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Managerial Strategies to Improve Warehouse Safety Culture

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This is to certify that the doctoral study by

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2023

Abstract

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MS, Michigan State University, 2017

BA, Ashford University, 2015

Doctoral Study Submitted in Partial Fulfillment

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Abstract

An unsuccessful safety program can negatively affect warehouse efficiency, profitability, and reputation. To provide a safe work environment, warehouse leaders need guidance on establishing policies and training to ensure that all employees are adequately trained and understand the safety expectations of the organization. Grounded in high-reliability organization theory, the purpose of this qualitative single-case study was to explore managerial strategies to improve the warehouse safety culture. The participants were five warehouse managers who demonstrated the ability to successfully improve their organization's safety culture. Data were collected through virtual semistructured interviews and reviews of organizational documentation. The data were analyzed using Yin’s five-step process, which yielded three themes: safety communication, management, and leadership training and development. A key recommendation is for warehouse leaders to increase top-down communication, employee engagement, and incident follow-up. The potential implications for positive social change include decreased work accidents, improved employee safety engagement, and increased safety mindfulness and accountability among local families and the community.

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Dedication

> Success is to be measured not so much by the position that one has reached in life as by the obstacles which he has overcome while trying to succeed.
>
> —Booker T. Washington, *Up from Slavery: An Autobiography*

I dedicate this study to my mother, Beverly Chatmon; my wife, Staff Sergeant (ret.) Shavon Chatmon; and my children, Cyan, Cyere, and Jianna. Your encouragement, love, and support were the driving force that allowed me to achieve this goal. Everything I do is to make you not only proud but to serve as an example that regardless of your past, your future is what you make of it. Shavon, I love you and appreciate you being in my life. Through the ups and down, we achieved our goals together.

I must thank the following people whose presence in my life made this possible: Sergeant First Class (ret.) Katherine Regalado, Tiffany Walker, Jarale Harris, Sergeant First Class (ret.) Eunice Williams, Chief Warrant Officer 4 Eugene Watson, Sergeant First Class (ret.) Robert Davis, Sergeant First Class (ret.) Joshua Locklear, and Sergeant First Class (ret.) Tondra Madison. Each of you has made me a better person with your guidance, advice, and friendship.

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Section 1: Foundation of the Study

Safety and performance are intertwined benchmarks in warehouse operations. Warehouse pick and put away operations are a determining factor in an organization's operational costs and customer lead time (Ozturkoglu, 2020). According to Klein (2021), the goal of warehouse leaders is to achieve excellent performance metrics, which they can achieve in part by establishing a strong safety culture. The Occupational Safety and Health Act of 1970 mandates that U.S. employers provide a safe work environment for employees (Occupational Safety and Health Administration [OSHA], 2017). Yet, according to data from the U.S. Bureau of Labor Statistics (2019, 2021), there were 913 fatalities in the transportation and warehousing industry in 2019, representing the second highest rate of fatalities, or 13.9 fatal work injuries per 100,000 full-time workers. Safety, therefore, represents an ongoing concern in U.S. warehouse operations.

Background of the Problem

Organizational leaders are responsible for providing a safe work environment for employees by establishing safety policies, performing audits, and providing a strong safety culture. Chief executives (i.e., the C-suite) bear responsibility for establishing policies and training to ensure that all employees are adequately trained and understand the safety expectations of the organization. Creating and implementing a strong safety culture can mitigate safety incidents before they become fatalities. According to Koziol et al. (2021), safety culture establishes the rules, values, and conduct recognized by employees and consists of three main areas of management: (a) human, (b) information, and (c) organizational.

Basahel (2021) suggested that the workplace's overall safety attitude can serve as a predictive measure of safety performance, safety-related behaviors, and workplace accident rates. Near-miss opportunities are based on the Herbert Heinrich safety triangle, which suggests that every major incident is equivalent to 29 minor incidents and 300 incidents that result in no injury (Busch et al., 2021). Leadership motivation to ensure safety plays a significant role in overall workplace safety-related behaviors (Basahel, 2021). Transformational leadership training provides leaders the necessary skills to positively affect safety culture through words, actions, and genuine concern for employee safety (Goldenhar et al., 2019). These leadership behaviors are increasingly important in the current environment.

E-commerce operations and online ordering have increased drastically due to the COVID-19 pandemic as consumer demands for the right product, at a lower price, and with faster delivery time have increased (Settey et al., 2021; Yang et al., 2022). To meet this demand, organizations have had to stock reserve freight in warehouses, ready to be pulled to meet customer expectations and demands (Settey et al., 2021). The increase in demand and product availability requires organizational leaders to maintain highly trained staff in warehouses ready to conduct pick and pull operations (Randhawa & Chaudhry, 2019). Yet, organizations often experience high turnover due to the working conditions within warehouses. Shift work consisting of 8-to-12-hr shifts is common. There are often long periods of standing, bending, and lifting objects up to 80 pounds (Rydström et al., 2023). With freight being loaded on trailers, dock doors often open and close, resulting in extreme weather conditions based on the seasons. Warehouses often

employ organization paid seasonal employees and contracted temporary workers to meet high demands during peak seasons around holidays and major events, which increases the potential for safety-related incidents due to minimal training being provided due to the workers' temporary status (Partida, 2021). These factors illustrate the challenges to instituting and maintaining a safety culture in current U.S. warehouse operations.

