The Impact of Change in Clinical Leader Behavior on Safety Climate during the COVID-19 Pandemic

ABSTRACT

Aiming to advance the knowledge of clinical leadership during crisis, this longitudinal study investigated the impact of change in leadership behavior among clinical leads on safety climate perceived by clinical workers during the COVID-19 pandemic. The data was collected from clinical leads and their direct reports in public hospitals at different time points over a period of one year. Using random coefficient modelling to analyze the data over time, the change in leadership behavior was detected among clinical leads. The results suggest that clinical leads tended to adopt consideration in their leadership behavior to enhance safety climate among their clinical workers in normal times. However, after the pandemic emerged, clinical leads increasingly adopted initiating structure in their leadership behaviors to ensure safety practice over the time of crisis. The findings provided empirical evidence to support the idea that being an effective leader rests on balancing between consideration and initiating structure behaviors. Based on the study results, practical implications were suggested on how to move leadership practices in healthcare toward the new normal.

Keywords:

Clinical leadership; Leadership in crisis; Safety Climate; COVID-19

INTRODUCTION

The COVID-19 was declared as a global pandemic in March 2020 (Boettner et al., 2020). However, there are a number of countries that had been dealing with the pandemic before the declaration. On 13th January 2020, Thailand was the first country to report a COVID-19 case outside China. Therefore, Thailand was one of the first countries where clinical workers in the healthcare system needed to start managing COVID-19 patients. In the crisis situation like this, clinical workers should have benefited from effective leadership in healthcare that had been moving toward building relationships at work with shared decision-making to improve patient care as well as coaching for success to support professional growth of individual workers (e.g. Specchia et al., 2020). However, in the field of leadership, there has been a continuous debate about the relative effectiveness of the two major orientations in leader behaviors: consideration behavior associated with person-orientation and initiating structure behavior identified with task-orientation (Bass, 1990; Stogdill, 1974). Fleishman and colleagues (1955) have first suggested that for leadership to be effective in different situations (such as increasing worker satisfaction and performance), leaders should express consideration behavior in combination with initiating structure behavior. This notion has been supported by many scholars by reflecting that being an effective leader often rests on balancing these two types of behaviors (e.g. Fleishman & Simmons, 1970; Halpin, 1957; Northouse, 2001; Yukl, 1971).

In healthcare contexts, initiating structure in leadership behavior seems to be an even stronger predictor of desirable outcomes, i.e. quality of care and productivity (Chen & Shea, 2002; Andersen, 2009). Nevertheless, initiating structure has been pointed out as a forgotten leadership style in research regardless of its predictive validity for important leadership outcomes such as follower performance (Judge, Piccolo, & Ilies, 2004). Therefore, we have little knowledge about potential effects of this leadership style. Especially during the

pandemic time, recent research on clinical leadership during the pandemic has argued that such leadership behavior may not be effective in managing the pandemic in the long term and moving toward the new normal (e.g. Sanders & Balcom, 2021; Hølge-Hazelton, Kjerholt, Rosted, Hansen, Borre, & McCormack, 2021).

Aiming to advance the knowledge about what leader behavior is effective during the crisis, the present study draws on the literature of leadership behavior and safety climate in order to investigate how behavioural change among clinical leaders during the pandemic can affect safety climate perceived by their clinical workers. To do so, the empirical data was collected from clinical leads and their direct reports from 21 public hospitals in Thailand at 3 different time points over a period of one year. The data collection was started before the first case of COVID-19 was confirmed in the country, at 6 months after the first case was confirmed, and at 12 months after the first case was confirmed consecutively. Next, the paper will outline the hypothesized relationships shown in Figure 1.

Insert Figure 1 about here

LITERATURE REVIEW

Clinical leader behavior and safety climate

Consideration is a leadership style where leaders appreciate good work, treat workers equally to maintain their self-esteem, value the importance of job satisfaction, make efforts to put workers' suggestions into practice, and obtain their approval before going ahead (Bass, 1990, p.511). Thus, it is centred towards relationships with workers (Stogdill, 1974). As such leader behaviors tend to be considered constructive by workers (Rodriguez, 2013), the

literature on consideration and workplace safety is based on a process of social exchange between leaders and workers in which mutual trust and liking is developed (Gouldner, 1960). Specifically, workers tend to perceive obligation to reciprocate or fulfil leaders' expectations when they feel liking, admiration and respect from their leaders (Graen & Uhl-Bien, 1995). Previous research has found that high levels of leader-member exchange (LMX) predicted fewer safety-related incidents and lower accident involvement because workers, who had higher quality relationships with their leaders, felt more comfortable to raise safety concerns when communicating with their leaders (e.g. Hofmann & Morgeson, 1999; Michael, Guo, Wiedenbeck, & Ray, 2006). In other words, safety behaviors such as engaging in safety activities and compliance can become avenues for reciprocation (Clarke, 2013) as leaders with high consideration tend to demonstrate concern for workers' safety and well-being (Barling, Loughlin, & Kelloway, 2002). Consistent patterns of safety behaviors among workers can make them perceive that safety behaviors are valued in their work units (Zhou & Jiang, 2015). Shared perceptions of "the way things are around here" can create organizational climates (Reichers, & Schneider, 1990), associated with different aspects such as safety (Zohar, 1980) and innovation (Abbey & Dickson, 1983). Focusing on the safety aspect, safety climate is commonly defined as a snapshot of workforce perceptions about safety (e.g. Shannon & Norman, 2009) or individual/group values that determine the commitment to safety management (Sexton et al., 2006). Thus, the shared perception of safety behavior as valued behavior among workers in the work unit can contribute to safety climate. The present study assumes that consideration positively relates to safety climate.

