



# Abusive leadership, psychological well-being, and intention to quit during the COVID-19 pandemic: a moderated mediation analysis among Quebec's healthcare system workers

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## Abstract

**Purpose** To examine the effects from work-organization conditions, abusive leadership, and their interaction on Quebec healthcare system workers' psychological well-being and intention to quit during the COVID-19 pandemic.

**Methods** Mediation and moderated mediation analyses were performed using MPlus software on a sample of 921 Quebec healthcare system workers.

**Results** Skill utilization, decision authority, social support from co-workers and supervisors, and recognition were associated directly and positively with psychological well-being, while psychological and physical demands were associated directly and negatively with psychological well-being. Skill utilization, irregular work schedule, and recognition were associated directly and negatively with intention to quit, while psychological demands were associated directly and positively with intention to quit. Moreover, the results demonstrated that abusive leadership attenuated the effects from recognition and decision authority on psychological well-being (moderation effects), contributing to greater intention to quit among workers (moderated mediation effects).

**Conclusions** The obtained results underline the importance of work-organization conditions and leadership style on healthcare system workers' psychological health and their intention to quit their jobs during a pandemic. In particular, and given their key role, leaders/managers must be sensitized concerning leadership style and its possible effects on their employees' psychological well-being and intention to quit. Therefore, training programs should be offered to leaders/managers to prevent adoption of abusive leadership styles.

**Keywords** Psychological well-being · Intention to quit · Abusive leadership · Work-organization conditions · COVID-19 pandemic

## Introduction

The interest in studying Quebec healthcare system (i.e., Quebec Health and Social Services Network) workers' psychological well-being and intention to quit in the context of the COVID-19 pandemic can be explained partially by public health concerns. According to De los Santos and Labrague

(2021), fear of COVID-19 was associated with healthcare work-related distress which may have influenced their intention to quit. Therefore, there is a need to identify factors associated with workers' psychological well-being to avoid turnover (De los Santos and Labrague 2021) and to ensure quality of care in this turbulent time.

It is important to point out that the Canadian's provincial and territorial governments are responsible for the management, organization and delivery of health care services for their residents. Healthcare system management is under provincial jurisdiction in Canada. Consequently, the management of the pandemic and the Quebec healthcare system is independent from that of other Canadian provinces and territories. The government of the province of Quebec declared a state of health emergency throughout its territory on March 13, 2020 (Public health expertise and reference

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centre 2020). In April 2020, 3314 people were hospitalized across the province of Quebec as a result of complications related to COVID-19 (Public health expertise and reference centre 2020). The signing of a ministerial decree on March 21, 2020, ordered postponement of all surgeries and treatments deemed non-urgent to provide immediate care to people with COVID-19 (Ministère de la Santé et des Services sociaux 2020a). Forced to provide care to the population and/or workers in close contact with an emerging risk (in this case, COVID-19) in the context of a pandemic, the Quebec healthcare system's workers are particularly vulnerable to decreases in their level of well-being and increases in their intention to quit. A recent study carried out in Belgium demonstrated that the COVID-19 crisis has been heavy on healthcare workers resulting in an increase in negative mental health symptoms (Vanhaecht et al. 2021). This is not inconsequential considering that each additional absence can affect staff on duty and the care offered to the population. To anticipate and prevent the loss of those who now are termed "essential" workers, we deem it important to understand the mechanisms that influence these workers' psychological state (i.e., well-being) and, consequently, their intention to quit. Although the scientific literature concerning determinants of psychological well-being and intention to quit is abundant (e.g., psychological demands, social support from co-workers and supervisors), especially among nurses (e.g., psychological demands, social support from co-workers and supervisors, decision authority), determinants in the context of a pandemic, specifically concerning Quebec's healthcare system workers, merit our attention. What we know so far and before the COVID-19 crisis is that workload is associated with occupational stress and intention to quit in healthcare employees (Said and El-Shafei 2021). Also, it was found that COVID-19 lowered job satisfaction, which increased intention to quit (Zhang et al. 2021). According to Jang et al. (2020), COVID-19 perceived threat was associated with healthcare employee intention to work or not. Similarly, Labrague and de Los Santos (2020) found that COVID-19 was associated with higher psychological distress and intention to quit. Moreover, leadership style, such as abusive leadership (repeated negative behavior such as anger, intimidation, yelling, and ridiculing) may exacerbate the effects of work-organization conditions in a pandemic. A recent meta-analysis, prior to the pandemic, found that leader stress (i.e. COVID-19 pandemic is stressful) influences their behavior/leadership style (Harms et al. 2017). As a human-centered industry, it is important to know the way leadership behaviors (i.e. in the case of the present study abusive leadership) guide healthcare professionals (Reyhanoğlu and Akin 2020).

Accordingly, this cross-sectional study examines the effects of work-organization conditions, abusive leadership, and their interaction on employees' psychological well-being

and intention to quit during the COVID-19 pandemic based on a sample of 921 Quebec healthcare system workers.

## Well-being

The knowledge acquired over the past 20 years about work constraints and psychological health comes from its deleterious indicators (e.g., psychological distress, depression, burnout) (Häusser et al. 2010). Despite the existence of positive dimensions (e.g., psychological well-being), the negative aspects of psychological health dominate the scientific literature. Consequently, researchers are measuring the presence or absence of symptoms and behaviors related to psychological health problems, rather than a positive psychological state. Psychological health is much more than the subjective or objective absence of signs or symptoms of mental disorders (World Health Organization 2010). Psychological health also refers to a reasonably high degree of psychological well-being (Bech et al. 2003), which is of great importance for healthcare workers during a pandemic. Therefore, we gauged a beneficial indicator of psychological health, namely psychological well-being, for this study using the World Health Organization's Well-Being Index (WHO-5), which assesses constructs related to positive mood, vitality, and general life satisfaction. This is consistent with the most popular definition of *well-being* in the scientific literature: an individual's optimal functioning (Ryan and Deci 2001).

