other constructs (Gillet, Morin, et al., 2023; Schellenberg & Bailis, 2015; Tóth-Király et al., 2019). Unfortunately, the bulk of research on work passion has so far relied on cross-sectional designs, or on limited longitudinal designs (including only two measurement points; Donahue et al., 2012; Gillet, Morin, et al., 2023), making it impossible to properly capture the dynamic nature of HP and OP trajectories (Liao et al., 2022; Schellenberg et al., 2024). To inform this issue, which is a core objective of the present study, more extensive longitudinal designs (i.e., including three or more measurement points, which is necessary to assess the shape of work passion trajectories) are needed (e.g., Grimm et al., 2016; Ployhart & Vandenberg, 2010). This study addresses this limitation by relying on a sample of nurses surveyed across six-time points (with an interval of one month

between each data collection) taken over a period of five months. This specific time frame is aligned with the range of time intervals usually considered as appropriate in research focusing on employees exposed to volatile work contexts such as nurses (e.g., Fernet et al., 2020), and encompasses enough time points to detect nonlinear trajectories (e.g., Grimm et al., 2016).

When seeking to understand the longitudinal dynamics of work passion, the first source of evidence comes from research examining rank-order stability. This type of research has reported moderately high levels of rank order stability among samples of mixed workers over a three-month period ( $r = .89$  for HP and  $.90$  for OP; Gillet, Morin, et al., 2023), nursing students across a four-month time interval ( $r = .53$  for HP and  $.60$  for OP; Cheyroux et al., 2023), and teachers over a 12-month period ( $r = .66$  for HP and  $.68$  for OP; Fernet et al., 2014). A second source of evidence comes from studies specifically concerned with longitudinal trajectories of HP and OP. In this regard, Tóth-Király et al. (2019) have shown that initial HP and OP levels were high and tended to remain stable over a four-month period among a sample of young adults. Similarly, Liao et al. (2022) found no change in HP and OP over a three-month period among a diversified sample of employees. In contrast, in a 12-week longitudinal study involving individuals who just started a new sports activity, HP and OP levels were initially high and slightly increased over time (Kovácsik et al., 2021). Schellenberg et al. (2024) also demonstrated that HP and OP levels decreased throughout a season among intercollegiate volleyball players (Study 1), intercollegiate athletes competing in various sports (Study 2), and fans of a hockey team (Study 3).

Beyond these generic tendencies, these studies highlight substantial inter-individual heterogeneity in the shape of these trajectories (e.g., Kovácsik et al., 2021; Schellenberg et al., 2024). For instance, decreases in HP and OP were more marked for individuals with high initial levels of HP and OP (Schellenberg et al., 2024), whereas Kovácsik et al. (2021) found the opposite. Although these previous results may seem hard to reconcile, the presence of inter-individual variability suggests that all possible shapes (e.g., high, low, increasing) might be occurring among different segments of the population (Morin et al., 2018; Morin & Litalien, 2019). Adopting a person-centered perspective, specifically designed to identify subpopulations following distinctly shaped HP and OP trajectories, may thus provide a way to reconcile these apparently discrepant results (Hofmans et al., 2021; Morin & Litalien, 2019). Supporting this claim in the educational (rather than work) area, Schellenberg and Bailis (2015) identified four distinct trajectories of HP and OP among a sample of first-year university students surveyed three times across a five-month period: Very Low/Low and Stable, Low and Increasing, Moderate and Stable/Increasing, and High and Stable.

The socialization literature also lends support to the claim that work passion trajectories are likely to follow different theoretical scenarios (e.g., Houle et al., 2024; Solinger et al., 2013). Indeed, socialization is expected to unfold as a result of reciprocal interactions between employees and their workplaces via which expectations, contributions, and values are progressively contrasted and integrated into employees' identities through a career-long process (Cooper-Thomas & Anderson, 2006; Louis, 1980; Moyson et al., 2018). From this perspective, socialization theory has long acknowledged the heterogeneity of the longitudinal trajectories likely to be displayed by employees (e.g., Bauer et al., 2021; Boswell et al., 2005; Solinger et al., 2013). The relevance of socialization theory as a guide for the current study is intimately connected to the fact that passionate (HP and OP) employees come to see their work as occupying a central part of their identity (Vallerand & Houliort, 2019). Moreover, based on this generic representation of work passion and previous studies showing that work passion trajectories tend to be similar for HP and OP (Schellenberg & Bailis, 2015; Tóth-Király et al., 2019), we expect similar types of trajectories for HP and OP. In the present study, we first rely on the

integrative taxonomy of theoretical socialization scenarios (1. *Learning to Love*; 2. *Honeymoon-Hangover*; 3. *Low Fit*; 4. *High Fit*; and 5. *Moderate Fit*) proposed by Solinger et al. (2013) to guide our expectations, while proposing one additional scenario (6. *Learning to Hate*).

Employees undergoing a **Learning to Love** scenario progressively discover, and adapt to, their work reality, and gradually develop the psychological resources required to cope with challenges encountered at work (Solinger et al., 2013). As they progressively come to feel that their work environment is consistent with their expectations, goals, and values, their initial levels of work passion can progressively increase over time based on the gradual endorsement and internalization of the objectives and contents of their job to their identity (Fernet et al., 2020; Sandrin et al., 2022). Although this scenario seems most suited to describe the process whereby new employees discover that their new workplace provides them with unexpected fulfillment opportunities, resulting in work passion trajectories demonstrating a sharp increase (Houle et al., 2024; Solinger et al., 2013), any employee can experience a similar scenario when discovering new, or changing, components of their work reality, resulting in passion trajectories demonstrating a gentler increase (Houle et al., 2022).

From initial work by Boswell et al. (2005), Solinger et al. (2013) described a second scenario corresponding to a **Honeymoon-Hangover** process. In this scenario, employees' expectations regarding their work context can sometimes be unrealistically high, akin to a *Honeymoon* period characterized by high levels of enthusiasm, interest, efficacy, energy, commitment, and passion, enabling them to cope with any difficulties that they may encounter (Zhou et al., 2021). However, overenthusiastic employees can quickly (sometimes within a few weeks; Wong et al., 2023) see their psychological resources gradually weaken, corresponding to a *Hangover* stage. This hangover stage occurs when their work experiences suddenly or progressively stop being aligned with their expectations, and failures or challenges start to accumulate (Valero & Hirschi, 2019). Once again, although "unrealistically" high expectations might be more frequent among newcomers (Houle et al., 2024; Solinger et al., 2013), even established employees can experience a change in their work reality that comes to challenge their initially positive view of this reality (Houle et al., 2022).

More generally, employees' psychological resources and functioning at work depend on the two complementary processes (Kristof-Brown et al., 2005; Solinger et al., 2013) of attraction (i.e., employees want to work in a context that matches their skills and expectations) and selection (i.e., organizations primarily select employees whose profiles match the organization expectations). When aligned, these two processes should help employees experience feelings of adequation, match, or fit between their knowledge, skills, and expectations, and the requirements, content, and nature of their work environment (Solinger et al., 2013). This experience of fit should be intimately related to the nature of their work passion trajectories (Astakhova et al., 2024): The higher the fit, the higher the work passion. Solinger et al. (2013) refer to these scenarios as involving high, moderate, or low levels of fit. Indeed, some workers may have few options in terms of accessible jobs, or may simply realize that they have made the wrong choice. However, not all of them will be able to leave their job right after finding that it does not suit them due to a lack of credible alternatives or financial resources able to support them in making another attempt (e.g., Houle et al., 2022; Morin, Morizot, et al., 2011). In this **Low Fit** scenario, employees should display very low to low and stable levels of HP and OP.

In contrast, the constant search for the best possible solution on the part of employees and organizations could also result in a **High Fit** scenario in which employees approach their work environment with high to very high levels of HP and OP that remain stable over time. These employees have the skills to succeed, are strongly committed to their work, are passionate about

it, and know what the organization expects of them. As a result, they will be protected against unpleasant surprises at work, and problems can be quickly resolved, leading to high and stable levels of HP and OP (Houle et al., 2022, 2024; Tóth-Király et al., 2023). Solinger et al. (2013) also proposed a **Moderate Fit** scenario. Indeed, employees may experience some uncertainties and apprehensions about their ability to cope with the demands of their jobs, which may result in moderate levels of work passion. Some of those doubts may gradually be dispelled by the experience of pleasant work situations, while difficulties and challenges may keep on occurring, resulting in moderate and stable levels of HP and OP (Cheyroux et al., 2023; Houle et al., 2022, 2024).

Although one last scenario was not proposed by Solinger et al. (2013), we can also expect that some employees may come to experience a decrease in their levels of work passion over time (Boswell et al., 2005). This **Learning to Hate** scenario differs from the *Honeymoon-Hangover* scenario as it does not require initially high levels (i.e., overenthusiasm) and thus implies a gradual decline in initially moderate-to-high HP and OP trajectories (Fernet et al., 2020). Indeed, as they gather additional information about their role and the functioning of their organization, employees may realize unexpected negative attributes and boring aspects of their occupation and organization, leading them to question their initial decision to work in this work setting (Sandrin et al., 2022). Based on these theoretical scenarios, while also accounting for the fact that Schellenberg and Bailis (2015) only identified four distinct trajectories of HP and OP in the educational area, we expect that:

**Hypothesis 1. (H1).** Four to six profiles of HP and OP trajectories will be identified in this study.

**H2.** These profiles will correspond to one of the following scenarios: (a) *Learning to Love* (low to moderate initial levels with increasing trajectories); (b) *Honeymoon-Hangover* (high initial levels followed by decreasing trajectories); (c) *Low Fit* (very low to low stable trajectories); (d) *High Fit* (high to very high stable trajectories); (e) *Moderate Fit* (moderate stable trajectories); and (f) *Learning to Hate* (high initial levels with decreasing trajectories).

## THE CO-EVOLUTION OF HP AND OP

Both types of work passion have never been proposed as mutually exclusive so that individual employees can jointly experience different intensities of HP and OP (Gillet, Vallerand, et al., 2023). This possibility to jointly experience HP and OP is formally acknowledged in the Quadripartite Model of Passion (QMP; Schellenberg et al., 2019), which specifically highlights the likely role of distinctive combinations of HP and OP. More precisely, the QMP (Schellenberg et al., 2019) proposes to differentiate among four prototypical configurations of passion: *OP Dominant* (low HP; high OP), *HP Dominant* (high HP; low OP), *Mixed Passion* (high HP; high OP), and *Low Passion* (low HP; low OP). However, although the QMP (Schellenberg et al., 2019) is clearly anchored in a person-centered perspective (e.g., Morin et al., 2018) through its focus on profiles of employees displaying different combinations of HP and OP, with few exceptions (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023), all previous studies seeking to validate this model have relied on a [suboptimal] variable-centered approach (e.g., Gillet, Vallerand, et al., 2023).

Despite this limitation, prior person-centered studies have thus far confirmed that the joint experience of both forms of work passion was quite frequent and provided tentative support to the theoretical assumptions of the expectations of the QMP (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). However, these studies also revealed that employees' profiles did not necessarily always match one of those four theoretical scenarios, in part by revealing profiles displaying moderate, rather than high or low, levels of HP and/or OP (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). This observation is aligned with the recognition that employees are more likely to display moderate, rather than high or low, levels of work passion (e.g., Birkeland & Buch, 2015; Breu & Yasserli, 2023). However, despite their interest, none of these person-centered studies has thus far considered the co-evolution of employees' HP and OP trajectories or, more precisely, the connections between longitudinal profiles of HP and OP. Adopting a longitudinal perspective is likely to dynamically enrich our understanding of employees' work passion profiles, which have been thus far limited to cross-sectional evidence. Perhaps more importantly, this perspective will allow us to systematically contrast dynamic predictors and outcomes underpinning the evolution of employees' HP and OP trajectories.

Although current longitudinal evidence remains limited, we can first theoretically expect some degree of convergence in HP and OP (Schellenberg et al., 2019), which is consistent with the moderately high correlations generally observed between these two types of work passion (Gillet, Morin, et al., 2023; Liao et al., 2022). Furthermore, prior person-centered investigations (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023) have revealed several profiles displaying matching levels of HP and OP. Interestingly, profiles displaying low to very low levels of HP and OP tend to represent a limited number of employees (e.g., 8.94% in Morin, Gillet, Chénard-Poirier, et al., 2023), whereas profiles displaying similarly average levels of HP and OP are more prevalent (e.g., 17.10% of the participants within the *Mixed-Passion Average* in Gillet, Morin, et al., 2023). Conversely, we can also expect some divergences, consistent with some form of incompatibility between both types of work passion (Schellenberg et al., 2019). Indeed, previous person-centered studies have highlighted that experiencing very high levels of one type of passion seemed to be incompatible, or mutually exclusive, with the joint experience of very high levels of the other type of passion (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). This result is consistent with the theoretical definition of OP, which positions it as a state that becomes all-encompassing at high levels of intensity, leaving no room for the harmony across different spheres of life that characterizes HP (Vallerand, 2015; Vallerand et al., 2003). More generally, previous studies have also demonstrated that profiles characterized by divergent levels of HP and OP tended to be far more prevalent than those displaying matching levels of work passion (Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). These various considerations suggest that:

**H3.** Few employees will belong to profiles displaying matching trajectories of OP and HP (especially for profiles displaying the highest and lowest trajectories), while most employees will belong to profiles characterized by distinct HP and OP trajectories.



## PREDICTORS OF WORK PASSION TRAJECTORIES

Work passion is conceptualized as an indicator of psychological functioning emerging from the experience of congruence between employees' own goals and values and those of their work environment (Vallerand, 2015). As a result, HP and OP trajectories should demonstrate reactivity to fluctuations in the characteristics of the work context (Gillet, Morin, et al., 2023; Vallerand & Houliort, 2019). Supporting this assertion, employees exposed to high levels of mastery climate (Zhang et al., 2022), charismatic leadership (Ho & Astakhova, 2020), and job autonomy (Astakhova et al., 2024) have been found to display higher levels of HP, whereas those exposed to a performance climate (Zhang et al., 2022) and job demands (Trépanier et al., 2014) tended to display higher levels of OP. However, to accurately grasp the dynamic nature of time-structured associations between work context and work passion trajectories in a way that can help guide interventions, longitudinal methods are required. Unfortunately, very little research has so far examined these questions dynamically. Among exceptions, Liao et al. (2022) showed that unmet expectations shared time-structured positive associations with OP and negative associations with HP. In this study, we consider four predictors falling under the control of organizations: Workload, unfairness, harassment, and supervisor support.

These predictors are likely to play a role in driving employees to allocate—willingly or not—more or less energy and resources to their work role (Hobfoll, 2011), and can thus be theoretically expected to play a role in the emergence of specific work passion trajectories (Vallerand, 2015; Vallerand & Houliort, 2019). According to the job demands-resources model (Bakker & Demerouti, 2017), workload, unfairness, and harassment represent job demands, whereas supervisor support represents a job resource, and both types of work characteristics can be expected to influence intense forms of work involvement, such as work passion. More precisely, job demands are known to have detrimental effects on job performance, work engagement, and well-being (Gillet et al., 2024; Trépanier et al., 2014). According to the health-impairment process of the job demands-resources model (Bakker & Demerouti, 2017), employees exposed to many demands must devote a great deal of time, effort, and energy to their work to manage these demands. However, the resources available to support this investment remain limited (Hobfoll, 2011). As these resources decrease, they are less likely to be available to support employees in meeting their job and family demands (Bakker & Demerouti, 2017). While this lack of resources is likely to reduce employees' levels of investment in their work, it may also increase their likelihood of becoming obsessive about it (i.e., OP) to regain some form of control (Gillet, Fouquereau, Vallerand, et al., 2018; Vallerand et al., 2003). In contrast, supervisor support helps workers face contextual demands while retaining their personal resources (Gillet, Fouquereau, Vallerand, et al., 2018; Morin, Gillet, Blais, et al., 2023), and is thus likely to support more intense forms of work investment while avoiding cross-domain interference (i.e., maintaining harmony across domains; HP) (Gillet, Morin, Ndiaye, et al., 2022).