Hypothesis 1. *Consideration is positively related to safety climate perceived by clinical workers.*

On the other hand, initiating structure is a leadership style that focuses on defining performance, goal, and role expectation and constraints (Fleishman, 1998). Therefore, it is

oriented towards directing and structuring subordinates' tasks (Bass & Stogdill, 1990) and meeting expectations (Halpin, 1957). The orientation makes initiating structure become transactional in the sense of expectations and consequences, which make workers aware of what behaviors are rewarded or punished (Kanfer, 1990). To avoid losses or punishment, workers are likely to comply with safety rules/policies but less likely to raise concerns about patient safety as they are afraid of failures. That is, safety is rather considered obligations or what ought to be done (Kark & Van Dijk, 2007) than a product of values (Sexton et al., 2006) by workers. Aiming to study safety climate of which definition is beyond what safety practice is done, initiating structure is less likely to influence deeper-level structures such as workers' shared values, communication and workplace norms (Flin et al., 2006) in comparison to the impact of consideration. Therefore, the present study assumes that initiating structure among clinical leaders is still a significant predictor of higher levels of safety climate. However, the positive impact of initiating structure may be weaker than that of consideration.

Hypothesis 2. *Initiating structure is positively related to safety climate perceived by clinical workers.*

The impact of change in clinical leader behavior on safety climate during the pandemic

During the pandemic, the effect of clinical leader behaviors on safety climate may, however, play out differently as clinical leaders tend to respond to the emergence of the crisis by developing behaviors differently from what they display in normal times. With the objectives of saving lives and minimizing adverse consequences (World Health Organization, 2020), clinical leaders are likely to assert control over their direct reports in an effort to reduce risk and increase efficiency (Kaul, Shah, & El-Serag, 2020). As a result, initiating structure may be preferable by leaders as the style involves proactively monitoring workers' behaviors and correcting errors before it leads to serious problems (Bass, 1985). This should enhance levels of attention that clinical workers pay to safety rules and regulations, placing a

positive spin on potential effects of initiating structure during the outbreak of the infectious disease. Such leader behaviors focus on error management rather than correcting mistakes that have already occurred (Griffin & Talati, 2011). This creates a learning environment (Reason, 1997) for workers to establish means of early detecting problems or patterns of safety behaviors shared by different workers in the work unit to reduce mistakes.

On the other hand, consideration may create negative impact on safety climate during the pandemic. Although mutual trust between leaders with high consideration and their workers could allow the workers to suggest innovative ways of reaching safety, risk-taking may outbalance intellectual stimulation (Clark, 2013). That is, in challenging workers' assumptions to encourage them to be creative, leaders may also act in a way that encourages their workers to take risks in problem-solving. Nevertheless, in the time of ambiguity and uncertainty, the costs occurred from potentially negative consequences of risk-taking may be high, e.g. ambiguous new roles related to cardiac arrest situations may put patients' lives in danger (Hynes, Kissoon, Hamielec, Greene, & Simone, 2006). Although risk-taking may be required in normal situations for successfully improving care quality, e.g. in intensive care units (Tucker, Nembhard, & Edmondson, 2007), effective management of risks from epidemic infectious diseases largely depends on precautionary behavior (Brug, Aro, & Richardus, 2009). For this reason, the present study assumes that behaviors among clinical leader change after the emergence of the pandemic. Specifically, consideration will decrease and initiating structure will increase, such that the relationship between clinical leader behavior and safety climate will also change over time.

Hypothesis 3. *Consideration decreases over time after the emergence of the pandemic, such that the strength of the relationship between consideration and safety climate decreases over time.*

Hypothesis 4. *Initiating structure increases over time after the emergence of the pandemic, such that the strength of the relationship between initiating structure and safety climate increases over time.*

Individual differences in leader behavioral change over time

Apart from critical situations that induce clinical leaders to change their behavior, identifying leader traits that influence the change during the pandemic is also important for theoretical and practical understanding of clinical leadership. The present study proposes that individual differences in affectivity among clinical leaders can help explain changes in leadership behaviors. Individuals with high positive affectivity (PA) tend to experience positive moods and get pleasure from social relations (George, 1996), resulting the ability to develop or maintain relationships at work (Staw, Sutton, & Pelled, 1994). Therefore, leaders with high PA are more willing to adopt consideration in their leader behavior, which leads to higher level of safety climate as mentioned above. Given the logic, leader PA is assumed to positively moderate the relationship between consideration in clinical leader behavior and safety climate perceived by clinical workers. However, consideration in leadership during the pandemic may not lead to safety climate due to risky behaviors involved in encouraging clinical workers to be creative as previously mentioned. Therefore, among leaders who have high PA, the positive impact of consideration on safety climate may become weaker during the pandemic. That is, clinical leaders who tend to experience positive moods are likely to adopt consideration in their leadership behavior when enhancing safety climate in the work unit. However, this type of leadership behavior may not be effective during the pandemic time.

