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How dialogic internal communication fosters employees' safety behavior during the COVID-19 pandemic

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ABSTRACT

As employees return to the workplace amidst the COVID-19 pandemic, ensuring safety and health at work remains a top priority for organizations. Grounded in dialogic theory and protection motivation theory, this study examines how dialogic communication, as a type of strategic internal communication, can encourage employees to engage in safety behaviors in the workplace during the COVID-19 pandemic via heightened efficacy and perceived threat. An online survey of full-time employees of different industries returning to the workplace during the COVID-19 pandemic is conducted. Results suggest that the communal relationship of employees with their organization, influenced by dialogic internal communication, fosters their efficacy and perceived threat of COVID-19 in the workplace, which in turn increases their safety behaviors. Theoretical and practical implications for public relations and internal communication studies are discussed.

1. Introduction

Employees' safety behaviors are crucial to not only their organization's safety measures and sustainable development (Zhang, Xie, & Morrison, 2021) but also their health and productivity in the workplace (Mullen, 2004). As ensuring employees' health and safety in the workplace has become an essential issue as companies reopen during the COVID-19 pandemic, how to encourage employees' safety behaviors to slow the spread of the virus while maintaining a productive working environment remains a key business concern (Igoe, 2021). Extant studies focused largely on employees' safety behaviors in traditionally high-risk industries, such as coal mining, construction, and chemical industries, as well as the service sector, such as the medical, airline, and hospitality sectors (Baser, Ture, Abubakirova, Sanlier, & Cil, 2017; Griffin & Neal, 2000; Newaz, Davis, Jefferies, & Pillay, 2019; Smith, DeJoy, Dyal, Pu, & Dickinson, 2019). With heightened awareness of safety and health in the workplace since the outbreak of COVID-19, safety behaviors have become important in nearly every industry, as they are directly related to health problems as well as customer safety. Understanding how and why employees adjust to new work environments and follow their organization's preventive measures and guidelines by engaging in safety behaviors is thus vital for ensuring occupational health and improving organizations' capabilities to cope with a public health crisis. Although several recent studies examined organizations' safety management for improving employees' safety behaviors during the COVID-19 pandemic (Du & Liu, 2020; Zhang et al., 2021), they are limited to specific industries, such as the service industry (e.g., hotels). Most important, the question of *how to* communicate organizations' safety guidelines in the new working environment remains unanswered.

In managing employee behaviors in the workplace during a crisis, strategic internal communication is a key tool and management practice adopted by companies. Public relations scholars suggested that internal communication can help organizations build and maintain long-term relationships with their employees and encourage employee behaviors (Kim & Rhee, 2011; Men & Stacks, 2014). Strategic internal communication can also help an organization mitigate crisis damages, reshape its corporate image, and obtain internal support (Johansen, Aggerholm, & Frandsen, 2012), including for the COVID-19 health crisis (e.g., Ruck & Men, 2021), and trigger employees' health-related behaviors in the workplace (Lee & Li, 2020). Specifically, researchers highlighted the importance of dialogue facilitation between an organization and its employees as an effective internal communication strategy for building quality relationships (Jo & Shim, 2005; Ruck, Welch, & Menara, 2017). Rooted in dialogic theory (Kent & Taylor, 2002), public relations scholars espoused the benefits of dialogic communication as a strategic communication tool for building relationships with publics and dealing with a crisis (Wang & Yang, 2020; Yang, Kang, & Johnson, 2010). However, few empirical studies examined the effectiveness of dialogic theory in internal communication settings, especially in the

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post−COVID-19 era.

Thus, the present study aims to examine how organizations' strategic internal communication efforts lead to employees' safety behaviors in the workplace during the COVID-19 pandemic. Integrating public relations theories (i.e., dialogic theory and relationship management theory) with protection motivation theory, this study explains how dialogic internal communication can help employees behave safely in the workplace when they return to work by enhancing individual efficacy and perceived threat of the virus. This study provides much-needed theoretical insights into internal communication in relation to employees' health based on dialogic principles and contributes to the intersection between public relations and the health communication discipline. Furthermore, this study offers practical guidance on how organizations can achieve employee compliance to COVID-19 safety measures through strategic internal communication.

2. Literature review

2.1. Dialogic internal communication

As one of the most ethical forms of communication across contexts, such as interpersonal relations, conflict resolution, and management (Pearce & Pearce, 2004), dialogic theory of public relations (Kent & Taylor, 2002), as a critical theory of effective and ethical public relations management, has become a major line of research in the discipline (e.g., Bortree & Seltzer, 2009; Bruning, Dials, & Shirka, 2008). Dialogic communication in an interpersonal communication setting indicates that parties in a dialogic exchange their position but allow others to hold their own position by hearing the others' position without opposing or assimilating it (Pearce & Pearce, 2004). In an organizational setting, dialogue is a product of ongoing communication and relationships and a result of an organization's willingness and commitment to engage in dialogic communication with its publics (Kent & Taylor, 2002). Emphasizing "meaning-making, understanding, co-creation of reality, and sympathetic/empathetic interactions" (Taylor & Kent, 2014, p. 389), effective dialogue can be achieved when parties in a communication exchange act authentically, collaborate and share insights and knowledge, focus on the future while allowing change to occur, and are present within the dialogical process (Theunissen & Noordin, 2012).