### Job demands

From a theoretical standpoint, perceived exposure to high levels of job demands should facilitate the development of OP and limit that of HP (Gillet, Morin, et al., 2023; Trépanier et al., 2014). Indeed, when employees feel pressured by job demands, they may feel compelled to invest themselves more intensively in their work to successfully meet all of these demands. This could lead to a more controlled (i.e., driven by internal or external contingencies) form of internalization of the

job into their sense of identity, thus increasing their likelihood of becoming so engrossed in their work as to have trouble distancing themselves from it (Gillet, Fouquereau, Vallerand, et al., 2018; Vallerand et al., 2003). For instance, employees who feel exposed to high levels of harassment (e.g., abusive and derogatory language or behaviors from their colleagues or supervisors) may have difficulty detaching themselves from their work, even when they should be doing something else. This situation could generate feelings of increased responsibility and pressure to overinvest in their work role (Gillet et al., 2024), which forms the basis of OP (Trépanier et al., 2014).

However, job demands also directly deplete energy and personal resources, which are no longer available to support other activities (Hobfoll, 2011). This resource expenditure, which also makes it harder to detach oneself from work, makes it harder to develop a work orientation that can harmoniously co-exist with other activities and life domains, which forms a core component of HP (Trépanier et al., 2014). Moreover, job demands also directly interfere with employees' enjoyment of their work, thus further interfering with HP (Morin, Gillet, Chénard-Poirier, et al., 2023).

These assertions have been supported by previous studies showing a positive effect of employees' perceptions of job demands (e.g., workload, unfairness) on their levels of OP (Lavigne et al., 2014; Morin, Gillet, Chénard-Poirier, et al., 2023; Trépanier et al., 2014) and workaholism (i.e., another extreme type of work involvement; Gillet et al., 2017; Gillet, Morin, Ndiaye, et al., 2022). In contrast, job demands have been found to share a negatively association with HP (Lavigne et al., 2014; Morin, Gillet, Chénard-Poirier, et al., 2023; Trépanier et al., 2014) or similar constructs (e.g., self-determined work motivation: Gillet et al., 2020; work engagement: Drouin-Rousseau et al., 2024). Just like work passion, workload, unfairness, and harassment are dynamic constructs (Adamovic, 2021; Huyghebaert, Fouquereau, et al., 2018; Rosander & Nielsen, 2023). Yet, despite this recognition, we are unaware of any research examining the dynamic and time-structured role of these job demands in relation to employees' HP and OP trajectories. In this regard, we expect that:

**H4.** Initial perceptions of workload, unfairness, and harassment will be associated with (a) membership into profiles characterized by higher initial levels of OP (*High Fit*, *Honeymoon-Hangover*) and lower initial levels of HP (*Low Fit*), (b) higher within-profile initial levels of OP and lower within-profile initial levels of HP, and (c) within-profile increases in OP and decreases in HP.

**H5.** Increases over time in perceptions of workload, unfairness, and harassment will be associated with (a) membership into profiles characterized by higher increases in OP (*High Fit*, *Learning to Love*) and decreases in HP (*Learning to Hate*), and (b) within-profile increases in OP and decreases in HP.

**H6.** Time-specific (i.e., state-like fluctuations) increases in workload, unfairness, and harassment will be associated with within-profile time-specific increases in OP and decreases in HP.

## Supervisor support as a Core job resource

Research supports the role of perceived supervisor support as a positive driver of individual and organizational outcomes (Caesens et al., 2020; Gillet et al., 2020), and one that easily falls under the control of managers and organizations (Gillet, Fernet, Colombat, et al., 2022). Perceived

supervisor support helps workers maintain and develop their personal resources at work (Hobfoll, 2011), thereby helping them recover more quickly from work and protecting them against the undesirable effects of job demands on other spheres of their lives (Bakker & Demerouti, 2017; Gillet, Fernet, Colombat, et al., 2022). Moreover, employees who feel supported by their supervisor tend to display higher levels of work engagement (Gillet, Morin, Sandrin, & Houle, 2018) – a construct sharing commonalities with HP (Smith et al., 2023) – while being less likely to rely on destructive forms of overinvestment such as OP or workaholism (Gillet, Morin, Ndiaye, et al., 2022). Perceived supervisor support is also associated with higher levels of autonomous motivation (driven by one's values and pleasure) and lower levels of controlled motivation (e.g., Gillet et al., 2013). Given that HP is primarily anchored in autonomous motivation, whereas OP is anchored in more controlled motivation (Vallerand, 2015), perceptions of supervisor support should theoretically increase one's likelihood of experiencing HP while limiting one's risk of experiencing OP. Supporting these assertions, Birkeland et al. (2018) showed that perceived supervisor support was positively related to HP and negatively associated with OP. Kong and Ho (2018) also found a positive effect of leader-member exchange (a construct encompassing perceptions of leader support) on HP and OP, although associations with HP were stronger than with OP. Likewise, Gillet, Morin, Ndiaye, et al. (2022) found positive associations between leader-member exchange and workaholism, a construct closely related to OP (Smith et al., 2023). We thus expect that:

**H7.** Initial levels of supervisor support will be associated with (a) membership into profiles characterized by higher initial levels of HP (*High Fit, Honeymoon-Hangover*) and lower initial levels of OP (*Low Fit*), (b) higher within-profile initial levels of HP and lower within-profile initial levels of OP, and (c) within-profile increases in HP and decreases in OP.

**H8.** Increases over time in supervisor support will be associated with (a) membership into profiles characterized by higher increases in HP (*High Fit, Learning to Love*) and decreases in OP (*Learning to Hate*), and (b) within-profile increases in HP and decreases in OP.

**H9.** Time-specific (i.e., state-like fluctuations) increases in supervisor support will be associated with within-profile time-specific increases in HP and decreases in OP.

## OUTCOMES OF WORK PASSION TRAJECTORIES

The DMP (Vallerand, 2010, 2015) notes that passionate workers allocate more resources to their work in a manner that is more (HP) or less (OP) balanced with the other facets of their lives, while gaining personal resources as a result of the fulfillment and enjoyment derived from spending time in an activity about which they are passionate. It is thus not surprising that HP tends to be associated with a variety of positive outcomes encompassing the professional and personal domains (Gillet, Morin, et al., 2023; Vallerand & Houliort, 2019). In contrast, OP tends to be associated with generally less desirable outcomes (Fernet et al., 2014; Vallerand & Houliort, 2019), although it might still lead to performance increases (Astakhova & Ho, 2018). This study expands upon prior longitudinal research by considering a broader range of outcomes pertaining to employees' attitudes (i.e., turnover intention), psychological health

(i.e., perceived psychological health and work fatigue), and behaviors (i.e., work performance, presenteeism, and absenteeism), all known to be highly relevant to professional success. The turnover intention has long been recognized as a direct, and critically important, precursor of a wide variety of undesirable work outcomes (e.g., actual turnover: Fukui et al., 2019; reduced performance: Haque, 2021), while presenteeism and absenteeism are known to have detrimental effects on learning, performance, executive functioning, and social skills (Gottfried & Ansari, 2022; Miraglia & Johns, 2016). Likewise, work fatigue has often been related to reduced levels of performance, due in part to its negative impact on employees' behavioral, motivational, physical, and/or cognitive functioning (Frone & Tidwell, 2015). In contrast, perceived psychological health is known to be positively associated with desirable work outcomes (e.g., job satisfaction: Gillet, Morin, Cougot, et al., 2022; work performance: Sandrin et al., 2019). Finally, employees' work performance may facilitate career success (Amarnani et al., 2020) and is negatively linked to multiple detrimental work behaviors (e.g., absenteeism: Peretz et al., 2015). Beyond their practical relevance, these outcomes were also selected due to their known dynamic nature (Cheyroux et al., 2023; Miraglia & Johns, 2016), making them naturally suited to the investigation of their time-structured associations with work passion trajectories.

Many theoretical arguments have been offered to account for the desirable outcomes of HP. For harmoniously passionate employees, work typically co-exists harmoniously with other life domains (Vallerand, 2010, 2015). This harmonious co-existence allows employees to establish adaptive boundaries between their work and other life areas, thus reducing their risk of experiencing conflicts between their personal and professional lives, in turn promoting their well-being (e.g., high perceived psychological health, low work fatigue) and functioning at work (e.g., high performance; Vallerand & Houlfort, 2019). Interestingly, Gong et al. (2020) showed that the negative effects of HP on turnover intention were mediated by psychological well-being. HP should also help employees to build up, or accumulate, personal resources as a result of the enjoyment (e.g., well-being; Vallerand et al., 2003) they derive from working (e.g., better psychological health, more positive mood, greater knowledge, and skills; Hobfoll, 2011). As these resources accumulate, they become available to support the demands of employees' personal lives, allowing them to experience positive outcomes at work (e.g., low presenteeism and absenteeism; Vallerand, 2015; Vallerand & Houlfort, 2019).

In contrast, obsessively passionate employees engage in their work with a rigid persistence, making it harder to establish boundaries between work and other life domains, thereby increasing the likelihood that work will interfere with other life areas and well-being (e.g., low perceived psychological health, high work fatigue; Gillet, Morin, et al., 2023; Vallerand & Houlfort, 2019). These employees are thus less likely to accumulate personal resources, and more likely to spend most of these resources at work, making them more likely to adopt defensive strategies to protect themselves from further loss of resources in other life domains (Hobfoll, 2011). As a result, they are more likely to experience the demands of their personal life as a threat to their work functioning (e.g., high absenteeism). By prioritizing their work role obsessively, these employees should be less willing to capitalize on resources gained at work to support their psychological functioning, leading to negative work outcomes (e.g., low performance). In addition, because obsessively passionate employees devote an inordinate amount of time to their work, which is their core source of self-esteem (Vallerand, 2010), they are more likely to continue working even if their psychological health does not allow them to (i.e., high presenteeism). OP may also be linked to turnover intention due to the fatigue, irritability, and tension experienced by obsessively passionate employees (Vallerand & Houlfort, 2019). Although research has seldom dynamically investigated these outcomes of HP and OP trajectories, we propose that:

**H10.** Time-specific levels of HP will be associated with matched time-specific levels of perceived psychological health and work performance, and inversely associated with their levels of turnover intention, work fatigue, presenteeism, and absenteeism.

**H11.** Time-specific levels of OP will be associated with matched time-specific levels of turnover intention, work fatigue, presenteeism, and absenteeism, and inversely associated with their levels of perceived psychological health and work performance.

## METHOD

### Sample and procedure

This study relies on a sample of 622 nurses ( $M_{age} = 35.75$ ;  $SD_{age} = 11.77$ ; 89.6% female) recruited in France. Most of these nurses (57.7%) had less than ten years of tenure in their occupation, with 36.5% of them having one year or less of tenure. Roughly one-quarter of the participants were single (23.9%), while the other three-quarters were in a couple (76.1%). Roughly half of the participants had no children (46.1%), whereas 9.7% had one child, 30.8% had two children, 10.5% had three children, and 2.8% had more than three children. Finally, 87.1% of the participants worked full-time.

Participation was voluntary and all participants were initially invited to complete a self-report questionnaire (Time 1, T1:  $n = 304$ ), and then to complete it again one (Time 2, T2:  $n = 190$ ), two (Time 3, T3:  $n = 165$ ), three (Time 4, T4:  $n = 130$ ), four (Time 5, T5:  $n = 99$ ), and five (Time 6, T6:  $n = 78$ ) months later. At each data collection point, the goals of the study were explained to all participants, who then actively provided informed consent before directly proceeding to complete a 15-minute online questionnaire. Participants were ensured that their responses were anonymous and would be kept confidential and that nothing about the study (e.g., their responses, their participation, their decision to stop participation) would have any impact on themselves and their work. Participants were also asked to provide a personal identification code to allow researchers to match their responses over time without gaining access to their identities. All procedures implemented in this research follow the ethical standards and principles of the Declaration of Helsinki (World Medical Association, 2013).

## MEASURES

Most measures were already validated in French (i.e., work passion, workload, supervisor support, psychological health, fatigue, presenteeism, turnover intention, performance, and absenteeism). Measures not already validated in French (i.e., unfairness and harassment) were adapted to French using a classical translation back-translation procedure by independent bilingual experts. Discrepancies were resolved by consensus among those involved in the translation and bilingual members of the research team.

## Work passion

Work passion was assessed using Philippe et al.'s (2017; originally developed in French) questionnaire covering HP (3 items; e.g., "Work is in harmony with the other things that are part of me";  $\alpha_{t1} = .837$ ;  $\alpha_{t2} = .829$ ;  $\alpha_{t3} = .860$ ;  $\alpha_{t4} = .848$ ;  $\alpha_{t5} = .806$ ; and  $\alpha_{t6} = .896$ ) and OP (3 items; e.g., "I have almost an obsessive feeling for work";  $\alpha_{t1} = .736$ ;  $\alpha_{t2} = .727$ ;  $\alpha_{t3} = .657$ ;  $\alpha_{t4} = .714$ ;  $\alpha_{t5} = .679$ ; and  $\alpha_{t6} = .648$ ). Items were rated on a seven-point scale (Strongly disagree to Strongly agree).

## Workload

Workload perceptions were assessed using a scale originally developed in French by Lequeurre et al. (2013; 4 items; e.g., "I have too much work to do";  $\alpha_{t1} = .918$ ;  $\alpha_{t2} = .931$ ;  $\alpha_{t3} = .947$ ;  $\alpha_{t4} = .950$ ;  $\alpha_{t5} = .948$ ; and  $\alpha_{t6} = .931$ ). All items were rated on a 1 (never) to 7 (always) response scale.

## Supervisor support

Supervisor support was assessed using a four-item measure originally developed in French by Caesens et al. (2014; e.g., "My supervisor really cared about my well-being";  $\alpha_{t1} = .841$ ;  $\alpha_{t2} = .881$ ;  $\alpha_{t3} = .871$ ;  $\alpha_{t4} = .873$ ;  $\alpha_{t5} = .890$ ; and  $\alpha_{t6} = .924$ ). All items were rated on a seven-point response scale (Strongly disagree to Strongly agree).

## Unfairness

Three items from French et al. (2019) were used to assess perceptions of unfairness (e.g., "How often are you watched more closely than other workers?";  $\alpha_{t1} = .542$ ;  $\alpha_{t2} = .611$ ;  $\alpha_{t3} = .624$ ;  $\alpha_{t4} = .544$ ;  $\alpha_{t5} = .637$ ; and  $\alpha_{t6} = .503$ ). Items were rated on a five-point scale (Never to Always).

## Harassment

Two items from French et al. (2019) were used to assess perceptions of harassment (i.e., "How often does your supervisor use ethnic, racial, or sexual slurs or jokes?" and "How often do your colleagues use ethnic, racial, or sexual slurs or jokes?";  $\alpha_{t1} = .532$ ;  $\alpha_{t2} = .610$ ;  $\alpha_{t3} = .444$ ;  $\alpha_{t4} = .574$ ;  $\alpha_{t5} = .709$ ; and  $\alpha_{t6} = .741$ ). Items were rated on a five-point scale ranging (Never to Always).