Hypothesis 5. *The influence of leader positive affectivity on the positive relationship between consideration and safety climate is strongest at the beginning of the pandemic.*

Further, clinical leaders with high positive affectivity are more likely to adopt consideration than those with low positive affectivity.

Leaders with high negative affectivity (NA) are more sensitive to negative stimuli such as mistakes (Larsen & Ketelaar, 1991). However, these leaders are less proactive in seeking resources to help manage undesirable situations (Cropanzano, James, & Konovsky, 1993) and direct control over relationships with workers (Watson, 2000). Thus, clinical leaders with high NA may find it easier to just direct clinical workers' tasks to meet safety goals or expectations without seeking to build good relationships with workers and attempting to put workers' suggestions into practice. Based on this, high levels of NA are likely to increase the strength of the relationship between initiating structure and safety climate. Moreover, leaders with high NA tend to perceive the situation in a more pessimistic way that it is (Cropanzano et al., 1993). Therefore, these leaders tend to experience more negative emotions from uncertainty and shortcomings during the pandemic (Larsen & Ketelaar, 1991). To create stability, leaders with high NA may rather choose to provide explicit instructions for safety activities as it does not require managing those negative emotions they experience when trying to motivate their workers or promote quality relationships (Lewis, 2000; Rubin et al., 2005). Therefore, among leaders who have high levels of NA, the positive impact of initiating structure on safety climate may become stronger during the pandemic.

Hypothesis 6. *The influence of leader negative affectivity on the positive relationship between initiating structure and safety climate becomes stronger at later stages of the pandemic. Further, leaders with high negative affectivity are more likely to adopt initiating structure than those with low negative affectivity.*

METHODS

Sample

The sample of clinical leads and their direct reports were recruited from 21 provincial hospital in Thailand, which is one of the first countries in Asia where COVID-19 cases were confirmed. At the beginning of the study, the sample of 195 dyads of clinical leads and their direct reports registered to participant in the study over one year. However, the response rate was 55.4% and the final sample consisted of 108 dyads of clinical leads and their direct reports. The majority of clinical leads was public doctors (64.8%) and the rest was registered nurses. These clinical leads had more than 3 years of experience in a leadership role.

Procedure

Due to the study focus on change in leadership behavior during the pandemic, a longitudinal research design was adopted. The data was collected at 3 different time points: before the first case of COVID-19 was confirmed in the country, 6 months after the first case was confirmed, and 12 months after the first case was confirmed. Two versions of online questionnaire links (for clinical leads and for their direct reports) were distributed via emails. Reminders for filling out the Time 1 questionnaire were also sent via email to the participants every day for 3 days continuously after the first email was sent. This was to ensure a high number of completed responses before the first case of COVID-19 would be confirmed in the country. Reminders for filling out Time 2 and Time 3 questionnaires were sent to the participants every 2 days for one week. In order to control the time that participants filled out their questionnaire, the participants were allowed 10 days after receiving the first email to submit their answers.

Measures

Safety climate was measured using one dimension of the Safety Attitudes Questionnaire by Sexton and colleagues (2006) consisting of 7 items ($\alpha = .82$). Clinical

workers who were a direct report of participating clinical leaders were asked to read statements and choose the level that best represents their perceptions about quality of collaboration between persons and commitment to patient safety in their unit (1 = *Strongly disagree* and 5 = *Strongly agree*). Example items were 'In this unit, it is difficult to discuss errors' and 'I would feel safe being treated here as a patient'.

Leader behaviors was measured using the Leadership Behavior Description Questionnaire (LBDQ) by Halpin (1957), consisting of 15 items for consideration (α = .85) and 15 items for initiating structure (α = .80). The participating leaders were asked to read each item and think about how frequently they have engaged in the behavior on a 5-point scale (1 = *Never* and 5 = *Always*) towards the particular worker stated in the survey.

Leader affectivity was measured using the short form of Watson, Clark, and Tellegen's (1988) Positive and Negative Affect Schedule (PANAS). 5 items measured leaders' general tendency to experience positive feelings, i.e. inspired and enthusiasm (α = .83), and 5 items measured their tendency to experience negative feelings, i.e. nervous and distressed (α = .84). Clinical leaders were asked to evaluate to what extent they have felt each feeling during that day on a 5-point scale (1 = *Very slightly or not at all* and 5 = *Extremely*).

Control variables were gender, age and tenure in the department (years) of clinical workers. Females are more likely to perceive workplace safety (Gyekye & Salminen, 2011) and pay attention to safety procedures than males (Harris, Jenkins, & Glaser, 2006). Regarding age, young clinical workers (e.g. those younger than 31 years) tend to obtain lower scores of safety climate than older clinical workers (Holden, Watts, & Walker, 2009). Moreover, a number of years working in the department was found to have an effect on willingness to speak up about patient safety concerns (Alingh et al., 2019).