Problem and Purpose

Warehouses are filled with various hazards that result in a workplace injury every 7s, on average, 34% of which are due to improper lifting and overexertion (Sadri & Salvador, 2019). In 2019, there were 227,900 reported cases of nonfatal injuries within the U.S. transportation and warehouse industry, 103,600 of which resulted in employees missed days of work (U.S. Bureau of Labor Statistics, 2020, p. 6). The general business problem is that an unsuccessful safety program can negatively affect warehouse efficiency, profitability, and organizational reputation. The specific business problem is that some managers lack strategies to improve warehouse safety culture.

The purpose of this qualitative single-case study was to explore strategies that managers use to improve warehouse safety culture. The targeted population for this study was five warehouse managers from a single organization who were responsible on a daily basis for executing organizational safety policies, conducting safety audits, and providing safety feedback and who had demonstrated success in mitigating safety incidents. The geographic location was the Midwest region of the United States. The study findings may reveal strategies that business leaders can use to improve the work environment by allowing employees more autonomy and less direct supervision. These efforts may lower

employer financial liability and increase employee accountability for safety actions. The implications for positive social change could potentially include an increase in safety, mindfulness, and accountability within local families and the community.

Population and Sampling

The study participants were five warehouse managers from a single organization located in the Midwest region of the United States, who were responsible for implementing organizational safety guidelines and enforcing safety standards. Participants were interviewed utilizing semistructured, open-ended questions to identify managerial strategies to improve the warehouse safety culture. I collected and analyzed data from multiple sources, including interviews, organizational training and safety documents, and historical incident review documents to investigate the phenomenon. I used the qualitative research method for this study to explore how managers impact warehouse safety culture as lived through human interactions and experiences.

Nature of the Study

There are three research methods for conducting a study: quantitative, qualitative, and mixed (Strijker et al., 2020). I used the qualitative research method for this study. I gathered data by conducting interviews featuring open-ended questions. A qualitative researcher uses semistructured, open-ended questions to explore and explain why a phenomenon occurs (Moser & Korstjens, 2017). Quantitative researchers use close-ended questions and hypothesis testing to examine variables' characteristics or relationships (Cortina, 2020). To explore manager strategies to improve warehouse safety, I did not test hypotheses about variables' characteristics or relationships, which is part of the

quantitative research method. Mixed-methods research includes both qualitative and quantitative research elements (Kansteiner & Konig, 2020). I opted to use the qualitative method as the sole method for my study.

I considered three qualitative research designs discussed by Renjith et al. (2021) for my qualitative study on manager strategies to improve warehouse safety: (a) phenomenology, (b) ethnography, and (c) case study. The phenomenological design is an approach that researchers use to explore a phenomenon by analyzing the personal meanings of the *lived experiences* and views of affected individuals (Neubauer et al., 2019; Yoon et al., 2021). I did not use the phenomenological design because I was not studying a phenomenon based on the personal meanings of the participants' lived experiences. Researchers use ethnographic designs to study participants' culture(s) in their everyday lives through direct interactions and behavioral observations to tell a story through gathering information (Celikoglu et al., 2020). Ethnography was not used, and although observations are an acceptable method for case studies (Ritella & Loperfido, 2021), I did not immerse myself in organizational interactions or directly observe participants. Case study researchers investigate a contemporary phenomenon based on its real-world context and seek to answer "what," "how," or "why" questions (Yin, 2016, 2018). I used the case study design because I could not manipulate the participants' behaviors and because I concluded that it would allow me to identify manager strategies for developing and sustaining safety culture in warehouses and the broader organization.

Research Question

What strategies do managers use to improve warehouse safety culture?

Interview Questions

1. How would you describe your organization's warehouse safety culture?
2. How important is warehouse safety to your organization?
3. What strategies do managers use to improve warehouse safety culture?
4. What safety training does your organization conduct for employees to improve warehouse safety culture?
5. What happens if an employee fails warehouse safety training?
6. What type of leader safety training is provided to warehouse managers?
7. What kind of follow-up is performed at the close of a warehouse safety incident?
8. What accountability techniques are used when an individual violates the warehouse safety rules?
9. What else can you share about warehouse safety culture and strategies to improve the safety culture within your organization?

Conceptual Framework

Roberts, LaPorte, and Rochlin studied hazardous organizations while at the University of California, Berkeley, to identify the factors of organizational safety culture (Roberts, 1989). The researchers wanted to explore common characteristics of inherently complex and dangerous industries that operated error-free (training, organizational polices, leadership, etc.). Weick et al. (1999) identified five characteristics for each of the three industries participating, which they labeled high-reliability organizations (HROs): (a) preoccupation with failure, (b) reluctance to simply, (c) sensitivity to operations, (d) commitment to resilience, and (e) deference to expertise. Weick et al. described these

principles as a state of mindfulness used to move teams forward and develop safety processes. I used the concept of HROs, along with semistructured interview questions, to identify and understand the strategies the participating managers used to improve their organization's warehouse safety culture. Figure 1 is a graphical depiction of HRO theory as it applies to improving warehouse safety culture.

Figure 1

High-Reliability Organization Principles That Apply to the Improvement of Safety Culture

	Principle #1 preoccupation with failure	Principle #2 reluctance to simplify	Principle #3 sensitivity to operations	Principle #4 commitment to resilience	Principle #5 deference to expertise
Human Management				✓	✓
Information Management	✓			✓	
Organizational Management	✓	✓			

Note. I created this figure based on information in Koziol et al. (2021), and Weick et al. (1999).