## Perceived psychological health

Perceived psychological health was assessed using the General Health Questionnaire (GHQ; Goldberg & Williams, 1988; French version by Lesage et al., 2011; 12 items; e.g., "During the past month, I was able to concentrate";  $\alpha_{t1} = .846$ ;  $\alpha_{t2} = .836$ ;  $\alpha_{t3} = .846$ ;  $\alpha_{t4} = .814$ ;  $\alpha_{t5} = .874$ ; and  $\alpha_{t6} = .853$ ). Items were rated on a four-point scale (Strongly disagree to Strongly agree).

## Fatigue

Work fatigue was assessed using the Three-Dimensional Work Fatigue Inventory (3D-WFI; Frone & Tidwell, 2015; French version by Sandrin et al., 2022). The 3D-WFI captures three dimensions of fatigue: (a) *physical fatigue* (six items; e.g., “During the past month, how often did you feel physically exhausted at the end of the work day?”;  $\alpha_{t1} = .874$ ;  $\alpha_{t2} = .900$ ;  $\alpha_{t3} = .922$ ;  $\alpha_{t4} = .931$ ;  $\alpha_{t5} = .938$ ; and  $\alpha_{t6} = .929$ ); (b) *mental fatigue* (six items; e.g., “During the past month, how often did you feel mentally exhausted at the end of the work day?”;  $\alpha_{t1} = .900$ ;  $\alpha_{t2} = .932$ ;  $\alpha_{t3} = .940$ ;  $\alpha_{t4} = .946$ ;  $\alpha_{t5} = .950$ ; and  $\alpha_{t6} = .952$ ); and (c) *emotional fatigue* (six items, e.g., “During the past month, how often did you feel emotionally exhausted at the end of the work day?”;  $\alpha_{t1} = .912$ ;  $\alpha_{t2} = .930$ ;  $\alpha_{t3} = .936$ ;  $\alpha_{t4} = .927$ ;  $\alpha_{t5} = .950$ ; and  $\alpha_{t6} = .943$ ). All items were rated on a 1 (everyday) to 5 (never) response scale and can be used together to assess participants' global levels of work fatigue (Blais et al., 2020), which is the approach taken in this study ( $\alpha_{t1} = .958$ ;  $\alpha_{t2} = .969$ ;  $\alpha_{t3} = .971$ ;  $\alpha_{t4} = .973$ ;  $\alpha_{t5} = .979$ ; and  $\alpha_{t6} = .977$ ). Higher scores on this measure reflect lower levels of fatigue.

## Presenteeism

Past month presenteeism was assessed using a six-item scale (Koopman et al., 2002; French version by Huyghebaert, Gillet, et al., 2018). These items (e.g., “Because of my health problems, the stresses of my job were much harder to handle”;  $\alpha_{t1} = .956$ ;  $\alpha_{t2} = .966$ ;  $\alpha_{t3} = .961$ ;  $\alpha_{t4} = .964$ ;  $\alpha_{t5} = .945$ ; and  $\alpha_{t6} = .972$ ) were rated on a five-point scale (Strongly disagree to Strongly agree).

## Turnover intention

Turnover intention was assessed with three items (e.g., “I often think about quitting this occupation”;  $\alpha_{t1} = .860$ ;  $\alpha_{t2} = .906$ ;  $\alpha_{t3} = .903$ ;  $\alpha_{t4} = .899$ ;  $\alpha_{t5} = .917$ ; and  $\alpha_{t6} = .925$ ) from Bardach et al. (2020; French version by Cheyroux et al., 2023). Items were rated on a six-point scale (Strongly disagree to Strongly agree).

## Performance

Work performance was measured with a single item (i.e., “How would you rate your overall job performance during the past four weeks?”) from the World Health Organization Health and Work Performance Questionnaire (Kessler et al., 2003; French version by Huyghebaert-Zouaghi et al., 2022) and rated on a 0 (Worst performance) to 10 (Best performance) scale.

## Absenteeism

Absenteeism was assessed with a one-item measure (“How many entire days did you miss during the last month because of problems related to your physical or psychological health?”; Kessler et al., 2003; French version by Sandrin et al., 2020).

## ANALYSES

### Preliminary measurement models

Apart from the single-item measures (absenteeism, presenteeism, and work performance), our main analyses relied on factor scores from preliminary measurement models to achieve a partial correction for unreliability. These factor scores were obtained in a two-step procedure recommended by Morin, Maïano, et al. (2011; Sandrin et al., 2022). First, longitudinal measurement models were used to test the measurement invariance of participants' ratings on the multi-item work passion (i.e., HP and OP), predictors (workload, harassment, support, and unfairness), and outcomes (i.e., fatigue, psychological health, presenteeism, and turnover intention). Factor scores were estimated in standardized units of the first time point ( $M = 0$ ,  $SD = 1$ ) and saved from the most invariant model to ensure comparability over time (Millsap, 2011). For work passion, these factor scores were directly used in our main analyses.

Second, for predictors and outcomes, longitudinally invariant factor scores, and scores on single-item variables, were used to estimate latent curve models reflecting participants' longitudinal trajectories (Bollen & Curran, 2006). Linear and quadratic specifications were contrasted to select the optimal representation of these trajectories (Grimm et al., 2016). Linear trajectories are represented by a random intercept factor reflecting the initial level of the trajectories (the occasion-specific measures are linked to this factor by loadings of 1, which means that effects involving the intercept can also be interpreted as involving the average level of the trajectories over time) and a random linear slope factor reflecting the rate of change in these trajectories over time (the occasion-specific measures are linked to this factor by loadings reflecting the passage of time). In this study, the loadings on the slope factor were set in monthly units to a value of 0 at T1 (initial level), 1 at T2 (one month after T1), 2 at T3 (two months after T1), 3 at T4 (three months after T1), 4 at T5 (four months after T1), and 5 at T6 (five months after T1). Quadratic models are specified as linear models but with the addition of a quadratic slope factor (the occasion-specific measures are linked to this factor by squaring the time codes used to define the linear slope factor) reflecting the curvature (U-shaped or inverted U-shaped) of these trajectories. A linear model (intercept and linear slope) was retained for all variables. Details on all preliminary analyses (factor solutions, longitudinal invariance, intraclass correlations, first-order correlations, reliability, and latent curve analyses) are described in the [online supplements](#).

### Model estimation and missing data

The first step of the preliminary analyses relied on the robust Weighted Least Squares with Mean and Variance adjustment (WLSMV) estimator implemented in Mplus 8.10 (Muthén & Muthén, 2023) to account for the ordinal nature of the response scales following asymmetric response thresholds used in this study (Finney & DiStefano, 2013). However, the missing data procedures implemented with WLSMV estimation are not as efficient as those used with other estimators (e.g., Asparouhov & Muthén, 2010; Enders, 2022). For this reason, time-specific factor scores were only saved for participants who completed each measurement point. Importantly, the online questionnaire was programmed to allow no missing responses for participants who completed each time point, meaning that missing responses were limited to attrition. Given the continuity of factor scores, we were able to rely on the Maximum Likelihood Robust (MLR) estimator



to estimate the second step of our preliminary analyses (i.e., latent curve models), as well as our main analyses. This estimator made it possible to rely on Full Information Maximum Likelihood (FIML) procedures (e.g., Enders, 2022) to handle missing responses due to attrition. FIML allows missing responses to be conditioned on all variables included in the model (including participants' scores at the other time points), making it very robust to attrition. Indeed, statistical research has shown that FIML and multiple imputations have a similar accuracy (Collins et al., 2001; Graham et al., 2007), but that computationally simpler FIML procedures should be favored for complex models (Enders, 2022). More precisely, statistical simulation studies show that 65% and 75% of the data can be salvaged without estimation biases by using state-of-the-art missing data handling techniques such as FIML (e.g., Lee et al., 2019; Newman, 2003, 2014). FIML relies on the missing at random (MAR) assumption that missing responses can be conditioned on all variables included in the model, including the same variables measured at different time points in longitudinal models, making it robust to attrition processes related to any of the variables included in the model (Enders, 2022). Attrition analyses, in which scores on all variables used in our analyses were used to predict the number of completed measurement occasions revealed that nurses with children tended to participate in slightly more measurement occasions ( $b = .207$ ,  $s.e. = .100$ ;  $\beta = .157$ ;  $p < .05$ ), thus supporting the value of considering the inclusion of this variable as a possible control. Among the other variables, only HP was positively associated with attrition ( $b = -.334$ ,  $s.e. = .137$ ;  $\beta = -.190$ ;  $p < .05$ ).

## Growth mixture models (GMM)

Linear GMM<sup>1</sup> including one to eight work passion trajectories were estimated for each component of work passion (HP and OP) using the MLR estimator, 12,000 random start values, 2000 second stage optimizations, 200 final optimizations, and 2000 iterations (Hipp & Bauer, 2006). In linear GMM, repeated measures are summarized via random intercepts and random linear slope factors, defined as in the preliminary latent curve analyses. In GMM, all parameters (intercepts and linear slope means, variances, and covariances, as well as time-specific residuals) should ideally be freely estimated across profiles (Diallo et al., 2016; Morin, Maïano, et al., 2011). This recommendation comes with the acknowledgment that this completely free estimation often yields improper or nonconverging solutions due to overparameterization, which supports the need to rely on simpler models (Diallo et al., 2016; Morin & Litalien, 2019). When this happens, as in this study, equality constraints should be progressively implemented (Diallo et al., 2016). Following current recommendations (Diallo et al., 2016; Morin & Litalien, 2019), we relied on a parameterization in which the means, variances, and covariance of the growth factors were freely estimated across profiles. The time-specific residuals were also allowed to differ across profiles but not over time (homoscedasticity), corresponding to the traditional multilevel operationalization of growth models (Grimm et al., 2016; Li & Hser, 2011).

The optimal number of profiles was determined by considering the theoretical conformity, heuristic meaning, and statistical adequacy of each solution (Marsh et al., 2009; Morin & Litalien, 2019; Muthén, 2003). This selection was also guided by statistical indices, including the Akaike Information Criterion (AIC) and its consistent version (CAIC), the Bayesian Information Criterion (BIC) and its sample-size adjusted version (ABIC), and two types of likelihood ratio tests (LRT): (1) the Lo et al.'s (2001) adjusted LRT (aLMR), and (2) the Bootstrap LRT (BLRT). When statistically significant, the aLMR or BLRT supports the addition of a profile

relative to the previous solution, whereas lower values on the AIC, CAIC, BIC, and ABIC suggest a superior model fit. According to statistical simulation studies, the CAIC, BIC, ABIC, and BLRT are effective guides for the optimal number of profiles, whereas the AIC and aLMR are not and are only reported to ensure complete disclosure (e.g., Diallo et al., 2016, 2017; Nylund et al., 2007; Tein et al., 2013). We also report the entropy as an indicator of classification accuracy (0-no accuracy to 1-perfect accuracy). Importantly, Diallo et al. (2017) revealed that the BIC and CAIC should be favored in conditions of high entropy (i.e., entropy  $\geq .80$ ), whereas the ABIC and BLRT should be favored when the entropy values are lower (i.e., closer to .50–.60).

Once the optimal number of profiles was selected for the HP and OP trajectories, these two solutions were combined into a single model via a latent Markov (or latent transition) link function (Collins & Lanza, 2009) allowing for the cross-tabulation of profile membership (e.g., Houle et al., 2024; Nylund-Gibson et al., 2014). To ensure that the nature of the profiles remained unchanged in this combined solution, as well as in analyses of predictors and outcomes, profiles were defined using the start values corresponding to the final solutions (Houle et al., 2024; Morin & Litalien, 2019). Although it was possible to estimate this joint model for solutions excluding covariates (to obtain a statistically accurate of participants' dual membership into HP and OP profiles), this dual solution proved too complex for analyses of predictors and outcomes (which systematically failed to converge or to converge on proper solutions), which had to be conducted separately for the two sets of profiles.

## Demographics, predictors, and outcomes

Once the optimal number of profiles were identified, we first estimated associations between participants' demographic characteristics [tenure (coded in years)<sup>2</sup>; sex (0: women; 1: men); conjugal situation (0: single; 1: in couple); number of kids; and work schedule (0: part-time; 1: full time)] and their work passion trajectories to verify the relevance of retaining these variables as controls in our main predictive models. These variables were directly included in the optimal solution as predictors of profile membership (via a multinomial logistic regression link) and of within-profile variations in the intercepts and linear slopes of the work passion trajectories (via a multiple regression link). Their effects were assessed following a sequential strategy recommended by Diallo et al. (2017; also see Morin & Litalien, 2019). In a first (null) model, associations between the demographics and profile membership and within-profile variations in the intercept and slope of the trajectories were all constrained to be 0. In a second model, we freely estimated the effects of these demographic variables on profile membership. In the third and fourth models, we freely estimated their effects on within-profile variations in the intercepts of the trajectories in a way that did not differ (model 3, invariant) or that was allowed to differ (model 4, varying) across profiles. In the fifth and sixth models, we freely estimated their effects on within-profile variations in the linear slope of the trajectories in a way that did not differ (model 5, invariant) or that was allowed to differ (model 6, varying) across profiles. Models 2 to 6 were built upon the results from the previous steps. All of these models, as well as the following ones, were contrasted using information criteria (CAIC, BIC, and ABIC), with a lower value indicating a better fit (Diallo et al., 2017; Morin et al., 2016).

Second, the factor scores representing the predictor trajectories (intercept and linear slopes) were integrated into the final solution retained previously. Associations involving the intercepts of the predictor trajectories were first assessed in the same sequence used for the demographics.

Second, building upon the optimal solution retained in the previous step, a similar sequence was used to assess the role of the slope of the predictor trajectories and (a) profile membership (model 7); (b) within-profile variations in the slopes of the work passion trajectories (models 8 invariant and 9 varying).

Third, we estimated time-varying associations between the time-specific residuals of the predictor trajectories (i.e., reflecting the extent to which observed scores deviated from model-implied predictor trajectories at each time point) and those of the work passion trajectories to assess state-level associations (i.e., whether a short-term boost or drop in predictors resulted in short-term boosts or drops in work passion). These models were also estimated in sequence (Morin & Litalien, 2019), starting with a null effect model (TVP1) followed by models in which these effects were set to be equal over time points and profiles (TVP2), equal over time but not profiles (TVP3), free to vary over time but not profiles (TVP4), and free to vary across time and profiles (TVP5).

Finally, outcome levels (i.e., participants' scores on the intercepts and slopes of their outcome trajectories) were contrasted across profiles using Mplus' Auxiliary (DCON) function (Asparouhov & Muthén, 2014; Lanza et al., 2013). This approach makes it possible to compare the profiles, defined in a probabilistic manner, in relation to a variety of outcomes.

## RESULTS

### Selection of the optimal number of profiles

The fit of the unconditional GMM solutions is reported in the top sections of Table 1. The pattern of results is very similar for HP and OP, revealing high-entropy solutions including two (HP and OP) to three (HP) profiles. This high entropy suggests that for these solutions the BIC and CAIC should be favored (Diallo et al., 2017). The CAIC had its lowest value for the two-profile HP and OP solutions, whereas the BIC had its lowest value for the two-profile OP solution and the three-profile HP solution. However, these solutions were substantively uninteresting. For HP, the suggested two- and three-profiles solutions included a very large Low HP profile corresponding to roughly 90% of the participants, accompanied by small High and Very High HP profiles corresponding to few participants each. For OP, the suggested two-profile solution included one very large Moderate OP profile corresponding to over 90% of participants, accompanied by a much smaller Low OP profile.

