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The Relationship Between “Speak Up” Culture Level, Team Effectiveness, and Organizational Performance Among Clinical Laboratory Professionals

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Walden University

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Emmanuel Fontanilla Udasco

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Walden University
2023

Abstract

The Relationship Between “Speak Up” Culture Level, Team Effectiveness, and
Organizational Performance Among Clinical Laboratory Professionals

by

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MSN, University of San Francisco, 2014

BS, Eastern Washington University, 2005

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Healthcare Administration

Walden University

August 2023

Abstract

The clinical laboratory plays a crucial role in aiding physicians to diagnose disease. With numerous studies on “Speak Up” culture well-documented among providers and nurses surrounding patient safety, gaps in literature exist concerning “Speak Up” culture that address team effectiveness and organizational performance within the clinical lab setting. The purpose of this quantitative correlation study was to investigate the relationship between “Speak Up” culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. The high-performance work practices model was utilized as the conceptual framework to ground this study. Research questions assessed the link between “Speak Up” culture level and team effectiveness as well as the connection between “Speak Up” culture level and organizational performance. Clinical lab employees ($N = 233$) completed a customized pulse survey administered and analyzed by a third-party survey vendor. The data were examined using descriptive and inferential statistics, which included performance of simple linear regression analysis (one-tail t test) to determine statistical significance. Results of the study demonstrated strong positive correlation among the variables; each unit increase in “Speak Up” culture level enhanced team effectiveness and organizational performance by a factor of .75 unit and .59 unit, respectively. This study contributes to positive social change by offering clinical lab leaders and health care administrators insights for promoting “Speak Up” culture within their organization to enhance team effectiveness and overall organizational performance that ultimately benefits consumers of health care.

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Dedication

I dedicate this dissertation to my higher self. This journey has taught me the value of perseverance, patience, and kindness. I am a better person coming out from this experience, so thank you Emmanuel for allowing things to be. As the late author Norman Vincent Peale famously once said, “Shoot for the moon. Even if you miss, you’ll land among the stars. ”

I also want to dedicate this dissertation to my mother. Inang, you have always been my number one fan from the day I was born! Thank you for your unconditional love and support—you finally have a doctor in the family!

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Section 1: Foundation of the Study and Literature Review

Laboratory medicine plays a subtle, yet vital role in patient care. Between 60–70% of all medical decisions are based on quality, timely, and accurate laboratory results (Avery & Geno, 2021). The work of the clinical lab in processing and analyzing numerous specimens from different biological sources to produce meaningful data for safe patient use rely on the performance of laboratorians working in the pre-analytic, analytic, and post-analytic testing phases. Common key performance indicators such as turnaround times, specimen/patient identification errors, and hemolysis rates are frequently employed by the clinical lab to monitor service line effectiveness and promote opportunities for process improvement (Tsai et al., 2019). Despite the various types of key performance indicators available for use, most clinical labs do not utilize “Speak Up” culture level as a metric to track and monitor performance because performance indicators for the clinical lab are often based on best practices or one that originates from a medical literature review (Tsai et al., 2019).

The concept of “Speak Up” or “Speaking Up” culture in health care focuses on an individual’s ability in the medical team to raise and communicate concerns freely to other team members of authority to prevent harm and promote patient safety (Jones et al., 2021). Several studies on “Speak Up” culture among physicians and nurses have demonstrated positive outcomes in environments where direct patient care occurs such as in the nursing units, surgical suites, and the emergency departments. For instance, implementing a multifaceted intervention designed to foster speaking up in a clinical unit has improved participants’ perceptions of teamwork climate (Ginsburg & Bain, 2017).

Further, organizational culture has been a robust predictor of speaking-up behaviors among nurses, which partially mediated the association between organizational culture and moral distress (Rainer & Schneider, 2020). Lastly, significant increases in safety and teamwork culture have been shown with those speaking up than in those who did not (Etchgaray et al., 2020). Overall, there is extensive literature on “Speak Up” culture in health care.

Although numerous studies on “Speak Up” culture in health care have been well-documented in nursing and physician practices, there is limited literature available on “Speak Up” culture in the clinical lab, specifically how this concept relates to lab performance. Though the clinical lab plays an important role in patient safety, novice health care workers, including those employed in a clinical lab, may be hesitant in expressing patient safety concerns in the workplace due to fear of negative perceptions by their superiors or their lack of confidence associated with limited experience (O’Grady, 2020). Therefore, it is imperative for health care management to establish a “Speak Up” culture in the clinical lab environment to promote positive impact to the organization’s safety performance, productivity, budget, and patient care outcomes (O’Grady, 2020). This paper aims to bridge the literature gap and contribute to the growing body of knowledge in health care leadership by providing insights on “Speak Up” culture in the clinical lab and its relationship to team effectiveness and organizational performance. Moreover, this paper intends to provide implications of positive social change for both current and future leaders in clinical lab science, if not health care administration.

Background of the Study

Medical diagnoses are established based on active interactions between clinical reasoning and biomedical knowledge (Groves, 2012). With 60–70% of all health care diagnoses originating from clinical lab data (Avery & Geno, 2021), medical providers need timely and accurate lab results for effective health care interventions and efficient patient flow across the care continuum (Chhatriwala et al., 2021). This would require the clinical lab to establish and execute processes that decrease turnaround times and minimize, if not eliminate errors in the pre-analytical, analytical, and post-analytical phases of testing. Medical laboratory scientists, phlebotomists/certified phlebotomy technicians, and clinical laboratory assistants play a significant role in identifying and reporting errors, including operational barriers to lab management to promote patient safety and service line performance. However, power dynamics and negative career repercussions often prevent these frontline experts from speaking up (Satterstrom et al., 2021). Further, the fear of potentially damaging one’s professional image contributes to these employees practicing defensive silence (Sahin et al., 2021). Therefore, efforts to encourage clinical lab staff to share ideas and feedback for optimizing operations and overall service line performance continue to challenge modern lab leaders and health care administrators.

To understand current levels of “Speak-Up” culture and employee engagement within the organization, many health care executives and administrators employ the use of surveys at defined intervals for data collection. With the lack of established industry standards, survey themes and questions are left to the organization to decide on the basis

on what the leaders define as a “culture” versus “engagement” issue (McGee & Crowley-Koch, 2021). Numerous published studies have revealed the relationship between employee engagement and organizational performance, with increased employee engagement levels associated with better organizational performance outcomes (Yuniati et al., 2021). However, research on organizational culture, specifically “Speak Up” culture and its relationship to organizational performance or effectiveness is poorly understood (Rainer & Schneider, 2020).

Problem Statement

Research on “Speak Up” culture and its impact to patient safety and organizational performance was well documented for health care professionals dealing with direct patient care (Seo & Lee, 2022). Despite the available literature, the reality of speaking up to authority when workplace issues are identified can be daunting for many health care workers. Intrapersonal factors such as self-efficacy, social outcome expectations, and assertiveness can influence an employee’s ability to speak up (Weller & Long, 2019). Psychological safety is paramount to establishing workplace cultures that enable team members to feel safe expressing their technical expertise (McCoy et al., 2020).

Many strategic and operational leaders in health care organizations that promote labor-management partnership (LMP) are challenged with sustaining strong “Speak Up” behaviors among frontline employees (Casey & Delaney, 2022). High-quality LMP processes positively impacts employee trust in management, which in turn fosters “Speak Up” behaviors (Avgar et al., 2016). Although researchers have investigated this issue,

there is little or no literature available that exhibits the relationship of “Speak Up” culture level on team effectiveness or organizational performance within the clinical lab space. Therefore, clinical labs with weak or non-existent “Speak Up” culture levels can be a potential threat to patient safety and the sustainment of high-performing teams.

Purpose of the Study

The purpose of this quantitative correlation study was to investigate the relationship between “Speak Up” culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. To clarify, the intent was to examine “Speak Up” culture level (independent variable) and its association, if any, between team effectiveness (dependent variable) and organizational performance (dependent variable) to promote positive social change in the field of health care administration, including clinical lab management. There are many benefits of speaking up in organizations (Satterstrom et al., 2021). As the health care landscape continues to rapidly evolve, the need for strategic and operational leaders to “embrace collective capability” is paramount to shaping and adopting contemporary cultural norms within the health system (Jackson et al., 2021, p. 395).

Research Questions and Hypotheses

RQ 1: What is the relationship between “Speak Up” culture level and team effectiveness?

H_0 1: No statistically significant difference exists between “Speak Up” culture level and team effectiveness.

H_{a1} : Statistically significant difference exists between “Speak Up” culture level and team effectiveness.

RQ 2: What is the relationship between “Speak Up” culture level and organizational performance?

H_{02} : No statistically significant difference exists between “Speak Up” culture level and organizational performance.

H_{a2} : Statistically significant difference exists between “Speak Up” culture level and organizational performance.

Conceptual Framework

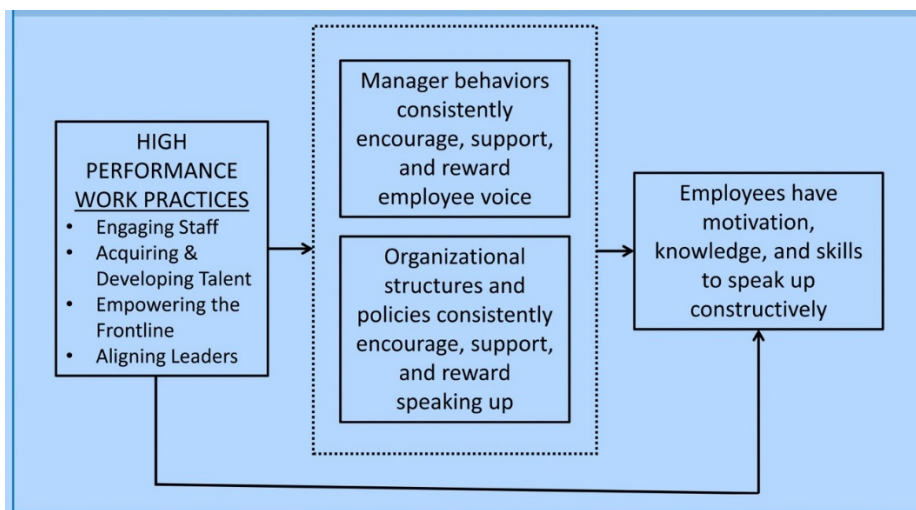
The conceptual framework that grounded this study included the works of Garman et al. (2011) and McAlearney et al. (2013) on the high-performance work practices (HPWPs) model. The HPWPs model was identified as a set of protocols within organizations that augment business outcomes through optimization of employee performance (Garman et al., 2011). The HPWPs model comprises 16 management practices (Robbins & McAlearney, 2020) that are categorized into four subsystems: (a) acquiring and developing talent, (b) engaging staff, (c) empowering the frontline, (d) and aligning leaders (McAlearney et al., 2013). When these subsystems are implemented together to support the systematic advancement of common organizational goals improvements in quality and safety outcomes are expected (Robbins & McAlearney, 2020).