In an effort to expand dialogic theory, Yang, Kang, and Cha (2015) developed an organization–public dialogic communication (OPDC) model, defining it as "the orientation of mutuality and the climate of openness that an organization and its publics hold in communication to bring about mutually beneficial relationships" (p. 176). Integrating insights from multiple disciplines, such as public relations, interpersonal communication, critical theory, speech communication, and organizational communication, the model suggested two major components of dialogic communication, namely, mutuality and openness. *Mutuality*, which requires the communicators to acknowledge mutual dependence (Broom & Sha, 2012), refers to the mutual confirmation of unique values in different perspectives, leading to concern and care for the other party (Baxter & Montgomery, 1996; Kent & Taylor, 2002). It highlights a mutual orientation of communicators (between an organization and its publics) to share common ground and communicative goals, to establish equal values, to be sensitive in recognizing the other party's needs and feelings, and to provide unconditional support. Therefore, the concept includes the following six attributes: grounding, collaboration, confirmed equality, responsiveness, respect, and empathy. Meanwhile, *openness* is defined as an open and honest communication climate, including ethical and transparent communication (Botan, 1997; Rawlins, 2009), that creates an optimal process for dialogue (Habermas, 1987). Openness also suggests equal access to communication as a crucial condition for dialogic interactions (Kang, Kim, & Cha, 2018). The OPDC model suggests three main elements of openness: accessibility (i.e., allowing publics to open access to information), genuineness (i.e., the establishment of a communication climate that generates authentic interest in communication), and transparency (i.e., information disclosure to publics). Through the multi-dimensional scale of mutuality and openness, as two central components constituting the dialogic performance of organizations, studies have demonstrated their validity and evaluated its effects on diverse public relations outcomes (Kang et al., 2018; Yang, 2018).

Dialogic theory has been widely used in public relations settings, such as government public relations (Kang et al., 2018), online/social media communication (Men, Tsai, Chen, & Ji, 2018; Rybalko & Seltzer, 2010), crisis/risk communication (Liu, Xu, & Tsai, 2020), and health communication (Hether, 2014). Despite its potential usefulness and theoretical importance, dialogic theory is rarely used in the internal communication setting (Lee & Yue, 2020), which is one of the fastest-growing specializations in the public relations discipline (Verčič, Verčič, & Sriramesh, 2012). Researchers in public relations have long emphasized that engaging in dialogues between management and employees via two-way communication and listening is a normative way for organizations to practice strategic internal communication (Kim & Rhee, 2011; Men & Stacks, 2014). Extant literature also implied that certain communication tactics such as dissemination of sufficient and balanced information (i.e., transparent communication), which resembles the main component of dialogic communication, openness, is an effective internal communication practice (Lee & Li, 2020). Symmetrical internal communication that aims to achieve mutual understanding between an organization and its employees, echoing the notion of mutuality in dialogic communication, was also suggested as an ethical communication strategy (Kim & Rhee, 2011). Internal communication based on dialogic principles, therefore, could be an effective and strategic communication practice that is worth to be conceptualized and operationalized. To advance dialogic theory in the context of internal communication, the present study follows Yang et al.'s (2015) conceptualization to define *dialogic internal communication* as *an orientation of mutuality between an organization and its employees and an internal climate of openness for building mutually beneficial employee-organization relationships.*

2.2. Communal relationship

Along with dialogic theory, the relationship management approach became a focal paradigm in public relations research in the past decades (Ferguson, 2018). While most studies focused on relationship quality (e.g., trust, control mutuality, commitment, and satisfaction; Hon & Grunig, 1999), communal-exchange relationship was considered a core relational typology in public relations scholarship. Communal relationship is defined as a relationship in which two parties provide benefits to each other owing to their concern for the other's welfare, while exchange relationship indicates that one party gives benefits to the other only because the other has provided benefits in the past or is expected to do so in the future (Grunig & Hung, 2015; Hon & Grunig, 1999). In a recent study, Lee and Kim (2021) re-conceptualized communal and exchange relationships in public relations context and updated the measures. Communal relationship, which represents the value of public relations, refers to "one party gives benefits to another party without expecting something in return because of concerns for the welfare of the other party" (p. 152). They noted that in contrast to exchange relationships (e.g., egoistic, provident relationships) in which each party in the relationship prioritizes its self- or mutual interest and provides benefits expecting something in return, a communal relationship is established based on altruistic motives and each party providing "unconditional" favors.

Although both relationship types are considered "win-win" relationships in the context of organization–public relationships (Hung, 2005), a communal relationship, which is stable and long term, was suggested as the final relational outcome that organizations should seek with their publics (Hon & Grunig, 1999; Kim, 2007; Lee & Kim, 2021). As communal relationship can help organizations become socially

responsible, build a long-term favorable reputation, and obtain public support (Grunig & Huang, 2000; Hung, 2005), scholars argued that it can add value to public relations functions (Lee & Kim, 2021). In the context of internal communication, communal relationship can enhance organizational effectiveness by encouraging employees' positive behaviors (Lee, 2017). Thus, this study focuses on communal relationship as an important relationship type that is influenced significantly by an organization's strategic communication efforts and may facilitate employee behaviors such as safety behaviors.

Dialogic internal communication is expected to positively influence employee–organization communal relationship. Previous public relations studies suggested that strategic internal communication is crucial for enhancing the quality of a relationship between an organization and its publics. For example, symmetrical communication, which is characterized by two-way communication, dialogue, mutual understanding, and transparent communication, grounded in information substantiality, participation, and accountability, has a positive influence on the quality of the employee–organization relationship (Kang & Sung, 2017; Kim & Rhee, 2011; Lee & Li, 2020; Men & Stacks, 2014). Furthermore, the authentic communication efforts of an organization highlighting truthfulness, transparency, and consistency were found to specifically enhance employee–organization communal relationship (Lee & Kim, 2021). Similarly, as dialogues with strategic publics are especially important for effective relationship management (Bortree & Seltzer, 2009; Seltzer & Zhang, 2011; Yang et al., 2015), expecting dialogic internal communication to be positively related to employees' perception of being cared for by their organization and the extent of employees' concern for the welfare of their company, namely, communal relationship, is plausible. Thus, the following hypothesis is proposed:

H1. Dialogic internal communication is positively associated with employee–organization communal relationship.