In contrast, solutions including more than two (OP) and three (HP) profiles had a lower entropy, which is not surprising as they revealed profiles displaying more differentiated, changing, and crossing trajectories, making it harder to achieve high levels of classification accuracy. The lower entropy associated with these solutions indicates that the ABIC and BLRT should be favored. In both cases, the ABIC and the BLRT supported the five-profile solution. A detailed examination of these various solutions is consistent with the ABIC. Indeed, if we consider the HP solution illustrated in Figure 1, Profiles 1, 4, and 5 were already present in the three-profile solution, whereas the two Moderate profiles (2 and 3) with distinctively shaped trajectories appeared in the four- and five-profile solutions. Adding a sixth profile resulted in the arbitrary division of the Low HP profile into two similarly shaped profiles. If we similarly consider the OP solution illustrated in Figure 2, Profiles 2 and 5 were already present in the two-profile solution, Profile 4 emerged in the three-profile solution, Profile 1 emerged in the four-profile solution, and Profile 3 emerged in the five-profile solution. In contrast, adding a sixth profile resulted in the arbitrary division of the High OP profile into two similarly shaped profiles.

TABLE 1 Results from the unconditional growth mixture analyses and tests of demographics.

Model	LL	#fp	Scaling	AIC	CAIC	BIC	ABIC	Entropy	aLMR	BLRT
<i>Harmonious passion</i>										
1 profile	-989.958	6	1.221	1991.917	2021.955	2015.955	1996.916	Na	Na	Na
2 profiles	-920.398	13	1.087	1866.796	1931.879	1918.879	1877.628	.931	≤ .001	≤ .001
3 profiles	-898.482	20	.940	1836.964	1937.091	1917.091	1853.629	.938	≤ .001	≤ .001
4 profiles	-882.715	27	.909	1819.429	1954.601	1927.601	1841.926	.667	≤ .001	≤ .001
5 profiles	-866.130	34	.881	1800.261	1970.477	1936.477	1828.590	.695	.004	≤ .001
6 profiles	-856.920	41	.845	1795.841	2001.101	1960.101	1830.003	.643	.009	.162
7 profiles	-847.828	48	.831	1791.657	2031.962	1983.962	1831.651	.606	.013	.167
8 profiles	-850.063	55	.882	1810.127	2085.476	2030.476	1855.953	.534	≤ .001	≤ .001
Final 5 profiles (constrained)	-886.063	34	.856	1840.125	2010.341	1976.341	1868.455	.681	Na	Na
<i>Obsessive passion</i>										
1 profile	-986.375	6	1.184	1984.751	2014.789	2008.789	1989.750	Na	Na	Na
2 profiles	-943.165	13	1.086	1912.331	1977.413	1964.413	1923.163	.969	.019	≤ .001
3 profiles	-923.619	20	1.002	1887.238	1987.365	1967.365	1903.902	.527	.003	≤ .001
4 profiles	-905.241	27	1.202	1864.481	1999.653	1972.653	1886.978	.646	.521	≤ .001
5 profiles	-892.030	34	1.321	1852.060	2022.276	1988.276	1880.389	.545	.657	≤ .001
6 profiles	-883.408	41	1.007	1848.817	2054.077	2013.077	1882.978	.564	.031	.098
7 profiles	-877.686	48	.134	1851.371	2091.676	2043.676	1891.365	.527	.240	.667
8 profiles	-896.889	55	.866	1903.778	2179.128	2124.128	1949.605	.598	≤ .001	≤ .001
Final 5 profiles (constrained)	-911.789	34	1.004	1891.577	2061.793	2027.793	1919.91	.563	Na	Na
<i>Harmonious passion (HP); Demographics (D)</i>										
HP-D1. Null	-898.838	24	.837	1845.676	1965.769	1941.769	1865.614	.520	Na	Na
HP-D2. Demo. Predicting C	-881.233	44	.943	1850.466	2070.637	2026.637	1887.019	.633	Na	Na
HP-D3. Demo. Predicting I (inv.)	-948.711	29	.822	1955.421	2100.534	2071.534	1979.513	.479	Na	Na

(Continues)

TABLE 1 (Continued)

Model	LL	#fp	Scaling	AIC	CAIC	BIC	ABIC	Entropy	aLMR	BLRT
HP-D4. Demo. Predicting I (var.)	-938.452	49	1.102	1974.904	2220.095	2171.095	2015.611	.499	Na	Na
HP-D5. Demo. Predicting S (inv.)	-936.676	29	.840	1931.351	2076.464	2047.464	1955.443	.421	Na	Na
HP-D6. Demo. Predicting S (var.)	-926.403	49	1.038	1950.807	2195.997	2146.997	1991.514	.417	Na	Na
<i>Obsessive passion (OP): Demographics (D)</i>										
OP-D1. Null	-909.693	24	.865	1867.386	1987.479	1963.479	1887.324	.564	Na	Na
OP-D2. Demo. Predicting C	-893.145	44	.979	1874.290	2094.461	2050.461	1910.843	.634	Na	Na
OP-D3. Demo. Predicting I (inv.)	-909.797	29	.832	1877.593	2022.706	1993.706	1901.685	.552	Na	Na
OP-D4. Demo. Predicting I (var.)	-913.766	49	1.060	1885.531	2050.644	2001.644	1909.623	.523	Na	Na
OP-D5. Demo. Predicting S (inv.)	-937.697	29	.712	1933.394	2078.507	2049.507	1957.487	.536	Na	Na
OP-D6. Demo. Predicting S (var.)	-935.657	49	.560	1969.315	2214.505	2165.505	2010.022	.464	Na	Na

Note. LL: Loglikelihood; #fp: Number of free parameters; Scaling: Scaling factor; AIC: Akaike Information Criteria; CAIC: Constant AIC; BIC: Bayesian Information Criteria; ABIC: Sample Size adjusted BIC; aLMR: Adjusted Lo-Mendell-Rubin likelihood ratio test; BLRT: Parametric Bootstrapped Likelihood Ratio Test; Na: Not applicable; C: Profile membership; I: Intercept factor; S: Slope factor; Inv.: Invariant across profiles; Var: Free to vary across profiles.

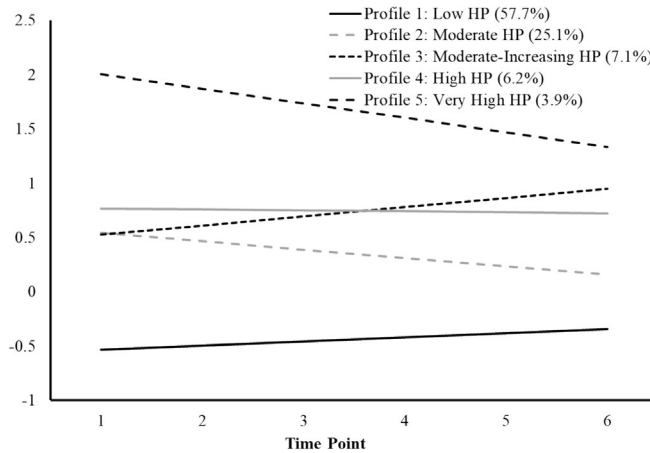


FIGURE 1 Final five-profile solution: harmonious work passion.

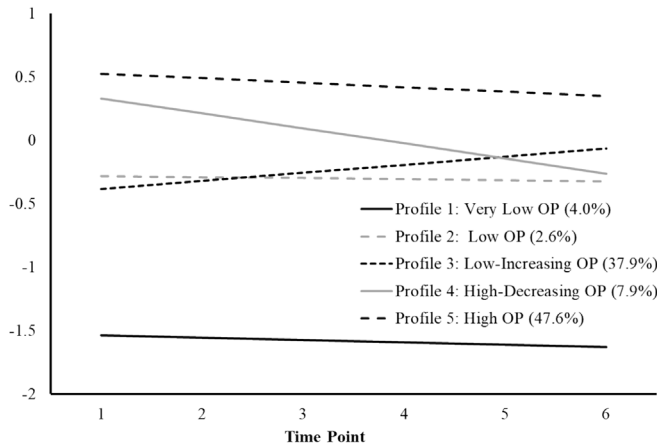


FIGURE 2 Final five-profile solution: obsessive work passion.

Solutions including five profiles were thus retained for HP and OP. As these solutions included improper negative variance estimates, they were re-estimated while constraining all variances to be positive (e.g., Gillet, Morin, Huart, et al., 2018; Morin et al., 2013). The resulting solutions had a shape similar to that of the unconstrained models and are illustrated in Figures 1 (HP) and Figures 2 (OP). Parameter estimates from these models are reported in Table S9 of the online supplements. These solutions had an entropy of .681 (HP) and .563 (OP), indicating a moderate level of classification accuracy. More extensive information on classification accuracy is reported in Table S10 of the online supplements. For HP, these results revealed a high accuracy for the classification of participants into Profiles 1 (.840) and 5 (.874), moderately high accuracy for classifications into Profiles 3 (.726) and 4 (.773), and a moderate accuracy for classifications into Profile 2 (.597). For OP, these results revealed a high accuracy for classification into Profile 2 (.897), a moderately high accuracy for classifications into Profiles 1 (.730), 4 (.788), and 5 (.719), and a moderate accuracy for classifications into Profile 3 (.657).

## Description of the HP profiles

Profile 1 (Low HP) characterized participants reporting persistently low levels of HP (roughly .5 SD under the sample mean at T1), while Profile 2 (Moderate HP) characterized those with persistently moderate levels of HP (roughly .5 SD above the mean). Although Profile 3 (Moderate-Increasing HP) also initially displayed moderate levels of HP (roughly .5 SD above the mean), these levels increased significantly until the end of the study. Profile 4 (High HP) characterized participants with persistently high levels of HP (roughly .75 SD above the mean), whereas Profile 5 (Very High HP) characterized those persistently reporting very high levels of HP (roughly 2 SD above the mean). Although HP levels decreased significantly over time in this profile, Profile 5 displayed the highest levels of HP over the course of the study. Profiles with the lowest levels of HP were by far the largest (Low HP: 57.7% of the sample; Moderate HP: 25.1%). The remaining profiles were smaller, corresponding to less than 10% of the sample (Moderate-Increasing HP: 7.1%; High HP: 6.2%; Very High HP: 3.9%).

## Description of the OP profiles

Profile 1 (Very Low OP) characterized participants persistently reporting very low levels of OP (roughly 1.5 SD under the mean), while Profile 2 (Low OP) characterized those with persistently low levels of OP (roughly .3 SD under the mean). Although Profile 3 (Low-Increasing OP) displayed similarly low, even slightly lower initial levels of OP (roughly .4 SD under the mean at T1), these levels significantly increased over time, bringing them halfway to those observed in the highest profile by the end of the study. Although Profiles 4 (High-Decreasing OP) and 5 (High OP) both displayed similarly high initial levels of OP (respectively .3 and .5 SD above the mean), these levels remained stable in Profile 5 but steadily decreased over time in Profile 4, bringing them close to those observed in Profile 2 (Low OP) by the end of the study. The profile displaying the highest levels of OP (High OP) was by far the largest (47.6% of the sample), followed closely by the Low-Increasing OP profile (37.9%). The remaining profiles were smaller, corresponding to less than 10% of the sample (Very Low OP: 4.0%; Low OP: 2.6%; High-Decreasing OP: 7.9%).

## Dual profile membership: cross-classifications of participants into HP and OP profiles

Results regarding participants' joint membership into the HP and OP profiles are illustrated and reported in Figure 3. These results should be interpreted while keeping in mind that the Low HP (HP Profile 1), Moderate HP (HP Profile 2), Low-Increasing OP (OP Profile 3), and High OP (OP Profile 5) profiles are much larger than the others, and thus involved more substantial cross-classifications. Participants corresponding to the Low (1) HP profile primarily corresponded to the High (5) OP profile (66.40%), followed by the Low-Increasing (3) OP profile (24.60%). Some of them also corresponded to the High-Decreasing (4) OP profile (7.40%). Almost none of them corresponded to the Very Low (1: 1.60%) or Low (2: 0%) OP profiles. Participants corresponding to the Moderate (2) HP profile primarily corresponded to the Low-Increasing (3) OP profile (60.20%), followed by the High (5) OP profile (20.00%). Some of them also corresponded to the Very Low (1: 8.90%), Low (2: 6.10%), and High-Decreasing (4: 4.80%) OP profiles. Participants corresponding to the Moderate-Increasing (3) HP profile were almost

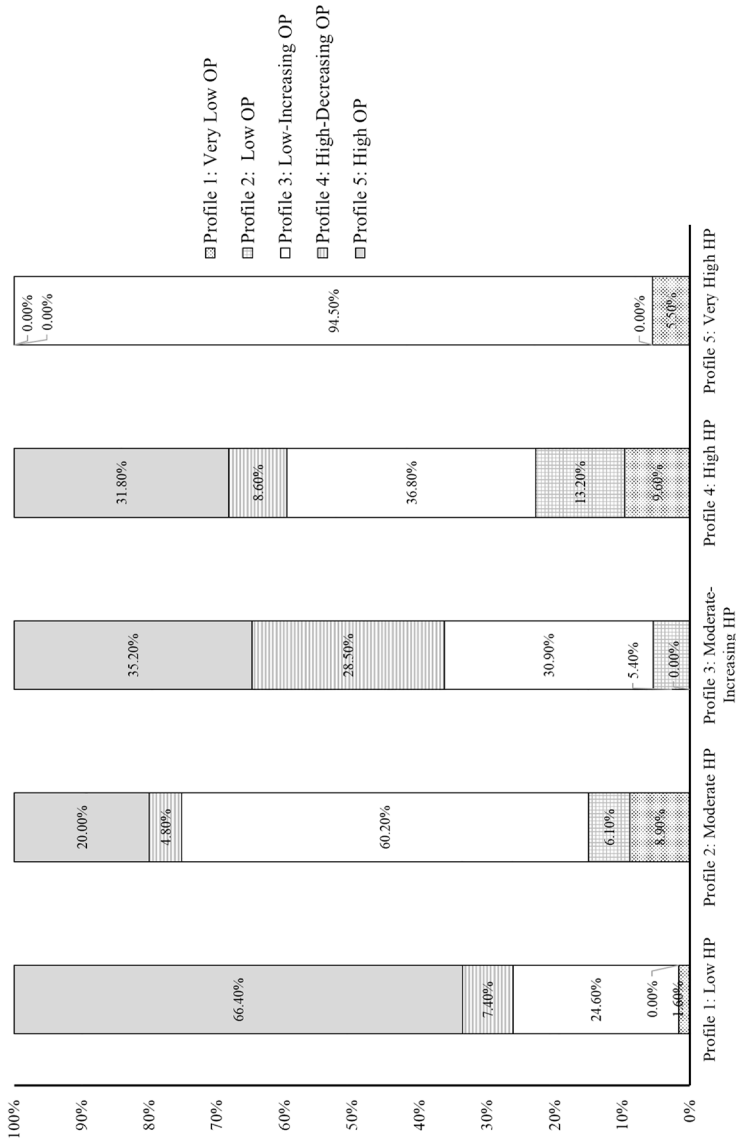


FIGURE 3 Cross-classification probabilities of profile membership across types of work passion. Note. The Y-axis reflects proportions summing up to 100%.



equally likely to correspond to the Low-Increasing (3: 30.90%), High-Decreasing (4: 28.50%), and High (5: 35.20%) OP profiles. Very few of them corresponded to the Low (2) OP profile (5.40%), and none of them to the Very Low (1) OP profile (0%). Participants corresponding to the High (4) HP profile were almost equally likely to correspond to the Low-Increasing (3: 36.80%) or High (5: 31.80%) OP profiles, although some of them also corresponded to the Very Low (1: 9.60%), Low (2: 13.20%) and High-Decreasing (4: 8.60%) OP profiles. Finally, almost all members of the Very High (5) HP profile corresponded to the Low-Increasing (3) OP profile (94.50%). A few of them also corresponded to the Very Low (1) OP profile (5.50%).