Numerous studies surrounding “Speak Up” culture in the context of HPWPs subsystems have been performed at various health systems, which supported the

applicability of this conceptual model in the health care setting. Figure 1 demonstrates Robbins and McAlearney's (2020) visual representation of the proposed relationship between HPWPs and "Speak Up" culture. According to Robbins and McAlearney, employees are often reserved in vocalizing concerns identified in their work environments, including potential solutions that could remedy these issues and facilitate organizational process improvement efforts toward service excellence.

Figure 1

Proposed Relationship of High-Performance Work Practices and "Speak Up" Culture



Note. From "Toward a High-Performance Management System in Health Care, Part 5: How High-Performance work Practices Facilitate Speaking Up in Health Care Organizations," by J. Robbins and A. S. McAlearney, 2020, *Health Care Management Review*, 45(4), p. 280. Copyright 2018 by the Wolters Kluwer Health. Reprinted with permission.

Nature of Study

A correlational quantitative research design was a suitable approach to analyze the relationship between “Speak Up” culture level (independent variable), team effectiveness (dependent variable), and organizational performance (dependent variable) in the clinical lab. The study design was a nonexperimental, national questionnaire that was conducted in a natural environment without any influence from the researcher; the aim was to examine the relationship between “Speak Up” culture level and team performance or effectiveness based on the responses from the survey. Additionally, correlational studies are inexpensive, rapid, and considered the best method to ascertain relationships between variables (Frankfort-Nachmias et al., 2015). Hence, a correlational design was selected.

The study population was a sample of clinical lab employees from a large health care system within the United States. An online survey developed by a reputable company specializing in pulse surveys was utilized for data collection. Furthermore, survey responses received from qualifying participants were processed and analyzed by this third-party vendor, providing percentage scores for the various indices of interest that included “Speak Up” culture, team effectiveness, and organizational performance. A hyperlink to the survey was sent via email to all qualifying clinical lab employees throughout this health care system enterprise at predefined intervals. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software, and inferential statistics were performed; both linear regression analysis and the Pearson product-moment correlation were applied to assess the predictability of the relationship and

strength of linear relationship between the two variables, respectively (see Creswell & Creswell, 2018). Moreover, the statistical significance was established at a $p > 0.05$ limit.

Literature Search Strategy

An extensive search for current literature was conducted to support this study. Literature review resources consisted of peer-reviewed journal articles and books. Research databases utilized for this study included the *Business Source Complete*, *ScienceDirect*, *APA PsycInfo*, *Medline*, *CINAHL*, *Cochrane Database of Systematic Reviews*, and *SocINDEX* that were all found within the Walden University Online Library. Furthermore, *Google Scholar* was used to search for credible articles that examined the relationship between the variables of “Speak Up” culture and team effectiveness, or “Speak Up” culture and organizational performance. Search terms included *speak up (or speaking up) culture*, *employee voice*, *team effectiveness*, *organizational performance*, *clinical laboratory*, *high performance work practices*, *HPWP/HPWPs*, and *health care*. The literature review incorporated original studies that were conducted between the years 2011 through 2022. However, majority of the literature discovered and applied to this quantitative correlational research study were published within the last 6 years. The literature sources were collected, analyzed, and categorized for inclusion.

Literature Review

The medical field can harbor an intimidating environment for both health care and nonhealth care professionals. One study demonstrated that 77% of health care workers experienced some form of abuse and disrespect in the workplace, yet only 7% addressed

the issues with their offender or offenders (Spruce, 2014). With preventable medical errors identified as the third leading cause of death in the United States (McCoy et al., 2020), coupled with the lack of psychological safety among health care professionals (O'Donovan & McAuliffe, 2020), the need for health care industries to promote a "Speak Up" culture within the workplace is greater than before.

"Speak/Speaking Up" Culture

The capacity for a health care professional to vocalize patient care concerns to their superior is often difficult to perform, even if the person understands the detrimental impact that could result from their inaction. Several studies have revealed that people will follow directives from individuals in a position of power and not challenge their commands despite knowing the risks associated with executing them (Weller & Long, 2019). As the medical field evolves and continues to increase in complexity, many health care institutions recognize the importance of empowering frontline employees in identifying and preventing potential patient risks, including sentinel events. Growing evidence has suggested that health care organizations that enable staff to openly express patient care concerns, and where swift corrective actions occur accordingly to address the issues, have been linked to improved patient care outcomes, financial stewardship, and employee job satisfaction (Jones et al., 2021). For instance, an international study involving critical care nurses and clinicians demonstrated that environments with high communication openness perceived better understanding of patient care goals (Ng et al., 2017). Improved communication of the patient's health care status between the providers and nursing teams ensures effective monitoring and timely implementation or follow-up

of medical interventions to achieve optimal patient care outcomes. Furthermore, the study revealed that eliminating team hierarchy to promote equal professional status, especially in emergency situations, facilitated in removing barriers to speaking up for patient safety by the health care team (Ng et al., 2017). Therefore, promoting the establishment of a “Speak Up” culture within the organization would help carve and align its efforts toward service excellence.

Much of the examples describing “Speak Up” culture came from observations of medical interventions in direct patient care areas. For instance, a study on speaking up to authority in a simulated medication error scenario described nursing students’ confidence levels in reporting medication safety issues to superiors before and after completion of a simulation training (Shanks et al., 2020). Students who participated in a simulation program on medication errors reported higher self-confidence scores and were likely to share patient safety concerns to an authority figure compared to those students who did not partake in the simulation training (Shanks et al., 2020). Therefore, there is potential for inefficiencies in patient care delivery to occur when lower confidence levels stifles speaking up.

Other terms such as *employee voice*, *speaking up*, *assertive communication*, and *voice* have been used interchangeably to denote the concept of speaking up (Lee et al., 2021). The concept of speaking up has then since spread to other clinical and non-clinical areas within the health care system, including indirect patient care settings and service lines such as the environmental health and safety, supply chain and materials management, biomedical engineering, and the clinical lab departments. Furthermore,

“Speak Up” culture in clinical labs continue to evolve as new discoveries in biomedical research/lab medicine lead toward the development of advanced and intricate diagnostic testing tools and equipment for clinical care use. Consequently, this progression calls on the requirement for enhanced competencies by qualified testing personnel (e.g., medical lab scientist) in ensuring the analysis and release of precise and accurate clinical lab data drives timely, safe, and appropriate health care interventions by the medical team for optimal patient care outcomes.

Team Effectiveness and Speaking Up

Team effectiveness is a phenomenon comprising a combination of team performance, team functioning, and team viability (Zajac et al., 2021). The ease by which team members vocalize and share their thoughts and ideas to improve processes is an important facet of highly effective teams (Morrow et al., 2016). A meta-synthesis study on speaking up behaviors among health care workers and nursing discovered four themes that affect “Speak Up” culture: (a) power dynamics and hierarchies, (b) negative perceptions of open communication, (c) rooted “nurse” conduct, and (d) nurse management influential power (Morrow et al., 2016). The first two themes are detrimental to “Speak Up” culture in health care overall, but the latter two themes revolve around the nursing practice and can be either positively or negatively affect speaking up behaviors (Morrow et al., 2016). Therefore, workplace environments that support a “Speak Up” culture could improve the effectiveness of the health care teams’ delivery of quality patient care that ultimately can lead the organization to achieve service excellence.

Clinical Laboratory

The clinical lab is one of several allied health care disciplines that focus on routine and complex diagnostic testing of human specimens. Many studies reference the importance of the clinical lab in patient care, as 60–70% of medical decisions rely on timely and accurate lab results (Avery & Geno, 2021). The quantitative or qualitative data obtained from analyzing blood, urine, or other biological samples provide crucial information about a patient’s health status (Avery & Geno, 2021). Therefore, quality/process improvement efforts within the clinical lab’s microsystem that aim to reduce errors and promote workflow efficiencies ultimately benefit patients (Tsai et al., 2019).

Despite the importance of the clinical lab, research on “Speak Up” culture in the clinical lab environment is understudied. With many lab errors occurring in the pre-analytic and post-analytic stages of testing (Raebel et al., 2019), lab leaders can explore and encourage speaking up among teams and other interdisciplinary staff to facilitate interdependencies and promote effectiveness. To clarify, studies have indicated that highly developed teams often demonstrate increased productivity and team satisfaction (Peralta et al., 2018). Adopting and implementing principles of HPWPs such as speaking up could improve the effectiveness of the clinical lab’s contributions to patient care and overall, impact the health care organization’s performance. In short, “Speak Up” culture has a place in the clinical lab setting worth exploring.

HPWPs

HPWPs are defined as a collective set of human resource practices such as performance appraisal, teamwork, and training that when executed properly, result in a positive relationship with organizational outcomes (McAlearney et al., 2013). The four subsystems of HPWPs include engaging staff, acquiring and developing talent, empowering the frontline, and aligning leaders (Robbins & McAlearney, 2020). Utilizing the HPWPs model as the foundation for fostering a “Speak Up” culture in the clinical lab would not only strengthen this concept in the field but also to other areas within the allied health disciplines. Overall, the HPWPs model is a practical framework to promote speaking up.

In the HPWPs model, engaging staff is comprised of four practices that focus on the employees’ awareness and connection to the organization’s vision and its current state of success in achieving that vision (Garman et al., 2011). The first practice involves communicating the mission and vision of the organization. This establishes the understanding of the organization’s scope and purpose to its employees and how the employees’ work supports the organization’s mission and goals. Second, the practice of information sharing provides the medium for ensuring staff are knowledgeable of the organization’s performance and other job-related concerns. Third, the practice of employee involvement in decision making encompass the processes aimed at enabling employees to influence decisions that affect their work. Lastly, performance-driven reward/recognition outlines the set of policies and procedures tied to employee

recognition and/or compensation for achieving “organization-supportive goals.”

Therefore, these four practices share the common theme in the engaging staff subsystem.