Analysis

Growth modelling using random coefficient models (RCM) guided by Bliese and Ployhart (2002) was adopted to test the hypotheses. The modelling strategy acknowledges non-independence of observation provided by the same individuals in longitudinal research and their heterogeneity. Therefore, it allows for the correct estimation and statistical significance tests of both within- and between-individual effects in a longitudinal design (Bliese & Ployhart, 2002). Using the RCM, three levels of the model were estimated. The Level 1 model examines the direct effects of clinical leader behaviors: consideration and initiating structure, on safety climate perceived by clinical workers (H1 and H2). The Level 2 model allows variation within and between clinical leaders in regression coefficients (or random effects on intercepts and slopes), such that clinical leaders differ in how they engage in each type of leader behaviors within and over time. Thus, the Level 2 model examines whether there is within-person change in leader behaviors over time during the pandemic (Consideration x Time and Initiating structure x Time interactions) (H3 and H4). Finally, the Level 3 model examines the influence of leader differences in affectivity to explain why such within-person change in leader behaviors occurs (H5 and H6). The NLME (Nonlinear and Linear Mixed Effects models) package (Pinheiro & Bates, 2000) was used to estimate the models in the R software (version 4.0.1) for Mac OS X. Moreover, following Bliese and Ployhart's (2002) guideline, time was coded 0, 1, and 2 to represent Time1-3 data collection, respectively. Doing so, the intercept can be interpreted as the first time period.

RESULTS

Table 1 presents means, standard deviations and correlations for study variables.

Insert Table 1 about here

Level 1 model: Safety climate and change over time

To estimate the strength of the non-independence, the intraclass correlation coefficient (ICC) of safety climate perceived by clinical workers was tested. 11.06% of safety climate variance was attributable to between-worker differences and 10.21% of safety climate variance was attributable to within-worker differences. Thus, the ICC for safety climate was 52%. This was sufficient for assuming non-independence of within-worker variance over time and beginning with a random intercept model (Bliese & Ployhart, 2002).

The ANOVA function was used to contrast alternative models in Table 2 based on -2log likelihood difference, depending on a chi-square distribution (Bliese & Ployhart, 2002). Comparing Model 1 (baseline) to Model 2 (random intercepts), the model fit significantly improved (Δ2LL=79.62, $p < .0001$). Moreover, Model 3 (random slopes) also significantly improved the model fit upon Model 2 (Δ2LL=12.16, $p < .001$). Thus, Model 3 allowing for difference in intercepts and slopes was the best-fitted model for safety climate. That is, the results suggested the variability of safety climate perceptions between different clinical workers 1) at the first timepoint (random intercepts) and 2) in how the perceptions changed across timepoints during the outbreak (random slopes or variable changing rates). Before conducting Level-2 analyzes, autocorrection and heteroscedasticity for Model 3 were determined. However, the model controlling for autocorrection and heteroscedasticity did not improve the model fit. Therefore, autocorrection and heteroscedasticity were not controlled in the next analyses.

Insert Table 2 about here

Level 2 model: Effects of leader behavior on safety climate and its change over time

Hypotheses 1 and 2 predicted that consideration and initiating structure would be significant predictors of safety climate. The level-2 model in Table 3 provided support for Hypothesis 1. That is, consideration in leader behaviors had a positive effect on levels of safety climate perceived by clinical workers (β=0.28; t=2.69; p<0.01). However, there was no significant impact of initiating structure on safety climate (β=-0.16; t=-1.68; p=0.09). As a result, Hypothesis 1 was supported while Hypothesis 2 was rejected.

Regarding change in leader behaviors over time, Hypotheses 3 and 4 proposed that clinical leaders would have a decrease in consideration but an increase in initiating structure after the emergence of the pandemic. The significant interaction between initiating structure and time (β=0.21; t=3.11; p<0.01) in the model supported Hypothesis 4 such that initiating structure increased over time. The increased initiating structure in leader behaviors also positively impacted levels of safety climate that clinical workers perceived over time. Nevertheless, the results did not show a significant decrease in consideration in clinical leads' behaviors after the emergence of the pandemic (β=-0.08; t=-1.05; p=0.29). As a result, Hypothesis 3 was rejected while Hypothesis 4 was supported.

Insert Table 3 about here

Level 3 model: Individual differences predicting change in leader behavior over time

Prior to testing Hypotheses 5 and 6 to explain change in leader behavior during the pandemic, exploratory analyzes were run to determine whether demographic effects were present. Leader behaviors were assessed across genders, ages and professional experience. No significant effects were found.

