The Effects of Leadership Behavior on Psychological Safety, Job Satisfaction, and Perceptions of Patient Care

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ABSTRACT

The purpose of this study was to examine psychological safety as a mediator of the relationship between leadership style and job satisfaction in a medical imaging center during the Covid-19 pandemic. Twenty-eight medical imaging technicians from a regional hospital (fifteen females and thirteen males) completed a survey that included perceptions of leadership style, psychological safety, and job satisfaction. Mediation analysis showed that one style of leadership, Instrumental, had direct positive effects on both psychological safety and job satisfaction, and that psychological safety had a direct effect on job satisfaction. Further, psychological safety fully mediated the relationship between leadership and job satisfaction. During the pandemic, an instrumental leadership style helped healthcare workers feel psychologically safe, which in turn, was associated with higher levels of job satisfaction. These results can help organizations, specifically in healthcare, foster the development of effective leadership behaviors, particularly during times of stress and chaos such as the Covid pandemic.

Keywords: healthcare; teamwork; quality of work; pandemic;

INTRODUCTION

During a pandemic, the demands on healthcare workers are extraordinary, and can have long lasting negative effects (Gavin, Hayden, Adamis, and McNicholas, 2020). A meta-analysis of the psychological impact of COVID-19 on healthcare workers indicated that from 1/3 to 1/2 of study participants reported experiencing anxiety, depression, stress, post-traumatic stress syndrome, insomnia, psychological distress, and burnout (Batra, Singh, Sharma, Batra, and Schvaneveldt, 2020). Given the significant negative outcomes healthcare workers face, it is important to understand factors in healthcare settings that can potentially mitigate or improve the negative effects created by a pandemic. The job satisfaction of employees is one such avenue, as job satisfaction has been linked to the mental health of organizational employees. In a meta-analysis, Faragher, Cass, and Cooper (2005) found that lower levels of job satisfaction were associated with higher rates of emotional burn-out, reduced levels of self-esteem, and higher levels of anxiety and depression. Further, the authors noted that the relationships between job satisfaction and mental health were large enough to be interpreted as both strong and extremely important.

One of the most important predictors of job satisfaction is leadership, as it is hugely consequential for the well-being, success, and satisfaction of an organization's employees (Hogan and Kaiser, 2005). In fact, Harter, Schmidt, and Hayes (2002) argued that how employees view their leaders is the primary determinant of their overall job satisfaction, and that all measures of job satisfaction are essentially measuring satisfaction with leadership in the organization. Janicijevic, Seke, Djokovic, and Filipovic (2013) found that job satisfaction also translates to patient care, and the authors found a small, positive

correlation between employee satisfaction and patient satisfaction and noted that, "… healthcare worker satisfaction does impact patient satisfaction" (p. 1).

Several authors have noted that psychological safety, the shared belief by team members that it is safe for interpersonal risk taking and asking for help (Edmondson, 1999) is an important mediator of the relationship between leadership and workplace attitudes like job satisfaction (e.g., Newman, Donohue, and Eva, 2017; Winarto, 2018). Research has shown that there is a relationship between psychological safety, job satisfaction, and most importantly, patient experiences with healthcare employees (Chang and Lee, 2007; Edmonson and Roloff, 2009; Holdank, Harsh, and Bushart, 1993; Janicijevic et al., 2013). Leadership style can encourage psychological safety by being open to suggestions and feedback, especially when they are able to admit when they make a mistake (Edmonson and Roloff, 2009; Frazier, Fainshmidt, Klinger, Pezeshkan, and Vracheva, 2017).

The purpose of this research is to explore the impact leadership styles on employees in an imaging center at a regional hospital during the COVID-19 Pandemic. Further, we explored the concept of psychological safety as a key mechanism that accounts for this connection. In the paragraphs that follow, we generate hypotheses based on a review of the literature.

Background/Review of Literature

Leadership Styles. Three leadership styles that are focused on in this paper are participative, supportive, and instrumental leadership. Participative leadership has characteristics of relationship-oriented leadership behaviors. For example, participative leaders have respect for their team members and are open to suggestions from others (Derue, Nahrgang, Wellman, and Humphrey, 2011). In addition, participative leaders are democratic, and allow employees to be a part of making a decision but still have the final say (Belias and Koustelios, 2014). Participative leaders are able to both identify and use the expertise of employees and solicit input from their employees while avoiding imposing their own beliefs (Tung and Yu, 2016).