The second subsystem identified in the HPWPs model is acquiring and developing talent (Robbins & McAlearney, 2020). Like engaging staff, this second subsystem is comprised of four practices but focus on the quality of the organization’s workforce through effective hiring and staff development (Garman et al., 2011). The first practice involves rigorous recruitment of new talent by means of referral incentives, employee branding, and leveraging strategic initiatives like workforce planning and talent acquisition systems evaluation. The second practice, selective hiring, denotes the methods utilized in filling open positions with erudite candidates from the applicant pool, which include the use of validated assessment tools such as personality and technical exams to aid managers with the hiring selection. The third practice, extensive training, focuses on mobilizing the organization’s resources toward staff development through robust performance management systems and on-the-job training programs. Moreover, the fourth practice, career development, emphasizes the identification of career pathways for existing employees and removing barriers/providing support to ensure their success. These four practices are linked in the acquiring and developing subsystem.

The third subsystem in the HPWPs model focuses on empowering the frontline staff (Robbins & McAlearney, 2020). This subsystem is comprised of three practices designed to influence care quality and safety measures the health care team provides to patients (Garman et al., 2011) in addition to reducing status distinctions (Robbins & McAlearney, 2020). The first practice in this subsystem is employment security. This

practice incorporates protocols and methods that help minimize the fear of employment loss for staff meeting performance standards (Garman et al., 2011). By reinforcing the employment guardrails, personnel may be encouraged to speak up and challenge the status quo due to their low perceived risks of a job loss. Overall, job security plays a significant role in promoting staff empowerment. The second practice in this subsystem is reduced status distinctions (Garman et al., 2011). The methods under this practice focus on establishing an egalitarian work culture by standardizing career advancement opportunities and dismantling hierarchical formalities within this environment. Lastly, the third practice within this subsystem is teams and decentralized decision making. This practice incorporates approaches that support a shared governance between employees and managers to determine the best path for handling day-to-day operations. Health care-related research has found significant relationships between the level of team performance and safety outcomes (Garman et al., 2011), which further supports the advancement of “Speak Up” culture within these teams. To summarize, these three practices reveal their association to the empower the frontline subsystem.

The fourth subsystem in the HPWPs model is aligning leaders (Robbins & McAlearney, 2020). This subsystem is comprised of three practices aimed at improving the organization’s leadership to effectively manage and lead the organization holistically towards greater heights (Garman et al., 2011). The first practice identified under this subsystem is leadership training linked to organizational goals (Robbins & McAlearney, 2020). This practice stresses the strategic application of leadership development resources, including the utilization of performance management tools and institution-

specific core competency training models to guide career development and alignment with the organization's vision and goals (Garman et al., 2011). The second practice related to this subsystem is succession planning (Garman et al., 2011). This approach surrounds proactive analysis and resolving future leadership needs by means of executing leadership workforce analysis, distinguishing high-potential leader candidates, and implementing promotion-centered development programs. Finally, the third practice within this subsystem is performance-contingent rewards. From a "Speak Up" culture perspective, the intent of this practice is to provide consistent motivation through rewards and incentives for observed managerial behaviors connected with employee speaking up (Robbins & McAlearney, 2020). Despite the similarity of the performance-driven reward/recognition practice under the engaging staff subsystem, it is worth noting the difference that reward/recognition methods utilized under this practice often vary at the leadership level from the frontline staff level. For instance, leadership-level practice regularly employs tactics that place a percentage of monetary rewards "at risk" depending on the successful achievement of institutional goals that include "acceptable overall financial performance" (Garman et al., 2011). On the contrary, frontline-level strategies often include application of cost-free methods such as public recognition or temporary preferences in work scheduling for achieving and sustaining department-specific goals (Gaughan et al., 2021). Consequently, these three practices demonstrate their relationship to the aligning leaders subsystem.

Pulse Surveys

Pulse surveys are assessment tools used for gathering short and timely insights of an organization's current state and to determine whether implemented interventions and/or action plans are on target (Allen et al., 2020). Pulse surveys are much quicker and simpler to complete and that technological advancements have made it easier for companies specializing in this niche to rapidly produce and implement employee questionnaires at a lower cost (Brown, 2022). In health care organizations, inquiries from these types of surveys aid in measuring statistically validated indices such as speaking up, team effectiveness, and organizational performance to predict business outcomes. While existing studies on pulse survey indices focused on organizational development (Allen et al., 2020), no comprehensive research has been published that specifically address the pulse survey indices' effects on the clinical lab (Garcia et al., 2020). Therefore, pulse surveys can provide leaders and other stakeholders a limited understanding into a clinical lab's culture by which holistic quality improvement initiatives can be cultivated.

Definitions

The following terms essential to this study are listed as follows:

Analytic test phase: The steps or processes involved during specimen analysis (Raebel et al., 2019).

Clinical laboratory professional (or clinical lab professional): A pathologist, lab scientist, lab technologist/technician or phlebotomist employed by a clinical lab (Al Naam et al., 2022).

Collective capability: A skill employed by a group that serves to secure an ability

for all the members within that group (Rosignoli, 2019).

Defensive silence: A proactive behavior in which an employee remains silent resulting from the perception of viewing “Speaking Up” as a risk to one’s career within the organization and can lead to disagreements (Khalid et al., 2020).

Employee engagement: An employee’s active participation and gratification with as well as desire for work (Shrotryia & Dhanda, 2019).

HPWPs: High performance work practices; A set of organizational and human resources (HR) principles that focus on quality improvement and employee performance to drive business outcomes (McAlearney et al., 2013).

Organizational performance: Quantitative correlational research study dependent variable; A measure of success against key performance indicators defined by the organization’s strategic objectives, which could include benchmarking with similar organizations to determine one’s competitive state (Al Hammadi & Hussain, 2018).

Post-analytic test phase: The steps or processes involved succeeding specimen analysis such as result reporting (Raebel et al., 2019).

Pre-analytic test phase: The steps or processes involved with collecting and processing of specimens prior to analysis (Lima-Oliveira et al., 2017).

Psychological safety: A phenomenon in which an individual feels secure in taking interpersonal risks, such as speaking up or engaging in polarizing interactions (O’Donovan & McAuliffe, 2020).

Pulse survey: A questionnaire for gathering short and timely insights of an organization’s current state and to determine whether implemented interventions and/or

action plans are on target (Allen et al., 2020).

Speak up (or speaking up): The act of raising concerns by health care professionals to promote patient safety and quality of care upon recognition of risks or “deficient actions” by one or more individuals within health care teams (Etchegaray et al., 2020).

Speak up culture: The shared beliefs and values among employees in the organization to promote open dialogue about issues in the workplace free from judgement or fear of retaliation (Betsy et al., 2020).

Speak up culture level: Quantitative correlational research design independent variable; A measurement of the perceived strength or weakness of “Speak Up” culture in the workplace; also known as ‘speak-up climate’ (Niederhauser & Schwappach, 2022).

Team effectiveness: Quantitative correlational research design dependent variable; A phenomena comprising a combination of team performance, team functioning, and team viability (Zajac et al., 2021).

Team performance: A results-oriented outcome caused by individuals within a team working towards a shared goal (Zajac et al., 2021).

Team functioning: Term used to describe how a team operates on a “day-to-day basis” (Zajac et al., 2021).

Team viability: Future forecasting of team functioning (Zajac et al., 2021).

Assumptions

There were a few assumptions that influenced this study. First, there was the assumption that survey participants possessed high integrity standards and were honest in

their assessment that significantly minimized, if not eliminated bias. Second, there was the assumption that all participants in the study had basic computer literacy skills, which included a rudimentary understanding on how to complete a pulse survey. Third, there was the assumption that the pulse survey tool was credible and valid. Finally, there was the assumption that the results of this study could be utilized to improve “Speak Up” culture training for clinical lab leaders and facilitate the removal of “Speak Up” barriers in the workplace to create positive impact in team effectiveness and organizational performance.

Scope and Delimitations

The research sample in this study was limited to clinical lab personnel with an active email address on file with the health care organization. Additionally, there were recent changes made to the administration of the pulse survey within the last four years. To elucidate, the surveys were now sent randomly to a select group of individuals on a biannual basis, which was a change in past practice where the surveys were sent to all employees at specific timeframes of the year on an annual basis. Other delimitations included some participants opting out from receiving emails to participate in the survey process entirely. Moreover, only managers with five or more employees under their organizational hierarchy received the final survey report card for review, including identified opportunities for improvement and corrective action plans that required follow-up.

The pulse survey questions revolved around 10 statistically validated metrics to quantify key business priorities and it included “Speaking Up,” team effectiveness, and

organizational performance. Moreover, the HPWPs model was selected as the conceptual framework for this study due to its overall alignment with the survey's measured indices of interest.

Limitations

Data collection by means of administering research surveys are a common practice in the social sciences. Advantages of utilizing questionnaires include wider sample population, minimal costs, participant anonymity, and flexibility (Andrews, 2019). Despite these advantages, this study was subject to several limitations. For instance, subject participation was voluntary and the results could have been influenced by bias due to self-selection. Additionally, survey participants may not have completed the questionnaire in its entirety, which could potentially skew the data of the final survey report. Moreover, there was a concern for personal bias to potentially influence this study because I currently work as a clinical lab scientist. However, values and personal preferences of the researcher were not as concerning and crucial to a quantitative study (Creswell & Creswell, 2018).

Another limitation of this research was the sample population may not be representative of the clinical lab profession; hence, the generalizability of the results obtained from this study were limited. This research was an original study intended to establish a starting point for future research, if not contribute to existing studies in the clinical lab regarding "Speak Up" culture and its relationship to team effectiveness and organizational performance.

Significance

Determining the relationship that exists between “Speak Up” culture, team effectiveness, and organizational performance has the potential to foster positive social change in the field of lab medicine. Barriers such as fear of negative career repercussions and power distance (Sahin et al., 2021) prevent frontline employees from speaking up and sharing ideas that can facilitate positive team and organizational changes (Satterstrom et al., 2021). Incorporating a multifaceted approach to enhance “Speak Up” behaviors and fortifying interdisciplinary teamwork is recommended (Ginsburg & Bain, 2017), as team development occurs over time due to evolving organizational challenges and other workplace dynamics such as information sharing and team cohesion (Peralta et al., 2018). Additionally, implementing elements of the HPWPs model in the workplace such as policy changes that eliminate fear of repercussions and promote safety-related reporting systems can bolster “Speak Up” behaviors (Robbins & McAlearney, 2020). Assessing whether “Speak Up” culture levels relate to team effectiveness or organizational performance could be an instrumental driver towards safe, cost-effective, and high-quality patient care. Moreover, this study has implications for health care administrators. Incorporating topics on “Speak Up” culture in health care leadership training programs could enhance leadership effectiveness among managers that ultimately benefits consumers of health care resulting from the elevated patient care experience they receive from high functioning teams.