## Demographic predictors of profile membership and within-profile trajectories

The fit of the models including the demographic variables are reported in the bottom sections of Table 1. For HP and OP, the null model was associated with the lowest CAIC, BIC, and ABIC values, and was thus supported by the data, suggesting a lack of associations between the trajectories and demographic characteristics. These characteristics were thus excluded from further analyses.

## Theoretical predictors of profile membership and within-profile trajectories

The fit of the models including the intercepts and slopes of the theoretical predictor trajectories is reported in the top sections of Table 2. For HP, the model (HP-P2) allowing the intercepts of the predictor trajectories to predict participants' likelihood of profile membership resulted in a reduction of the value of all information criteria relative to the null model (HP-P1) and was thus supported by the data. None of the subsequent models resulted in a further decrease in the value of any of the information criteria, leading us to retain model HP-P2 for interpretation. For OP, the model (OP-P2) allowing the intercepts of the predictor trajectories to predict participants' likelihood of profile membership resulted in an increase in the value of the BIC and CAIC relative to the null model (OP-P1), whereas it resulted in a decrease in the value of the ABIC, which should be favored given the moderately low entropy value. This inconsistency seems related to the fact that model OP-P2 revealed associations limited to a single predictor (i.e., unfairness). An alternative model (OP-P2') was thus estimated in which only the intercepts of unfairness trajectories were allowed to predict profile membership. This model resulted in a decrease in all information criteria relative to the null model and was thus supported by the data. None of the subsequent models resulted in a further decrease in any of the information criteria, leading us to retain model OP-P2' for interpretation.

The results from these final models are reported in Table 3. These results first showed that initial levels of workload were associated with a higher likelihood of membership into the Low (1) and Moderate (2) HP profiles relative to the Moderate-Increasing (3) and High (4) HP profiles. They were also associated with a higher likelihood of membership into the Moderate-Increasing (3) HP profile relative to the High (4) HP profile. In contrast, initial levels of support were associated with a higher likelihood of membership into the Very High (5) HP profile relative to all other profiles, as well as into the High (4) HP profile relative to the Low (1) and Moderate (2) HP profiles. Initial levels of workload and support were not, however, associated

**TABLE 2** Results from the conditional growth mixture analyses (including predictors).

<b>Model</b>	<b>LL</b>	<b>#fp</b>	<b>Scaling</b>	<b>AIC</b>	<b>CAIC</b>	<b>BIC</b>	<b>ABIC</b>	<b>Entropy</b>
<i>Harmonious passion (HP): Predictors (P; intercepts, slopes, and profiles)</i>								
HP-P1. Null	-898.247	24	.878	1844.494	1964.646	1940.646	1864.491	.530
HP-P2. Intercepts predicting C	-836.162	40	.985	1752.324	1952.578	1912.578	1785.652	.675
HP-P3. HP-P2 + intercepts predicting I (inv.)	-835.575	44	.955	1759.150	1979.430	1935.430	1795.811	.682
HP-P4. HP-P2 + intercepts predicting I (var.)	-835.678	60	1.169	1791.355	2091.736	2031.736	1841.348	.584
HP-P5. HP-P2 + intercepts predicting S (inv.)	-834.962	44	1.146	1757.923	1978.203	1934.203	1794.585	.671
HP-P6. HP-P2 + intercepts predicting S (var.)	-816.519	60	1.026	1753.038	2053.419	1993.419	1803.031	.683
HP-P7. HP-P2 + slopes predicting C	-808.760	56	1.274	1729.520	2009.876	1953.876	1776.180	.746
HP-P8. HP-P2 + slopes predicting S (inv.)	-831.608	44	1.201	1751.215	1971.495	1927.495	1787.877	.645
HP-P9. HP-P2 + slopes predicting S (var.)	-802.833	60	.945	1725.665	2026.046	1966.046	1775.658	.658
<i>Obsessive passion (OP): Predictors (P; intercepts, slopes, and profiles)</i>								
OP-P1. Null	-911.814	24	.878	1871.629	1991.781	1967.781	1891.626	.564
OP-P2. Intercepts predicting C	-883.073	40	.968	1846.145	2046.399	2006.399	1879.474	.679
OP-P2'. Intercept (unfairness) predicting C	-889.457	28	.848	1834.914	1975.092	1947.092	1858.244	.673
OP-P3. OP-P2' + intercepts predicting I (inv.)	-885.357	32	.782	1834.714	1994.918	1962.918	1861.377	.635
OP-P4. OP-P2' + intercepts predicting I (var.)	-873.000	48	.940	1842.000	2082.305	2034.305	1881.994	.564
OP-P5. OP-P2' + intercepts predicting S (inv.)	-888.343	32	.912	1840.686	2000.889	1968.889	1867.349	.658
OP-P6. OP-P2' + intercepts predicting S (var.)	-915.440	48	.824	1926.880	2167.185	2119.185	1966.874	.575
	-884.423	44	.803	1856.846	2077.126	2033.126	1893.507	.728

(Continues)

TABLE 2 (Continued)

Model	LL	#fp	Scaling	AIC	CAIC	BIC	ABIC	Entropy
OP-P7. OP-P2' + slopes predicting C								
OP-P8. OP-P2' + slopes predicting S (inv.)	-886.049	32	.852	1836.098	1996.302	1964.302	1862.761	.652
OP-P9. OP-P2' + slopes predicting S (var.)	-887.338	48	.924	1870.677	2110.982	2062.982	1910.671	.600
<i>Harmonious passion (HP): Time varying predictors (TVP)</i>								
HP-TVP1. Null	-886.079	5	.883	1782.159	1807.190	1802.190	1786.325	.680
HP-TVP2. Effects inv. time and inv. profiles	-874.117	9	1.235	1766.235	1810.292	1801.292	1773.734	.677
HP-TVP2'. Effects inv. time and inv. profiles (workload and support)	-875.412	7	1.482	1764.824	1799.869	1792.869	1770.657	.677
HP-TVP3. Effects inv. time and var. profiles	-886.080	25	1.625	1822.160	1947.319	1922.319	1842.990	.680
HP-TVP4. Effects var. time and inv. profiles	-847.262	29	.947	1752.524	1897.708	1868.708	1776.687	.678
HP-TVP5. Effects var. time and var. profiles	-886.080	125	1.197	2022.160	2647.954	2522.954	2126.312	.680
<i>Obsessive passion (OP): Time varying predictors (TVP)</i>								
OP-TVP1. Null	-911.822	5	1.058	1833.644	1858.675	1853.675	1837.810	.563
OP-TVP2. Effects inv. time and inv. profiles	-911.133	9	1.002	1840.267	1885.324	1876.324	1847.766	.563
OP-TVP3. Effects inv. time and var. profiles	-911.831	25	1.500	1873.662	1998.821	1973.821	1894.493	.563
OP-TVP4. Effects var. time and inv. profiles	-911.831	29	1.366	1881.662	2026.846	1997.846	1905.825	.563
OP-TVP5. Effects var. time and var. profiles	-911.829	125	1.422	2073.657	2699.452	2574.452	2177.809	.563

Note. LL: Loglikelihood; #fp: Number of free parameters; Scaling: Scaling factor; AIC: Akaike Information Criteria; CAIC: Constant AIC; BIC: Bayesian Information Criteria; ABIC: Sample-Size adjusted BIC; C: Profile membership; I: Intercept factor; S: Slope factor; Inv.: Invariant across profiles; Var: free to vary across profiles.

with membership in any of the OP profiles. Similarly, initial levels of harassment were not associated with membership in any of the HP or OP profiles. Although initial levels of unfairness were only associated with a higher likelihood of membership into the Low HP (1) profile relative to the Moderate HP (2) profile, they had more widespread associations with membership into the OP profiles. More precisely, initial levels of unfairness were associated with a higher likelihood of membership into the High-Decreasing (4) and High (5) OP profiles relative to the Very Low (1), Low (2), and Low-Increasing (3) OP profiles.

TABLE 3 Results from the prediction of profile membership analyses.

<i>Harmonious passion</i>															
	Profile 1 vs. profile 5		Profile 2 vs. profile 5		Profile 3 vs. profile 5		Profile 4 vs. profile 5		Profile 1 vs. profile 4						
	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.				
Workload (intercept)	1.557	1.524	4.745	.576	1.520	1.779	-0.709	1.580	.492	-1.198	1.454	.302	2.756	.834**	15.731
Harassment (intercept)	-4.648	2.644	.010	-3.235	2.711	.039	-4.188	2.729	.015	-5.179	2.886	.006	.531	1.578	1.701
Support (intercept)	-9.705	2.743**	.000	-9.403	2.710**	.000	-8.846	2.767**	.000	-7.899	2.687**	.000	-1.807	.730*	.164
Unfairness (intercept)	2.867	2.744	17.581	-.430	2.691	.651	1.426	2.644	4.160	1.759	2.643	5.805	1.108	1.551	3.028
	Profile 2 vs. profile 4		Profile 3 vs. profile 4		Profile 1 vs. profile 3		Profile 2 vs. profile 3		Profile 1 vs. profile 2						
	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.				
Workload (intercept)	1.774	.557**	5.897	.490	.701	1.632	2.266	1.054*	9.642	1.285	.613*	3.614	.981	.760	2.668
Harassment (intercept)	1.944	1.649	6.986	.990	1.750	2.692	-.459	1.035	.632	.953	.996	2.595	-1.413	.841	.243
Support (intercept)	-1.504	.692*	.222	-.947	.853	.388	-.860	.673	.423	-.557	.676	.573	-.303	.424	.739
Unfairness (intercept)	-2.189	1.444	.112	-.333	1.557	.717	1.441	1.305	4.226	-1.855	1.165	.156	3.297	1.064**	27.022
	<i>Obsessive passion</i>														
	Profile 1 vs. profile 5		Profile 2 vs. profile 5		Profile 3 vs. profile 5		Profile 4 vs. profile 5		Profile 1 vs. profile 4						
	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.				
Unfairness (intercept)	-2.553	.652**	.078	-2.268	.955*	.104	-1.796	.438**	.166	1.374	.997	3.951	-3.927	1.054**	.020
	Profile 2 vs. profile 4		Profile 3 vs. profile 4		Profile 1 vs. profile 3		Profile 2 vs. profile 3		Profile 1 vs. profile 2						
	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.	OR	Coef.	S.E.				
Unfairness (intercept)	-3.642	1.280**	.026	-3.170	.963**	.253	-.757	.559	.469	-.472	.913	.624	-.286	.993	.752

\*\* $p < .01$ ; \* $p < .05$ ; Coef: Logistic regression coefficients; S.E.: Standard error of the coefficient; OR: Odds ratio; the multinomial logistic regression coefficients and OR reflect the predictor effects on the likelihood of membership in the bottom listed profile relative to the top listed profile; for harmonious passion (HP), the profiles are Profile 1 (Low HP), Profile 2 (Moderate HP), Profile 3 (Moderate-Increasing HP), Profile 4 (High HP), and Profile 5 (Very High HP); for obsessive passion (OP), the profiles are: Profile 1 (Very Low OP), Profile 2 (Low OP), Profile 3 (Low-Increasing OP), Profile 4 (High-Decreasing OP), and Profile 5 (High OP).

## Time-specific residual predictions

The fit results from the models assessing time-varying associations between the time-specific residuals of the predictor trajectories and those of the work passion trajectories are reported in the bottom sections of Table 2. For HP, the lowest CAIC value was associated with the null model (HP-TVP1), whereas the lowest BIC and ABIC values were associated with the model in which these associations were constrained to equality across time profiles (HP-TVP2). This inconsistency seems related to the fact that model HP-TVP2 revealed associations that were limited to two predictors (i.e., workload and support). An alternative model (HP-TVP2') was thus estimated in which only these predictors were allowed to predict time-specific variations in HP levels. This model resulted in a lower value on all information criteria relative to the null model and was thus retained for interpretation. The results from this model revealed that time-specific increases in workload were related to time-specific decreases in HP ( $b = -.081$ ,  $s.e. = .025$ ,  $p \leq .01$ ), whereas time-specific increases in support were related to time-specific increases in HP ( $b = .058$ ,  $s.e. = .026$ ,  $p \leq .05$ ). For OP, the null model (OP-TVP1) resulted in the lowest values on all information criteria and was thus retained, revealing no association between time-specific fluctuations in predictor and OP levels.

## Outcomes of profile membership

The results related to the associations between the outcome trajectories and the profiles are reported in Tables 4 (HP) and Tables 5 (OP), and illustrated in Figure 4 (psychological health, fatigue, and performance) and Figure 5 (presenteeism, absenteeism, and turnover intention). These results revealed profiles well differentiated on the outcomes trajectories in a way that differed across outcomes. More generally, a summary of hypotheses and results is provided in Table 6.

### Psychological health

Levels of psychological health were highest in the Very High (5) HP profile, followed equally by the Moderate (2) and Moderate-Increasing (3) HP profiles, then by the High (4) HP profile (which did not differ from the Moderate-Increasing HP profile), and were lowest in the Low (1) HP profile. These levels displayed a small equivalent increase over time in the Low (1), Moderate-Increasing (3), and High (4) HP profiles, but a small equivalent decrease over time in the Moderate (2) and Very High (5) HP profiles. In contrast, levels of psychological health were highest in the Very Low OP (1) profile, equally followed by the Low (2) and Low-Increasing (3) OP profiles, and were equally lowest in the High-Decreasing (4) and High (5) OP profiles. These levels increased over time in the High-Decreasing (4) OP profile but remained similarly stable in the remaining OP profiles.

### Fatigue

When interpreting fatigue results, it is important to keep in mind that higher levels of this variable indicate lower levels of fatigue, and vice versa. Interpretations provided in the text are consistent with the nature of this measurement. Levels of fatigue were highest in the Low

TABLE 4 Associations between profile membership and the outcome trajectories: harmonious passion (HP).