2.3. Employees' safety behavior

Safety behaviors involve abiding by operating rules at work to ensure personal safety and the integrity of equipment and other materials (Ye, 2005). Employees' safety behaviors also refer to a series of conscious behaviors in the work process to avoid accidents that may affect personal safety (Shao, Xing, & Wang, 2008). Thus, safety behaviors reflect employees' response to safety issues in the workplace to reduce conflicts, injuries, and accidents (Zhang et al., 2021). Previous scholars identified several types of safety behaviors, such as safety compliance, safety participation, and safety adaptation. *Safety compliance* indicates that employees perform core activities to maintain workplace safety and follow the safety procedures and steps stipulated by the organization to work safely (Griffin & Neal, 2000; Neal, Griffin, & Hart, 2000). *Safety participation* involves employees' proactive and voluntary behaviors contributing to the development of an environment supporting safety. Safety participation occurs through the completion of safety-related work, which is beyond normal organization regulations (Neal et al., 2000). Finally, through *safety adaptation*, as an innovative action, employees can propose new safety ideas and techniques and creatively solve safety issues (Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020). Employees' safety behaviors are believed to not only reduce corporate accidents and injuries but also increase individual safety knowledge and enhance the safety climate affecting corporate safety performance (Christian, Bradley, Wallace, & Burke, 2009).

Studies on employee safety behaviors focused on specific industries, such as the construction, chemical, and service industries, which are considered high risk (Baser et al., 2017; Griffin & Neal, 2000; Newaz et al., 2019; Smith et al., 2019). However, since the outbreak of COVID-19, employees of nearly every industry have been required to be adaptable, versatile, and creative in solving threats and issues related to workplace safety and health in dynamic working environments. Specifically, to ensure the smooth implementation of COVID-19 safety measures, organizations are required to encourage their employees to not only comply with such measures but also participate in prevention by expressing and sharing their ideas and experiences (Hu, Yan, Casey, & Wu, 2021). Therefore, drawing on previous studies, this study conceptualizes safety behaviors as a multidimensional construct including safety compliance, participation, and adaptation.

Previous studies noted that organizational factors such as the safety climate and leadership play a key role in fostering employees' safety behaviors (Bian et al., 2019; Zhang et al., 2020). This study expects employee–organization communal relationship, as a major antecedent of employees' behaviors at work (Lee, 2017), to facilitate employees' safety behaviors in the workplace during the COVID-19 pandemic. Relationship management theory and social exchange theory (Blau, 1964) suggests that a favorable relationship can help employees perceive their organization fulfilling its corresponding obligations and responsibilities, thereby motivating them to reciprocate by engaging in positive behaviors, such as organizational citizenship behaviors or advocative behaviors (Kim & Rhee, 2011; Lee & Kim, 2021; Men & Stacks, 2014). Similarly, communal relationship, which is based on altruistic motives, can motivate employees to generate benefits for their organization without expecting anything in return (Lee & Kim, 2021). Individuals with a communal relationship norm typically transform their motivations from what is best for themselves to what is best for their partners or relationships (Rusbult & Van Lange, 2008). Individuals in a strong communal relationship want to ensure the other party's pleasure and promote intimacy in the relationship rather than their self-interested concerns (Clark & Mills, 1993). Therefore, when employees perceive a favorable relationship with their organization, such as a communal one, they become motivated to reciprocate by engaging in proactive behaviors that benefit the organization. That is, safety behaviors, as a form of benefit-giving and extra-role behavior, may derive from individuals' altruistic motives to help their organization succeed in its operating safety protocols, as they care about their relationship with their organization and consider what is beneficial for their organization's overall safety during the COVID-19 pandemic. In line with this reasoning, the following hypothesis is proposed:

H2. Employee–organization communal relationship is positively associated with employees' safety behaviors.

2.4. Mediating role of efficacy and perceived threat

In building a link between communal relationship and employees' safety behaviors, this study integrates protection motivation theory (PMT) to explore the mediating role of individual efficacy and perceived threat. According to PMT, individuals assess an event through two cognitive appraisal processes, namely, threat and coping appraisal, which can explain their adaptive behaviors (Rogers, 1975). First, threat appraisal involves evaluating the risk degree by assessing the level of danger and harmfulness of a threat (i.e., perceived severity) and the susceptibility of an individual to be exposed to such a threat (i.e., perceived vulnerability). Second, through coping appraisal, individuals evaluate their ability to deal with and avoid potential danger using two factors, that is, response efficacy (i.e., the effectiveness of a coping response in avoiding a threat) and self-efficacy (i.e., ability to engage in the coping response). PMT suggests that an individual's protection motivation increases as his/her perceived severity and vulnerability as well as response and self-efficacy increase, thereby leading to one's protective behaviors.

PMT is widely adopted to explain various types of protective behaviors in health-related contexts, such as cancer-protective behaviors or smoking cessation (Floyd, Prentice-Dunn, & Rogers, 2000). PMT also serves as a useful framework for understanding individuals' behaviors during a pandemic. For example, during the swine flu pandemic, individuals' preventive behaviors (e.g., hand washing and maintaining distance from people suspected to be infected) were highly influenced by their efficacy (Teasdale, Yardley, Schlotz, & Michie, 2012). In the context of the COVID-19 pandemic, Farooq, Laato, and Islam (2020)

found that perceived severity and self-efficacy can enhance individuals' self-isolation intention. As following organization guidelines on safety measures in the workplace and expressing ideas on safety aim to improve the overall health and wellbeing of individuals and organizations, this study views employees' safety behaviors during the COVID-19 pandemic as individual health-related behaviors. Thus, PMT may be an effective theoretical framework for understanding the motives of employee safety behavior. In line with previous studies that adopted PMT to understand individuals' behaviors during a pandemic, this study expects coping variables and threat variables to play a significant role in predicting employees' safety behaviors in the workplace.