Summary and Conclusions

Lab professionals have recently been dubbed the “unsung heroes of modern-day medicine” due to the nature of their work occurring primarily “behind the scenes” (Leber et al., 2022). With 60-70% of medical diagnoses are based on timely and accurate lab results (Avery & Geno, 2021), methods aimed to reduce errors in the pre-analytic, analytic, and post-analytic testing phases continue to pose challenges for many lab leaders and health care administrators alike. Despite the various performance indicators available for use, “Speak Up” or “Speaking Up” levels in the clinical lab are seldomly used as a metric to monitor performance because of its unfamiliarity in lab medicine. However, there have been several research studies supporting the correlation between “Speak Up” levels and patient safety in “direct” patient care areas (McCoy et al., 2020; Millis, 2020; Weller & Long, 2019). Moreover, limited studies supporting the relationship between “Speak Up” culture, team effectiveness, and organizational performance in health care were also discovered (Garman et al., 2011; Robbins & McAlearney, 2020). The purpose of this quantitative correlation study was to investigate the relationship between “Speak Up” culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab.

This study was a correlational quantitative research design focused on examining “Speak Up” culture level (independent variable) and its association, if any, between team effectiveness (dependent variable) and organizational performance (dependent variable) to promote positive social change in the field of health care administration, including clinical lab management. The HPWPs model was used as the conceptual framework for

this study. Data were collected electronically using a pulse survey filled with probing statements that were tailored to the research host organization's business priorities, which were then processed and analyzed by a reputable third-party vendor.

The purpose of this quantitative correlation study was to investigate the relationship between "Speak Up" culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. Consequently, a Pearson's correlation coefficient was evaluated in conjunction with a regression analysis to establish the strength and predictability of the relationship. Moreover, relevant literature review was included in this study to discuss the research gaps within the literature and link the importance of understanding the association between "Speak Up" culture level, team effectiveness, and organizational performance in the clinical lab setting.

Section 2: Research Design and Data Collection

The purpose of this quantitative correlation study was to investigate the relationship between “Speak Up” culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. Numerous studies have demonstrated that health care environments that fostered speaking up behaviors among health care teams directly involved with the patient’s care were associated with increased patient safety awareness and thus promoted better patient care outcomes (Morrow et al., 2016; Ng et al., 2017; Shanks et al., 2020). Despite the growing literature on the benefits of “Speak Up” culture on team effectiveness and organizational performance in modern-day medicine, this emerging topic was understudied in health care areas indirectly involved in patient care such as the clinical laboratory. Consequently, this paper aimed to bridge the research gap and contribute to the growing body of knowledge on “Speak Up” culture within the Clinical Laboratory space.

Section 2 outlines the research design, methodology, and data analysis plans for executing the study to gain insights on “Speak Up” culture and its relationship to team effectiveness and organizational performance. Moreover, the data analysis plan is presented with a discussion of validity issues, including control protocols to address potential ethical concerns generated by this study.

Research Design and Rationale

This quantitative study followed a correlational exploratory research design to analyze the relationship between “Speak Up” culture level (independent variable), team effectiveness (dependent variable), and organizational performance (dependent variable)

of lab professionals employed in a clinical lab. Current literature has suggested that correlational research designs are the preferred method for conducting studies that investigate relationships between variables of interest (Curtin et al., 2020). This study employed a nonexperimental pulse survey, which took place in a natural environment to prevent any influence from the investigator. Furthermore, examination of the association between “Speak Up” culture level and team effectiveness and the link between “Speak Up” culture level and organizational performance was performed according to survey responses. The survey was sent electronically to all qualified health care professionals employed by the organization within the United States by a reputable third-party vendor. However, the population of interest for this study primarily focused on a sample of clinical laboratory professionals working in northern California.

Methodology

Population

The target population were lab professionals working in a health care clinical lab, which included participants in subspecialties of lab medicine categorized under anatomic pathology. It would be ideal to obtain a sample that was representative of the lab medicine discipline. However, a convenience sample would not be representative of the clinical lab population within the United States.

Sample and Sampling Procedures

All health care employees in the United States with an active employment status (i.e., not on leave of absence, terminated, contracted employees, etc.) with the research host organization was invited to participate in the pulse survey. However, only survey

data from clinical lab professionals in northern California were evaluated for this study to ensure alignment and consistency in scope. The survey was administered by a reputable third-party vendor at predefined intervals that included a start and end date established by the research host organization's executive leadership. The selection of the survey period was predetermined by the research host organization to ensure consistency with historical survey administration practices. During the survey period, selected participants received an email from the third-party vendor with an electronic notification uniquely linked to the individual employee to prevent receiving duplicate responses. Furthermore, selection of questionnaire participants was based according to the predefined pulse survey schedule. Exempt employees with direct reports (e.g., supervisors, managers, directors, etc.) did not know whom among their subordinates have received the survey. However, the exempt leaders were notified of the overall completion/response rate as a percentage total from the survey vendor to ensure the integrity of participant anonymity. Moreover, the vendor routinely sent email reminders throughout the survey period to the selected participants pending survey response submission.

Sample size analysis were applied for quantitative research designs that focused on three vital pieces of information: statistical power, alpha, and effect size. The expectation was to discover an 80% (or .80) association between the variables, which was the power used in classical studies to establish the sample size (Norouzian, 2020). As a starting point for this research, the sample size was determined using a statistical power of .80 and an alpha level of .01, which indicated that there was a 1% chance the investigator has reached the wrong conclusion. To ensure consistency with literature, an

effect size of .20 was initially used for this study to compute and determine sample size. However, upon review of the secondary data sets provided by the third-party vendor, the data sets were presented in an executive summary format of the survey results rather than individual responses. This observation led to modifying the study's effect size and increasing the value from .20 to .50 to ensure the required sample size was manageable. An effect size of .50 was the threshold value interpreted as medium effects that is widely accepted and applied by the research community (Lovakov & Agadullina, 2021). Further, statistical analyses would include the use of univariate tests and multivariate linear regression, which could require modifications to account for demographic characteristics. The G*Power (version 3.1) for correlation with a one-tailed test, an effect size of 0.50, an alpha of 0.01, and a power of 0.80 resulted in a total sample size calculation of 164 participants. With more than 1,000 eligible clinical lab personnel employed in one of the several research host organization's labs in northern California, collecting a minimum of 164 responses from these employees within the established survey period was attained.

Procedures for Participation and Data Collection

An email from a third-party pulse survey vendor was sent to all health care employees with an active email address from the research host organization throughout the United States. However, given the various health care disciplines employed by the research host organization, data collected and analyzed were focused on personnel working under the departments of pathology and clinical lab medicine. The email that was received by the lab employee described the purpose of the pulse survey and included a disclosure indicating that individual responses were confidential and that their feedback

was highly encouraged. Furthermore, organizational managers were instructed from the survey program administrators to inform staff that participation was strictly voluntary; no identifying information was collected except employee desktop credentials that were needed to access the survey to prevent duplicate participant responses; and survey participants could exit the questionnaire at any time. Employee consent in completing the questionnaire was implied through their responses and submission of the pulse survey. Consequently, there was no need for follow-up once the questionnaire has been submitted.

Instrumentation

The pulse survey was developed for the health care system to measure two custom benchmarks—health care and administrative services. Additionally, the health care system collaborated with a third-party vendor to develop each item on the pulse survey. The health care benchmark was said to reflect the top 25% from several health care institutions with workforce segments, which included nursing and allied health disciplines, that were parallel to the research host organization. Similarly, the administrative services benchmark was said to mirror the top 25% from administrative services industries with workforce segments such as administrative support, information technology, facility services, supply chain/materials management, and marketing identified as similar to the research host organization. Lastly, the pulse survey has been used in the research host organization for more than 10 years to assess and evaluate the organization's performance against the 10 indices, which included "speaking up," team effectiveness, and organizational performance.

The research host organization defined the “Speaking Up” index as a measure to which staff members “feel valued and respected” with the sense of psychological safety in expressing or vocalizing concerns. Under this index, nine survey questions were developed that were directly tied to nine reporting categories: feeling valued, ideas considered, innovation, input, open and honest, perspectives valued, respect, response to errors, and speak up. Each reporting label was displayed as a corresponding statement item in the pulse survey on a 5-point agreement scale that were coded as 1 = *strongly disagree*, 2 = *disagree*, 3 = *partly disagree/partly agree*, 4 = *agree*, and 5 = *strongly agree*.

The research host organization defined the “Team Effectiveness” index as a measure to which staff members have aligned objectives, role clarity, efficient processes, and shared respect and trust. Within this index, 10 survey questions were developed that were directly tied to 10 reporting categories: department goals, efficiency, ideas considered, learn from errors, open and honest, performance feedback, recognition, respect, role clarity, and teamwork. Each reporting category was displayed as a corresponding statement item in the pulse survey on a 5-point agreement scale that were coded as 1 = *strongly disagree*, 2 = *disagree*, 3 = *partly disagree/partly agree*, 4 = *agree*, and 5 = *strongly agree*.

The research host organization defined the “Organizational Performance” index as the perceived effectiveness of the research host organization’s operations and the level of support it provided to its employees in promoting and optimizing performance. This index comprised eight survey questions that were directly tied to eight reporting

categories: access to information, accountability, collaboration across departments, employee contribution to organizational goals, organizational goals, performance feedback, resources, and technology. Each reporting category was displayed as a corresponding statement item in the pulse survey on a 5-point agreement scale that were coded as 1 = *strongly disagree*, 2 = *disagree*, 3 = *partly disagree/partly agree*, 4 = *agree*, and 5 = *strongly agree*.

According to a confidential and proprietary document, the reporting category translated to a 100-point value based on the mean questionnaire rating; the point value for the reporting category ratings were interpreted as 0 = *strongly disagree*, 25 = *disagree*, 50 = *partly disagree/partly agree*, 75 = *agree*, and 100 = *strongly agree*. Moreover, scores less than 60 were considered “low” and score values greater than 75 were considered “high. ”

The administrators responsible for administering the pulse surveys across the organization provided a finalized and “crunched” data sets displayed as an electronic summary or detailed report to all clinical lab managers with 10 or more respondents to the survey. Furthermore, the survey administrators granted the managers restricted access to view and download or print reports online only for the lab section(s) they oversaw, if not as a service line rollup based on their leadership role within the organizational chart; it was during this timeframe where the managers were allowed to share survey outcomes with their respective team(s) to initiate dialogues for celebrating successes in the survey categories with high scores and promote opportunities for improvement in the categories that received low scores.