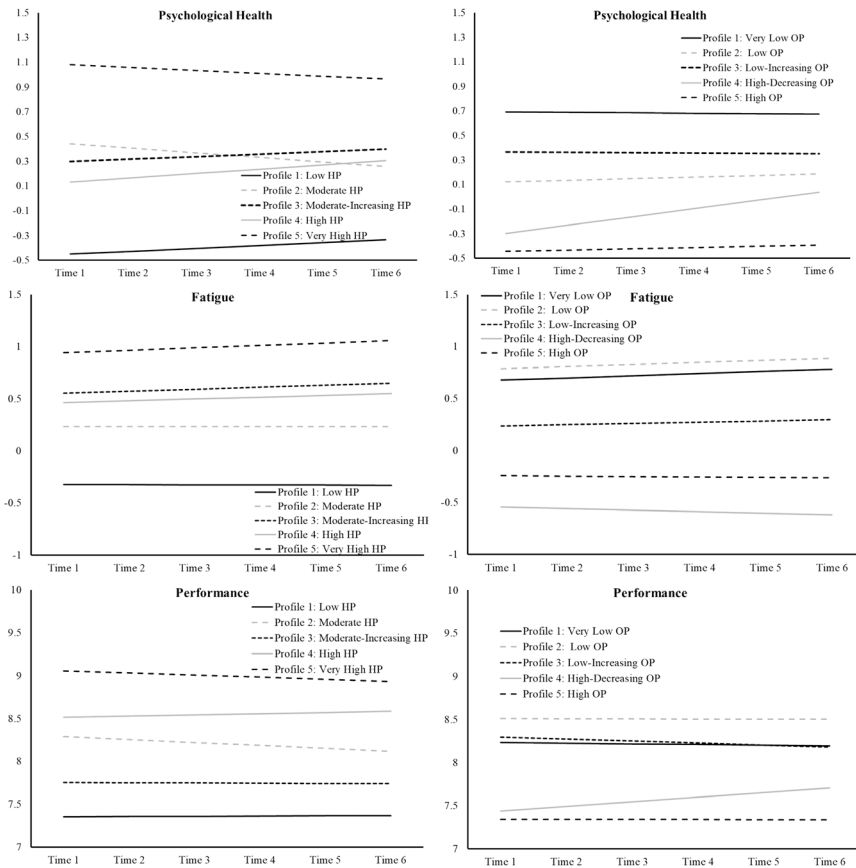
	Profile 1: low HP			Profile 2: moderate HP			Profile 3: moderate-increasing HP			Profile 4: high HP			Profile 5: very high HP			Statistically significant Differences
	M	CI-L	CI-U	M	CI-L	CI-U	M	CI-L	CI-U	M	CI-L	CI-U	M	CI-L	CI-U	
Psy. Health (Int.)	-.450	-.513	-.387	.442	.354	.530	.297	.134	.460	.130	-.037	.297	1.078	.839	1.317	5 > 2 > 4 > 1; 5 > 3 > 1; 2 = 3; 3 = 4
Psy. Health (Slo.)	.023	.015	.031	-.037	-.049	-.025	.020	-.002	.042	.035	.008	.062	-.023	-.052	.006	1 = 3 = 4 > 2 = 5
Fatigue (Int.) [reversed]	-.327	-.409	-.245	.231	.119	.343	.553	.345	.761	.461	.241	.681	.941	.678	1.204	5 > 3 = 4 > 2 > 1
Fatigue (Slo.) [reversed]	-.001	-.005	.003	.000	-.004	.004	.019	.009	.029	.018	.008	.028	.023	.011	.035	3 = 4 = 5 > 1 = 2
Performance (Int.)	7.354	7.199	7.509	8.289	8.154	8.424	7.754	7.413	8.095	8.515	8.254	8.776	9.059	8.763	9.355	5 > 2 = 4 > 3 > 1
Performance (Slo.)	.003	-.007	.013	-.034	-.052	-.016	-.003	-.028	.022	.014	-.013	.041	-.025	-.064	.014	1 = 3 = 4 > 2; 2 = 5; 1 = 3 = 4 = 5
Presenteeism (Int.)	.217	.154	.280	-.107	-.183	-.031	.003	-.156	.162	.026	-.146	.198	-.384	-.517	-.251	1 > 2 = 3 = 4 > 5
Presenteeism (Slo.)	.002	-.004	.008	.019	.009	.029	-.021	-.041	-.001	-.026	-.050	-.002	-.002	-.027	.023	2 > 1 > 3 = 4; 3 = 4 = 5; 1 = 5; 2 = 5
Absenteeism (Int.)	.318	.234	.402	.268	.156	.380	.430	.140	.720	.321	.062	.580	.117	-.044	.278	1 = 3 > 5; 1 = 2 = 3 = 4; 2 = 4 = 5
Absenteeism (Slo.)	.015	-.005	.035	.040	.007	.073	.041	-.022	.104	-.034	-.108	.040	.036	-.046	.118	1 = 2 = 3 = 4 = 5
Turnover intention (Int.)	.508	.422	.594	-.498	-.592	-.404	-.323	-.529	-.117	-.393	-.613	-.173	-1.162	-1.256	-1.068	1 > 2 = 3 = 4 > 5
Turnover intention (Slo.)	-.008	-.012	-.004	.015	.007	.023	-.006	-.020	.008	-.018	-.036	.000	.012	-.008	.032	2 = 5 > 1; 2 > 3 = 4; 1 = 3 = 4; 3 = 4 = 5

Note: M: Mean; CI-L: Lower bound of the 95% confidence interval; CI-U: Upper bound of the 95% confidence interval; Psy.: Psychological; Int: Intercept of the outcome trajectories; Slo.: Linear slope of the outcome trajectories; fatigue, psychological health, presenteeism, and turnover intention are factor scores estimated with a  $M = 0$  and a  $SD = 1$ .

TABLE 5 Associations between profile membership and the outcome trajectories: obsessive passion (OP).

	Profile 1: very low OP		Profile 2: low OP		Profile 3: low-increasing OP		Profile 4: high-decreasing OP		Profile 5: high OP		Statistically significant Differences					
	M	CI-L	CI-U	M	CI-L	CI-U	M	CI-L	CI-U	M		CI-L	CI-U			
Psy. Health (Int.)	.693	.409	.977	.121	-.177	.419	.366	.282	.450	-.298	-.472	-.124	-.443	-.514	-.372	1 > 2 = 3 > 4 = 5
Psy. Health (Slo.)	-.004	-.035	.027	.013	-.026	.052	-.003	-.013	.007	.067	.020	.114	.010	.000	.020	4 > 1 = 3 = 5; 2 = 4; 1 = 2 = 3 = 5
Fatigue (Int.) [reversed]	.678	.398	.958	.787	.440	1.134	.237	.137	.337	-.544	-.771	-.317	-.243	-.335	-.151	1 = 2 > 3 > 5 > 4
Fatigue (Slo.) [reversed]	.021	.009	.033	.020	.006	.034	.012	.008	.016	-.015	-.025	-.005	-.004	-.008	.000	1 = 2 = 3 > 5 > 4
Performance (Int.)	8.233	7.845	8.621	8.511	8.078	8.944	8.295	8.172	8.418	7.438	7.054	7.822	7.343	7.172	7.514	1 = 2 = 3 > 4 = 5
Performance (Slo.)	-.008	-.043	.027	-.002	-.043	.039	-.023	-.035	-.011	.053	.020	.086	-.001	-.011	.009	4 > 1 = 2 = 3; 3; 4 > 5 > 3; 1 = 2 = 5
Presenteeism (Int.)	-.230	-.391	-.069	-.014	-.259	.231	-.145	-.206	-.084	.519	.352	.686	.217	.152	.282	4 > 5 > 1 = 2 = 3
Presenteeism (Slo.)	-.005	-.029	.019	-.034	-.071	.003	.010	.002	.018	-.043	-.072	-.014	.004	-.004	.012	1 = 3 = 5 > 4; 3 = 5 > 2; 1 = 2; 2 = 4
Absenteeism (Int.)	.141	-.024	.306	.180	-.065	.425	.155	.096	.214	1.287	.868	1.706	.288	.208	.368	4 > 1 = 2 = 3; 4 > 5 > 3; 1 = 2 = 5
Absenteeism (Slo.)	.009	-.062	.080	-.009	-.103	.085	.053	.026	.080	.005	-.046	.056	.001	-.021	.023	3 > 5; 1 = 2 = 3 = 4; 1 = 2 = 4 = 5
Turnover intention (Int.)	.015	-.357	.387	-.329	-.752	.094	-.189	-.307	-.071	-.063	-.326	.200	.217	.107	.327	5 > 2 = 3 = 4; 1 = 5; 1 = 2 = 3 = 4
Turnover intention (Slo.)	-.003	-.021	.015	.013	-.012	.038	-.004	-.010	.002	.023	.005	.041	-.005	-.011	.001	4 > 1 = 3 = 5; 2 = 4; 1 = 2 = 3 = 5

Note: M: Mean; CI-L: Lower bound of the 95% confidence interval; CI-U: Upper bound of the 95% confidence interval; Psy.: Psychological; Int: Intercept of the outcome trajectories; Slo.: Linear slope of the outcome trajectories; fatigue, psychological health, presenteeism, and turnover intention are factor scores estimated with a M = 0 and a SD = 1.



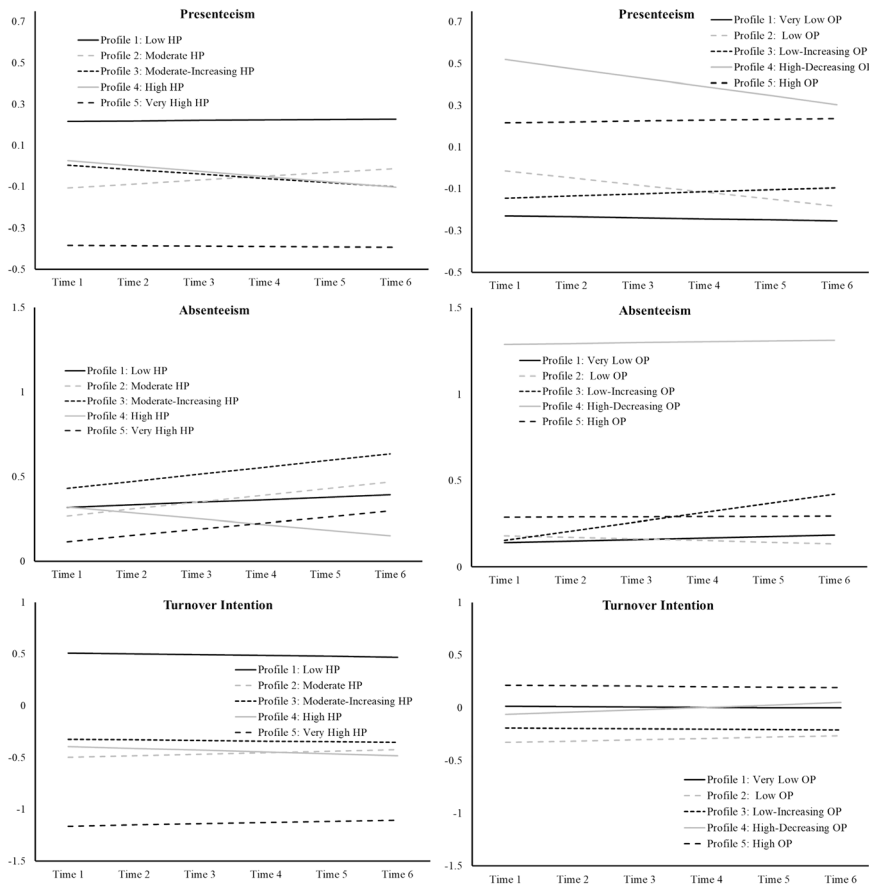
**FIGURE 4** Profile-specific outcome trajectories: psychological health (top), fatigue [reversed] (middle), and performance (bottom). *Note.* Harmonious passion profiles are on the left and obsessive passion profiles are on the right.

(1) HP profile, followed by the Moderate (2) HP profile, then equally by the Moderate-Increasing (3) and High (4) HP profiles, and were lowest in the Very High (5) HP profile. These levels were similarly stable over time in the Low (1) and Moderate (2) HP profiles, and slightly decreased over time in the remaining profiles. In contrast, levels of fatigue were highest in the High-Decreasing (4) OP profile, followed by the High (5) OP profile, then by the Low-Increasing (3) OP profile, and were equally lowest in the Very Low (1) and Low (2) OP profiles. These levels increased slightly over time in the High-Decreasing (4) OP profile, remained primarily stable in the High (5) OP profile, and displayed a small equivalent decrease in the Very Low (1), Low (2), and Low-Increasing (3) OP profiles.

### Performance

Levels of performance were highest in the Very High (5) HP profile, followed equally by the Moderate (2) and High (4) HP profiles, then by the Moderate-Increasing (3) HP profile, and were lowest in the Low (1) HP profile. These levels decreased slightly over time in the Moderate





**FIGURE 5** Profile-specific outcome trajectories: Presenteeism (top), absenteeism (middle), and turnover intention (bottom). *Note.* Harmonious passion profiles are on the left and obsessive passion profiles are on the right.

(2) and Very High (5) HP profiles and remained mainly stable in the remaining profiles. In contrast, levels of performance were equally highest in the Very Low (1), Low (2), and Low-Increasing (3) OP profiles, and equally lowest in the High-Decreasing (4) and High (5) OP profiles. These levels increased over time in the High-Decreasing (4) OP profile, decreased slightly over time in the Low-Increasing (3) OP profile, and remained stable over time in the remaining profiles.

### Presenteeism

Levels of presenteeism were highest in the Low (1) HP profile, equally followed by the Moderate (2), Moderate-Increasing (3), and High (4) HP profile, and were lowest in the Very High (5) HP profile. These levels increased over time in the Moderate (2) HP profile, remained stable over time in the Low (1) and Very High (5) HP profiles, and decreased over time in the Moderate-Increasing (3) and High (4) HP profiles. In contrast, levels of presenteeism were highest in the High-Decreasing (4) OP profile, followed by the High (5) OP profile, and

TABLE 6 Summary of hypotheses and results.

Hypothesis (H)	Results	Support
H1. Four to six profiles of HP and OP trajectories will be identified.	Five profiles were retained for HP and for OP.	Yes
H2. The profiles will correspond to the learning to love, honeymoon-hangover, low fit, high fit, moderate fit, and learning to hate scenarios.	For HP, the profiles are Low HP, moderate HP, moderate-increasing HP, high HP, and very high HP. For OP, the profiles are very low OP, low OP, low-increasing OP, high-decreasing OP, and high OP.	Partial
H3. Most employees will belong to profiles characterized by distinct HP and OP trajectories.	Most nurses displayed different profiles of HP and OP.	Yes
H4. Initial perceptions of job demands will be associated with: (a) membership into profiles characterized by higher initial levels of OP and lower initial levels of HP, (b) higher within-profile initial levels of OP and lower within-profile initial levels of HP, and (c) within-profile increases in OP and decreases in HP.	Initial levels of workload were associated with a higher likelihood of membership into the low and moderate HP profiles relative to the moderate-increasing and high HP profiles. Initial levels of unfairness were associated with a higher likelihood of membership into the high-decreasing and high OP profiles relative to the very low, low, and low-increasing OP profiles. Initial levels of harassment were unrelated to profile membership.	Partial
H5. Increases over time in perceptions of job demands will be associated with: (a) membership into profiles characterized by higher increases in OP and decreases in HP, and (b) within-profile increases in OP and decreases in HP.	No statistically significant effect.	No
H6. Time-specific increases in job demands will be associated with within-profile time-specific increases in OP and decreases in HP.	Time-specific increases in workload were related to time-specific decreases in HP (but not to OP). Time-specific increases in unfairness and harassment were not related to time-specific levels of HP or OP.	Partial
H7. Initial levels of supervisor support will be associated with: (a) membership into profiles characterized by higher initial levels of HP and lower initial levels of OP, (b) higher within-profile initial levels of HP and lower within-profile initial levels of OP, and (c) within-profile increases in HP and decreases in OP.	Initial levels of support were associated with a higher likelihood of membership into the very high HP profile relative to all other profiles, as well as into the high HP profile relative to the low and moderate HP profiles. No effect was found in the prediction of within-profile trajectories.	Partial
H8. Increases over time in supervisor support will be associated with: (a) membership into profiles characterized by higher increases in HP and decreases in OP, and (b) within-profile increases in HP and decreases in OP.	No statistically significant effect.	No

(Continues)

TABLE 6 (Continued)

Hypothesis (H)	Results	Support
H9. Time-specific increases in supervisor support will be associated with within-profile time-specific increases in HP and decreases in OP.	Time-specific increases in support were related to time-specific increases in HP (but not to OP).	Partial
H10. Time-specific levels of HP will be associated with matched time-specific levels of perceived psychological health and work performance, and inversely associated with their levels of turnover intention, work fatigue, presenteeism, and absenteeism.	Initial levels of psychological health and performance were highest in the very high HP profile and lowest in the low HP profile, with the high, moderate, and moderate-increasing HP profiles falling in between. Conversely, initial levels of fatigue, presenteeism, absenteeism, and turnover intention were highest in the low HP profile and lowest in the very high HP profile, with the high, moderate, and moderate-increasing HP profiles falling in between.	Yes
H11. Time-specific levels of OP will be associated with matched time-specific levels of turnover intention, work fatigue, presenteeism, and absenteeism, and inversely associated with their levels of perceived psychological health and work performance.	Initial levels of psychological health and performance were highest in the very low OP profile and lowest in the high-decreasing and high OP profiles, with the low and low-increasing OP profiles falling in between. Conversely, initial levels of fatigue, presenteeism, and absenteeism were highest in the high-decreasing OP profile, followed by the high OP profile, and were lowest in the very low, low, and low-increasing OP profiles. The high OP profile also displayed the highest initial levels of turnover intention.	Partial

Note: HP: Harmonious passion; OP: Obsessive passion.

were equally lowest in the Very Low (1), Low (2), and Low-Increasing OP profiles. These levels decreased over time in the Low (2) and High-Decreasing (4) OP profiles but remained stable in the other profiles.