Supportive leaders create, "a task environment of psychological support, mutual trust and respect, helpfulness, and friendliness," (Tung and Yu, 2016, p. 581). Leaders who have these characteristics are considerate and promote an environment where the team of employees look out for one another (Derue et al., 2011). Supportive leadership focuses on the needs and well-being of subordinates, and creates a climate that promotes empowerment, development, and trust (Schyns, van Weldhoven, and Wood, 2009)

Lastly, instrumental leadership has similar characteristics to task-oriented behaviors. Leaders who use these behaviors make sure the employees know the expectations and their roles within their team. By using those standards, leaders can influence employee motivation and behavior (Derue et al., 2011). Tung and Yu (2016, p. 581) noted that instrumental leadership, "is essential for organizational and employee performance because it focuses on actions that ensure organizational adaptation and employee work outcomes."

Leaders who are relationship-oriented focus more on being understanding and sympathetic (Fleishman and Salter, 1963). Participative and supportive leadership can be associated with consideration because they all focus on relationships with their workplace. Instrumental leadership can be compared to initiating structure because it focuses on task related goals (Judge et al., 2004).

Leadership Style and Job Satisfaction. The relationship between job satisfaction and leadership has been widely studied, and there has been a consistent link between leadership style and satisfaction (Belias and Koustelios, 2014). Leaders who are clear and encouraging tend to have subordinates with higher levels of job satisfaction (Smith and Peterson, 1998; Iverson and Roy, 1994). Relationship-focused leadership styles like servant leadership tend to positively correlate with job satisfaction (Stone, Russel, and Patterson, 2003). Leadership styles that include empowerment and clear objectives are associated with high job satisfaction and commitment (Smith and Petterson, 1998; Iverson and Roy, 1994). It has been found that leaders who are considerate

have a more positive correlation with satisfaction compared to leaders who focus more on the structure of their workplace (Judge, Piccolo, and Ilies, 2004). Holdank et al. (1993) found that leadership consideration behavior, a relationship-focused leadership style, correlates with increased job satisfaction, while initiating structure, which is more task-focused, leads to lower levels of job satisfaction. In general, instrumental leadership has a stronger correlation with performance in the workplace since it emphasizes both the removal of obstacles that hinder performance and providing resources for goal accomplishment (Rowold, 2014).

Leadership Style and Psychological Safety. Frazier et al. (2016) argued that leaders play a critical role in fostering psychological safety. Leaders can facilitate a work environment that encourages learning, which can create feelings of psychological safety. Leadership styles that encourage innovation, learning, and change create conditions where employees in a healthcare environment feel safe and heard (Ortega et al., 2014). Leaders can also help foster psychological safety by being open to suggestions and taking responsibility for their actions (Edmonson and Roloff, 2009). Inclusive leadership, a style associated with being open and available to employees, has been shown to have a positive correlation with psychological safety (Carmeli, Reiter-Palmon, and Ziv, 2010). Further, participative leaders who consult with and involve employees in the decision-making process, have been shown to nurture psychological safety and encourage risk and creativity (Chen, Wadei, Bai, and Lui, 2020).

Mediating Role of Psychological Safety. Frazier et al. (2016) found that psychological safety was positively linked to a number of important workplace attitudes, including job satisfaction, commitment, and engagement. When employees feel psychologically safe, they speak up about a mistake or suggestions that they might have without fear of negative personal consequences. Edmondson (1999) indicated that psychological safety creates an environment where employees are comfortable to be themselves with fear of repercussion. In a healthcare team, it is very important to promote a "learning environment" so that employees

can improve their performance because they feel safe giving suggestions or asking for help without fear of judgment or retribution (Ortega, Van de Bossche, Sánchez-Manzanares, Rico, and Gil, 2014). Psychological safety helps to create an open and safe work climate where employees feel truly valued (Erkutlu and Chafra, 2015). Conceptually, a work environment like this should lead to higher levels of job satisfaction. Further, Hogan and Kaiser (2005) noted that leadership style has a direct impact on team functioning, psychological safety has emerged as a mediator between leadership and significant organizational outcomes, including team satisfaction (Winarto, 2018), job satisfaction (Ahmad and Umran, 2021), and error reporting (Lee and Dahinten, 2021).

Based on the literature reviewed for this study, we propose the following hypotheses:

H1: Participative, Supportive, and Instrumental leaderships style will be related to job satisfaction.

H2: Participative, Supportive, and Instrumental leadership styles will be related to the feelings of psychological safety.

H3: Psychological safety will be related to job satisfaction.

H4. Psychological safety will mediate the relationship between leadership style and job satisfaction.

METHODS

Participants

After the study was approved by the institutional review board of Bloomsburg University of Pennsylvania and the regional hospital, we collected data from radiologic technicians in the radiology center. Department supervisors provided questionnaires to their technicians to complete, and the employees could opt to week to fill out the surveys until they were collected a few weeks later. Consent was obtained by signing a form on the front of the packet contained the questionnaire. There were 28 participants who completed surveys, but one was dropped from final analyses due to extensive missing data. There were 15 women and 13 men in the final sample, and the majority were Caucasian (85%) and between 25 and 34 years old (59%). Data collection

occurred entirely during the Covid pandemic in 2021.