Operationalization

For this study, there was an interest in determining the relationship between “Speak Up” culture levels and team effectiveness. There was also an interest to establish the link, if it existed, between “Speak Up” culture levels and organizational performance. I hypothesized that as “Speak Up” culture levels increased, team effectiveness and organizational performance scores would either increase or decrease by some quantitative value. Therefore, “Speak Up” culture level was identified as this study’s independent variable, while team effectiveness and organizational performance were classified as the two dependent variables.

Since the pulse survey questions relevant to this study were directly associated to either the “speaking up,” team effectiveness, or organizational performance index, the finalized data sets provided by the pulse survey administrators were simply operationalized by entering and categorizing the data in Microsoft Excel and downloading it into SPSS, where descriptive and inferential statistics were performed to determine the relationships between the independent and dependent variables.

Data Analysis Plan

Data were analyzed using SPSS version 24, which were cleaned and screened. Moreover, descriptive and inferential statistics were performed. The data were examined to determine if a relationship existed between the study variables. The following research questions were studied:

RQ 1: What is the relationship between “Speak Up” culture level and team effectiveness?

H_01 : No statistically significant difference exists between “Speak Up” culture level and team effectiveness.

H_a1 : Statistically significant difference exists between “Speak Up” culture level and team effectiveness.

RQ 2: What is the relationship between “Speak Up” culture level and organizational performance?

H_02 : No statistically significant difference exists between “Speak Up” culture level and organizational performance.

H_a2 : Statistically significant difference exists between “Speak Up” culture level and organizational performance.

Descriptive and Inferential Statistics

Descriptive and inferential statistics were utilized to determine the relationship, if it existed, between “Speak Up” culture level and team effectiveness. Similarly, descriptive and inferential statistics were applied to ascertain the association between “Speak Up” culture level and organizational performance. A custom pulse survey was implemented by a third-party vendor that collected and measured “Speak Up” culture level, team effectiveness, and organizational performance among health care personnel employed by the research host organization. However, descriptive and inferential statistics were only conducted on survey data received from the research host organization’s health care personnel working in the clinical lab environment within the northern California region.

The descriptive statistics included the mean score value and standard deviation for each study variable. Additionally, the inferential statistics included a simple linear regression analysis to measure the strength of the relationship between the study variables; researchers employ this statistical method more commonly in the field to reveal the association between the independent and one or more dependent variables (Yan & Su, 2009). Moreover, the application of regression analysis facilitated the establishment of a causal relationship between the research variables (Yan & Su, 2009) and helped determine the predictability of the relationship (Field, 2013). Therefore, a simple regression analysis was the appropriate statistical test to use in this study.

To answer the first research question, results were obtained from the simple regression analysis to show how “Speak Up” culture level, the independent variable, correlated with team effectiveness, the dependent variable, among lab professionals working in a clinical lab environment. A one-tailed t test was calculated with the statistical significance set at a p value of <0.05 . The one-tailed t test was the appropriate choice for this study due to its higher statistical power in determining a unidirectional effect, as compared to a two-tailed t test where statistical power declines when the same correlational research design and significance level is applied.

To solve the second research question, a simple linear regression was also applied to demonstrate how “Speak Up” culture level, the independent variable, correlated with organizational performance, the dependent variable, among lab professionals employed in a clinical lab. Similar to the first research question, a one-tailed t test was calculated with the statistical significance set at a p value of <0.05 . Moreover, the one-tailed t test

was the appropriate test to apply due to its robust statistical power in comparison to a two-tailed t test when the correlational research design and significance level are the same.

Threats to Validity

Internal Validity

Issues surrounding internal validity may have originated from the survey instrument. To reduce instrument bias, methods that included review of survey question wording and using multiple probing questions designed to extract the same response were considered (Bianchi & Rosielle, 2022). Since the pulse survey was created specifically for the research host organization and has been in use throughout the health care system for more than a decade, one can infer with confidence that the results obtained from the survey were valid.

Other internal threats to validity could have included the Hawthorne effect and selection bias. To clarify, the study participants' attitudes and behaviors toward this research could have changed due to their awareness of the pulse survey being observed, monitored, and assessed by the organization's leadership (Nguyen et al., 2018). Furthermore, this correlational quantitative research design may have utilized a convenience sample of survey participants that could have been selected in a non-randomized approach. Therefore, both the Hawthorne effect and selection bias could potentially pose a threat to internal validity.

External Validity

A limitation of this research was the convenience sampling of clinical lab professionals. To elaborate, the survey participants were all from northern California and may not be representative of the entire clinical lab population (Mann, 2003). In a similar manner, the pulse survey was a self-report instrument; survey participants may not want to answer the questions candidly due to possible perceptions that survey responses may not be kept confidential by the third-party survey administrators or that they may not be used by health care managers to promote positive changes within the organization. Finally, attaining statistical significance with less than the required sample size ($n=164$) was also a potential threat to validity. However, with more than 1000 eligible clinical lab personnel employed in one of the several research host organization's labs in northern California, collecting the minimum number of responses was achieved and eliminated this risk.

Ethical Procedures

Authorization to access pulse survey results were obtained from the research host organization's senior leadership under the caveat of enforcing deidentifying procedures to ensure the confidentiality of the research host organization. This was accomplished via a written letter of agreement that outlined the purpose for using the pulse survey data sets, the period in which the data were accessed and how it was stored, and the data disposal method plans upon completion of this research study. The survey data were accessed online and electronically downloaded into a portable, password-protected/encrypted flash

drive as an “executive summary” and “detailed report” Excel file designed by the third-party pulse survey vendor.

According to an internal confidential document distributed by the pulse survey administrators, the questionnaires were sent to qualified participants via email during the survey window by a third-party vendor. The email contained an embedded link that routed the participant directly to the questionnaire. Additionally, the email displayed a summary of the survey’s purpose and instructions on how to complete the survey, including a reminder to exercise caution in not identifying themselves on the survey sections requiring free text data entry. Moreover, the internal confidential document indicated that no personal demographic information were collected from the participants to ensure anonymity.

The participant’s consent to complete the survey was implied by the action of providing their feedback and that they could withdraw from completing the questionnaire at any time. This quantitative research correlational design study was submitted to Walden University’s Institutional Review Board (IRB) and all non-identifying information were kept in an electronic, password-protected/encrypted file. The plan was to ultimately destroy the files, including any external portable drives used during the research, using a reputable data destruction service after a minimum amount of time has passed from the time of data collection to safely complete this study. Lastly, a published copy of this study will be provided to the research host organization in hopes of providing insights to health care leaders and promote positive social change within the clinical lab space, if not the organization.

Summary

Section two of this dissertation described the intricate plans for implementing the study's purpose, which was to investigate the relationship between "Speak Up" culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. Additionally, research methodology tactics were also discussed, including the logic behind the selected strategies. To explicate, sample population, sampling procedures, data collection instruments, and data analyses for testing the hypotheses were outlined for clarity. Testing the hypotheses included the use of descriptive and inferential statistics. To elaborate, the mean and standard deviation values were calculated from the pulse survey data sets to determine the distribution for each variable. Additionally, simple linear regression analyses were employed to measure the strength of the association between the study variables; a one-tailed t test was applied with the p value set at <0.05 to determine statistical significance that aided in establishing the link, if any, between "Speak Up" culture level, the independent variable, and the dependent variables, team effectiveness and organizational performance among health care workers employed in a clinical lab. Lastly, the internal and external threats to validity were addressed, as well as how ethical protocols were executed and enforced.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative correlation study was to investigate the relationship between “Speak Up” culture level, team effectiveness, and organizational performance among health care workers employed in the clinical lab. Two research questions were developed for this study that each addressed “Speak Up” culture and the two variables (team effectiveness and organizational performance), and secondary data sets spanning over a 4-year period outlining participant survey responses that measured “Speaking Up,” team effectiveness, and organizational performance indices were analyzed.

This section presents the detailed results of the study. The section outlines the specifics of the data collection of the secondary data set, which included timeframes, recruitment, and response rates. Additionally, baseline descriptive and demographic characteristics of the sample population and its representativeness to the larger population of interest are also discussed. Moreover, findings of the descriptive and inferential statistics, including the application of simple regression analysis are organized according to the two research questions along with its associated tables to demonstrate the results.

Data Collection of Secondary Data Set

The research study was approved through Walden University’s IRB (#11-21-22-0988788), with an expiration date of November 21, 2023. The sample used for the study was a population of laboratory professionals working at one of the research host organization’s clinical laboratories in northern California that included participants

employed in subspecialties of clinical laboratory medicine categorized under anatomic pathology.

Data collection were performed using a pulse survey administered by a reputable third-party vendor employed by the research host organization. The third-party vendor administered the pulse survey biannually, which occurred on the first and third quarters of each year. For this study, secondary data of pulse surveys administered by the third-party vendor for the years 2019, 2020, 2021, and 2022 were utilized. Notification surrounding the deployment of the pulse surveys were provided to all personnel employed by the research host organization several weeks in advance via email. The email depicted a brief synopsis of the pulse survey in addition to placing all employees on notice of observing increased communication reminders from their respective management team about the survey to promote awareness and encourage participation.

During the open pulse survey period, all employees that were due on the rotation schedule to complete the survey received a separate email from the third-party vendor. The email contained an encrypted hyperlink to the pulse survey along with a brief description of the survey's purpose and a disclosure from the third-party vendor emphasizing their confidence in maintaining confidentiality of the survey responses. The pulse survey period for collecting participant responses by the third-party vendor was set for 15 days that was scheduled on a month during the first and third quarters of each year.

For this study's sample population, there were more than 1,000 clinical laboratory employees available to participate during each open survey period. The sample population would be considered representative of the population of interest, as all

participants represented one or more disciplines in clinical laboratory medicine. Based on the G*Power (version 3.1) calculation, a minimum sample size of 164 observations was required for correlation: a one-tailed test with an effect size of 0.50, an alpha of 0.01, and the power at 0.80. To ensure the minimum sample size for this study was achieved within study timelines, retrieval of secondary data sets over a 4-year period from the research host organization was implemented.

The total number of observations gathered from the secondary data sets ranging from years 2019 through 2022 was $N = 250$, which was more than adequate to meet the required sample size for this study. The samples in the data sets were from clinical laboratory professionals that held managerial roles with direct reports within the research host organization at the time the pulse surveys were administered. However, there were a few samples identified in the data sets that did not hold traditional clinical laboratory roles (e.g., medical lab scientist) but were considered ancillary support roles within the clinical laboratory by the research host organization. This was a discrepancy from the original plan presented in Section 2. Otherwise, all other aspects of data collection went as planned.