The safety behavior literature suggested that perceived risks are highly associated with employees' adoption of safe working practices (Mullen, 2004). Specifically, individuals' perceived susceptibility to risks and seriousness of a threat can lead to precautionary behaviors (Xia, Xie, Hu, Wang, & Meng, 2020). In the COVID-19 context, Hu et al. (2021) pointed out that employees' increased health and risk awareness is the first step of the compliance process. That is, when employees are aware of the health threat of COVID-19, they will likely adopt safety behaviors. Furthermore, employees' safety-related efficacy, which refers to their confidence in their ability to work safely in the context of a specific environment (Brown, Willis, & Prussia, 2000), was suggested to be a predictor of their safety behaviors. Employees with heightened efficacy are likely to support and adhere to organizational safety (Bian et al., 2019). Based on this line of reasoning and the main assumption of PMT, the following hypotheses are proposed:

H3. Employees' (a) efficacy and (b) perceived threat are positively associated with their safety behaviors.

In addition, communal relationship may increase employees' safety protection motivation in the workplace by enhancing their efficacy and perceived threat. In the health communication literature, organizational trust, which is the main outcome of communal relationship (Lee & Kim, 2021), is suggested as an essential factor increasing publics' risk perception and efficacy. For example, trust reduces individuals' skepticism about their organization's communication efforts and influences their evaluation of risks (Quinn et al., 2013; Siegrist, Earle, & Gutscher, 2003). Trust can also help publics cope with uncertainty (Gefen, 2002), thereby resulting in considerable control over certain behaviors (Pavlou & Fygenson, 2006). Moreover, trust can motivate individuals to overcome barriers against engaging in certain behaviors by increasing their efficacy (Hsu, Ju, Yen, & Chang, 2007) and help them perceive their vulnerability to and the severity of a disease (Blair, Morse, & Tsai, 2017). Similarly, employees who perceive a communal relationship with their organization are likely to trust the company's capability to handle a problematic situation effectively (Lee, 2017). This belief may encourage employees to perceive the seriousness of an issue that their organization will attempt to address and feel empowered to solve it, thereby increasing their efficacy and perceived threat of an event, such as COVID-19 in this case. Kim and Sung (2016) empirically showed that communal relationship increases publics' problem recognition and reduces their constraint recognition, thereby suggesting that this relationship plays a vital role in increasing individuals' perception of the seriousness of a problem or risk and their efficacy in solving it. Therefore, in the context of the present study, communal relationship is expected to reinforce employees' perceived threat of COVID-19 and efficacy in solving it in the workplace. Thus, the following hypotheses are suggested:

H4. Employee–organization communal relationship is positively associated with employees' (a) efficacy and (b) perceived threat.

Fig. 1 depicts the conceptual model.

3. Method

3.1. Participants and procedures

To test the hypotheses, an online survey of fulltime employees currently working in various organizations in the United States was conducted. Qualtrics panels were used to recruit participants. An invitation email was sent to panels qualified for this research by Qualtrics, which is a research company headquartered in the United States with access to more than three million panelists. The data were collected during a one-week period in mid-July 2021. The participants were invited to answer a 15-minute survey and given an incentive of approximately $5.

Employees working in a wide range of industries were recruited, including IT, finance and insurance, manufacturing, healthcare and social assistance, administrative support, and so on. Given the purpose and timing of the survey, only employees who returned to their workplace after the outbreak of COVID-19 were included. Accordingly, those currently working from home owing to the pandemic were excluded. In the survey, participants were asked to briefly describe their organization's safety protocols and guidelines during the COVID-19 pandemic. Those who answered "none" or "unsure" to this question were also excluded. Examples of participants' answers include maintaining social distance between workers, wearing masks, getting vaccinated, staying at home when feeling sick, using sanitizers often, washing their hands frequently, and taking their own temperature, and so on. Upon returning the consent form, the participants were asked to answer a series of questions on their evaluation of their organization's communication efforts, individual perception of COVID-19, behaviors in the workplace,

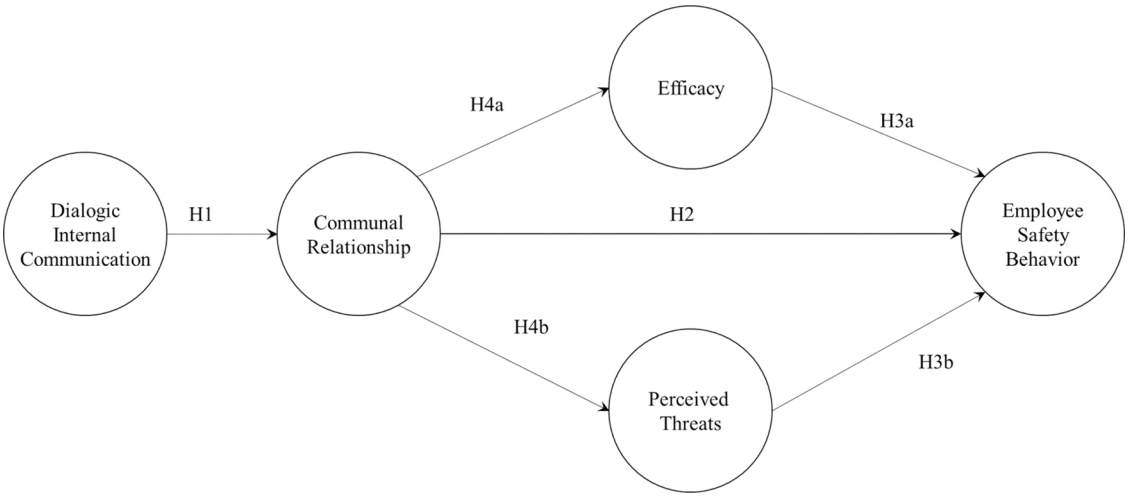

Fig. 1. Conceptual model.

and demographics.