## Well-being and intention to quit during a pandemic

The COVID-19 pandemic has the potential to harm workers' psychological well-being, particularly those who work in the healthcare system. It presents a more demanding work environment for them, characterized by the presence of an emerging threat. The severe acute respiratory syndrome (SARS) outbreak in Toronto in 2003 resembles the current pandemic and, thus, can serve as a comparison reference. That viral outbreak required the implementation of health measures similar to those currently in place in health care facilities (Rae and Zeng 2020), including quarantining, screening all people who use health facilities, and creating sections reserved for people with symptoms similar to those of SARS. In total, Toronto reported 375 cases (Ministry of Health and Ministry of Long-Term Care 2003). By comparison, in February 2021, there were more than 280,600 confirmed cases of COVID-19 in the province of Quebec since the start of the pandemic (Public health expertise and reference centre 2020). A study conducted in the aftermath of the 2003 SARS outbreak found significantly elevated levels of burnout, psychological distress, and post-traumatic stress disorder among healthcare workers (Maunder et al. 2006). According to this study, workers admitted that they reduced their contact with patients and took more time off

due to illness. These difficulties persisted for more than 12 to 24 months after the end of the epidemic (Maunder et al. 2006). In this situation, the outbreak of a virus negatively affected healthcare system workers' psychological health.

In the present study's context, i.e., in the midst of a pandemic, it is possible to argue that direct contact with COVID-19 patients among healthcare system workers may influence their psychological well-being and intention to quit. For instance, it was previously found that work stress was associated with a reduced level of well-being for employees during the COVID-19 pandemic (Yu et al. 2021). This study intends to shed light on psychological well-being and intention to quit in such a context. The pandemic is a good reminder of the value of health. Considering that health makes it possible to work, enjoy autonomy, and satisfy one's needs (Charte d'Ottawa 1986), the deterioration of psychological well-being at work can be viewed as the beginning of a major loss. In this case, the worker may adopt a defensive attitude, which results in intention to quit. Moreover, among health professionals, psychological health problems are associated positively and significantly with intention to quit (Hu et al. 2011; Jourdain and Chênevert 2010; Leiter and Maslach 2009). Intention to quit represents intention to take action (Ajzen and Fishbein 1977) – in this case, leaving the workplace (Mobley 1977). In management, this action affects staff turnover rate (Mobley et al. 1978; Mor Barak et al. 2001). Intention to quit takes many forms in the academic literature, but we will employ a definition from a conceptual analysis of nurses, in which *intention to leave* is defined as “a multi-step process involving the voluntary departure of employees from their current position, and is triggered by negative psychological responses to the internal and/or external work context” (Takase 2010). Therefore, being interested in workers' psychological experiences is the only way to know their intention. Moreover, intention to quit leads to higher turnover rate in public organizations. As such, intention to quit may be a valid proxy for turnover behaviour (Sun and Wang 2017).

### Work-organization conditions

Work-organization conditions, also called work psychosocial risk factors, are grouped into four dimensions: task design; work demands; social relations; and gratifications (Marchand et al. 2005). In accordance with the current pandemic context, we added the work zone.

#### Task design

The way tasks are performed can impact workers' perception of their control levels. Karasek (1979) conceptualizes a person's potential control under the notion of decisional latitude. Two fundamental elements comprise the basis of

the notion of decisional latitude: skill utilization and decision authority. For task design to foster a feeling of control and freedom for workers, it must allow workers to use their skills and participate in decision-making. According to studies, workers who enjoy a certain degree of autonomy have less intention of leaving their jobs (Agarwal and Gupta 2018; Arnoux-Nicolas et al. 2016; Chiu et al. 2009). When it comes to autonomy's effect on psychological well-being, extant studies' results are rather mixed. Some found that autonomy significantly influences levels of psychological well-being (Kopp et al. 2008; Schütte et al. 2014). To this end, the results from a study by Kopp et al. (2008) demonstrate that autonomy is an important correlate of psychological well-being for both genders. However, other studies concluded that autonomy's impact on psychological well-being is insignificant (Ariza-Montes et al. 2018; Parent-Lamarche and Marchand 2019). Therefore, we will measure these effects on workers in the Quebec health network during a pandemic.

#### Work demands

Work demands represent those aspects of the job that require mental or physical effort on employees' part. Physical demands represent factors present in the work environment that are potentially harmful to workers' health, safety, and physical well-being. To our knowledge, no study has measured physical demands' impact on intention to quit. In addition, studies that have measured physical demands' impact on psychological well-being are rare. Only one study, to our knowledge, has examined this factor's effect, and the results indicated that no significant relationship existed (Parent-Lamarche and Marchand 2019). Therefore, it seems relevant to measure this variable's impact through the present study, considering the pandemic's context and the specific targeted sample. Psychological demands at work correspond to the time allotted to do the job, the cognitive burden, the amount of work required, and the presence of conflicting demands (Karasek 1979). Psychological demands appear mainly in research on stress at work. A considerable number of studies statistically have found positive and significant effects from psychological demands on intention to quit (Arnoux-Nicolas et al. 2016; Chen et al. 2011; Chiu et al. 2009; Flinkman et al. 2008; Hopkins et al. 2010; Kim and Kim 2017). As for their effect on well-being, extant studies concluded that psychological demands are associated negatively with psychological well-being (Ariza-Montes et al. 2018; Parent-Lamarche and Marchand 2019). Contractual demands comprise two elements: number of hours worked and work schedule. To our knowledge, no empirical study has measured the impact from number of hours worked on intention to quit. However, in a study that describes the main reasons why nurses quit, work schedules and hours of work

ranked third (Flinkman et al. 2008). Regarding number of hours worked and psychological well-being, the literature offers conflicting answers. To our knowledge, only one study demonstrated an increased risk of depression and anxiety associated with working long hours (Virtanen et al. 2011). However, a study found no significant relationship between number of hours worked and psychological distress, depression, and exhaustion (Marchand et al. 2015). The results from a cross-sectional study pointed in the same direction and confirmed the absence of a significant relationship between number of hours worked and psychological well-being (Parent-Lamarche and Marchand 2019). Studies that examined the effects from work schedule on psychological well-being found no statistically significant relationship (Marchand et al. 2015; Parent-Lamarche and Marchand 2019). The few and nuanced results regarding the effects from hours worked and irregular work schedules justify further research efforts to shed light on these relationships. This is especially true in the exceptional context of a pandemic.