The Level-3 model in Table 3 tested Hypotheses 5 and 6, which predicted that leader affectivity would explain change in leader behaviors during the pandemic. Hypothesis 5 proposed that the difference in leader PA levels was the most influential in strengthening the relationship between consideration and safety climate at the beginning of the pandemic. As can be seen from the significant interaction between consideration and PA (β=0.29; t=2.67; $p<0.01$), clinical leaders with high PA adopted more consideration than those with low PA, resulting in higher levels of safety climate. However, the three-way interaction between consideration x PA x time (β=-0.17; t=-2.21; $p<0.05$), shown in Figure 2, indicated that the influence of leader PA on the relationship between consideration and safety climate was strongest at the beginning of the pandemic and then weaker over time. Thus, Hypothesis 5 was supported.

On the other hand, Hypothesis 6 proposed that the influence of leader differences in NA on the relationship between initiating structure and safety climate would be stronger over time. However, the Level-3 model showed that the interaction between initiating structure and NA was not significant (β=-0.05; t=-0.52; p=0.61). This suggested that leaders with high NA did not adopt initiating structure more than those with low NA. Moreover, the influence of leader NA did not get stronger over time as can be seen from the insignificant interaction between initiating structure x negative NA x time (β=-0.05; t=-0.52; p=0.61). Therefore, Hypothesis 6 was rejected.

Insert Figure 2 about here

DISCUSSION

Aiming to advance the knowledge about clinical leadership during crisis, this study investigates change in clinical leader behaviors during the COVID-19 pandemic and how the behavioral change impacts safety climate perceived by clinical workers.

Firstly, the study demonstrates how clinical leads changed their leadership behavior in promoting safety climate during crisis. In line with prior evidence (e.g. Hofmann & Morgeson, 1999; Michael et al., 2006), the results showed that clinical leads adopted consideration in their leadership behavior to enhance safety climate in normal times or before the emergence of the pandemic in this case. However, after the pandemic emerged in the country, clinical leads were proven to increasingly adopt initiating structure in their leadership behaviors, such that the positive relationship between initiating structure and safety climate became significantly stronger. That is, during the pandemic, the role of initiating structure was more prominent while the role of consideration became less significant in promoting the shared perception of safety behavior among clinical workers. The results advance our knowledge of clinical leadership during crisis by addressing possible challenges that clinical leaders may encounter when seeking for creativity in uncertain times. Particularly during crisis such as the COVID-19 pandemic, clinical leads may be required to learn different lessons along the way and develop creative problem-solving strategies to keep the operation going and make sure that patients are safe and well-cared for (Kaul et al., 2020; World Health Organization, 2020). However, with limited information and unpredictable change, the findings suggest that it may be difficult for clinical leaders to make efforts to put workers' suggestions into practice and obtain their approval before going ahead as rapid decisions are often required. For this reason, clinical leads tend to assert control and take away managerial responsibilities from their direct reports during the time of crisis. This is where initiating structure of leadership behavior has instead come into play an important role

in minimizing risks by proactively monitoring workers' behavior and correcting errors early before it becomes serious. However, the change has made some clinical workers who used to have leadership responsibilities in normal times become an executor without being involved in decision making processes.

Secondly, the study provides empirical evidence to identify the extent to which leader behaviors among clinical leads can be predicted by their individual differences. As expected, leader positive affectivity (PA) positively moderated the relationship between consideration and safety climate. That is, clinical leads with higher PA tended to adopt consideration behavior in normal circumstances due to the pleasure from developing social relationships with workers (George, 1996; Staw, Sutton, & Pelled, 1994). However, after the emergence of the pandemic, the moderating effect of leader positive affectivity on the relationship between consideration and safety climate became weaker over the time of crisis. The findings demonstrate some interesting insights into how different levels of the same trait can be expressed in leader behavior depending on situations. This supports trait activation theory (Tett & Burnett, 2003) happening among clinical leads in times of crisis. Despite the fact that PA levels among clinical leaders seemed to increase over the study period (see Level-3 model in Table 3), the trait (PA) was expressed in their leader behavior to the extent that it could respond to trait-relevant situational cues during the crisis. Specifically during the outbreak, consideration behavior may not be desirable as job demands of clinical leads were likely to change in different levels: task, social, and organizational levels (Tett & Burnett, 2003). At the task level, there was a sudden change in their day-to-day responsibilities after the pandemic emergence that required them to learn along the way and make rapid decisions without sufficient information (see also Kaul et al., 2020). At the social level, there was a significant need for clinical leaders to maintain communication with their clinical workers during the pandemic. However, this had to be done with physical distancing and the use of

virtual communication platforms (see also Sanders & Balcom, 2021). Therefore, the communication from clinical leaders should be more directive and give clear instructions. At the organizational level, organizations often review and revise implementing policies during the pandemic to be able to flex up staffing to address volume and acuity surges (see also Joslin & Joslin, 2021). These changes in job demands from different levels required a more autocratic approach to leadership such as initiating structure behavior in the crisis situation. This may have been evaluated by clinical leaders and reflected in the change of their leader behavior by not activating their PA trait that could trigger consideration behavior.