This study retained the final sample of 400 employees, with 59.3 % of males and with a mean age of 35.19 ($SD = 9.66$). A large proportion of the participants was White (67 %), followed by Hispanic/Latino (11.8 %), African American (8.3 %), Asian (4%), and others (2%). Most of the participants had at least a bachelor's degree or higher (81.3 %) and 66.1 % of them had at least $50,000 of annual household income. Approximately 69.5 % of them responded that they have worked at their current company for at least four years. In terms of participants' positions, 35.5 % were non-managerial, including entry-level employees. 54 % of them were in a low-level managerial position and 10.5 % of them were in a middle-level managerial position. Approximately 19.5 % of the participants responded that they have never been working-from-home due to the COVID-19 and a majority of the participants (61.2 %) responded that they returned to the workplace after the COVID-19 more than five months ago. Most participants (82 %) responded that they are somewhat or strongly satisfied with their organizations' safety protocols and guidelines in relation to COVID-19 prevention at work.

3.2. Measures

All measurement items were adopted from prior studies. A 5-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5) was used.

For dialogic internal communication, this study used an abbreviated 14 item-scale (α = .908) from Yang et al.'s (2015) scale of organizational dialogic competency. The reliability and validity of this abbreviated scale have been demonstrated in previous works (e.g., Kang et al., 2018; Yang, 2018). Original items were modified to fit the context of employee-organization relationships. Six items were used for openness (α = .801) and eight items were used for mutuality (α = .840). Employees' perceived communal relationship with their organization was measured with five items (α = 0.822) adopted from Lee and Kim (2021). Items that measure employees' efficacy and perceived threats were adopted from Witte (1996) and adjusted in the current study's context. Specifically, five items (α = .775) were used for employees' self-efficacy, while three items (α = .727) were used for response efficacy. For individuals' perceived threats, three items were used for vulnerability (α = .874) and severity (α = .840), respectively. To measure employees' safety behavior, a total of nine items (α = 0.851) adopted from previous studies were used. Specifically, three items adopted from Neal and Griffin (2006) were used for safety compliance (α = .745) and participation (α = .781), respectively. Three items adopted from Zhang et al. (2020) were used for safety adaptation (α = 0.758). Appendix summarizes all the measurement items.

3.3. Analysis

This study employed a two-step structural equation modeling (SEM) analysis with Mplus program. SEM allows for the assessment of multiple independent and dependent variables simultaneously. The measurement model was first evaluated, followed by assessing the structural model. The following criteria suggested by Hu and Bentler (1998) was used to evaluate the model fit: the root mean square error of approximation (RMSEA) < 0.08; comparative fit index (CFI) > 0.90; Tucker-Lewis index (TLI) > .90; and standardized root mean square residual (SRMR) < .90.

4. Results

4.1. Preliminary data analysis

Table 1 summarizes descriptive statistics, reliabilities, and correlations among the study variables. Participants as a whole reported high levels of dialogic communication, communal relationship, efficacy, and safety behaviors ($Ms > 4.0$). Cronbach's α values were all greater than 0.7, demonstrating the reliabilities of the variables. All the variables were positively and significantly correlated, which provides preliminary support for the hypotheses.

A series of *t*-test, ANOVA, and regression analyses was employed to identify control variables. Regression analysis showed that individuals' education level was positively and significantly associated with perceived threats (β = .158, $p = .003$). Individuals' organizational tenure was also positively associated with efficacy (β = .145, $p = .007$). ANOVA results revealed that participants' race/ethnicity ($F(1,4) = 3.66$, $p < .001$) and industry ($F(118) = 3.25$, $p < .001$) were significantly associated with perceived threats of COVID-19. No difference was found in terms of participants' gender, age, and position, and any of the key variables in this study. Based on these results, individual employees' race/ethnicity, industry, and education level were included as covariates in the following SEM analysis.

4.2. SEM analysis

Model specification. In the SEM model, dialogic internal communication was specified as the second-order factor model that contains two layers of latent constructs: mutuality and openness. Efficacy and perceived threats were also specified as second-order factor model, including the constructs of self-efficacy and response efficacy, and perceived severity and vulnerability, respectively. Employee safety behavior was specified as second-order factor, including the following three sub-elements: safety compliance, participation and compliance. CFA results showed that the second-order factor models for dialogic internal communication, efficacy, perceived threats, and safety behaviors were significantly better than the first-order models ($\Delta\chi^2 > 7.5$, $p < .001$), demonstrating that the sub-constructs are good indicators of the main latent variables.

Measurement model. CFA results revealed that the measurement model yielded an acceptable model fit: $\chi^2(683) = 1978.304$, RMSEA = .062 [.055, .065], CFI = .947, TLI = .925, SRMR = .049. All factor loadings were greater than .6 and significant at $p < .001$ level. As shown in Table 2, the composite reliabilities (CR) for all variables were higher

Table 1
Descriptive statistics, reliabilities, and correlations among the study variables.

	M (SD)	α	1	2	3	4	5
1. Dialogic communication	4.09(0.59)	.91	–				
2. Communal relationship	4.05 (0.64)	.82	.678**	–			
3. Efficacy	4.17 (0.54)	.85	.433**	.476**	–		
4. Perceived threats	3.87 (0.79)	.83	.627**	.564**	.302**	–	
5. Safety behavior	4.20 (0.53)	.85	.568**	.520**	.404**	.620**	–

**$p < 0.01$.

Table 2
Results of confirmatory factor analysis (CFA).