Measures

Unless otherwise noted, all measures were on a 5-point Likert scale (from 1– strongly disagree, to 5 – strongly agree). All measures demonstrated adequate internal consistency (.7 or greater). One item was dropped from both the job satisfaction scale and the psychological safety scale. These items were reversed scored, so it may be that participants misunderstood or misread the nature of the question.

Leadership Style. Leadership style was assessed with the 12-item measure from Ogbonna and Harris (2000), adapted from the House (1971) and House and Dessler (1974). This scale assesses three leadership styles, participative ("When faced with a problem, my manager consults with his/her employees"), supportive ("S/he looks out for the personal welfare of group members"), and instrumental ("S/he explains the way tasks should be carried out").

Psychological Safety. Edmondson's (1999) scale was used to measure team psychological safety. The 7-item scale assesses each team member's belief about interpersonal risk-taking on their work team and includes items such as, "It is safe to take a risk on this team," and "It is difficult to ask other members of this team for help."

Job Satisfaction. Job Satisfaction was measured with the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS) developed by Cammann, Fichman, Jenkins, and Klesh, (1983). The 3-item scale assesses how individuals feel about their jobs. Items include, ''All in all I am satisfied with my job," ''In general, I don't like my job," and ''In general, I like working here." The NOAQ-JSS has been found to be a reliable and valid measure of job satisfaction.

RESULTS

Response data from the surveys were analyzed using the Statistical Package for the Social Sciences (SPSS). Pearson correlations and regression analyses were run to evaluate the hypotheses.

All variables of interest were evaluated for outliers and violations of normality. Values of Z, Skewness, or Kurtosis greater than or equal to ± 3.48 (.001 two-tailed) were considered outliers or a violation of the assumption of normality, respectively. Z score analyses of all participants on all variables showed that no outliers existed. Tests for Skewness and Kurtosis revealed that the data met the assumption of normality. ANOVA results revealed that there were no differences among demographic groups (e.g., age, gender) on any of the variables in the study.

Descriptive statistics and correlations are displayed in Table 1. Job Satisfaction and Psychological Safety were positively correlated, indicating that individuals who are satisfied with their jobs also report higher levels of psychological safety. This supports hypothesis 3. The only leadership style with a significant relationship to the outcome variables was instrumental leadership, which was positively correlated with both job satisfaction and psychological safety.

Table 1: Descriptives and Correlations

Variable		Mean (SD) Under	1	2	3	4
1. Psychological Safety		3.36 (.67)	--			
2. Job Satisfaction		3.20 (.84)	.45*			
3. Participative Leadership		3.16 (.59)	.06	.20		
4. Supportive Leadership		2.92 (.73)	-.10	.16	.48*	
5. Instrumental Leadership		3.36 (.52)	.47*	.36	.40*	.21

Note. * $p<.05$

Individuals who perceived their leader to be more instrumental in their leadership style tended to be more satisfied with their jobs and have higher levels of psychological safety. Thus, hypotheses 1 and 2 were only partially supported, as instrumental leadership was the only leadership style related to job satisfaction and psychological safety. We conducted mediation analyses using the methodology established by Baron and Kenny (1986). In order to establish psychological safety as a mediator of the relationship between leadership style and job satisfaction, the following conditions must be present: 1) leadership style is shown to significantly influence job satisfaction, 2) Leadership style significantly influences the mediator, psychological safety, 3) the mediator, psychological safety, is significantly associated with job satisfaction when leadership style is included in the regression equation, and 4) the effect of leadership style on job satisfaction is reduced or eliminated when psychological safety is included in the regression model. Neither participative (β = .20, p = .32) or supportive (β = .16, p = .42) leadership styles significantly predicted job satisfaction, so the results will focus on the mediation analysis with instrumental leadership as the independent variable. These results are presented in Table 2. All of the preconditions for mediation established by Baron Kenny (1986) were met. Instrumental leadership was significantly associated with job satisfaction (β = .37, p = .06), indicating that participants who perceived their leader as instrumental were more satisfied with their job. Instrumental leadership was also positively and significantly related to psychological safety (β = .47, p = .01) . Lastly, when both leadership style and psychological safety were included in the regression equation, psychological safety was significant (β = .35, p = .09), while leadership style was no longer significant (β = .20, p = .33). Thus, the leadership style coefficient was reduced (from .37 to .20) and no longer influences job satisfaction after controlling for psychological safety. While all of the conditions for mediation were established, we conducted Sobel's test to determine if this reduction was statistically significant. Sobel's test was significant (z = 1.45, p <.15) using a more relaxed p value of .15, which is acceptable when assessing the impact of a third factor on the main relationship (Thiese, Ronna, and Ott, 2016). This indicates that psychological safety fully mediates the relationship between instrumental leadership and job satisfaction. Thus hypothesis 4 is partially supported.