HROs achieve a high level of safety based on multiple factors, such as policies and procedures, to understand potential risks and how to prevent them. There are also expectations of employee safety behavior that, if not followed, have the potential to result in catastrophic results such as at-work injuries or casualties (Rowen et al., 2022). Safety practices such as admitting errors, addressing unsafe behavior, and speaking up to management are associated with organizational positions and societal values (Tear et al., 2020). By comparing the participating warehouse's current safety policies and practices

to those deemed successful by HROs, I sought to identify strategies that leaders at the organization can use to potentially increase the safety culture within the warehouse.

The contrasting theories I used for this study were Albert Bandura's social cognitive and self-efficacy theories. Bandura (1997) identified how shared beliefs influence individuals' ability to utilize resources while working together to achieve a collective action or goal. I chose not to use Bandura's social cognitive theory or self-efficacy theory for this study due to their emphasis on building efficacy within individuals and focus on individual learning. In contrast, the focus of this study was on strategies and tools managers can use to improve warehouse safety culture. HRO theory offered a useful lens for exploring the study topic.

Operational Definitions

Continuous improvement (*kaizen*): Routines that improve current processes and practices within an organization (Stimac & Grima, 2019).

5S methodology: A methodology that business leaders use to remove unnecessary tools or steps to simplify a process and improve safety and productivity (Sa et al., 2021; Tahasin et al., 2021).

Gemba walk: A process whereby leaders observe the real place where organizational value is added; doing so allows leaders to identify insufficient management systems (Maamri et al., 2021).

Near-miss event: A safety issue that does not occur but that has the potential to negatively affect an organization (Azadegan et al., 2019).

Safety climate: The organizational perception of safety elements and programs through the eyes of the workforce (Bhandari & Hallowell, 2021; Flatau-Harrison et al., 2021).

Safety culture: Organizational or individual attitudes, behaviors, or core values based on a commitment to and emphasis on safety over organizational production goals (Badia et al., 2021).

Safety mindfulness: Focus, attention, and awareness of safety concerns while observing ongoing events or experiences (Kao et al., 2021; Liang et al., 2022).

Stop work authority: The ability of workers to stop all work when they believe there is a potential for a safety incident to happen based on the current activity (Weber et al., 2018).

Assumptions, Limitations, and Delimitations

In this subsection, I address assumptions, limitations, and delimitations pertaining to this study. While conducting research, it is essential to ensure that all information is reinforced with peer-reviewed citations to strengthen and validate the data presented. This subsection also adds credibility to the study by addressing factors that may have influenced the study and illustrating the researchers determination to prevent them from doing so.

Assumptions

Assumptions are unverified beliefs that the researcher assumes to be true. Schlegel and Parascando (2020) defined assumptions as the researcher using unverified information based on their individual beliefs and take improper actions in research based

on the unverified information. My study included three assumptions. My first assumption was that the leaders of organization selected for the research would allow me to conduct interviews with current employees. My second assumption was that eligible individuals would be willing to participate in the interview. My third assumption was that participants would provide truthful feedback during the interview process. The implications of these assumptions could negatively affect the reliability of this study.

Limitations

Limitations are potential weaknesses the researcher faces that are outside their control in research design, use of statistical models, or funding constraints (Theofanidis & Fountouki, 2019). The primary limitation of this study was its reliance on participants answering questions honestly and being knowledgeable enough about organizational policies to provide relevant information. Participants also needed to have prior success in improving warehouse safety culture. An additional limitation was that the data received might not be viable to properly study manager strategies to improve warehouse safety culture.

Delimitations

Delimitations refer to the bounds or scope of the study. Delimitations are limitations consciously set by a researcher to ensure that a study's objectives are achievable (Theofanidis & Fountouki, 2019). I focused on manager strategies in a warehouse to improve the safety culture. Only organizational managers responsible for the implementation of safety policies who had been successful in improving warehouse safety culture were interviewed. The study took place in the Midwest region of the

United States, where distribution centers and hubs are centrally located, allowing organizational network and delivery optimization (Sarwar et al., 2020).

Significance of the Study

Organizational leaders have a legal and moral obligation to provide a safe workplace for employees. Improved safety culture, when properly implemented, can lower work injuries and injury claims, increase employee confidence, and increase employee safety innovation (Otitolaiye et al., 2022). The study findings may inform business practice by providing organizational leaders with a model to improve safety culture, raise safety awareness, and lower work injuries. The study may also benefit the participating warehouse by promoting the development of managers, bolstering of employee confidence, and creation of policies and procedures to address safety near-miss opportunities before serious incidents result in injury or fatalities. The implications for positive social change include decreased work accidents, increased employee safety engagement, and increased safety mindfulness and accountability in local families and the community.

Contribution to Business Practice

The results of this study may provide leaders with strategies to improve warehouse safety culture. The findings reveal strategies that the participating organization used to measure the current state of the warehouse safety culture and identify ways to improve it. By implementing these strategies, organizational leaders could potentially lower safety incidents by proactively preventing injuries and reducing financial losses due to work injuries. By improving warehouse safety culture, the

organization will be meeting its legal and regulatory requirements and corporate social responsibility to provide a safe work environment for employees and concomitantly reduce the cost of workplace injuries (Mondal et al., 2022).