Items	Standardized factor loadings	CR	AVE	Square root of AVE
Openness		.890	.576	.759
O1	.741*			
O2	.725*			
O3	.636*			
O4	.834*			
O5	.821*			
O6	.779*			
Mutuality		.892	.510	.714
M1	.769*			
M2	.657*			
M3	.640*			
M4	.759*			
M5	.797*			
M6	.701*			
M7	.661*			
M8	.714*			
Communal Relationship		.815	.524	.724
C1	.749*			
C2	.669*			
C3	.753*			
C4	.722*			
Self-Efficacy		.845	.523	.723
SE1	.635*			
SE2	.721*			
SE3	.735*			
SE4	.802*			
SE5	.714*			
Response Efficacy		.782	.544	.738
RE1	.774*			
RE2	.680*			
RE3	.757*			
Perceived Vulnerability		.759	.513	.716
PV1	.716*			
PV2	.685*			
PV3	.746*			
Perceived Severity			.	
PS1	.888*	.876	.703	.838
PS2	.780*			
PS3	.843*			
Safety Compliance		.758	.510	.714
SC1	.703*			
SC2	.728*			
SC3	.712*			
Safety Participation		.788	.554	.744
SP1	.705*			
SP2	.725*			
SP3	.800*			
Safety Adaptation		.755	.508	.713
SA1	.679*			
SA2	.718*			
SA3	.740*			

*Composite reliabilities (CR); Average of variance extracted (AVE).
*$p < 0.001$.

than .6, demonstrating the internal consistency. The values of the average of variance extracted (AVE) were higher than .5 and the square root values of AVE were greater than the construct correlations. Therefore, the convergent and discriminant validity of the measures were found to be satisfactory. This study thus proceeded with the structural model testing.

Structural model. The baseline model (Fig. 1) showed a satisfactory model fit: $\chi^2(686) = 1994.165$, RMSEA = .062 [.058, .065], CFI = .945, TLI = .925, SRMR = .049. To identify the best-fitting model, this study compared the baseline model with other alternative models that are theoretically plausible via nested model comparison. In the first alternative model, the direct path from dialogic communication to efficacy was added. The model had a good fit ($\chi^2(685) = 1990.721$, RMSEA = .062 [.057, .065], CFI = .946, TLI = .926, SRMR = .049) and dialogic communication had a significant direct effect on efficacy (.506, $p <$ .001). However, this model was not significantly better than the hypothesized model ($\Delta\chi^2(1) = 3.44$, $p = .06$). In the second alternative model, the direct path from dialogic communication to perceived threats was added. This model also showed acceptable model fit ($\chi^2(685) =$ 1992.231, RMSEA = .070 [.061, .072], CFI = .944, TLI = .924, SRMR = .050), but did not have a significantly better fit than the baseline model ($\Delta\chi^2(1) = 1.93$, $p = .16$). In the third alternative model, the direct path from dialogic communication to the final DV, safety behavior, was added. This model ($\chi^2(685) = 1993.940$, RMSEA = .065 [.057, .074], CFI = .943, TLI = .923, SRMR = .051) was not significantly better than the hypothesized model ($\Delta\chi^2(1) = 0.23$, $p = .63$) and the direct path was insignificant (.081, $p = .629$). Therefore, this study selected the hypothesized model (Fig. 2), which is the most parsimonious model, as the final model and interpreted the path coefficients.

4.3. Hypotheses testing

H1 examined how dialogic internal communication is associated with employees' perceived communal relationship with their organization. The analysis showed that the path was positive and significant (.826, $p <$ .001), supporting H1. H2 tested the effect of communal relationship on employees' safety behavior. It didn't have a significant effect (.189, $p = .089$), and thus, H2 was not supported. H3 investigated the associations between communal relationship and employees' efficacy and perceived threats of the COVID-19. Communal relationship was positively and significantly associated with efficacy (.735, $p <$ .001) and perceived threats (.575, $p <$ .001). H3a and H3b were thus supported. In H4, this study hypothesized the positive effects of employees' efficacy and perceived threats on their safety behaviors. As expected, efficacy (.620, $p <$ .001) and threats (.208, $p = .031$) were all positively and significantly associated with safety behavior, supporting both H4a and H4b.

Although not hypothesized, this study tested the indirect effects using a bootstrapping procedure ($N = 5000$). Results revealed significant indirect effects in the paths from dialogic internal communication to safety behavior via communal relationship and efficacy (.376, $p <$ .001, 95 % CI = [.184, .415]) and via communal relationship and perceived threats (.099, $p = .021$, 95 % CI = [.060, .194]). Efficacy and perceived threats are thus shown to *fully* mediate the association between communal relationship and safety behavior.

5. Discussion

To identify the effectiveness of strategic internal communication in motivating employee's safety behaviors in the workplace during the COVID-19 pandemic, this study integrated public relations theories with PMT. The findings revealed that the employees' perceived communal relationship with their organization, heightened by dialogic internal communication, increased their efficacy and perceived threat of COVID-19, thereby leading them to engage in safety behaviors in the workplace. Thus, this study can provide significant theoretical and practical implications for public relations and internal communication studies.