Table 2:Statistical Output of the Test for Mediation

Model	DV	Beta	t	p
Instrumental Leadership	Job Satisfaction	.37	1.99	.06
Instrumental Leadership	Psychological Safety	.47	2.66	.01
Instrumental Leadership	Job Satisfaction	.20	.99	.33
Psychological Safety		.35	1.74	.09

DISCUSSION

Given the significant toll the Covid pandemic has had on the mental and physical well-being of health care workers, it is important to identify organizational factors that can potentially mitigate and help to alleviate these negative outcomes. Both job satisfaction and psychological safety can have profound positive effects on employees, and so we included them in this study. The purpose of this paper was to determine if psychological safety mediated the relationship between leadership style and job satisfaction for radiologic technicians at a regional hospital during the covid pandemic.

We found that psychological safety and job satisfaction have a positive correlation, indicating that employees who show a high level of psychological safety also have a high level of job satisfaction. Of the three leadership styles included in this study, instrumental leadership was the only style that played a significant role in the outcomes. Instrumental leadership was significantly and positively related to both job satisfaction and psychological safety. Thus, employees who viewed their employer's leadership style as

instrumental also reported higher levels of psychological safety and job satisfaction

The most significant finding of our study was that psychological safety fully mediated the relationship between instrumental leadership and job satisfaction. This contributes to the underlying process of how leadership style influences job satisfaction during a pandemic. In the chaos and stress created by a pandemic, providing clarity on what, how, and why tasks should be performed creates an atmosphere where employees feel safe to express their thoughts, opinions, and ideas, and this leads employees to be more satisfied with their job.

It was unexpected that instrumental leadership was the only style related to job satisfaction and psychological safety, as past research has shown positive relationships with both supportive and participative styles (e.g., Chen et al. 2020; Stone et al., 2003). We attribute these results to the fact that our study was conducted during the Covid pandemic. As noted by Gavin, Hayden, Adamis, and McNicholas (2020), "During a pandemic, the demands on healthcare staff are extraordinary and long lasting," (p. 51). Health care workers faced multiple sources of significant stress during the pandemic, including their personal health, the health of others, the spread of the virus, and their work environment (Benfante, Di Tella, Romeo, and Castelli, 2020). Health care workers showed a high prevalence of depression and anxiety (Pan, Zhang, and Pan, 2020), and reported high levels of trauma-related stress (Benfante et al., 2020). While supportive and participative styles tend to have positive workplace outcomes, in the stressful working conditions created by the pandemic, healthcare workers were positively affected by a leadership style that created clarity about the work that needed to be completed. Instrumental leaders explain how tasks should be carried out, what and how things should be done, how to maintain the standards of performance, and schedules the work to be done (House, 1971). This style of leadership may be essential during the chaos created for health care workers during the pandemic and might explain our surprising results.

This study contributes to our understanding of factors that can be put in place to significantly help health care employees during high stress like the Covid-19 pandemic.

Both job satisfaction and psychological safety can have significant benefits to both employees and organizations. From an employee standpoint, these factors increase psychological and general well-being (Erkutlu and Chafra, 2015; Wang, Kang, and Choi, 2022), overall life satisfaction (Lin, Vu, and Wu, 2022), and lower levels of burnout and psychological distress, which included feelings of hopelessness, depression, and worthlessness (Ahmed, Xiong, Faraz, and Arslan, 2022; Sasaki et al., 2022). Therefore, organizations can better prepare leaders by encouraging and ensuring they adopt instrumental approaches to leading their teams. If necessary, training can be provided to help leaders develop these key instrumental skills.

There are also benefits to the organization, and in health care settings, this can impact overall patient care. Both job satisfaction and psychological safety are related to job performance and a host of positive work outcomes like absenteeism, turnover, withdrawal, and job performance (e.g., Frazier et al., 2016; Judge & Klinger, 2008), so preserving and enhancing these workplace attitudes is essential for achieving the appropriate high-quality medical service. This is a significant outcome because medical errors remain the third leading cause of patient death in the United States (Makary & Daniel, 2016). Even small improvements are likely to have a significant and important impact on patient care. For example, health care workers who feel psychologically safe will be more willing to give their opinion on which procedures are working well and which ones are not (Tucker, Nembhard, and Edmonson, 2007). Further, employees who are not satisfied with their job have been found to provide less efficient care and lower quality care as compared to those who are satisfied (Mamitsa and Ramasodi, 2012). Thus, an instrumental leadership style leads health care employees to be more satisfied with their jobs and feel more psychologically safe at work. In turn, this is likely to have a positive impact on patient care.

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