Practical implications

Moving forward with a long-term strategy for leadership during the pandemic, it is increasingly important for clinical managers to reconsider the impact of the change in their leadership practice. This study suggests that clinical leads have adjusted their leader behavior in response to urgent needs since the emergence of the pandemic. However, the behavioral change among clinical leaders seems to be just a response to a short-term crisis. For instance, clinical leaders have started to adopt the behavior that centralizes decision-making processes to make rapid decisions and minimize risks when managing the crisis situation. Nevertheless, the pandemic is still ongoing and continuously evolving. Such behavioral change among clinical leaders may not be considered as a fundamental change for leadership practice during crisis.

The change in leader behavior found in this study has put healthcare professionals who are in hybrid roles at risk of not being able to fulfil their managerial responsibilities. Getting healthcare professionals involved in management has long been considered as a way to improve the quality of care from within the medical profession by aligning clinical with managerial demands (Llewellyn, 2001). For this reason, hybrid roles with both clinical and managerial responsibilities have been created for those healthcare professionals who engage

in managing professional work and staff (Fitzgerald & Ferlie, 2000). However, during the pandemic, the key aspect of hybrid roles in maintaining credibility in both clinical and managerial groups (Witman, Smid, Meurs, & Willems, 2011) has been taken away by the change in leadership practice in response to the crisis. For example, some clinical workers in hybrid roles were transferred to a COVID-19 unit with uncleared managerial responsibilities that made them feel powerless as they were only able to listen to but not act on something (see also Hølge-Hazelton et al., 2021). Without clear direction, there was no surprise that leaders of these clinicians have practiced a more directive leadership style focusing on directing and structuring subordinates' tasks (Bass & Stogdill, 1990) and meeting expectations to achieve transactional outcomes such as gaining rewards and avoiding punishment (Halpin, 1957).

Moving forward with this leadership style, clinical workers are likely to comply with safety rules and policies but less likely to raise concerns about patient safety as they are afraid of failures (Kanfer, 1990). Such practice tends to limit opportunities for clinical workers to engage in extra-role behavior that can create a wide range of positive outcomes to fulfil long-term strategic goals in healthcare. Especially during the time of crisis, clinical workers tend to not engage in voice behavior that put their constructive views forward to challenge the existing safety practice (Van Dyne & LePine, 1998) as it is less likely to be accepted by supervisors and more likely to create tension in leader-follower relationships (Avery, Mckay, Wilson, Volpone, & Killahm, 2011; Detert & Burris, 2007; Thomas & Feldman, 2011). This can create negative consequences on trust in the organization, in-role performance, job satisfaction, and creativity among clinicians (Avery et al., 2011; Detert & Burris, 2007; Specchia et al., 2021).

Having entered the new normal, clinical leaders should consider the trade-off between positive and negative consequences of the short-term change in their leadership practice in

response to the crisis and find a way to adjust their leader behavior for long-term strategic goals. In doing so, clinical leaders may be made aware of the importance of balancing between consideration and initiating structure in their leader behaviors (Fleishman & Simmons, 1970; Halpin, 1957; Northouse, 2001; Yukl, 1971). This is not only to fulfil short-term needs but also to steer their leadership practice toward building relationships to support clinicians through empathy, shared decision-making, and collaboration (Sanders & Balcom, 2021), in keeping with the principles of servant leadership that was proven to be strongly related to improved long-term outcomes in healthcare (e.g. Hølge-Hazelton et al., 2021; Specchia et al., 2021).

Limitations and suggestions for future research

One limitation of this study is at the data that was collected at only 3 different time points. This has limited the opportunity to analyze fluctuations of safety climate during the pandemic using the data collected from at least 4 different time points. Therefore, quadratic growth modelling using RCM could be applied in future research in order to analyze variability in fluctuations of safety climate or other safety-related outcomes during crisis.

Secondly, the study results also showed the significant relationship between initiating structure and worker gender at Time 2 of data collection (see Table 1). This has suggested that male clinical leaders were more likely to adopt initiating structure in their leader behavior than female clinical leaders. Therefore, future studies may further investigate the role of gender in consideration and initiating structure leadership behaviors during crisis.

Lastly, the results of leadership behavioral change suggested the possibility that job demands for clinical leads during the pandemic may have created trait-relevant cues prohibiting them to express a certain trait in their leader behavior. From a motivational perspective, not being able to express one's traits can lead to anxiety (e.g. Cote & Moskowitz, 1998). Moreover, recent research on leadership during crisis has showed

supporting findings for high levels of anxiety among clinical workers due to uncertainty during the pandemic (e.g. Kaul et al., 2020). For this reason, future research may explore the mechanism in which anxiety is heighten among healthcare leaders, especially whether or not it is related to lack of opportunities for expressing certain traits in their roles.