## Absenteeism

Levels of absenteeism were equally highest in the Low (1) and Moderate-Increasing (3) HP profiles, and equally lowest in the Moderate (2), High (4), and Very High (5) HP profiles. Levels of absenteeism decreased over time in the High (4) HP profile, whereas they increased over time in the remaining profiles, although differences across HP profiles were not statistically significant. In contrast, levels of absenteeism were highest in the High-Decreasing (4) OP profile, followed by the High (5) OP profile, and were equally lowest in the Very Low (1), Low (2), and Low-Increasing (3) OP profiles. These levels increased over time in the Low-Increasing (3) OP profile, whereas they remained stable over time in the other profiles.

## Turnover intention

Levels of turnover intention were highest in the Low (1) HP profile, followed equally by the Moderate (2), Moderate-Increasing (3), and High (4) HP profile, and were lowest in the Very High (5) HP profile. These levels slightly increased over time in the Moderate (2) and Very High (5) HP profiles but remained stable over time in the other profiles. In contrast, levels of turnover intention were higher in the High (5) OP profile than in all other profiles, which did not differ from one another on this variable. They also slightly increased over time in the High-Decreasing (4) OP profile and remained stable over time in the other profiles.

## DISCUSSION

Although the effects of work passion on individual and organizational functioning are well-documented (Vallerand, 2015; Vallerand & Houliort, 2019), very little research (i.e., Liao et al., 2022; Schellenberg et al., 2024) has sought to understand how it dynamically evolves over time. Moreover, despite the recognition that HP and OP can combine at a specific point in time (e.g., *HP Dominant* profile with high HP and low OP; Morin, Gillet, Chénard-Poirier, et al., 2023; Schellenberg et al., 2019) or across two-time points (Gillet, Morin, et al., 2023), no research has yet sought to understand the joint evolution of HP and OP. The present study was designed to address these limitations by considering the various profiles underpinning HP and OP trajectories and their interconnections among a sample of nurses followed over a five-month period. To understand what drives the evolution of HP and OP, we then considered the role of nurses' perceptions of supervisor support, workload, harassment, and unfairness as dynamic predictors of these trajectories. Finally, to achieve a more complete understanding of the implications of these trajectories, we assessed their associations with nurses' turnover intention, psychological health, work fatigue, work performance, presenteeism, and absenteeism as outcomes of HP and OP trajectories.

### Distinct profiles of work passion trajectories

Previous longitudinal studies of HP and OP have yielded inconsistent results, revealing stable (Liao et al., 2022; Tóth-Király et al., 2019), increasing (Kovácsik et al., 2021), or decreasing (Schellenberg et al., 2024) average trajectories across the whole sample, while providing evidence of inter-individual variability in the shape of these trajectories. These observations suggest that discrete subpopulations of employees may be following distinctly-shaped trajectories. Adopting a socialization perspective describing how employees' identity comes to evolve over the span of their career as a result of a series of reciprocal transactions with their workplace (e.g., Bauer et al., 2007; Boswell et al., 2005; Moyson et al., 2018; Solinger et al., 2013), we proposed that six different scenarios were likely to describe employees' evolving HP and OP trajectories: (1) *Learning to Love* (initially low-to-moderate trajectories that increase over time); (2) *Honeymoon-Hangover* (initially high trajectories that progressively decrease over time); (3) *Low Fit* (persistently very low-to-low trajectories); (4) *High Fit* (persistently high-to-very high trajectories); (5) *Moderate Fit* (persistently moderate trajectories); and (6) *Learning to Hate* (initially high trajectories that decrease over time).

Our results revealed the presence of five of these theoretical scenarios in the current sample of nurses and that these scenarios generalized to HP and OP, with some differences. More precisely, a *Learning to Love* scenario was identified for OP (Low-Increasing) and HP (Moderate-Increasing), a *Low Fit* scenario was identified once for HP (Low), and twice for OP (Low and Very Low), a *High Fit* scenario was identified once for OP (High), and twice for HP (High and Very High), a *Moderate Fit* scenario was only identified for HP (Moderate), and a *Learning to Hate* scenario was only identified for OP (High-Decreasing). Our failure to validate the *Honeymoon-Hangover* scenario could potentially be explained by our focus on more established employees than those typically considered in the socialization literature. Indeed, this *Honeymoon-Hangover* scenario has been specifically proposed to describe the occurrence of a quick “reality shock” following one’s entry into a new workplace (e.g., Boswell et al., 2005; Solinger et al., 2013), which does seem to happen frequently in the nursing occupation (e.g., Tomietto et al., 2015). In this regard, our results are consistent with those obtained in commitment research, which have also documented similar scenarios among samples of new (Houle et al., 2024; Solinger et al., 2013) and established employees (Houle et al., 2022), while also failing to validate the *Honeymoon-Hangover* scenario among established employees (Houle et al., 2022). In sum, whereas most of these theoretical scenarios seem relevant to consider throughout the span of the career, the *Honeymoon-Hangover* one may be specific to career entry. It would be important for future research to investigate whether and how the profiles identified in this study will generalize to other types of employees, career stages, and even constructs.

When specifically focusing on the current results, we can also note that four HP profiles (Low HP, Moderate HP, High HP, and Very High HP) and three OP profiles (Very Low OP, Low OP, and High OP) displayed work passion trajectories that remained primarily stable over the course of the study, even though the Very High HP profile experienced a slight normative decrease suggesting that it may be hard to maintain very high levels of HP over time. These results are consistent with previous results highlighting that HP and OP tend to remain moderately to highly stable over time (Gillet, Morin, et al., 2023; Tóth-Király et al., 2019). On the one hand, high levels of passion have been shown to help employees recover some of their resources as a result of the pleasure experienced at work (Vallerand & Houliort, 2019), resulting in a gain spiral (Hobfoll, 2011) allowing high levels of passion to support themselves (Vallerand, 2015). On the other hand, employees’ lacking passion are likely to expand more resources than their peers to cope with a work context that holds little interest for them (Gillet, Morin, et al., 2023; Schellenberg et al., 2019), thereby decreasing their likelihood of becoming passionate about it.

In contrast, the High-Decreasing OP profile displayed a marked decrease in its OP trajectory, suggesting increasing levels of dissatisfaction toward their workplace, tasks, or occupation (e.g., Landay et al., 2024; Thorgren & Wincent, 2013), or perhaps difficulties in sustaining for a long time such an obsessive orientation toward their work (e.g., Tóth-Király et al., 2021; Vallerand & Houliort, 2019). Alternatively, this profile might also reflect, at least when accompanied by an HP profile characterized by higher or increasing levels of HP, exposure to gradually improving work conditions enabling them to satisfy their basic psychological needs without having to overinvest their work role at the detriment of other life spheres (i.e., more harmoniously; Morin, Gillet, Blais, et al., 2023). Although this profile only represents 7.9% of the participants, it suggests that it might be possible to reduce very high levels of OP to a more manageable level and perhaps even to convert them to a more harmonious form of passion through work-related interventions (Huyghebaert-Zouaghi et al., 2022).

The remaining profiles (Moderate-Increasing HP and Low-Increasing OP) displayed increasing levels of HP and OP, consistent with previous results showcasing normative increases in

work passion (e.g., Kovácsik et al., 2021). However, these two profiles are likely to reflect very different work experiences. Indeed, nurses displaying a Moderate-Increasing HP trajectory seem to increasingly appreciate their work and invest themselves in it in a way that can remain in harmony with other spheres of their life (Vallerand, 2010; Vallerand & Houliort, 2019). From an intervention perspective, these results suggest that nurses displaying initially moderate levels of HP might be those most likely to benefit from interventions seeking to improve their desire to invest themselves in their work in a healthy manner. In contrast, nurses with a Low-Increasing OP profile initially display a low level of interest in their work and evolve to become more likely to feel the need to over-invest themselves at work to the detriment of their personal life (Trépanier et al., 2014; Vallerand, 2015). This suggests exposure to a work environment unable to fulfill their basic psychological needs on its own, forcing them to dedicate more of their personal resources to achieve fulfillment (Morin, Gillet, Blais, et al., 2023). It is particularly concerning to note that this profile corresponds to 37.9% of our participants. Yet, the fact that OP levels are changing over time in this profile also reinforces the potential value of interventions seeking to prevent the emergence of high levels of OP. Clearly, more research will be needed to understand the psychological mechanisms underlying these changing profiles. Fortunately, the predictors considered in this study provide some insights in this regard.

## Co-evolving profiles of HP and OP

Supporting H3, most nurses displayed different profiles of HP and OP, particularly those displaying Very High or Low trajectories. Thus, close to 90% of nurses from the Low HP profile corresponded to a High OP profile (66.40%) or to a Low-Increasing OP profile (24.60%). In other words, many nurses who are not harmoniously passionate about their work are obsessively passionate about it, or increasingly so. Likewise, all members of the Very High HP profile belonged to the Low-Increasing OP (94.50%) or Very Low OP (5.50%) profiles. This should not come as a surprise, given that high levels of OP leave little room for other activities, just like the harmonious nature of HP should prevent one's passion from becoming too obsessive (Vallerand, 2010; Vallerand & Houliort, 2019). These results thus suggest that high levels of HP and OP could be incompatible. Although inconsistent with the QMP (Schellenberg et al., 2019), this conclusion is aligned with previous findings revealing negative correlations between these two forms of work passion (e.g., Zhang et al., 2024), while suggesting that this incompatibility might be limited to high levels. This interpretation is also consistent with previous person-centered research on passion, which has routinely identified profiles dominated by OP or HP, but rarely profiles displaying high levels of both types of passion (e.g., Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). It is, however, important to note that members of the High HP profile displayed a wide range of OP profiles (36.80% Low-Increasing OP; 31.80% High OP; 13.20% Low OP; 9.60% Very Low OP; and 8.60% High-Decreasing OP). In other words, this suggests that incompatibility could be limited to very high, rather than simply high, levels of HP.

Furthermore, nurses belonging to the Moderate-Increasing HP profile corresponded equally to the Low-Increasing (30.90%), High-Decreasing (28.50%), and High (35.20%) OP profiles. In contrast, very few of them corresponded to the Low OP profile (5.40%), and none of them to the Very Low OP profile. These results indicate that increasing levels of HP may make it hard to maintain low to very low levels of OP over time. Rather, they often tend to be associated with increases (30.90%) or decreases (28.50%) in OP levels. Thus, when HP levels increase, high OP

levels tend to decrease, while low OP levels tend to increase. Whereas the former suggests that increased levels of harmonious involvement at work help employees to free up space and time for other activities (Vallerand, 2015), the latter suggests that increasing levels of HP may make it hard to display a complete lack of interest in one's work that characterizes low levels of OP (Vallerand & Houliort, 2019).

Finally, 80% of the nurses belonging to the Moderate HP profile corresponded to the Low-Increasing OP (60.20%) or High OP (20.00%) profiles, thereby suggesting that when stable, moderate HP may be linked to the development of OP or at least to maintaining high OP levels. In both cases, this also suggests that being passionate about an activity might be more important, at least at moderate levels, than the type of passion that is considered (Gillet, Morin, et al., 2023). Beyond showing that it is possible for nurses to adopt distinct trajectories of HP and OP, this set of results supports the idea that moderate levels of HP may combine in a different manner with OP, which is consistent with the results from prior person-centered studies (e.g., Gillet, Morin, et al., 2023; Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). They also provide longitudinal evidence of the moderate association between HP and OP previously identified in cross-sectional studies (e.g., Li et al., 2020; Morin, Gillet, Chénard-Poirier, et al., 2023). Although our results do not allow us to identify the mechanisms involved in the process via which OP increases or stays high when HP is moderate and stable, they suggest that both forms of work passion are important and likely to influence one another, perhaps through self-regulation or internalization processes (Vallerand et al., 2003). Moreover, these results support the idea that fostering HP can create a process that favors the internalization of work into nurses' professional identities, which may in turn translate to higher levels of OP when nothing prevents that passion from becoming obsessive (Vallerand, 2010).

## Predictors of HP and OP trajectories

From a theoretical perspective, supervisor support acts as a core job resource (Bakker & Demerouti, 2017) that positively contributes to employees' perceptions of, and adaptation to, their work environment (Caesens et al., 2020) by reinforcing the development of their personal resources (Hobfoll, 2011). As a result, supervisor support represents a theoretically plausible driver of HP (e.g., Vallerand & Houliort, 2019). Supporting these assertions, prior variable-centered research has demonstrated the positive effects of supervisor support on a variety of outcomes, including HP (e.g., Birkeland et al., 2018). Our results are consistent with this prior evidence, revealing that higher initial levels of supervisor support were associated with a higher probability of membership into the Very High HP profile (characterized by the highest levels of HP initially and throughout the study) relative to all other profiles, as well as into the High HP profile relative to the Low and Moderate HP profiles. Moreover, time-specific increases in supervisor support were related to time-specific increases in HP. These observations are consistent with our expectations and previous reports of positive associations between employees' perceptions of supervisor support and HP levels (e.g., Birkeland et al., 2018). However, supervisor support did not differentiate between pairs of profiles initially displaying comparably low (Low HP profile) or moderate (Moderate HP and Moderate HP-Increasing profiles) levels of HP, indicating that the benefits of supervisor support are truly limited to supporting the emergence of higher, relative to low or moderate, levels of HP, and that other targets of interventions should be selected when seeking to help employees increase from a low to a moderate level of HP, or from a moderate to a moderately increasing type of HP trajectory.