### Social relations

Social relations often refer to social support in the scientific literature. In fact, support from immediate supervisors and co-workers can be viewed as social resources at work. Social support, examined globally in scientific research, appeared to influence intention to quit negatively (Arnoux-Nicolas et al. 2016; Bertrand et al. 2008; Chiu et al. 2009; Lavoie-Tremblay et al. 2008; Zeytinoglu et al. 2011). When it comes to effects from co-workers and supervisors' support on psychological well-being, extant research results are rather contradictory. On one hand, some authors concluded that weak social support at work represented a risk factor for low levels of psychological well-being (Kopp et al. 2008; Schütte et al. 2014). On the other hand, other research did not find any significant link between co-workers and supervisors' social support and psychological well-being (Marchand et al. 2015; Parent-Lamarche and Marchand 2019). Given the mixed results in the literature on social support's effects on psychological well-being, we endeavored to continue these research efforts and included these factors in the present study, in the specific context of the COVID-19 pandemic.

### Gratifications

Gratifications at work refer to recognizing and valuing workers (Brun and Dugas 2008). They take several forms, including remuneration, career prospects, job security, and self-esteem (Marchand et al. 2005). Some studies demonstrated that recognition was associated negatively with intention to quit (Agarwal and Gupta 2018; Lavoie-Tremblay et al. 2008). We discovered a study from Parent-Lamarche and Marchand (2019) that found recognition does not influence

psychological well-being significantly, corresponding with results from Marchand et al. (2015).

### Work zone

Workers in so-called “hot zones” were in close contact with people infected with COVID-19. For these workers, personal protective equipment was essential, including long-sleeve gowns, eye protection, procedural masks, and gloves. To our knowledge, only one extant study has investigated the link between protective equipment, infection control procedures, and the presence of psychological health problems during the COVID-19 pandemic among Canadian healthcare system workers. Survey results demonstrated that respondents whose protective equipment needs were met experienced mild depressive and anxiety symptoms (Smith et al. 2020). That said, a study carried out in the United States found that healthcare professionals' perceptions of critical care resource availability, such as powered air purifying respirators, was associated with emotional distress/burnout (Sharma et al. 2020). As a result, healthcare workers who perceive themselves to be more at risk of contracting the virus due to a lack of adequate protective equipment are more likely to show signs of anxiety and depression. However, no study, to our knowledge, has examined the impact from the “hot zone” on psychological well-being and intention to quit.

### Abusive leadership

*Abusive leadership* is defined as “subordinates' perception of the extent to which superiors engage in a sustained display of hostile verbal and non-verbal behavior, excluding physical contact” (Tepper 2007). To meet the definition of abusive leadership, manifestations of non-physical hostilities must be sustained over time. The intention of the superior who engages in abusive behavior is not to harm employees. Regarding the effect of abusive leadership on intention to quit prior to the pandemic, results from several studies demonstrated a positive association (Haar et al. 2016; Pradhan and Jena 2017, 2018; Pyc et al. 2017; Seo et al. 2019). It was found that toxic leadership style (e.g., abusive) predicted psychological distress and intention to quit among healthcare employees (Labrague et al. 2020). Reyhanoglu and Akin (2020) found that toxic leadership style (e.g., abusive) was associated with higher intentions to quit. Hussain et al. (2020) arrived to the same conclusions in that abusive leadership affected both psychological well-being and intention to quit. One study also found that psychological distress is a mediator of the relationship between abusive leadership and intention to quit (Pyc et al. 2017). Moreover, other studies concluded that abusive leadership exerts harmful effects on psychological health (Mullen et al. 2018; Tepper 2000, 2007). In terms of its effects during the

COVID-19 pandemic, we were not able to locate any study that examined the impact of abusive leadership specifically. That said, a recent study found that a positive form of leadership style (i.e. inclusive leadership) was negatively associated with psychological distress during the COVID-19 pandemic (Ahmed et al. 2020). Furthermore, it was recently established that employees working in healthcare require managerial/leaders support to promote well-being during COVID-19 pandemic according to employees own perspectives (Digby et al. 2021). No study, to our knowledge, has established a moderating effect of abusive leadership on the relationship between work-organization conditions and psychological well-being, and the latter effect on intention to quit during the COVID-19 pandemic. The closest study is one by Kim et al. (2020) that found that social support was necessary to help nurses cope with the work-relate stressor to ensure their job retention during the COVID-19 crisis. According to Shanafelt et al. (2020), healthcare employees desire visible leadership during this turbulent time. In the same vein, managerial/leadership support was identified as one of the most important type of resource for healthcare employees during the pandemic (Cho et al. 2021). Based on those recent studies, we suggest evaluating the moderating effect of abusive leadership on the relationship between work-organization conditions and psychological well-being and the latter effect on intention to quit.