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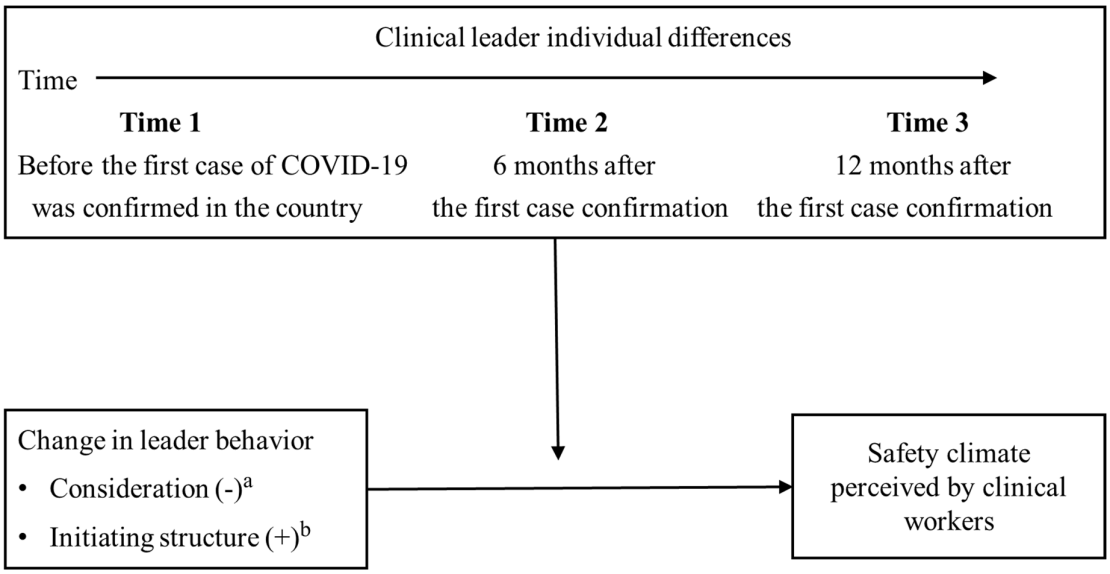
FIGURE 1

The Research Model



[a] A negative symbol indicates leader behavior that is predicted to decrease over time.

[b] A positive symbol indicates leader behavior that is predicted to increase over time.