Implications for Social Change

This study may effect positive social change through the residual effects of implementing strategies that further employees' understanding that their safety and well-being are an organizational priority. Psychological safety is the belief that employees can show their true selves without fear of negative consequences to their self-image, resulting in knowledge sharing, increased productivity, organizational citizenship behavior, and lower turnover intentions (Liu & Keller, 2021). Working in an environment where job satisfaction is reached can also improve the employee's personal life as work-family conflict decreases (Dilmaghani et al., 2022). Improving warehouse safety culture may lower injuries by increasing employee confidence, morale, and productivity while decreasing medical costs and financial liability due to accidents (Aburumman et al., 2019). The organizational commitment to safety could reduce absenteeism, improve retention, and result in employees making better decisions that may go beyond the organization into their out-of-work activities to enhance their quality of life.

A Review of the Professional and Academic Literature

I sought to identify managerial strategies to improve warehouse safety culture in this qualitative single-case study. According to Leite et al. (2019), the literature review allows the researcher to explain the research question and justify the research, and it provides a lens for interpreting the results based on various theoretical points of view.

Bjorn et al. (2022) further added that reading, interpreting, analyzing, and synthesizing the literature is critical in the doctoral process. In this literature review, I evaluated professional and academic literature to provide an overview of previous and current articles, journals, books, and studies related to my research, particularly HRO theory and management strategies to improve the warehouse safety culture.

The Walden University databases I used to conduct this literature review were Emerald Management, ScienceDirect, EBSCOhost, and ABI/INFORM. I also used the search engine Google Scholar. To locate peer-reviewed journal articles and other sources for this literature review, I used the following keywords or phrases in my searches : *high-reliability organizations*, *HRO theory*, *normal accident theory*, *organizational safety policy*, *safety policies and procedures*, *safety leadership*, *leadership styles*, *Gemba*, *continuous improvement*, *Kaizen*, *5S*, *safety culture*, *safety climate*, *employee empowerment*, *near-miss reporting*, *stop work authority*, *safety management*, *leadership training*, *leadership development*, *safety awareness*, *safety mindfulness*, *mindfulness audit*, *safety accountability*, *employee turnover*, *5 for safety*, *self-efficacy*, and *collective efficacy*. Cantu et al. (2021) and Michael (2019) addressed how the health care and academic research sectors have the most significant amount of peer reviewed HRO literature available. (I noted a decline in new HRO research as of March 2020, however.) In the review of professional and academic literature, I use 208 references. Of the 208 references, 30 (14%) have a publication date before 2019; the remaining 178 (86%) have a publication date between 2019 and 2023. I used the Bureau of Labor Statistics and OSHA websites to analyze reported injuries and deaths associated with warehouse

operations presented in this study. Per the Walden University (2022) *Doctor of Business Administration: Combined Traditional Doctoral Study Research Handbook and Qualitative Case Study IRB Manual*, 85% of the selected references should have publication dates within the last 5 years. Table 1 is a visual representation of the resources used to conduct this study. The table identifies the resource type and provides a count of resources based on publication date requirements in conjunction with the current year.

Table 1

Literature Review Sources

Source type	No. of sources > 5 years old	No. of sources < 5 years old	Total
Peer-reviewed journals and articles	17	168	185
Books and dissertations	9	0	9
Government and corporate sites	4	10	14
Total	30	178	208

Introduction to Conceptual Framework

All operational industries have risk associated with operations. Some industries have experienced an operational failure that can lead to high amounts of injuries, deaths, or damages to infrastructures and the environment. HROs operate in high-risk environments where process failures can result in catastrophic events, but these organizations operate error-free for extended periods (Cantu et al., 2021; Roberts, 1989).

Rochlin et al. (1987) suggested that system accidents were considered normal and were accepted before the emergence of HROs. A small number of organizations that can conduct highly technical and complex operations daily with the understanding they cannot have a safety incident have the potential to become HROs, according to Rochlin et al. Haslam et al. (2022) described HROs as having members who are capable of operating at the same organizational expectation and requirements. Rochlin et al. focused on three highly technical institutions that operated error-free, despite the complexity of their operations. These cases were the utility grid management of Pacific Gas and Electric Company's nuclear power plant, flight operations of U.S. Navy aircraft carriers, and air traffic control stations of the Federal Aviation Administration.

The original research industries were able to operate error free regardless of the high level of stress and potential for catastrophic events if failure occurred. Rochlin et al. (1987) identified similarities between personnel management and training requirements amongst the utility company and air traffic control, which aided in their success in maintaining high operational performance. Their success was in part due to (a) careful selection of personnel, (b) extended amounts of technical personnel training, (c) employee experience, and (d) task and team stability. According to Rochlin et al., the U.S. Navy accomplished the same high performance and safety results as the nuclear power plant and air traffic control with young and inexperienced crews. Rochlin et al. further stated that the U.S. Navy's high-performance results were due to the management of personnel by officers who were often rotated every 18 months, along with the aircraft carrier crew. The continuous rotation of new personnel often resulted in a complete

turnover of the aircraft carrier crew during refit times. The U.S. Navy maintained the same high level of safe operations. Maintaining this level of safety operations is due to an already established culture of safety, leadership oversight, and closely monitored regulations. According to Wallace et al. (2021), executives of high-functioning organizations realize that leadership development should be a core business function to maintain a competitive advantage. Leader influence directly affects an organization's success or failure, which is how a leader's effectiveness is evaluated (Rochlin et al., 1987; Wallace et al., 2021). Organizational leaders can work toward achieving HRO status by creating a process to develop human, information, and organizational management techniques.