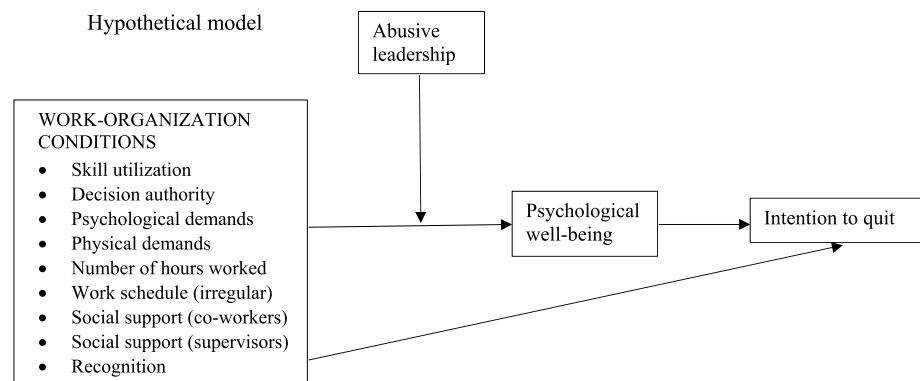
## Theoretical model

The theoretical model that we propose is based on the combination of the job demands-resources model (JDR) (Demerouti et al. 2001) and the conservation of resources theory (COR) (Hobfoll 1989). As argued by van Woerkom et al. (2016), COR theory serve as fine-tuning of the JD-R model. The general idea behind our theoretical proposed model is that constant exposure to demanding aspects of work (e.g., high psychological demands) and a lack of resources (e.g., abusive leadership) promote degradation of the level of psychological well-being, which, in turn, will strengthen

intention to quit. In other words and as stated by Kniffin et al. (2021), employees will need resources to adequately deal with pandemic-specific job demands. Demerouti et al. (2001) assumed that an employee who lacks resources (e.g., abusive leadership) at work can hardly meet the job's demands (e.g., psychological demands), which consumes the worker's motivation and can lead to withdrawal behavior (or the intention of having withdrawal behavior) that we translate, for this study's purposes, as intention to quit. Therefore, based on this assumption, it is anticipated that high job demands, as well as a lack of resources at work, may influence workers' psychological well-being and their intention to quit. Which correspond to our global hypothetical model (See Fig. 1).

According to the JDR model (Demerouti et al. 2001), when job demands are high, workers' energy levels decrease, leading to a decrease in psychological well-being as well (See hypothesis 1) and increase intention to quit (See hypothesis 2). Delving deeper, COR theory (Hobfoll 1989) postulates that individuals faced with a loss of resources (actual or potential) seek to minimize loss of resources. An unhealthy working environment, i.e., one with high job demands (e.g., psychological demands) and a lack of resources (e.g., abusive leadership), can be viewed as a threat to psychological health. Faced with these threatening environmental circumstances, the individuals wants to adapt themselves and invests the resources at their disposal to maintain or protect their level of psychological well-being. In accordance with COR theory, unsuccessful adaptation to resource loss causes a cycle of chronic loss (i.e., spiral loss), ultimately leading to defensive behavior (e.g., leaving the job or intention to quit the job). In the present case, a worker's unsuccessful adaptation to a loss of resources results in deterioration in the level of psychological well-being. In other words, a worker with a low level of psychological well-being will adopt a defensive position, resulting in intention to quit and leave the threatening work environment (See hypothesis 3). This relationship will be moderated by abusive leadership, which generates a significant additional loss of resources. Under these conditions, the worker has fewer resources and is, therefore, more

**Fig. 1** Hypothetical model





vulnerable to a loss of resources, leading to a lower level of psychological well-being, in line with COR theory (Hobfoll 1989). In other words, abusive leadership is likely to strengthen the loss spiral (See hypothesis 4). Therefore, it is assumed that workers' psychological well-being is the result of the interplay between work-organization conditions and abusive leadership. Specifically, abusive leadership is likely to strengthen or attenuate the effects from work-organization conditions on workers' psychological well-being, which would affect intention to quit (See hypothesis 5). Based on both COR theory and JD-R model, we believe that in a context with multiple stressors (i.e. COVID-19 pandemic), coupled with depleting resources, healthcare employees will engage in a spiral of loss when faced with abusive leadership. Loss spirals will follow initial losses, with each loss resulting in depletion of resources when a worker attempts to confront threats such as abusive leadership. This refers to a loss cycle (COR theory) applied in the JD-R model (Bakker and Demerouti 2018).

Accordingly, we propose the following five hypotheses.

**Hypotheses** *H1.* Work-organization conditions are associated directly with healthcare system workers' level of psychological well-being during the COVID-19 pandemic (direct effect hypothesis).

*H2.* Work-organization conditions are associated directly with healthcare system workers' intention to quit during the COVID-19 pandemic (direct effect hypothesis).

*H3.* Health and social services workers' psychological well-being mediates the relationship between work-organization conditions and intention to quit during the COVID-19 pandemic (mediation hypothesis).

*H4.* Abusive leadership plays a moderating role in the relationship between work-organization conditions and psychological well-being during the COVID-19 pandemic (moderation hypothesis).

*H5.* The relationship between work-organization conditions, psychological well-being, and intention to quit is moderated by abusive leadership during the COVID-19 pandemic (moderated mediation hypothesis).

## Method

### Participants

The data were collected four months after the start of the COVID-19 pandemic in the province of Quebec (from June 1, 2020, to July 31, 2020). Given the COVID-19 pandemic's context, we developed an online questionnaire and opted for network sampling to avoid face-to-face interactions and respect social distancing. The participants had to be

employed in paid work within the health and social services network in the province of Quebec, as well as be able to read and understand French. Physicians were excluded from the study because they have a different status in the healthcare system in Quebec. They are not considered as employee per se, but rather self-employed/contractual. The questionnaire link has been shared over 70 times on social networks such as Facebook, LinkedIn, and Instagram. To target workers in Quebec's healthcare system, we sent the questionnaire link to administrators of Facebook healthcare system workers' and unions' pages in a private message. In response to these requests, some administrators shared the link on their Facebook pages, namely the Fédération interprofessionnelle de la santé du Québec (FIQ), Fédération de la santé et des services sociaux (FSSS), and Confédération des syndicats nationaux (CSN). Also, the Ordre des infirmières et infirmiers auxiliaires du Québec (OIIAQ) sent the questionnaire link to their members via an email. The respondents stated that they read the consent form by checking the box to that effect in the questionnaire and participated without any monetary compensation. The University of Quebec at Trois-Rivières (UQTR) (CER-20–266-07.14) issued ethical approval. The obtained sample comprised 921 workers, of which 88.38% were female, with an average age of 39.2 years for the whole sample.