Upon receipt of the data sets from the third-party vendor, there were observable variations in values surrounding the response rates and quantity of direct reports among the samples. Therefore, the means of the survey response rates were calculated for each year (2019 = 67%, 2020 = 56%, 2021 = 61%, 2020 = 64%), with the 4-year average response rate calculated at 62%, which was considered a realistic percentage value by

industry standards when using web-based surveys in organizations with more than 1000 employees.

Preliminary Data Management

Data were entered in SPSS version 24. Prior to conducting the analyses, the data sets were screened for inaccuracies, missing data, and replication of sample name. From the original data sets, 17 entries were removed based on missing data for one or more of the study variables of interest. Furthermore, pseudonymization of the samples were performed to ensure confidentiality of proprietary data in accordance with the executed letter of agreement previously established with the research host organization. Moreover, the sex identities of the samples were manually identified and calculated to provide general demographics. In total, there were 65 laboratory managers calculated, with 33 identified as male and the other 32 female. The final data sets contained quantitative pulse survey response values for the “speaking up,” team effectiveness, and organizational performance indices.

Results

Descriptive Statistics

Baseline descriptive analyses of the score values for each research study variables were performed to determine the minimum, maximum, mean, and standard deviation. With a sample size of 233 observations ($N = 233$), score values for the organizational performance index ranged from 40 to 93, with an average score value of 69 ($SD = 10$). As for the “Speaking Up” index, score values ranged from 31 to 95, with an average score value of 69 ($SD = 14$). Further, score values for the team effectiveness index ranged

from 35 to 90, with an average score value of 66 (SD = 12). Distribution of data for the “Speaking Up,” organizational performance, and team effectiveness indices appeared to be symmetrical and normally distributed, as evidence by the histograms (see Appendix). Moreover, results of the descriptive analyses were organized and presented in Table 1.

Table 1

Descriptive Statistics for Independent and Dependent Variables

	Team Effectiveness Index ^a	Organizational Performance Index ^a	Speaking Up Index ^b
<i>N</i>	233	233	233
Mean	66	69	69
Std. Deviation	11.5	9.8	13.6
Minimum	35	40	31
Maximum	90	93	95

Note. Data were collected by third-party vendor beginning 2018-2022 from 33 male and 32 female lab managers. The means and standard deviations were rounded up to the nearest whole number for reporting consistency.

^aDependent variable. ^bIndependent variable.

Inferential Statistics

Research Question 1

To evaluate whether a linear relationship existed between “Speak Up” culture level and team effectiveness, calculation of the Pearson’s correlation coefficient (r) was conducted. A r value between 0.70 to 0.89 indicates a strong correlation between the variables, whereas a r value between 0.90 to 1.00 indicates a “very” strong correlation

between the variables (Schober et al., 2018). The calculated coefficient was determined to be $r=.887$ (Table 2). Autocorrelation was assessed utilizing the Durbin-Watson (DW) test. The reference range for the DW test was between 0 and 4, with a value of 2 signifying zero autocorrelation (Uyanto, 2020). According to the model (Table 2), the calculated DW value was 1.735, which was considered normal since this value fell within the acceptable reference limit of 1.500–2.500 by industry standards. Consequently, the coefficient analysis concluded that there was a strong positive correlation between “Speak Up” culture level and team effectiveness.

Table 2

Pearson’s r Model for “Speaking Up” and Team Effectiveness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.887 ^a	.787	.786	5.320	1.735

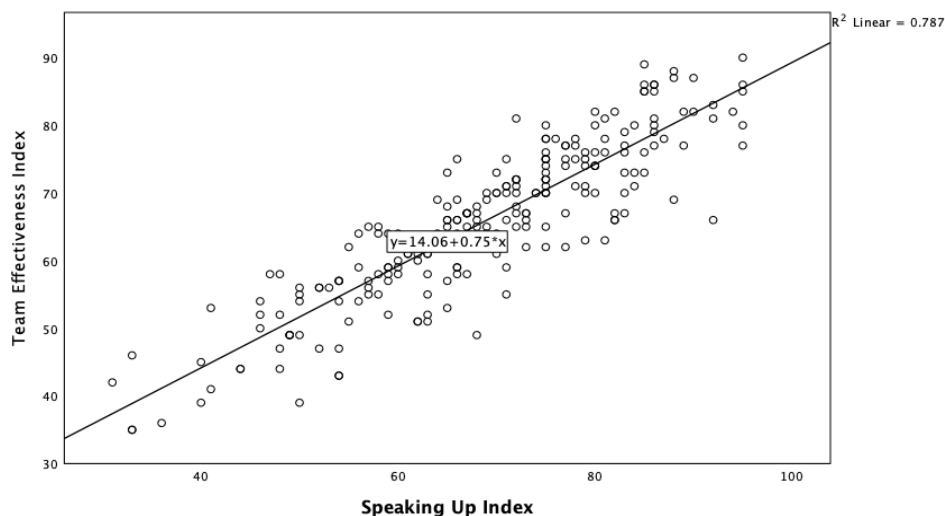
Note. $N = 233$. Dependent variable: Team Effectiveness Index.

^aIndependent variable (predictor/constant): Speaking Up Index

A scatter plot was created with “Speak Up” culture level represented as “Speaking Up” as the independent variable (x-axis) and team effectiveness as the dependent variable (y-axis). The linear relationship between team effectiveness and “Speak Up” culture level is demonstrated in Figure 2.

Figure 2

Scatter Plot of Team Effectiveness by “Speaking Up”



As expected, overall team effectiveness was predicted from “Speak Up” culture level. To further explore this relationship, a linear regression analysis was performed to evaluate how “Speak Up” culture level correlated with team effectiveness. According to Figure 2, the regression equation for predicting team effectiveness was: *Team effectiveness* = (0.75 x “Speak Up” culture level) + 14.06. To clarify, the confidence interval set at 95.0% had a lower and upper bound slope value of .70 and .80, which did not equal to zero (Table 3). Consequently, “Speak Up” culture level was significantly related to team effectiveness. The correlation between team effectiveness and “Speak Up” culture level was .887. The r^2 value for the linear regression was calculated at .787 (Table 2), which suggested that about 79% of the variability in team effectiveness were explained by “Speak Up” culture level. The t-test for “Speaking Up” was significant at $p < 0.05$ (t-statistic = 29.24, $p = .000$) with team effectiveness. Congruent with these results, the null hypothesis was rejected in favor of the alternative hypothesis. To elaborate, the

model can be interpreted as for each unit increase in “Speak Up” culture level is achieved, team effectiveness is expected to increase by a factor of .75 unit. Taken together, these findings validated the relationship between “Speak Up” culture level and team effectiveness for health care professionals working in a clinical lab.

Table 3

Linear Regression for “Speaking Up” and Team Effectiveness

Model	Unstandardized Coefficients		Standardized Coefficients	t	95.0% Confidence Interval for B	
	B	S. E.	Beta		Lower Bound	Upper Bound
(Constant)	14.06	1.80		7.80	10.51	17.62
Speaking Up Index ^a	.75	.02	.89	29.24	.70	.80

Note. $N = 233$. Dependent Variable: Team Effectiveness Index. Significance = .000.

^aIndependent variable.

Research Question 2

To evaluate whether a linear relationship existed between “Speak Up” culture level and organizational performance, calculation of the Pearson’s correlation coefficient (r) was conducted. A r value between 0.70 to 0.89 indicates a strong correlation between the variables, whereas a r value between 0.90 to 1.00 indicates a “very” strong correlation between the variables (Schober et al., 2018). The calculated coefficient was determined to be $r=.806$ (Table 4). Autocorrelation was assessed using the DW test. To restate, the limits for the DW test was between 0 and 4, with a value of 2 signifying zero autocorrelation (Uyanto, 2020). According to the model (Table 4), the calculated DW

value was 1.730, which was considered normal since this value was within the acceptable reference limit of 1.500–2.500 by industry standards. Therefore, the coefficient analysis concluded that there was a strong positive correlation between “Speak Up” culture level and organizational performance.

Table 4

Pearson’s r Model for “Speaking Up” and Organizational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.806 ^a	.650	.648	5.841	1.730

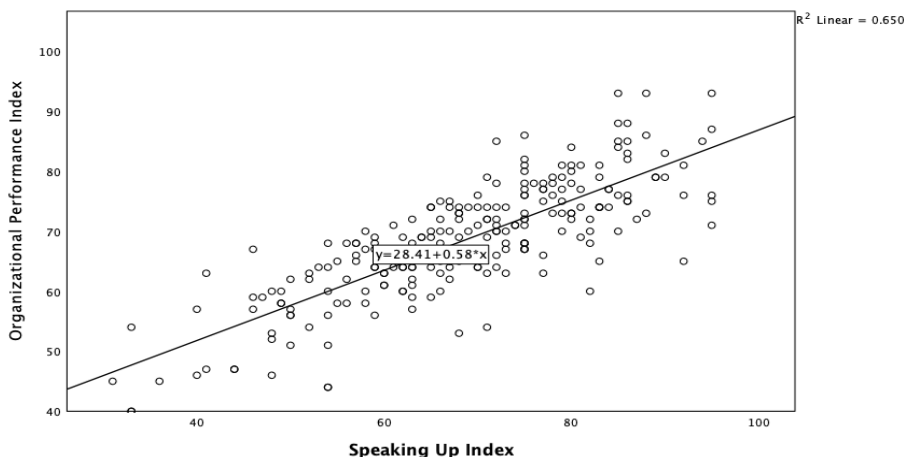
Note. $N = 233$. Dependent variable: Organizational Performance Index.

^aIndependent variable (predictor/constant): Speaking Up Index

A scatter plot was created with “Speak Up” culture level represented as “Speaking Up” as the independent variable (x-axis) and organizational performance as the dependent variable (y-axis). The linear relationship between organizational performance and “Speak Up” culture level is demonstrated in Figure 3.