The results of the research can identify similarities between the original HRO organizations that lead to the discovery of principles, and warehouses where leaders could use the identified information to improve warehouse safety culture. Along with similar training, management, and operational structures, HROs share five key aspects consisting of (a) preoccupation with failure, (b) reluctance to simplify, (c) sensitivity to operations, (d) commitment to resiliency, and (e) deference to expertise (Cantu et al., 2021; Hendrich & Haydar, 2017). Because of their preoccupation with failure, HRO leaders emphasize conducting risk assessments, reevaluating procedures, learning from past incidents, and establishing a continuous learning cycle to safeguard organizational reliability (Ford, 2018). Cantu et al. (2021) described HRO principal reluctance to simplify as the organizations ability to completely understand the operation of their systems and processes. Deviation from standard operating procedures can be a potential

problem that is immediately analyzed to address unwanted system interactions, which are corrected before the situation results in a significant system failure.

Sensitivity to operations describes the attentiveness of frontline operations in observing the system as it typically works and acting quickly if a hidden or dormant condition unexpectedly occurs, preventing more significant issues from emerging (Garcia et al., 2020; Weick & Sutcliffe, 2011). Commitment to resilience refers to the ability of frontline workers to utilize their expertise to detect, contain, and correct minor disruptions to the system at the lowest level without impacts on operations or the need to alert higher management (Cantu et al., 2021; Hales & Chakravorty, 2016). Deference to expertise is an HRO principle that focuses on supporting employees with the most experience or expertise over individuals with a higher title or position in the organization (Veazie et al., 2022). The industries that achieved HRO status have similar safety cultures rooted in executing the HRO principles.

Organizational leaders who correctly apply the same principles can improve their organization's safety culture and can achieve the same increase in safety accountability while decreasing safety incidents. Rochlin (1996) stated that he and his colleagues were often asked to adapt HRO theory to work within an organizational structure. He added that they were cautious about applying HRO principles to organizations because the time needed to explore industry adaption would exceed allocated resources. They also wanted to maintain their creditability, and their original goal was only to study why HRO performed so well, not how to apply the theory across industries. Hales and Chakravorty (2016) stated that although organizations understand what aspects define an HRO, there

is a lack of understanding on how to create an HRO. Cantu et al. (2020) noted that the research conducted on HROs between 2001 and 2007 resulted in the creation of an HRO toolkit that managers can adapt to fit their organization. The HRO principles serve as a guideline an organization can use to improve organizational safety, and the organization must apply the principles to the unique aspects of that organization.

In this study, I adapted HRO principles to a warehouse environment to identify strategies for improving the safety culture. HRO theory substantiates organizational safety and reliability based on design, culture, technology, and leadership choices (Haavik et al., 2019). Michael (2019) further suggested that organizations work to reach the status and title of an HRO to improve organizational safety performance and, often, publicize the results to improve their public image. Veazie et al. (2022) identified common HRO implementation strategies consisting of (a) leader development, (b) safety culture, (c) establishing and using data systems, (d) training, (e) learning, and (f) quality improvement initiatives.

As Veazie et al.'s (2022) and Rochlin et al.'s (1987) studies demonstrate, U.S. Navy aircraft carriers can operate as HROs with young and regularly rotated crew members and leaders while still maintaining high standards of safety and performance. There is the potential to apply the HRO methodology to improve warehouse safety culture by emulating practices used by the U.S. Navy, particularly in organizational, human, and information management. The U.S. Navy's 200-year culture, traditions, and knowledge are successfully passed down by immersing recruits in the branch's culture and removing all other cultural inputs, such as during boot camp (Saunders, 2018). The

U.S. Navy also trains leaders to develop individual leadership abilities by focusing more on its core values over any specific leadership style (Naval History and Heritage Command, 2019.) The U.S. Navy has the most similar entry requirements to a traditional warehouse based on the original HRO industries. Table 2 offers a comparison of the current minimum qualifications needed to enter the original HRO-researched industries and the existing minimum warehouse worker qualifications.

Table 2

A Comparison of Entry Requirements in Warehouses and Documented High-Reliability Organizations

Industry	Position	Minimum age	Minimum education	Entry exam	Specialized training	Physical requirement
Federal Aviation Administration	Air traffic controller	18 [a]	Bachelor's degree	Yes	Yes	No
Pacific Gas and Electric Company	Power generation engineer	18	Bachelor's degree [b]	No	Yes	No
U.S. Navy	Aircraft carrier crew member	17 [c]	HS diploma /GED	Yes	Yes	Yes
Standard warehouse	Warehouse worker	18	HS diploma /GED [d]	Yes	Yes	Yes

Note. Rochlin et al. (1987) examined the Federal Aviation Administration, Pacific Gas and Electric Company, and U.S. Navy in their original research on high-reliability organizations. HS = high school; GED = general equivalency diploma.

[a] The Federal Aviation Administration (2022) requires 3 years of education, work experience, or combination of both requirements to apply. Accepted applicants then must complete over 4,600 hr of training at the Administration's training academy (U.S. Department of Transportation, 2023).