First, this study advances dialogic theory in public relations (Kent & Taylor, 2002) in the internal communication setting. Despite its theoretical importance and prevalence in public relations research, dialogic theory has been underutilized in internal communication research (Lee & Yue, 2020). This study is among the first studies that defined and operationalized dialogic internal communication based on dialogic theory in public relations. In line with the argument that dialogues with strategic publics are crucial for relationship management (e.g., Yang et al., 2015), this study provides empirical evidence showing that dialogic internal communication is a critical antecedent of a favorable employee–organization relationship. In addition to authentic, transparent, and symmetrical communication, which were emphasized in the literature (Lee & Kim, 2021; Men & Stacks, 2014), this study adds the

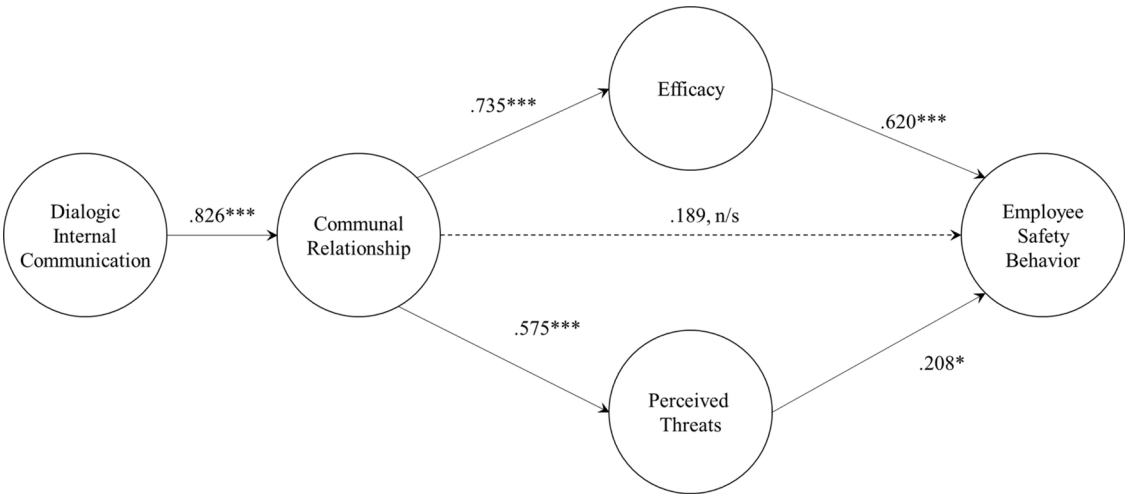

Fig. 2. Results of the hypothesized model.
$\chi^2(686) = 1994.165$, RMSEA = .062 [.058, .065], CFI = .945, TLI = .925, SRMR = .049
*$p < .05$, ***$p < .001$
Note. Dotted line indicates insignificant path.

important element of strategic internal communication practice grounded in dialogic communication principles. In addition, this study contributes to advancing relationship management theory, as one of the first empirical attempts to test the effectiveness of dialogic communication in the internal communication setting. Strategic internal communication, contributing to an open climate and interdependence between an organization and its employees, can help employees feel cared for and supported, thereby perceiving a communal relationship with their organization. Dialogic communication with employees is thus shown as a valuable relationship-building and maintenance practice that increases organizational effectiveness.

Second, this study contributes to the safety behavior literature by incorporating the public relations perspective. Previous studies explored various organizational-level antecedents (e.g., leadership and the organizational climate) that help employees engage in safety behaviors. However, the role of organizations' communication efforts in safety guidelines has yet to be fully investigated. This study suggests that organizations' relationship-building efforts through strategic internal communication are key factors that could possibly persuade employees to follow the organization's safety-related decisions. During the COVID-19 pandemic, wherein employees experience high levels of uncertainty and ambiguity, dialogues between an organization and its employees are essential for attaining a mutual understanding, which can help employees perceive a communal relationship with their organization. This communal norm can then encourage employees' safety protection motives by boosting their efficacy and perceived threat of health issues, such as COVID-19. Although communal relationship was not directly related to safety behaviors, this link was fully mediated by employees' efficacy and perceived threat. By suggesting significant mechanisms that can explain the effect of communal relationship on employees' behaviors, this study delineates how the value of the relationship management approach can be manifested by encouraging employees to comply with their organization's safety measures and express and make suggestions on how to improve safety in the workplace. In addition, the literature focused only on specific industries, such as high-risk sectors (e.g., hotels), in examining employees' safety behaviors during the COVID-19 pandemic. The present study shows the effectiveness of strategic communication in a wide range of industries by including employees of different industries as the study participants. Thus, this study contributes to the ongoing discussion on effective organizational interventions and safety measures by suggesting that the way organizations communicated their safety protocols and guidelines was crucial in their protection of their employees' health and wellbeing.

Finally, this study contributes to the intersection between public relations and the health communication discipline by verifying the theoretical utility of PMT in the internal communication setting. PMT is widely used to understand individuals' health-related behaviors (Milne, Sheeran, & Orbell, 2000). Viewing employees' safety behaviors as an important indicator of their and their organization's health-protective and health-promotion behaviors, which is particularly essential during the COVID-19 pandemic, this study identifies the value of PMT for understanding employee behaviors in the workplace and their antecedents. This study proposes an organization's strategic communication as a vital information and knowledge source that can help employees handle threats and the coping appraisal process. As expected, self- and response-efficacy and perceived vulnerability to and severity of COVID-19 were observed to be key antecedents of employees' safety behaviors. By exploring the role of dialogic communication and communal relationship, this study answers the question of *how* to effectively increase employees' protection motivation in the workplace, thereby fostering their safety behaviors. In addition, by explaining the mediating mechanism through which communication leads to individuals' appraisal of a health-related situation, this study enhances theoretical understanding of the role of dialogues and relationship management in promoting employees' health-related behaviors.