## Measures

### Intention to quit

A three-item scale (O'Driscoll and Beehr 1994) was used to measure workers' intention to quit. Items such as "Since the current crisis, I am thinking of quitting my job" were assessed on a five-point Likert scale (1 = never, 5 = almost always,  $\alpha = 0.96$ ). Intention to quit was treated as a continuous variable in the statistical analysis.

### Well-being

The WHO Well-Being Index (WHO-5) was used to measure well-being (Heun et al. 2001), comprising five items on a six-point Likert scale (0 = at no time, 5 = all the time), e.g., "Since the current crisis began, I have felt cheerful and in good spirits" ( $\alpha = 0.90$ ). Well-being was treated as a continuous variable in the statistical analysis.

### Work-organization conditions

The Job Content Questionnaire (JCQ) (Karasek 1985) was used to measure skill utilization, decision authority, psychological demands, and social support with a four-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). *Skill utilization* comprised six items (e.g., "Since the

current crisis began, my job has required me to be creative,”  $\alpha=0.61$ ). *Decision authority* contained three items (e.g., “Since the current crisis began, I had the freedom to decide how I do my work,”  $\alpha=0.68$ ). *Psychological demands* were measured with nine items (e.g., “Since the current crisis began, my job required long periods of intense concentration on the task,”  $\alpha=0.81$ ). *Social support from co-workers* was measured with four items (e.g., “Since the current crisis began, the people I work with take a personal interest in me,”  $\alpha=0.82$ ), and *social support from supervisors* was measured with four items (e.g., “Since the current crisis began, my supervisor has been concerned about the welfare of those under him,”  $\alpha=0.91$ ). The Effort-Reward Imbalance Questionnaire (Siegrist 1996) was used to measure physical demands and recognition. Responses were based on a four-point Likert scale (1 = strongly disagree, 4 = strongly agree). *Physical demands* were based on a single item (e.g., “Since the current crisis began, my work required physical effort”). *Recognition* contained five items (e.g., “Since the current crisis began, I have been treated unfairly at work,”  $\alpha=0.82$ ). *Number of hours worked* was obtained by asking, “How many hours do you work weekly since the current crisis began?” *Irregular work schedule* since the current crisis was coded as 0 = no and 1 = yes.

*Work zone* was coded 0 = cold (without a case of COVID-19) and 1 = hot (with suspected or confirmed COVID-19 cases). *Shift work* since the current crisis began was coded 0 = night shift or evening shift and 1 = day shift. *Work schedule* since the current crisis began was coded 0 = part-time and 1 = full-time.

### Abusive leadership

Subordinates’ perceived abusive leadership was measured using 15 items with a five-point Likert scale (1 = never, 5 = almost always) (e.g., “Since the current crisis began, my supervisor has ridiculed me,”  $\alpha=0.92$ ) (Tepper 2000). Abusive leadership was treated as a continuous variable in the statistical analysis.

### Control variables

Corresponding with previous studies, we controlled for gender and age (Dai et al. 2008), marital status, parental status, and education level (Xie et al. 2011). Also, to reflect the findings, we decided to adjust for occupation (care) which we supposed can have a confounding effect, considering that they were in closer contact with patients and, thus, potentially COVID-19-infected patients. *Gender* was coded as 0 = man and 1 = woman, and *age* was coded in years. *Marital status* was coded as 0 = single, 1 = living as a couple, and parental status as 0 = no, 1 = yes. *Education level* was coded using the highest degree attained by the respondent on a

10-point scale ranked based on the number of years needed to obtain the degree (1 = none, 2 = high school, 3 = professional school, 4 = college (general), 5 = college (technical), 6 = university (undergraduate certificate), 7 = university (bachelor’s degree), 8 = university (graduate diploma), 9 = university (master’s degree), and 10 = university (doctorate). *Occupation* was coded as 0 = other and 1 = care.

### Data analysis

Adjusted, moderated path analyses were performed using MPlus software, Version 8. The moderated mediation effect falls under the heading of conditional indirect effects, i.e., the effect of interest to us is an indirect (mediation) effect that may be conditioned by the values of a moderator (Hayes 2018; Preacher et al. 2007). The conditional indirect effects process modeling method was taken from Preacher et al. (2007). As a first step, our analytical strategy was to estimate a model that included work-organization conditions, abusive leadership, and control variables so that we might estimate the main effects they exert on intention to quit and psychological well-being. As a second step, we verified whether work-organization condition variables that were significant for psychological well-being in the basic model indirectly, but significantly, influenced intention to quit via psychological well-being. In a third and final step, we checked whether abusive leadership exerts a moderating effect on the relationship between work-organization conditions and psychological well-being. First, we introduced, one by one, interactions between workplace variables and abusive leadership. Altogether, nine interaction effects were tested—one for each work-organization condition variable. Given the number of interactions to be evaluated separately, we applied a Bonferroni correction to the estimated interactions and set the significance level at  $p < 0.005$ . The significant interactions were tested again together in a final model to determine which interactions were significant.