[b] Pacific Gas and Electric Company requires power generation engineers to possess a bachelor's degree in engineering (Pacific Gas and Electric Company, 2023).

[c] Individuals who are 17 years of age can join the U.S. Navy with parental consent (Americas Navy, 2023).

[d] Some warehouses do not require completion of a HS diploma or GED.

Evolution of Organizational Safety

Organizational safety has undergone multiple evolutions since the industrial revolution. Haghighattalab et al. (2019) stated accident models and the understanding of the significant role human factors play in accidents have advanced within the last 50-75 years. One of the most profound pioneers in the field of industrial safety is Herbert W. Heinrich, who, in the 1930s, published his first book on accident prevention and suggested accidents were behavior-based. Dunlap et al. (2019), stated Heinrich's work has influenced the advancement of occupational safety and has directly impacted how organizations view safety today. Heinrich created multiple safety theories, such as the domino theory, causations theory, and the injury pyramid. The domino theory suggested five factors must be present for an accident to occur: (a) ancestry and social environment, (b) fault of a person, (c) unsafe act, physical environment, or mechanical failure, (d) the accident, and (e) the injury. Removing one of the "dominos" or risk decreases the chance of an accident or injury. Heinrichs' causation theory (88-10-2 Ratio) suggested that the unsafe acts of employees caused 88% of industrial accidents, 10% were due to unsafe environmental or mechanical conditions, and 2% were unpreventable (Dunlap et al.). As previously mentioned, Heinrichs' injury pyramid suggested that for everyone major

incident, there were 29 minor incidents and 300 near-miss incidents, which serve as a tool to help organizations identify potential areas of increased safety risk. Warehouse safety policies often have some aspects of Heinrich's various theories within their safety policies, such as removing risks will positively impact organizational safety or identifying near-miss opportunities that could identify potential hazards.

Charles Perrow established the normal accident theory (NAT) in 1984 while investigating the nuclear disaster that occurred on Three Mile Island in Pennsylvania. NAT suggested that operations complexity will inevitably result in an accident regardless of organizational engagement, leadership, and training (Haavik et al., 2019; Pillay et al., 2019). NAT directly contrasts HROs theory, and comparative studies of both approaches often result in an inconclusive opinion of which view is true. According to Cooke (2009), in NAT, two inevitable factors contribute to catastrophic incidents; a) organizational coupling is tight and not loose, and b) processes have interactive complexity over linearity. For accidents to happen, the organizational coupling is tight, and processes are defined by interactive complexity.

The NAT premise that an accident will inevitably happen based on process coupling and complexity directly contrasts HRO theory. Tight coupling is described as processes executed without delay due to direct sequences with no ability to change or improvise the process when interruptions occur (Cooke, 2009; Haavik, 2021). HRO Principles 2, reluctance to simplify; 3, sensitivity to operations; and 4, commitment to resilience, directly challenge the NAT assumption. HRO addresses the ability of front-line workers to fully understand the system, adjust, and proactively forecast operations to

prevent interruptions to the process. Cooke further described loose coupling as delays in the process due to multiple methods to achieve the desired goal, resulting in "slack" within the process. The second factor within NAT, described by Cooke, referred to interactive complexity within a system due to multiple interdependent processes supervised by employees who specialize in that one process and may not fully understand the entire system. Employees do not understand the chance of process failure as isolated events, failed components are hard to isolate, and there is no feedback loop. In the linear system, failed parts are easy to identify due to how close the processes are in similarity, and the supervisors of the operations understand the system, ensuring the feedback loop is intact and everyone is fully aware of system status. This, too, is addressed by the ability of frontline workers in HROs to anticipate potential failures through mindfulness and spontaneously move from a centralized to a decentralized process (Haavik, 2021).

Organizational Management

Organizational structure, leader expectations, and safety standards are vital in creating an HRO. Before establishing an organizational safety culture, C-Suite or executive leadership is required to develop the organization's guidelines, including the company mission statement, vision, and corporate social responsibility (Kempinski, 2021). When considering safety management, an organization must establish guidelines for procedures, information management, and mid-level leadership requirements, which are all necessary to impact organizational safety (Ali et al., 2022). Organizations must first understand the differences between personal and process safety (Garcia et al., 2020). HRO Principle 2, reluctance to simplify, is associated with organizational management

and creating rules, policies, and procedures to ensure the organization operates safely and efficiently.

The C-suite must also create policies to establish leadership training and development. The HRO policies and procedures are detailed in the expectations of all employees around safety behaviors, incidents, and reporting. The U.S. Government highly regulates the original HROs, and regular inspections are conducted to ensure they comply with government laws and policies. Organizations should review and update safety policies and procedures at a minimum annually. Under continuous improvement guidelines, safety policies should be reviewed and updated no later than 3 years.