Figure 3

Scatter Plot of Organizational Performance by “Speaking Up”



As expected, overall organizational performance was predicted from “Speak Up” culture level. To further investigate this relationship, a linear regression analysis was conducted to evaluate how “Speak Up” culture level correlated with organizational performance. According to Figure 3, the regression equation for predicting organizational performance was: *Organizational performance* = (0.58 x “*Speak Up*” culture level) + 28.41. To elucidate, the confidence interval set at 95.0% had a lower and upper bound slope value of .53 and .64, which did not equal zero (Table 5). Therefore, “Speak Up” culture level was significantly related to organizational performance. The correlation between organizational performance and “Speak Up” culture level was .806. The r^2 value for the linear regression was calculated at .650 (Table 4), which implied 65% of the variability in organizational performance was explained by “Speak Up” culture level. The t-test for “Speaking Up” was significant at $p < 0.05$ (t-statistic = 20.70, $p = .000$) with organizational performance. In accordance with these results, the null hypothesis was rejected in favor of the alternative hypothesis. In other words, the model

can be interpreted as for each unit increase in “Speak Up” culture level is achieved, organizational performance is expected to increase by a factor of .59 unit. In sum, these results validated the relationship between “Speak Up” culture level and organizational performance for health care professionals working in a clinical lab.

Table 5

Linear Regression for “Speaking Up” and Organizational Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	95.0% Confidence Interval for B	
		B	S. E.	Beta		Lower Bound	Upper Bound
1	(Constant)	28.41	1.98		14.35	24.51	32.31
	Speaking Up Index	.59	.03	.81	20.70	.53	.64

Note. $N = 233$. Dependent Variable: Organizational Performance Index. Significance = .000.

Summary

The relationship between “Speak Up” culture level and team effectiveness, and the connection between “Speak Up” culture level and organizational performance have not been evaluated for health care professionals working in a clinical lab. To determine whether the associations existed between these variables, two research questions were developed to help guide the data collection and analyses of 233 observations ($N = 233$) from 65 lab managers with direct reports.

The null hypothesis for RQ 1 was rejected in favor of the alternative hypothesis that a statistically significant difference existed between “Speak Up” culture level and team effectiveness. Interestingly, inferential statistics revealed a .75 unit increase in team

effectiveness for every unit increase in “Speak Up” culture level. In a similar manner, the null hypothesis for RQ 2 was rejected in favor of the alternative hypothesis that a statistically significant difference existed between “Speak Up” culture level and organizational performance. Importantly, inferential statistics demonstrated a .59 unit increase in organizational performance for every unit increase in “Speak Up” culture level.

Section 4 continues the discussion on the meaning of these findings, including limitations of the study, recommendations for future research, implications for professional practice, and the potential impact for positive social change.

Section 4: Application to Professional Practice and Implications for Social Change

This correlational quantitative research study explored the association between “Speak Up” culture level, team effectiveness, and organizational performance among lab professionals working in a clinical lab. Research questions were developed to focus on determining the relationship, if any, between “Speak Up” culture level and team effectiveness, and the relationship between “Speak Up” culture level and organizational performance. Secondary data sets of a customized pulse survey administered by a third-party vendor were obtained from a reputable research host organization for analysis to help shed light on the existence of these associations. The intent for conducting this analysis was to facilitate the promotion of positive social change in the field of health care administration, including clinical lab leadership.

The first research question evaluated the relationship between “Speak Up” culture level and team effectiveness of lab professionals working in a clinical lab setting. A strong positive correlation between “Speak Up” culture level and team effectiveness was discovered with a Pearson coefficient analysis of $r = .887$. A simple linear regression model calculating the correlation between team effectiveness and “Speak Up” culture level was statistically significant (significance set at $p < 0.05$). The r^2 value of .787 suggested that about 79% of the variability in team effectiveness was from “Speak up” culture level. In accordance with the statistical significance, the null hypothesis was rejected in favor of the alternative hypothesis. As such, the existence of a relationship between “Speak Up” culture level and team effectiveness was established for clinical lab

professionals. Moreover, the simple regression model implied a .75 unit increase in team effectiveness for every unit increase in “Speak Up” culture level.

The second research question assessed the relationship between “Speak Up” culture level and organizational performance among lab professionals working in a clinical lab environment. A strong positive correlation between “Speak Up” culture level and organizational performance was observed with a Pearson coefficient analysis of $r = .806$. A simple linear regression model analyzing the correlation between organizational performance and “Speak Up” culture level was statistically significant (significance set at $p < 0.05$). The r^2 value of .650 indicated that about 65% of the variability in organizational performance was from “Speak Up” culture level. Congruent with the statistical significance, the null hypothesis was rejected in favor of the alternative hypothesis. Thus, the existence of an association between “Speak Up” culture level and organizational performance was confirmed for clinical lab professionals. Moreover, the simple regression model revealed a .59 unit increase in organizational performance for every unit increase in “Speak Up” culture level.

Interpretation of the Findings

The lab professionals in this study demonstrated a mean “Speak Up” culture level score of 69, with observations of this value ranging from 31 to 95. Based on the confidential and proprietary information obtained from the research host organization, score values less than 60 was considered “low,” and score values greater than 75 was considered “high.” By computing the average between this “low” and “high” score values, a rounded score value of 68 was obtained; it could be argued this score then be

labeled as “moderate” in determining the “Speak Up” culture level in the clinical labs under the research host organization. Therefore, the clinical lab environment’s “Speak Up” culture level in this research study was slightly above moderate. The extrapolation of this finding supported previous research demonstrating the intimidating environment of the health care field (Spruce, 2014) and its lack of psychological safety among health care workers (O’Donovan & McAuliffe, 2020).

Power dynamics, organizational hierarchies, and negative perceptions of open communication were known barriers to promoting “Speak Up” culture in health care (Morrow et al., 2016). Since the clinical labs of the research host organization in this study were identified to have moderate “Speak Up” culture levels, those barriers pertaining to power dynamics, organizational hierarchies, and negative perceptions of open communication were found to be less compared to other clinical labs in other health care enterprises whose “Speak Up” culture levels were low or non-existent. Furthermore, it can be inferred that the clinical lab teams in this research were more developed, as increased productivity and team satisfaction were known attributes of highly developed teams (Peralta et al., 2018). Studies on high functioning teams also reported that increased productivity and team satisfaction were observed when open and judgement-free communication between team members occur (Betsy et al., 2020). Moreover, studies that explored “Speak Up” culture also confirmed similar observations, highlighting health care systems that embraced a “Speak Up” culture with quick turnaround times to issue resolution have been linked to better patient care outcomes, employee job satisfaction, and financial stewardship (Jones et al., 2021).

The results of this study expanded the understanding of “Speak Up” culture level and its relationship to team effectiveness and organizational performance among health care workers working in indirect patient care settings. As previously described, most cases of “Speak Up” culture originated from observations in direct patient care areas, such as the nursing units, surgical suites, and emergency departments. By contrast, the findings of this research study were observed in the clinical labs of the research host organization. Consequently, this study confirmed that the benefits of “Speak Up” culture did not distinguish boundaries between indirect and direct patient care settings, but rather vary in strength depending on how “Speak Up” culture was cultivated by the health care management team and their frontline employees.

Theoretical Context

The HPWPs model represented several management methods that promote the enhancement of business outcomes through elevated employee performance (Garman et al., 2011). The four subsystems of the HPWPs outlined by Robbins and McAlearney (2020)—(a) acquiring and developing talent, (b) engaging staff, (c) empowering the frontline, (d) aligning leaders—were practiced together successfully in the research host organization’s clinical labs and thereby supported the achievement of positive outcomes in activities related to team effectiveness and organizational performance. Furthermore, among the four subsystems, engaging staff and empowering the frontline were highly recognized by staff at all levels within the research host organization. This implied that the research host organization’s leaders would have applied the methods that routinely communicated its mission and vision among their frontline staff to establish and maintain

engagement. The constant messaging of the research host organization's mission and vision, in turn, helped to create the psychological shift among the frontline staff in connecting their work's purpose to the organization's mission and vision (see Garman et al., 2011). Moreover, the perceived "communication openness" by the frontline staff were likely to increase their awareness and understanding of patient care goals (Ng et al., 2017).

Team hierarchy, especially in emergency situations, was a known barrier to speaking up for patient safety (Ng et al., 2017). To ensure health care interventions were promptly delivered to patients and were executed safely, health care teams must be effective and that includes each team member exercising courage to vocalize and share their thoughts/ideas for process improvement (Morrow et al., 2016). Specific to this study, the staff within the research host organization's clinical labs were likely to have adopted a reduced status distinction mindset, which was one of the empowering the frontline subsystem practices within the HPWPs model (Robbins & McAlearney, 2020). Additionally, the behavior of teams and decentralized decision making (Garman et al., 2011) in which support of a shared governance between the frontline staff and managers were likely practiced as well. To elaborate, clinical lab managers in this study have cultivated partnerships with their frontline employees to determine best practices for handling the day-to-day workplace issues to enhance operational efficiencies and promote team effectiveness (Garman et al., 2011). In general, application of some components of the HPWPs model existed in this study.

Limitations of the Study

The application of surveys for data collection in research are one of the most common approaches utilized in the social sciences. A few advantages of using surveys include decreased costs, increased participant flexibility and anonymity, and wider geographical survey coverage (Andrews, 2019). Despite these benefits, one of the limitations identified in this study was that participation was voluntary and that results were potentially biased due to self-selection. Although the pulse survey utilized in this study have been validated by a reputable, third-party vendor, self-reported measures and response biases could have been a major concern.

Another limitation identified in this study was the sample population. That is, survey participants were limited to clinical lab professionals employed by the research host organization in northern California; the sample population was not representative of the entire clinical lab profession. During the early stages of the COVID-19 pandemic, there were many unknown factors that shrouded the virus, including its virulency and transmission mode. These uncertainties caused world havoc and strained many health care systems to the breaking point, as infection rates and death tolls soared. In the clinical lab, changes in workload distribution were observed. The demands for diagnostic testing rose, as daily overtime work increased from 3.4% to 13.5% during the first months of the pandemic (Nuñez-Argote et al., 2021). Similarly, uncontrolled work stress contributed to burnout, which may have promoted higher employee turnover within the organization (Chiou, 2021). Therefore, the COVID-19 pandemic could have influenced the secondary data sets, which limited the generalizability and/or reliability of this research.

The sample of clinical lab professionals gathered in this study was from a convenience sample and not a representative of the clinical lab population. Therefore, the causal associations were deciphered rather than established. This research was an original study and will function as a reference point for future research surrounding the clinical lab, if not lab medicine, in relation to “Speak Up” culture level, team effectiveness, and organizational performance topics.