FIGURE 2

Three-Way Interaction between Consideration x Positive Affectivity x Time

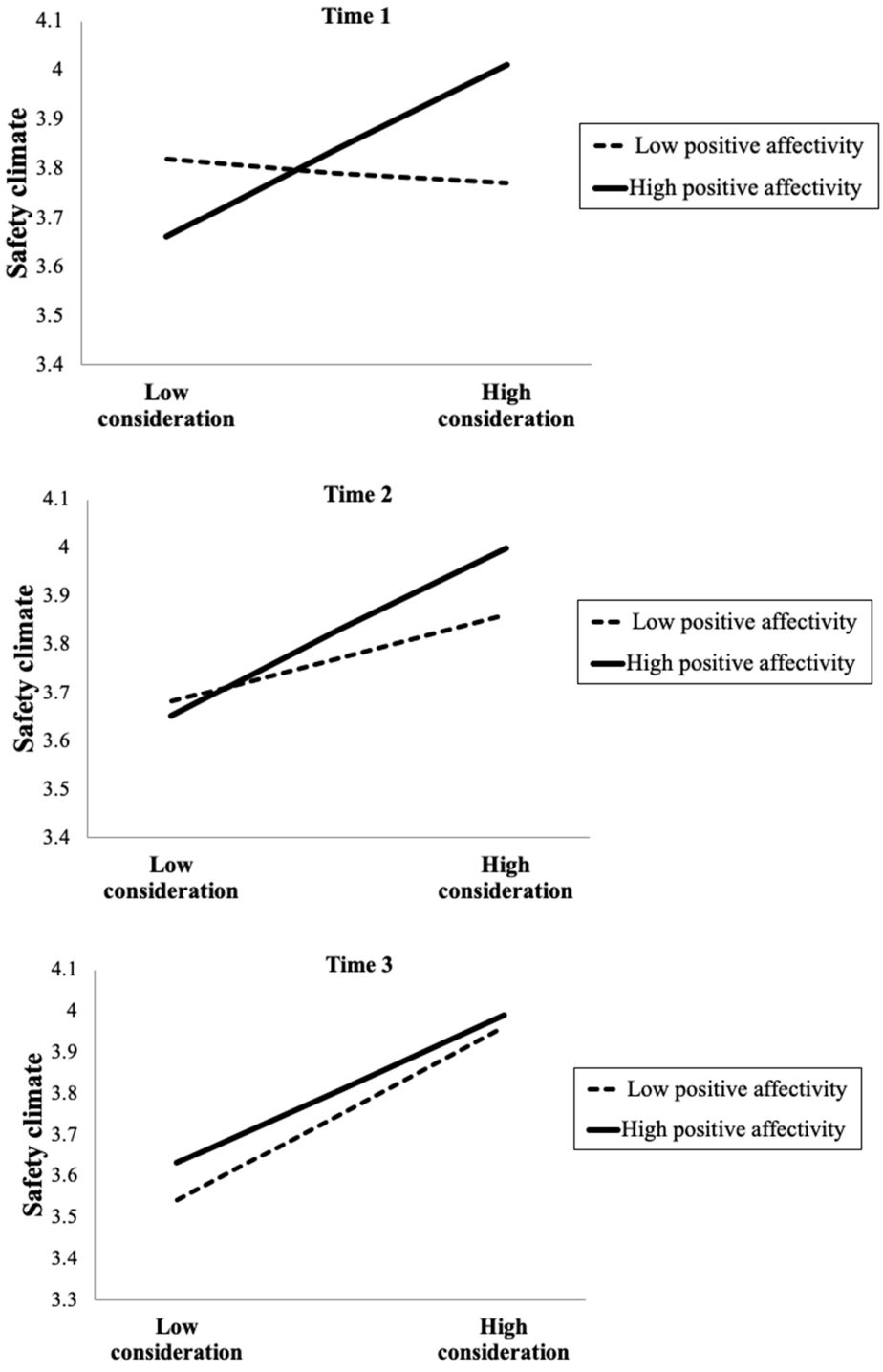


TABLE 1

Means, SD and Correlations for Study Variables

Time 1 variables	**Mean**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**
1. Consideration	3.06	.55						
2. Initiating structure	2.94	.60	.81**					
3. Safety climate	3.84	.44	.13	.05				
4. Leader positive affectivity	3.68	.57	.14	.14	.10			
5. Leader negative affectivity	2.36	.64	-.04	-.05	-.05	-.19		
5. Worker gender┼	1.85	.36	.06	.03	.01	.03	.15	
6. Worker age┼	35.2	7.99	.05	.02	.08	.13	-.01	.05
7. Worker tenure┼	2.62	1.06	.03	.01	-.01	.11	.05	-.13
Time 2 variables	Mean	SD	1	2	3	4	5	6
1. Consideration	3.02	.51						
2. Initiating structure	2.89	.56	.73**					
3. Safety climate	3.80	.46	.19	.18				
4. Leader positive affectivity	3.53	.66	.05	.04	.09			
5. Leader negative affectivity	1.88	.71	-.09	-.17	-.10	-.15		
5. Worker gender┼	1.85	.36	-.14	-.25**	-.10	-.05	.22*	
6. Worker age┼	35.2	7.99	.10	.12	.00	.22*	-.08	.05
7. Worker tenure┼	2.62	1.06	.12	.22*	.00	.14	-.12	-.13
Time 3 variables	Mean	SD	1	2	3	4	5	6
1. Consideration	3.04	.52						
2. Initiating structure	2.86	.57	.78**					
3. Safety climate	3.78	.49	.35**	.39**				
4. Leader positive affectivity	3.65	.71	-.00	.14	.12			
5. Leader negative affectivity	1.83	.55	-.05	-.06	-.08	.14		
5. Worker gender┼	1.85	.36	-.05	-.15	-.05	-.17	.12	
6. Worker age┼	35.2	7.99	.01	.08	-.08	.21*	.01	.05
7. Worker tenure┼	2.62	1.06	.05	.17	-.06	.16	-.05	-.13

N = 324 observations (108 leader-follower dyads x 3 consecutive time points), *p<.05 (2-tailed); **p<.01 (2-tailed), ┼ Control variables

TABLE 2

Results of Fixed Function for Time and Fitting Random Coefficient Models to Safety Climate

Safety climate	**Model 1: Linear function for time**			**Model 2: Random intercepts**			**Model 3: Random intercepts and slopes**		
Fixed effect	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Intercept	3.83***	0.04	93.70	3.83***	0.04	89.10	3.83***	0.04	90.33
Time	-0.02	0.03	-0.79	-0.03	0.02	-1.14	-0.03	0.03	-0.99
Goodness of fit									
log-likelihood	-209.05			-169.23			-163.15		
AIC	424.09			346.47			338.31		
BIC	435.36			361.49			360.84		

***p<.001

TABLE 3

Level 1, 2 and 3 Models

Level 2 model – Leader behavior effects on safety climate and its change over time	**β**	**SE**	**t**
Intercept	3.42***	0.20	16.86
Consideration	**0.28****	**0.11**	**2.69**
Initiating structure	**-0.16**	**0.09**	**-1.68**
Time	-0.40**	0.14	-2.88
Consideration x Time	**-0.08**	**0.07**	**-1.05**
Initiating structure x Time	**0.21****	**0.07**	**3.11**
Level 3 model – Leader affectivity predicting leader behavior change over time	β	SE	t
Intercept	6.49***	1.22	5.33
Consideration	-0.92*	0.39	-2.33
Positive affectivity	-0.85*	0.34	-2.52
Time	-2.24**	0.86	-2.61
Consideration x Time	0.72*	0.28	2.58
Consideration x Positive affectivity	**0.29****	**0.11**	**2.67**
Positive affectivity x Time	0.52*	0.23	2.22
Consideration x Positive affectivity x Time	**-0.17***	**0.07**	**-2.21**
Intercept	3.40***	0.65	5.21
Initiating structure	0.15	0.22	0.68
Negative affectivity	0.13	0.27	0.49
Time	-0.49	0.48	-1.01
Initiating structure x Time	0.16	0.16	1.01
Initiating structure x Negative affectivity	**-0.05**	**0.09**	**-0.52**
Negative affectivity x Time	0.03	0.22	0.14
Initiating structure x Negative affectivity x Time	**-0.01**	**0.07**	**-0.16**

Bolded values represent hypothesized relationships.

*p<.05; **p<.01; ***p<.001