Organizational Safety Policies, Procedures, and Communication

Organizational safety policies and procedures are the foundation of an organization's safety culture. Warehouses require the creation of policies identifying expectations for performing job functions, safe and unsafe behaviors, and the steps to mitigate safety incidences. Policies, procedures, and communication expectations need to be easily understood and detailed enough to leave little room for misinterpretation. Every organization must identify safety precautions directly related to the operation of the organization. The policies and processes, safety procedures and reporting, job descriptions, and regulatory requirements when investigating and reporting incidents must be supported by all leaders (St. Aubin & Pater, 2021; Weick & Sutcliffe, 2011). Cooper and Phillips (1997) suggested organizations establish a total safety management (TSM) process that formalizes safety policy and plans by selecting precise levels of responsibility, communication, and assessing and identifying all potential hazards and

risks. The TSM process should include measurable milestones that are specific, measurable, agreed, realistic, and time-bound (SMART). The SMART plan is vital in setting organizational performance targets (Cooper, 1998.) HRO Principle 1, preoccupation with failure; the focus is on identifying risks and continuous learning to mitigate risks in the future. Organizations should not treat safety as a specific initiative but as an organizational structural change where there is a constant process of collecting information and sharing across multiple teams to drive safety behaviors, improve values, and create a safe culture (Hendrich & Haydar, 2017; Weick & Sutcliffe, 2011). Establishing these expectations is necessary to improve a warehouse safety culture.

The means of communication in an organization should be established and easily understood. Establishing effective communication policies is vital to organization safety (Nordin et al., 2021). Communication from the top-down and across various levels of the organization will increase knowledge sharing, improve the feedback loop and increase employee safety awareness in identifying and reporting potential safety incidents (Zhang et al., 2022). Open safety feedback is necessary to improve a warehouse safety culture to encourage employee buy in and identify safety risks. Poor communication can result in devastating impacts on not only the safety of personnel but also negatively impact employee trust in leadership (Nordin et al.). When trying to improve a warehouse safety culture, leaders should understand and address barriers to communication such as lack of information, knowledge, attention to detail, and selective listening. Tomaino (2020) suggests leaders should understand the difference in delivery styles, such as generation Z who utilize texting in their day to days lives as a primary means of communication.

According to Hendrich and Haydar (2017), organizations often allow potential liability to affect how communication is shared about a safety incident. Organizations should exercise transparency when investigating an incident and communicate the facts, such as root cause, injuries sustained, equipment damage, and safety countermeasures which will increase mid-level leader and employee confidence in the organization. (Hendrich & Haydar; Nordin et al.).

Leader Training and Development

Front-line leaders serve as the direct connection between employees and C-suite executives and serve as the primary point of contact and role model within the management hierarchy. Eide et al. (2020) suggest leaders' motivation should relate to the organizational sustainability efforts. Their behaviors and expectations on safety will influence the development of the employees' views on safety policy adherence. According to Wallace et al. (2021), leaders' development should take place on individual and collective levels. Personal leadership development's primary focus is to increase skills, abilities, knowledge, and capacity to lead. In contrast, collective leadership development is centered around increasing collective knowledge, building mutual trust and respect, building social bonds, and increasing the collective's ability to lead itself and or others (Wallace et al.). Leaders wanting to achieve a global class safety culture must engage, energize, and inspire employees to internalize safety through building trust and credibility, which will result in the leader's ability to persuade employee safety behaviors (St. Aubin & Pater, 2021). Leaders must have the self-awareness and courage to practice self-care and mindfulness to remain effective as leaders. Rupprecht et al. (2019)

suggested that self-care allows leaders to be aware of their limits and communicate their need for a break from strenuous tasks to limit the potential for low leadership performance. Leaders must be able to think critically and be able to maintain professionalism while regulating the display of negative emotions and views.

HROs commit resources to ensure leaders possess the necessary skill level and training to monitor systems properly and manage personnel. According to Luria et al. (2019), an essential individual in the development of leaders is the leadership trainer-supervisor who serves as a role model and guide as new leaders develop the necessary skills to support organizational expectations. Inexperienced leader training is imperative because there is a positive relationship between leader identity and leadership effectiveness (Kragt & Guenter, 2018). The U.S. Navy has progressive leadership training based on service member rank, focusing on leadership development. Tomaino (2020) shared that the U.S. Navy updated its operational risk management program to include individual risk management, supervisors managing team risks, leading risk management, and commanders directing risk management. According to Bahmani et al. (2021), military organizations are highly different from civilian sector organizations due to the consistent high-risk activities, interlocking responsibilities, and ethical climate grounded in regulations.

To improve warehouse safety culture, all leaders should possess the same foundational information. Organizations should conduct leadership pre-training audits to determine where the current leadership capabilities are, which allows the organizations to be more intentional with the training needs of the leader (Cohrs et al., 2020). Different

levels of leadership knowledge, potential or performance can affect the ability of leaders to improve the warehouse safety culture. Intentional leadership development training can be used as a process to help new leaders form individual identities and improve confidence (Cohrs et al., 2020; London & Sherman, 2021). London and Sherman further added leadership development might be difficult for some as they have observed leaders but may not have been responsible for leading teams, holding employees accountable, or achieving common organizational goals. Once these leaders are identified, the leader trainer should dedicate resources, such as leader-mentorship, peer-to-peer mentorship, or one-on-one developmental statuses, to support the leaders as they utilize their new skills to improve warehouse safety culture. Offstein et al. (2020) suggested organizations should provide leaders with an executive coach whose primary role is to assist the leader in sharpening and deploying new skill sets. Once an executive coach or leader mentor is identified, the mentee needs access to that individual as they navigate improving warehouse safety culture.