### Results

Table 1 provides descriptive statistics (Min–Max, Mean/Proportion, Standard deviation) for all the variables of the sample. For instance, the results demonstrated that the psychological well-being score was low (37.64%), although a specific cut-off value has not been established. Under the scoring principle, the raw score, which ranges from 0 to 25, is multiplied by 4 to obtain the final score, which ranges from 0 (the worst imaginable psychological well-being level) to 100 (the best imaginable psychological well-being level) (Topp et al. 2015). Moreover, Table 1 shows that our sample mean age was 39.20 years

**Table 1** Descriptive statistics of all the variables in this study ( $N=921$ )

	Min–max	Mean/proportion	Standard deviation
Intention to quit			
Intention to quit	3–15	9.44	3.39
Well-being			
Well-being	0–25	9.41	5.34
Leadership			
Abusive leadership	15–75	24.85	10.51
Work-organization conditions			
Skill utilization	7–24	16.44	2.75
Decision authority	3–12	6.10	1.87
Psychological demands	9–36	27.19	4.76
Physical demands	1–4	2.90	97
Number of hours worked	0–170	35.77	13.80
Work schedule (irregular)	0–1	0.39	0.49
Social support (co-workers)	4–16	11.93	2.40
Social support (supervisor)	4–16	9.06	3.27
Recognition	5–20	12.10	3.26
Other variables of interest			
Work zone (hot)	0–1	0.55	0.49
Work schedule (full-time)	0–1	0.31	0.46
Shift (day)	0–1	0.50	0.50
Control variables			
Age	19–68	39.20	10.46
Gender (female)	0–1	0.88	0.32
Education level	1–9	3.76	1.50
Marital status (living as couple)	0–1	0.77	41
Parental status (children)	0–1	0.52	0.49

old and 88% female. (The correlation matrix for the variables under study is available as supplemental material).

Table 2 provides results on the main effects from work-organization conditions, abusive supervision, and psychological well-being on intention to quit and the main effects from work-organization conditions and abusive supervision on well-being. The results demonstrate that psychological well-being, skill utilization, work schedule (irregular), and recognition were associated with lower levels of intention to quit. Conversely, abusive leadership, psychological demands, and work schedule (full-time) were associated with higher levels of intention to quit. The results show that psychological demands, physical demands, and work zone (hot) were associated with lower levels of psychological well-being. Conversely, skill utilization, decision authority, social support from co-workers, social support from supervisors, and recognition were associated with higher levels of psychological well-being.

In addition, results provided in Table 3 demonstrate variables that indirectly influenced intention to quit via psychological well-being: skill utilization; decision authority;

psychological demands; physical demands; social support from co-workers; and social support from supervisors.

### Significant interactions

Two interactions emerged as significant in our final model, which we designed to verify the moderating effect from abusive leadership. First, abusive leadership was found to moderate the relationship between recognition and psychological well-being ( $b = -0.011$ ,  $p = 0.034$ ). When recognition was high, highly abusive leadership was associated with a lower level of psychological well-being, and less-abusive leadership was associated with a higher level of psychological well-being. On the other hand, this effect did not seem to apply when recognition was low. Thus, less-abusive leadership strengthened the effect from high recognition on psychological well-being. Conversely, highly abusive leadership attenuated the effect from high recognition on psychological well-being Fig. 2.

Second, abusive leadership was found to play a moderating role in the relationship between decision authority and



**Table 2** Main effects on well-being and intention to quit

	Well-being	Intention to quit
Constant	3.899**	11.208*
Well-being		
Well-being		− 0.192
Leadership		
Abusive leadership	− 0.007	0.041**
Work-organization conditions		
Skill utilization	0.198*:	− 0.150
Decision authority	0.232 **	− 0.086
Psychological demands	− 0.275**	0.111*
Physical demands	− 0.369*	0.170
Number of hours worked	− 0.003	− 0.005
Work schedule (irregular)	0.432	− 0.508*
Social support (co-workers)	0.384	0.020
Social support (supervisors)	0.198	0.063
Recognition	0.236*	− 0.214*
Other variables of interest		
Work zone (hot)	− 0.634*	0.173
Work schedule (full-time)	0.310	0.522*
Shift (day)	0.593	− 0.124
Adjustments		
CFI	1.00	
TLI	1.00	
$\chi^2$ (df)	885.567 (39)**	

The following variables were controlled for: age, gender, educational level, marital status, parental status, occupation (care). (Non-standardized coefficients)

\* $p \leq 0.05$

\*\* $p \leq 0.01$

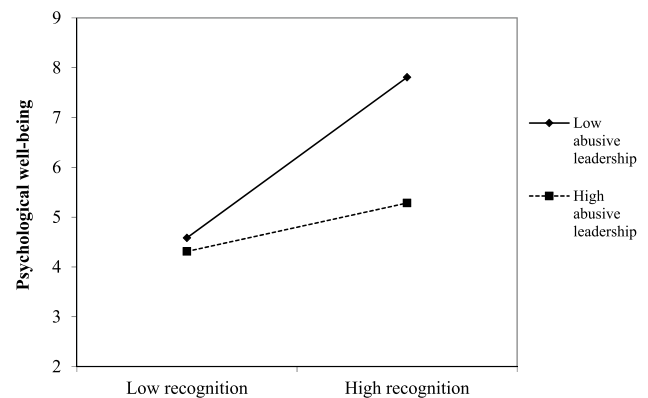
well-being ( $b = -0.018, p = 0.035$ ). When decision authority was strong, highly abusive leadership was associated with a lower level of psychological well-being, and less-abusive leadership was associated with a higher level of psychological well-being. On the other hand, this effect did not seem to occur in the case of weak decision authority. Thus, less-abusive leadership strengthened the effect from strong decision authority on psychological well-being. Conversely, highly abusive leadership attenuated the effect from strong decision authority on psychological well-being Fig. 3.