This study also provides significant practical implications for organization leaders and public relations and internal communication practitioners. Every organization has its own unique safety policies and guidelines during the COVID-19 pandemic. This study suggests the importance of organizations engaging in dialogues to understand their employees' needs, concerns, and perceived risks of a crisis and related health issues. The creation of an open climate to discuss topics on employee health and safety and incorporate employees' ideas into the company's decision making is highly recommended. Holding regular meetings with managers and senior executives to listen to employees' ideas on workplace safety from diverse channels (e.g., email, townhall meetings, internal social media, question and answer events, interactive online sessions, informal gatherings, surveys, and so on) is crucial for engaging in dialogues, which can help employees have a communal relationship with their organization. Communication managers should provide appropriate training for organizational leaders to highlight the importance of dialogues and mutual interdependence when dealing with a health-related crisis to convince the management of their value. Communication managers should also promote opportunities for

upward communication and dialogues by persuading senior managers, which can help organizations build a communal relationship with their employees during uncertain periods and boost their motivation to protect the workplace by engaging in safety behaviors.

6. Limitations and future studies

As with any research, this study has several limitations that must be addressed. First, individuals' self-efficacy and perceived vulnerability to or severity of COVID-19 may vary depending on their health beliefs, personal networks, and trust level with the government (e.g., Quinn et al., 2013). Although organizations' communication efforts were found to have a significant impact on such perceptions in this study, future studies may incorporate other individual-level variables to comprehensively understand employees' safety behaviors in the workplace. Furthermore, the study participants were recruited from diverse organizations in the United States, which may have different safety policies and guidelines (e.g., wearing masks and/or practicing social distancing). Therefore, future research should explore employees' attitudes and behaviors toward their organization's specific preventive measures by reducing variations among individuals and testing the effectiveness of internal communication efforts. Finally, the conceptualization of dialogic internal communication suggested in this study, including the two constructs (i.e., mutuality and openness), may not be exhaustive. Other features of dialogic communication suggested in the original dialogic theory of public relations (Kent & Taylor, 2002), such as propinquity (i.e., the spontaneity of interactions) or risk (i.e., willingness to interact with publics on their own terms), may play important role in an internal communication setting. Future studies could thus advance the conceptualization and operationalization of dialogic internal communication by developing and validating additional measures, incorporating key aspects of dialogues in public relations comprehensively.

7. Conclusion

As the COVID-19 has changed the standards of employee safety and health, how to adapt to these changes becomes a critical concern for organizations across the industries. Empirical insights are needed to illuminate how internal communication functions help organizations to ensure employees' safety and health and enhance employees' safety behavior at work. The study findings expand existing public relations theories by highlighting the crucial role of dialogic internal communication and relationship-building efforts of organizations. Creating an open climate for dialogues and discussion for mutual understanding between an organization and its employees about their safety and health expectations plays a critical role in establishing a communal relationship and enhancing employees' efficacy and perceived threats of disease. Consequently, employees are motivated to comply with organizations' safety protocols and guidelines and be proactive in improving workplace safety as organizational citizens. This finding provides important insights for guiding future preparation, communication, and management for creating a safe and healthy workplace in the post−COVID era.

Data availability

Data will be made available on request.

Our open-access data is available via Zenodo (https://doi.org/10.5281/zenodo.5794358) but we were unable to link this data set in the \.

Declaration of Competing Interest

The author declares that there is no conflict of interest in the current manuscript.

Appendix A. Measurement Items

Dialogic Internal Communication

Regarding workplace safety protocols and guidelines, my organization..

Openness

- has shared open access of information to its employees
- has been timely in providing information to its employees
- has been honest in communicating with employees
- has genuinely committed to the conversation with employees
- has been transparent in communicating with employees
- has not been deceptive in interpreting employees' opinions

Mutuality

- has shared common ground of communication with employees
- has tried to establish employees correctly understood
- has understood problems from employees' perspectives
- has been empathetic in understanding employees' feelings
- has not been arrogant in communicating with employees
- has been sensitive to employees' needs
- has dealt with diverse employees' opinions effectively
- has accepted employees' opinions as worthy of consideration

Communal Relationship

In light of my organization's communication about workplace safety protocols and guidelines,

- I feel that my organization takes care of its employees even when doing so brings few returns
- I feel cared for by my organization unconditionally
- I feel that my organization helps its employees without expecting something in return
- I feel that my organization values its relationship with employees more than it values profits
- I feel that my organization cares for employees without calculation

Self-Efficacy

- It is easy for me to follow my organization's safety protocol and guidelines at work
- I believe I have the capability to follow my organization's safety protocol and guidelines at work
- I am able to follow my organization's safety protocol and guidelines at work
- I am certain that I can behave following my organization's safety protocol and guidelines at work
- I have the resources, knowledge, and ability to follow my organization's safety protocol and guidelines at work

Response Efficacy

- Following my organization's safety and health protocols would work for avoiding COVID-19 at work
- Following my organization's safety and health protocols would be effective for avoiding the COVID-19 at work
- When following my organization's safety and healthy protocols, protection from COVID-19 at work is more likely to be guaranteed

Perceived Vulnerability

- I am at risk for getting sick from the coronavirus (COVID-19)

- It is likely that I will be sick from the coronavirus (COVID-19)
- It is possible for me to get sick from the coronavirus (COVID-19)

Perceived Severity

Getting the coronavirus (COVID-19) would be..

- Severe
- Serious
- significant

Safety Behavior

Since I returned to my workplace,
Safety Compliance

- I have used the correct safety procedures for carrying out my job
- I have ensured the highest levels of safety when I carry out my job
- I have followed all the necessary safety protocols and guidelines to do my job

Safety Participation

- I have promoted pandemic prevention and safety programs within my organization
- I have put in extra effort to improve the safety of the workplace
- I have been voluntarily carrying out tasks or activities that help to improve workplace safety

Safety Adaptation

- I have generated creative ideas or suggestions on COVID-19 prevention for the workplace
- I have promoted and championed new methods to colleagues for preventing and controlling COVID-19
- I have searched out new technologies, processes, and techniques to improve the effectiveness of COVID-19 prevention in the workplace

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