Recommendations

Although this study may not be representative of the entire clinical lab profession, the findings from this research suggested some evidence that a relationship existed between “Speak Up” culture level and team effectiveness, and between “Speak Up” culture level and organizational performance. Exploration, if not replication of this study would be needed. One of the recommendations would be to focus research efforts on improving sample collection strategies. Specifically, one should consider methods that will capture a broader population of clinical lab professionals to ensure a comprehensive representation of health care employees trained in lab medicine. Furthermore, there are studies available that explored the subject of LMP in health care. To elaborate, the quality of LMP processes in the workplace influences the trust factor between frontline staff and their managers (Avgar et al., 2016), which may in turn influence health care teams to speak up for patient safety. It seems logical that exploring an additional variable such as LMP effectiveness could promote understanding of the association between “Speak Up” culture level and LMP in the clinical lab.

The HPWPs model was the conceptual framework that grounded this study. Original research on the HPWPs model defined the collective set of human resource practices (see McAlearney et al., 2013) that were later refined and categorized into four subsystems (see Robbins & McAlearney, 2020). This allowed health care leaders to grasp vital management concepts for promoting quality and safety outcomes within their organizations. If HPWPs can be learned, then providing training for novice and experienced clinical laboratorians on HPWPs could significantly benefit the clinical lab profession. Interestingly, “Speak Up” culture research would be needed from an experimental perspective starting with a pre-assessment of “Speak Up” culture level baseline, followed by training of clinical lab staff on the HPWPs model, and then a post-assessment of “Speak Up” culture level to measure the effectiveness of the intervention. In a similar manner, the recommendation is for further longitudinal studies. Moreover, HPWPs training should be incorporated into various health care curriculums, including medical education and health care administration programs. In general, integrating HPWPs education could enhance leadership development among health care workers, which ultimately can help establish and promote long-term sustainability of “Speak Up” culture within the organization.

Implications for Professional Practice and Social Change

“Speak Up” culture is a well-documented subject in health care, especially in the nursing profession where frontline nurses routinely encounter dilemmas concerning patient safety (Hall et al., 2018). In the context of HPWPs, research on “Speak Up” or “Speaking Up” have revealed impact on quality improvement and patient safety

initiatives in health care organizations (Robbins & McAlearney, 2020). It could be argued that health care environments that promote a culture of “Speaking Up” could potentially influence team effectiveness and overall, organizational performance. Results of this study confirmed a positive relationship between “Speak Up” culture level and team effectiveness, and a positive relationship between “Speak Up” culture level and organizational performance. Although causal inferences could not be made and that limitations existed preventing the findings to be generalized to the entire lab medicine population, this research was aligned with other studies demonstrating an association between “Speak Up” culture and team effectiveness or organizational outcomes (Etchgaray et al., 2020; McAlearney et al., 2013; Robbins & McAlearney, 2020).

Historically, there was no exploration on the association between “Speak Up” culture level and team effectiveness or organizational performance within the clinical lab space. Understanding the relationships between these variables outside of the nursing discipline could lead to the establishment of “Speak Up” culture being viewed as a value-added characteristic within other health care settings for optimizing service line interdependencies. Fostering a strong “Speak Up” culture through staff education on HPWPs in conjunction with strong leadership support could lead to positive team and organizational changes that ultimately elevate the patient care experience (Morrow et al., 2016; Robbins & McAlearney, 2020; Sahin et al., 2021; Satterstrom et al., 2021).

Implications for Clinical Laboratory Medicine

This study provided new insights previously unknown about the association between “Speak Up” culture level and team effectiveness, and the relationship between

“Speak Up” culture level and organizational performance among clinical lab staff. Importantly, the results of this study has practical implications in the clinical lab. To elaborate, health care environments that embrace “Speak Up” culture have observed improvements regarding patient safety. Specifically, clinical labs that process and analyze large volumes of patient specimens are prone to errors in all phases of testing when quality control processes are insufficient coupled with high testing demands. Establishing or strengthening “Speak Up” culture in the clinical lab would empower the frontline staff through open communication and information sharing (Ng et al., 2017), which in turn enhances the team’s ability to quickly locate and rectify lab errors. Thus, preventing patient harm.

Another implication of this research would be to transform the clinical lab science curriculum by incorporating HPWPs training. Studies have discovered a significant positive correlation between HPWPs and job satisfaction, which in turn promotes employee efforts toward the success of the organization (Nasurdin et al., 2020). With a declining clinical lab workforce (Al Naam et al., 2022) and increasing complexities in medical technology, novice and experienced lab leaders will need to align their strategies toward leadership styles that focus on coaching and support to facilitate team resilience. It seems logical that implementing HPWPs training in the clinical lab science programs, especially during succession planning, could produce a new generation of laboratorians equipped with essential technical and behavioral skills to manage the challenges of high-stress work environments. In general, introducing HPWPs training early in a student’s clinical lab science career could foster their “Speak Up” skills.

Implications for Health Care Administration

“Speak Up” culture can benefit all employees across the health care system. Various literatures supported a correlation between “Speak Up” culture and team effectiveness or organizational performance regarding patient care safety (Etchgaray et al., 2020; Ginsburg & Bain, 2017; Morrow et al., 2016; Robbins & McAlearney, 2020; Satterstrom et al., 2021). While there are needs for health care administration to develop innovative solutions to address rising costs, limited resources, and patient satisfaction barriers (de Sousa Vale et al., 2020), leaders could rely on frontline staff to vocalize practical and sustainable microsystem changes that enhance team effectiveness and overall, organizational performance.

This study revealed that for every unit increase in “Speak Up” culture level, team effectiveness and organizational performance increased by a factor of .75 unit and .59 unit, respectively. Increased team effectiveness and organizational performance can be achieved via strong leadership support of promoting “Speak Up” behaviors at all levels of the organization; organizational culture was a strong predictor of “Speak Up” behaviors (Rainer & Schneider, 2020). In addition, implementation of the HPWPs model in the workplace could cultivate “Speak Up” culture as a core organizational value that can be adopted and exercised by the employees. It seems reasonable that health care administration should redesign leadership development methods that incorporate HPWPs training to establish “Speak Up” culture within the organization. Consequently, promoting team effectiveness to elevate the patient experience towards newer heights.

Finally, implications of “Speak Up” culture on sharing best practices between

interdisciplinary leaders could evolve. Power distance and fear of negative career repercussions were known factors to increase defensive silence among employees (Sahin et al., 2021), resulting in information hoarding that can potentially create destructive consequences for the organization if left unchecked (Khalid et al., 2020). By augmenting an organization's "Speak Up" culture, the perceptions of psychological safety among various stakeholders would increase and allow critical interdependencies to be nurtured. As such, empowered health care leaders could then develop robust policies and protocols that enable frontline staff to provide safe and effective patient care interventions within a dynamic work environment (O'Donovan & McAuliffe, 2020). In short, the implications of "Speak Up" culture in health care administration could transform the future of health care.

Conclusion

This study allowed me to evaluate the relationship between "Speak Up" culture level, team effectiveness, and organizational performance for health care professionals working in the clinical lab. To elucidate, improving the "Speak Up" culture level by one unit correlated with an increase in team effectiveness by a factor of .75 unit. Similarly, as the "Speak Up" culture level increased by one unit, organizational performance improved by a factor of .59 unit. As expected, the results of this study were consistent with previous research findings demonstrating work environments with strong "Speak Up" cultures promote high-functioning teams and overall, improve organizational performance (Etchgaray et al., 2020; Ginsburg & Bain, 2017; Morrow et al., 2016; Robbins & McAlearney, 2020; Satterstrom et al., 2021).

The value of “Speak Up” culture is beneficial in complex and high-risk work environments such as health care. Conversely, fear and low psychological safety still exists (O’Donovan & McAuliffe, 2020) in many health care systems that prevent them from advancing medicine to the next level. Recognizing the need to establish and foster “Speak Up” culture in health care could serve as a starting point and be the catalyst for breaking down silos and spread healing from within.

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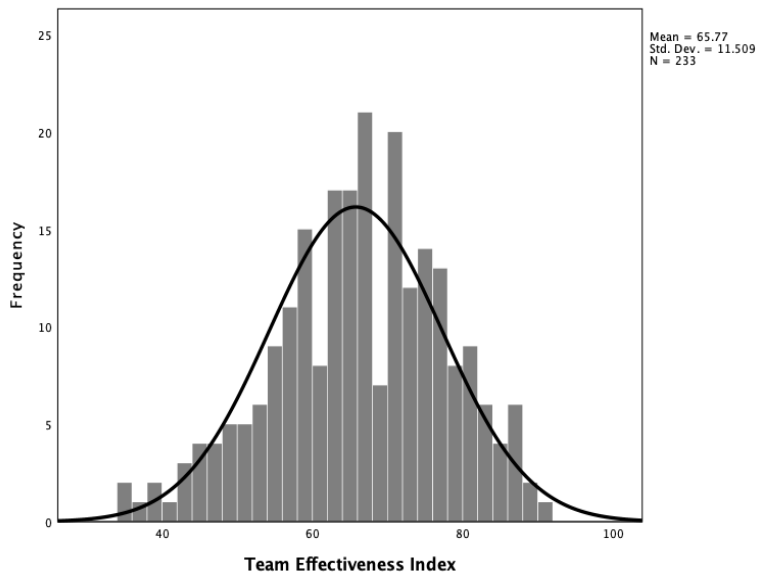
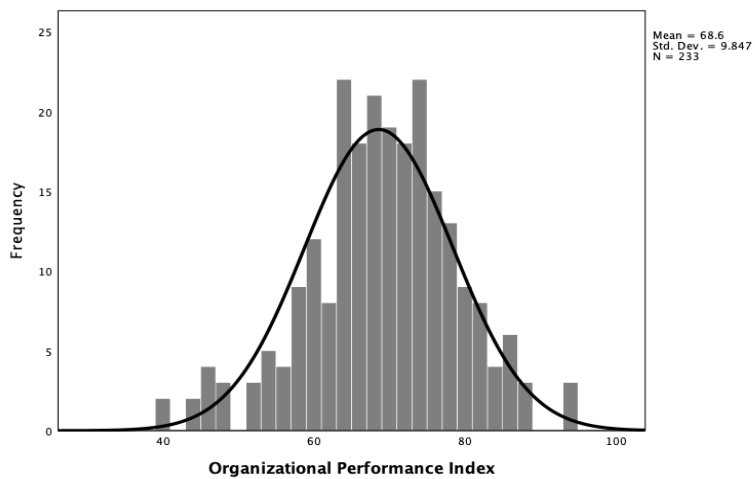
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Appendix: Histograms

Team Effectiveness Index Histogram*Organizational Performance Index Histogram*

Speaking Up Index Histogram