These interactions demonstrated significant moderated mediation effects as well (See Table 3). First, the interaction effect between recognition and abusive leadership on psychological well-being was associated positively with intention to quit. In other words, abusive leadership attenuated the effect from recognition on psychological well-being, and this contributed to greater intention to quit. Second, the interaction effect between decision authority and abusive leadership on psychological well-being was associated positively with intention to quit. In other words, abusive leadership

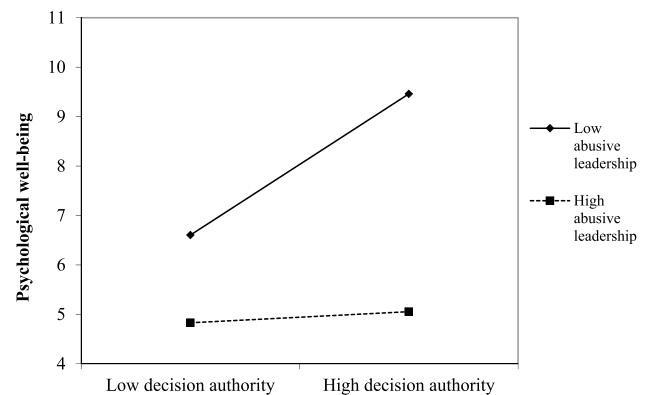
**Table 3** Indirect effects on intention to quit

	Estimation	<i>P</i> value
Leadership		
Abusive leadership	0.001	0.712
Work-organization conditions		
Skill utilization	− 0.038	0.001
Decision authority	− 0.045	0.009
Psychological demands	0.053	0.000
Physical demands	0.071	0.049
Social support (supervisors)	− 0.038	0.009
Social support (co-workers)	− 0.074	0.000
Number of hours worked	0.000	0.809
Work schedule (irregular)	− 0.083	0.172
Recognition	− 0.045	0.002
Moderated mediation		
Interaction recognition—abusive leadership	0.002	0.039
Interaction decision authority—abusive leadership	0.003	0.042

The following variables were controlled for: age, gender, educational level, marital status, parental status, occupation (care). (Non-standardized coefficients)



**Fig. 2** Recognition and abusive leadership interaction



**Fig. 3** Decision authority and abusive leadership interaction

attenuated the effect from decision authority on psychological well-being, contributing to greater intention to quit.

## Discussion

This study examined the contribution from work-organization conditions, abusive leadership, and their interaction on psychological well-being and intention to quit on a sample of Quebec's healthcare system workers during the COVID-19 pandemic.

The first hypothesis (H1) postulated that work-organization conditions are associated directly with psychological well-being. We observed that skill utilization, decision authority, social support from co-workers, social support from supervisors, and recognition were associated directly and significantly with a higher level of psychological well-being, whereas psychological and physical demands were associated directly and significantly with a lower level of psychological well-being. On the one hand, number of hours worked and irregular work schedule were not significantly associated with psychological well-being. Therefore, our first hypothesis was confirmed partially. These observations are consistent with the literature on psychological demands (Ariza-Montes et al. 2018; Marchand et al. 2005; Parent-Lamarche and Marchand 2019; Schütte et al. 2014). These observations are also consistent with the JDR model (Demerouti et al. 2001), which suggests that psychological health problems are likely to develop when job demands are high and job resources are insufficient.

Our second hypothesis (H2), which postulated that work-organization conditions are associated directly and significantly with intention to quit, also was confirmed partially. The results indicated that psychological well-being, skill utilization, work schedule (irregular), and recognition were associated directly and significantly with lesser intention to quit, whereas abusive leadership and psychological demands were associated directly and significantly with greater intention to quit. On the other hand, decision authority, physical demands, number of hours worked and social support were not significantly associated with intention to quit. Therefore, our second hypothesis was confirmed partially. These observations are consistent with the literature on psychological well-being (Chen et al. 2011; Hu et al. 2011; Leiter and Maslach 2009), psychological demands (Arnoux-Nicolas et al. 2016; Kim and Kim 2017), recognition (Agarwal and Gupta 2018; Lavoie-Tremblay et al. 2008), and abusive leadership (Haar et al. 2016; Pradhan and Jena 2018; Seo et al. 2019). The observations are also consistent with the JDR model (Demerouti et al. 2001), which postulates that lacking the ability to meet job demands consumes workers' motivation and leads to withdrawal behavior (or the intention to carry out withdrawal behavior). Moreover, we observed that

the work zone (hot) was associated directly and significantly with a lower level of psychological well-being. This may be explained in various ways. It is possible that close contact with an emerging risk (i.e., COVID-19) generates a stress response that influences psychological well-being. That said, our results demonstrated that the work zone (hot) does not explain intention to quit during the COVID-19 pandemic. Moreover, the results indicated that work schedule (full-time) was associated directly and significantly with greater intention to quit. This can be explained in part by full-time workers' greater exposure to job demands.

The third hypothesis (H3) postulated that psychological well-being mediated the relationship between work-organization conditions and intention to quit. This hypothesis was supported partially. Skill utilization, decision authority, psychological and physical demands, social support from co-workers, social support from supervisors, and recognition were associated indirectly and significantly with intention to quit. More precisely, skill utilization, decision authority, social support from co-workers, social support from supervisors, and recognition were associated negatively with intention to quit via their influence on psychological well-being, while psychological and physical demands were associated positively with intention to quit via their influence on psychological well-being. This is consistent with evidence in the literature that demonstrated psychological well-being's mediating role between work-organization conditions and intention to quit (Chen et al. 2011; Jourdain and Chênevert 2010; Leiter and Maslach 2009)—or more recently, job performance (Parent-Lamarche et al. 2021). This also corresponds with principal COR theory (Hobfoll 1989), i.e., a worker's unsuccessful adaptation to the loss of resources results in deterioration in the level of psychological well-being, resulting in adoption of a defensive position that leads to intention to quit to escape the threatening work environment.

Our fourth hypothesis (H4), which postulated that abusive leadership moderated the relationship between work-organization conditions and psychological well-being, was confirmed partially. We observed that less-abusive leadership strengthened the effect from high recognition and strong decision authority on psychological well-being. Inversely, highly abusive leadership attenuated the effect from high recognition and strong decision authority on psychological well-being.