Contrasting with the effects of supervisor support, initial levels of workload were associated with a higher likelihood of membership into the Low and Moderate HP profiles relative to the Moderate-Increasing and High HP profiles, as well as into the Moderate-Increasing HP profile relative to the High HP profile. In a complementary manner, initial levels of unfairness were associated with a higher likelihood of membership into the Low HP profile relative to the Moderate HP profile. Finally, and also contrasting with supervisor support, time-specific increases in workload were related to time-specific decreases in HP. These results are all consistent with previous evidence showcasing the detrimental effects of job demands on HP (Lavigne et al., 2014; Trépanier et al., 2014). Indeed, job demands are associated with a loss of personal resources, which prevents employees from having a balanced professional involvement and enjoying their work (Hobfoll, 2011; Morin, Gillet, Chénard-Poirier, et al., 2023).

Although the effects of unfairness on HP trajectories were more limited than anticipated, employees' perceptions of unfairness emerge as the sole predictor of OP profile membership, consistent with the importance of these perceptions for exposed employees. More precisely, these perceptions were associated with a higher likelihood of membership into the High-Decreasing and High OP profiles relative to the Very Low, Low, and Low-Increasing OP profiles. These observations are consistent with the documented positive effect of various types of job demands on OP (Lavigne et al., 2014; Trépanier et al., 2014). Indeed, employees exposed to job demands feel more pressure, resulting in higher levels of controlled motivation and difficulties in distancing themselves from their work, both of which share intimate associations with OP (Gillet, Fouquereau, Vallerand, et al., 2018; Vallerand et al., 2003).

It should be noted, however, that initial levels of harassment were not associated with membership in any of the HP or OP profiles. Likewise, we found no evidence that changes in predictor levels (e.g., increasing levels of workload) were associated with profile membership or with within-profile HP or OP trajectories. Finally, our results revealed no association between time-specific fluctuations in any of our predictors and time-specific fluctuations in OP levels. Taken together, these results thus highlight the primary role of initial levels of supervisor support, and fluctuations over time in these levels, as a central driver of HP trajectories. Although job demands also had detrimental effects on HP trajectories, particularly initially high levels of workload and unfairness and fluctuations over time in levels of workload, the role of these work characteristics was less important than that of supervisor support in relation to HP. These results are consistent with previous studies showing that job resources tend to share stronger associations with HP than job demands (e.g., Trépanier et al., 2014), although both still seem to play complementary roles. In contrast, initial levels of unfairness emerged as the sole driver of OP trajectories, thus indicating that this type of undesirable job demand is the one on which organizations and managers should first act to reduce employees' risk of becoming obsessively over-involved in their work. These results are consistent with previous research showcasing the stronger role of job demands, relative to job resources, as predictors of OP (e.g., Lavigne et al., 2014). It would be interesting for future research to examine whether and how these effects generalize to other job demands (e.g., work interruptions, physical efforts) and valuable sources of social support, such as peers or family members.

## Outcomes of HP trajectories

Our results clearly demonstrated the importance of nurses' HP and OP trajectories for a variety of outcomes related to their attitude (i.e., turnover intention), psychological health



(i.e., perceived psychological health and work fatigue), and behaviors at work (i.e., work performance, presenteeism, and absenteeism). For HP, initial levels of psychological health and performance were highest in the Very High HP profile and lowest in the Low HP profile, with the High, Moderate, and Moderate-Increasing HP profiles falling in between. These levels also decreased over time in the Moderate and Very High HP profiles, while they remained stable (performance) or increased (psychological health) in the Low, Moderate-Increasing, and High HP profiles. Conversely, initial levels of fatigue, presenteeism, absenteeism, and turnover intention were highest in the Low HP profile and lowest in the Very High HP profile, with the High, Moderate, and Moderate-Increasing HP profiles falling in between. Moreover, levels of turnover intention slightly increased over time in the Moderate and Very High HP profiles, while they remained stable in the other profiles. Similarly, levels of presenteeism increased over time in the Moderate HP profile, while they remained stable (Low and Very High HP profiles) or decreased (Moderate-Increasing and High HP profiles) in the other profiles. Interestingly, levels of fatigue also decreased over time in the Very High, High, and Moderate-Increasing HP profiles, while they remained stable in the other profiles. Finally, levels of absenteeism remained stable in all profiles.

Beyond supporting the differential implications of the HP profiles identified in this study, as well as accumulating research evidence highlighting the multiple benefits of HP (e.g., Vallerand, 2015; Vallerand & Houliort, 2019), these results, particularly those involving changes over time, have different implications. First, the decreasing levels of performance and psychological health, coupled with increasing levels of turnover intention and presenteeism, observed in the Moderate and Very High HP (with the exception of presenteeism) profiles seem to match the decreasing levels of HP observed in these profiles. These two profiles are the only two that are characterized by a visible downward trajectory of HP, and this downward trend matches the trend observed for these outcomes. In other words, as nurses corresponding to these two profiles come to experience decreasing levels of pleasure in their work, it becomes harder to capitalize on this pleasure to refresh their resources (e.g., Vallerand, 2010), leading them to experience similar changes in these outcomes.

Second, psychological health levels seemed to increase slightly, whereas presenteeism and fatigue levels decreased slightly, in the Moderate-Increasing, High, and Very High (fatigue only) HP profiles. These changes may reflect the more, or even increasingly in the Moderate-Increasing HP profile, a balanced allocation of personal resources to work by these employees captured by their stable or increasing HP trajectories, allowing them to better maintain their personal resources by experiencing more pleasure at work (Vallerand & Houliort, 2019). Although psychological health also increased slightly in the Low HP profile, this effect may simply reflect the fact that without passion, it becomes easier to avoid expanding too much of ones' resources at work, thus supporting personal psychological health (Vallerand & Houliort, 2019).

Third, our results are consistent with the idea that the benefits of HP differ as a function of the outcomes considered (e.g., Gillet, Morin, et al., 2023; Gillet, Vallerand, et al., 2023). For instance, despite trends indicating some change in absenteeism levels over time, these trends did not differ in a statistically significant manner across profiles. This could be explained by the nature of the absenteeism measure used in this study. Specifically, changes in absenteeism happening in a consistent manner for many individuals would be highly irregular in the highly regulated healthcare system. Indeed, while it may be conceivable that an employee would have to miss work for a few days to handle personal issues or temporary illnesses, it would be unlikely (outside of an epidemic) to observe consistent trends emerging within a sample of nurses. Importantly, these absences would typically be independent of employees' levels of HP, and

simply reflect an inability to attend work due to uncontrollable circumstances. This observation reinforces the need to expand upon the present results by considering a wider range of outcomes.

Fourth, profiles with initially moderate HP levels (Moderate and Moderate-Increasing) displayed very distinct outcome levels and trajectories. This suggests that these differences may reflect the increases in HP observed in the Moderate-Increasing HP profile, consistent with the benefits of HP (Fernet et al., 2014; Gillet, Morin, et al., 2023) and showing that these benefits extend to increases in HP.

## Outcomes of OP trajectories

For OP, initial levels of psychological health and performance were highest in the Very Low OP profile and lowest in the High-Decreasing and High OP profiles, with the Low and Low-Increasing OP profiles falling in between. These levels also increased over time in the High-Decreasing OP profile, while they remained mainly stable in the remaining OP profiles, although levels of performance decreased in the Low-Increasing OP profile. Conversely, initial levels of fatigue, presenteeism, and absenteeism were highest in the High-Decreasing OP profile, followed by the High OP profile, and were lowest in the Very Low, Low, and Low-Increasing OP profiles. The High OP profile also displayed the highest initial levels of turnover intention. Moreover, we also found that: (a) levels of fatigue increased in the High-Decreasing OP profile and decreased in the Very Low, Low, and Low-Increasing OP profiles; (b) levels of presenteeism decreased in the Low and High-Decreasing OP profiles; (c) levels of absenteeism increased in the Low-Increasing OP profile; and (d) levels of turnover intention increased in the High-Decreasing OP profile.

Beyond supporting the differential implications of these OP profiles in a way that is generally consistent with research evidence highlighting the detrimental effects of OP (e.g., Vallerand, 2015; Vallerand & Houliort, 2019) or even increases in OP (Vallerand, 2010), these results also have noteworthy implications. First, they revealed that decreasing levels of OP seem to be accompanied by some benefits in terms of psychological health and performance. This conclusion is consistent with the idea that decreasing levels of OP will help employees avoid dedicating too much of their personal resources to their work, making it increasingly easier to recover from their work-related efforts (Hobfoll, 2011; Vallerand, 2015). However, despite the decrease in OP observed in the High-Decreasing OP profile, employees' levels of fatigue and turnover intention kept on increasing in these profiles. On the one hand, this effect may reflect the fact that OP levels remain high in this profile, so that the decrease observed within the timespan of the current study may simply not have been sufficient to completely offset the harmful consequences of OP (Vallerand & Houliort, 2019). On the other hand, these results could also reflect the fact that decreasing levels of OP may also mean that employees are becoming less interested in their work, or passionate about it.

Second, our results showed that OP profiles, and changes over time in OP levels captured by these profiles, shared slightly weaker associations with changes in outcome levels than HP profiles. From a practical point of view, this suggests that there might be more benefits to devise interventions designed to support HP than to prevent OP, although both can still go together. Indeed, we did find that fatigue levels remained low and kept on slightly decreasing in profiles displaying low levels of OP. These benefits of low OP in terms of fatigue might be particularly important to keep in mind in the nursing profession, which is known to be exposed to a

particularly high workload (e.g., Houle et al., 2024). Likewise, the decreases in OP found in the High-Decreasing OP profile seemed to be accompanied by matching decreases in presenteeism and matching increases in psychological health and performance. Interestingly, the decreasing levels of presenteeism found in the High-Decreasing OP profile matched those found in the Low OP profile, which displayed similarly low levels of OP at the end of the study. These benefits may reflect the fact that these employees seem increasingly reluctant to obsessively invest an inordinate amount of time and resources in their work to the detriment of their psychological health and personal life (Miraglia & Johns, 2016). Finally, although they occurred within a profile displaying generally low levels of OP (Low-Increasing OP profile), increases in OP were still accompanied by a decrease in performance and an increase in absenteeism, further highlighting the risk of letting OP grow unchecked (Vallerand, 2010). Still, it should be kept in mind that despite these changes, these outcome levels remained far more desirable in the Low-Increasing OP profile than in the High OP profile, confirming once again the harmful effects of too high levels of OP (Vallerand, 2015; Vallerand & Houliort, 2019).

## Limitations and future directions

The current study offers the first examination of the nature, predictors, outcomes, and joint evolution of employees' profiles of HP and OP trajectories. Despite these strengths, it also has limitations. First, we solely relied on self-reported measures, which come with an increased risk of social desirability and self-report biases. Future investigations should include more objective indicators of employees' behaviors (e.g., absenteeism, performance) as well as multiple informants' ratings (e.g., colleagues, supervisors). Second, this study involved a sample of French nurses followed over a period of five months. Other investigations will be needed to replicate our findings in different samples, occupations, cultures, and countries, as well as the extent to which conclusions generalize to other predictors and outcomes. Indeed, person-centered research is cumulative in nature, so that only an accumulation of studies relying on meaningfully distinct samples will make it possible to differentiate between the central set of profiles that will systematically emerge across situations, the more specific set of profiles that will only emerge in specific situations, and the rarer set of profiles that only reflect random sampling variations (e.g., Morin et al., 2016; Solinger et al., 2013). Moreover, although we considered predictors (i.e., workload, harassment, unfairness, and supervisor support) of nurses' work passion trajectories, it would be interesting for upcoming investigations to incorporate other individual (e.g., psychological capital) or organizational (e.g., perceived peer support, perceived supervisor leadership) predictors of these trajectories, as well as a more diverse set of outcomes (e.g., objective performance, physical health, actual turnover). Lastly, longer-term studies would be important to monitor how unfolding work passion trajectories persist, change, or are completely reset over longer periods of time.

## Practical implications

Our results highlight the importance for organizations and supervisors to focus on employees displaying persistently low or decreasing trajectories of HP and persistently high or increasing trajectories of OP. Indeed, these employees seem to be exposed to higher risks of impaired functioning (e.g., high turnover intention and presenteeism, and low work performance). In

particular, employees with low initial levels of HP tended to remain at low levels over time, and thus seem unlikely to experience a progressive increase in these levels over time (i.e., a *Learning to Love* scenario). Unfortunately, this Low HP trajectory was associated with disastrous outcomes for these employees (e.g., the lowest levels of psychological health and performance at the beginning and end of the study). Organizations thus need to be vigilant about how they recruit employees and should, when possible, hire workers who already have a minimum level of HP. More importantly, organizations should try to put in place actions that allow employees to increase their levels of HP from the start, to maximize their likelihood of developing a *Learning to Love* trajectory early in their tenure.

Interventions seeking to decrease the workload in a sustainable manner may help decrease the prevalence of employees with a Low HP profile over time (Donahue et al., 2012). Particular attention needs to be paid to ensure that employees do not become overwhelmed with responsibility and the associated workload. Our findings also suggest that interventions seeking to improve supervisor support may be particularly useful. To nurture perceptions of supervisor support, it may be helpful to promote a supportive culture to help managers break down the walls between themselves and employees. Without those proverbial walls, managers and employees can more easily share power and become attuned to one another's identity and culture, resulting in higher opportunities for the co-creation of positive learning and working experiences. Promoting procedural justice can also represent a meaningful way to increase supervisor support (Caesens et al., 2020), while also contributing to decreasing perceptions of unfairness, thus carrying the double benefit of supporting HP while limiting OP.

Interventions directly seeking to decrease OP may also prove fruitful. For instance, changes designed to increase work-home segmentation could be leveraged to help employees stay away from a High OP profile and more generally support a better functioning. For instance, it may be interesting to state clear segmentation norms and encourage balanced and healthier lifestyles (Kreiner, 2006), to create well-being-oriented workplaces, and to offer enabling versus enclosing work-life policies (Bourdeau et al., 2019). Furthermore, OP could also be decreased at the individual level through coaching or counseling (Van Gordon et al., 2017). Consulting the few employees with a High HP profile combined with a Low OP or a high decreasing OP profile may also make it possible to identify the most useful (or harmful) practices aiming at maintaining low levels of OP without interfering with HP. Such interventions may subsequently be expanded to help employees displaying other profiles increase their likelihood of maintaining or developing more desirable trajectories. Interestingly, Lalande et al. (2017) demonstrated that an increase in employees' OP could also be linked to non-work-related factors. Specifically, unmet psychological needs in important life domains (e.g., family) were associated with higher levels of OP at work. We could thus not only act on work-related factors to limit the development of employees' OP, but also consider other important aspects of their life. For instance, encouraging employees to take part in activities that give them pleasure outside of work (e.g., spending more time with their family, participating in more leisure activities), may help them satisfy their psychological needs and reduce their OP for work.

#### **CONFLICT OF INTEREST STATEMENT**

None of the authors have any conflict of interest to declare.

#### **DATA AVAILABILITY STATEMENT**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ETHICS STATEMENT

All procedures performed in the current study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all individual participants involved in the study.

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## ENDNOTES

<sup>1</sup> To assess possible nonlinearity in these trajectories, we also estimated alternative solutions relying on a quadratic (curvilinear) or latent basis (non-linear) parameterization (Grimm et al., 2016). However, none of these alternative solutions provided any of evidence of nonlinearity.

<sup>2</sup> Age was not included in these analyses due to its empirical redundancy with tenure ( $r = .826$ ). Results remained unchanged when age was used instead of tenure.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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