Furthermore, these interaction effects were associated positively with intention to quit, partially confirming our fifth hypothesis (H5). In other words, abusive leadership attenuated the effect from high recognition and strong decision authority on psychological well-being, contributing to greater intention to quit among Quebec's healthcare system workers. No extant study, to our knowledge, has investigated the moderating effect from abusive leadership

on the relationship between work-organization conditions and psychological well-being, nor has any study verified whether this carries repercussions on intention to quit. We consider that the perception of abusive leadership generated a significant additional loss of resources. Under these conditions, the worker had fewer resources and was, therefore, more vulnerable to a loss of resources, leading to a lower level of psychological well-being, corresponding with COR theory (Hobfoll 1989). In other words, abusive leadership seemed to have strengthened the loss spiral. Therefore, it seems that workers' psychological well-being was the result of the interplay between work-organization conditions and abusive leadership. Specifically, abusive leadership seems to have strengthened or attenuated the effects from work-organization conditions on workers' psychological well-being, which, in turn, affected intention to quit. Finally, it seems that work-organization conditions and abusive leadership, through psychological well-being, played a role in explaining intention to quit during the COVID-19 pandemic in our sample of Quebec healthcare workers.

### Practical implications

This study suggests that psychological well-being mediates the relationship between work-organization conditions and intention to quit. Therefore, practitioners need to focus on the determinants of employee psychological well-being at the organizational level to prevent the loss of certain essential workers during a pandemic. For example, skill utilization, decision authority, psychological demands, social support from co-workers, social support from supervisors, and recognition should improve through participatory organizational interventions. More specifically, skill utilization and decision authority may be targeted by ensuring that leaders are trained to pinpoint employees' strengths and enhance their autonomy (Fujishiro and Heaney 2017). Moreover, stabilization of replacements should be considered to target psychological demands (Bambra et al. 2007). Workplace recognition programs, such as leaders highlighting employees' good moves and the importance of their essential role in the COVID-19 context, and improving their remuneration are potential options. According to Lavoie-Tremblay et al. (2005), action plans that target problematic aspects of the psychological work environment are key elements in improving healthcare workers' psychological health. The results also found that all efforts to improve recognition and decision authority may be attenuated by the presence of abusive leadership. Given their key role, leaders/managers must be sensitized about leadership style, and its possible effects on their employees' psychological well-being and intention to quit. Therefore, training programs should be offered to leaders/managers to prevent the adoption of an abusive leadership style. For instance, Gonzalez-Morales et al. (2018)

suggested that training that explains the usefulness of supportive leadership and provides supervisors with the skills and strategies needed to implement such behavior is helpful. Group discussions, role-play and one-on-one discussion sessions could be considered as potential training options for leaders (Barling et al. 1996). Moreover, healthcare employees mentioned that they appreciated leaders visiting hospital units to reassure and inquire about their needs during the COVID-19 pandemic (Shanafelt et al. 2020). Healthcare organizations could encourage their leaders to act in this manner.

### Limitations and suggestions for future research

Among this study's limitations, the snowball strategy sampling method may have introduced bias; therefore, our sample may not be representative of the general worker population. That said, it was established previously that this sampling method is valid and allows for indistinguishable results compared with a standard sample (Casler et al. 2013). Moreover, it allowed us to survey healthcare system workers rapidly in the context of a pandemic, in which no face-to-face interactions were allowed. That said, the results of this study should be interpreted with caution due to the non-probabilistic sample we used to establish our conclusions. Moreover, the size of the denominator on March 31st 2020 was approximately 171 000 healthcare employees/healthcare professions excluding physicians (Ministère de la Santé et des Services sociaux 2020b). Therefore, we were able to reach a small percentage ( $n = 921$  workers) of the entire workforce, which correspond to a modest response rate. Second, the data used in the study are cross-sectional in nature, making causality impossible to confirm. Third, this study was designed to examine workers' perceptions; thus, all study variables are at the individual (employee) level, and responses were collected from a single source (i.e., the employee). Consequently, future studies should collect data from supervisors as well to avoid common method variance bias. Fourth, we used a short questionnaire format to limit the workload of respondents who already were loaded with work due to the COVID-19 pandemic. For instance, we did not address other organizational factors associated with the COVID-19 pandemic that may improve workers' mental health. Organizational measures including significant improvement in workplace hygiene was associated with less severe psychiatric symptoms (Tan et al. 2020). Therefore, unobserved variables also could have influenced the examined relationships. Moreover, we did not use scales to assess depression, anxiety and stress (Depression, Anxiety and Stress Scale/DASS-21) as well as impact of event (Impact of Event Scale-Revised/IES-R) (Chew et al. 2020). These variables should be included in future studies to better

understand the impact of the COVID-19 pandemic on psychological health. For example, it could be interesting to assess the additional effect that social benefit/reward conditions offered to healthcare system workers might have on psychological well-being and intention to quit.

## Conclusion

In conclusion, our results indicate that our sample of Quebec healthcare workers were vulnerable to reductions in level of well-being and increases in their intention to quit in the context of a pandemic. We found psychological well-being to play a mediating role between work-organization conditions and intention to quit. To anticipate and prevent the loss of those who are now termed “essential” workers, we should consider work-organizational conditions associated with intention to quit via their influence on psychological well-being. More precisely, action plans that target the reduction of psychological demands and improve skill utilization, decision authority, social support and recognition seem to be key in improving healthcare workers’ psychological health which, in turn, affects their intention to quit. Moreover, we found that abusive leadership attenuates the effect of favorable work-organization conditions on psychological well-being. Leaders/managers must be trained to not to adopt an abusive leadership style. This in turn will likely have positive effects on their employees’ psychological well-being while reducing their intention to quit. This study contributes to the literature by building on previous research on psychological well-being and intention to quit in the context of a pandemic. This may remain useful in the case of future pandemics or in a post-pandemic context.

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**Funding** This study received no outside financial support.

**Data availability** The data are not available due to confidentiality.

**Code availability** Not applicable.

## Declarations

**Conflict of interest** The authors declare that they have no competing interests.

**Ethical approval** The University of Quebec at Trois-Rivières (UQTR) (CER-20–266-07.14) has issued ethical approval for this research.

**Consent to participate** Participants read the necessary instructions pertaining to confidentiality and signed an informed consent form prior to their participation.

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