Human Management

HRO Principles 4, commitment to resilience, and 5, deference to expertise, can be associated with human management. Over 70% of workplace accidents are caused by unsafe behaviors or employee mistakes (Wang et al., 2021). Fabiano et al. (2019) define human factors as the elements, tools, equipment, and work environment available to help employees make work tasks easier to complete. Human factors such as work ethic, abilities, limitations, and environmental considerations play a significant part in accidents (Haghighattalab et al., 2019). Human factors should be managed, and controls set in

place to impact reliable performance. Without human management, direct leadership engagement, and oversight, the policies and processes written by organizational leadership are useless. Rochlin et al. (1987) suggested organizations are predisposed to error and safety incidents, often due to complacency, routinizations, carelessness, and lack of challenging roles. For this reason, leadership engagement and employee support are necessary to build a strong safety culture.

Leadership style is based on factors such as experience, training, and personality. Social psychologist Kurt Lewin (1939, as cited in Crosby, 2021) identified three leadership styles, which he labeled autocratic (authoritarian), democratic (participative), and laissez-faire (delegate). Lewin's original research, which consisted of rotating leaders displaying the three styles amongst three groups of children to identify similarities based on the style used by the leader, paved the way for further study into leadership and its impact on groups (Crosby, 2021). As additional theories and studies on leadership continued, individuals such as Max Weber, who identified transactional leadership, and James Burns, who identified transformational leadership, have impacted future development. Crosby (2021) stated that most studies focus on transformational and transactional leadership traits. Leadership style plays a direct role in the connection between leaders and their employees, and when working to gain trust to improve warehouse safety culture, leaders must know how to appropriately adjust their leadership style based on the current situation they face.

Safety Culture Versus Safety Climate

Safety culture and safety climate are both required when establishing an HRO. Safety culture and climate are often used out of context or interchangeably, although they describe different aspects of organizational safety beliefs (Noor Arzahan et al., 2022). According to Hofstra et al. (2018), the term safety culture was first used in the nuclear industry summary of the Chornobyl post-accident report in 1986. Safety culture refers to the beliefs, values, behavioral patterns, competencies, and attitudes an individual or group displays toward safety (Aven & Yionen, 2021; Noor Arzahan et al., 2022). Three factors are necessary to create a resilient safety culture consisting of cognitive, behavioral, and managerial capabilities (Adjekum & Tous, 2020). Adjekum and Tous further added employees' perception of safety measures cognitive abilities, behavioral capabilities are measured through observations, and managerial capabilities are measured by a leadership commitment to safety (Adjekum & Tous). Chenani et al. (2020) provided multiple factors associated with safety culture from various researchers, but the common factor consisted of safety training, safety practices, and management oversight. Chenani et al., addressed the need to create an organizational safety committee and safety officer and its effect on safety conduct as it relates to promotion potential. Leaders' commitment to safety and their ability to build trust with employees can positively impact a safety culture.

Employee involvement in creating a safety culture increases the chances new employees will emulate the actions of their peers. According to Dunlap et al. (2019), HROs often have similar characteristics based on inherent dangers and should also share

similar cultural elements, which are viewed as what makes these organizations reliable. Organizations with a substantial safety culture exhibit shared perceptions on communication, confidence in safety measures, leadership, and mutual trust (Complimentary publication of the joint commission, 2017). Ismail et al. (2021) identified 16 key factors that lead to unsafe working conditions and increased accidents, of which the following can be directly applied to warehouse safety failures: (a) unsafe behaviors and acts, (b) lack of safety training and education, (c) poor leadership or supervision, (d) lack of rules and regulations, (e) poor safety management and records. According to Ismail et al., an organization must first strengthen safety knowledge on machine handling and production equipment, production processes, skills and competencies, expectations, and individual protection techniques (such as personal protective equipment) to create a strong safety culture. Bisbey et al. (2021), shared as employees gain expertise in their jobs, that expertise plays a vital role in the development of values and norms, which are the foundation of a strong safety culture.

An employee's personal beliefs on safety can positively or negatively affect safety climate. Safety climate describes the environmental effects, organizational policies, and individual factors that impact the shared beliefs and values prevalent in strong safety culture and how the organization manages safety in the workplace at present (Cooper, 2019; Kalteh et al., 2021). Naevestad et al. (2019) added safety climate could be viewed as a snapshot or an organizational safety culture, which is normally achieved through quantitative surveys. Kalteh et al., identified a positive correlation between safety climate, safety culture, and performance indicators. The leader-member exchange

represents a reciprocal relationship between leader and employee (Huang et al., 2021). Building trust and mutual respect are necessary, resulting in employee compliance with organizational rules and regulations. Building trust between leaders and employees is pivotal in improving safety culture and climate. Employee and supervisor safety communications can result in employees developing a feeling of ownership within the organization, and a more incredible sense of obligation to adhere to organizational rules, policies, and norms (Huang et al., 2021). According to Schwatka et al. (2019), for front-line leaders to improve organizational safety climate, they must be able to communicate successfully. Leaders share the company and their values and expectations around safety, train new employees on safety expectations, promote employee safety program participation, and lead by example.

Impact of Leadership on Safety Culture

Front facing leaders' views, team expectations, and leadership style will determine how safety culture is established in the organization. The role front-line leadership plays in organizational safety performance, culture, and success cannot be understated (Addo & Dartey-Baah, 2020). Leadership safety commitment directly affects employee safety behavior (Niu & Liu, 2022). Leaders who monitor employee behaviors, describe expectations, provide rewards, and take corrective actions could reduce workplace injuries, but leaders must be able to determine the right leadership style for the perceived risk level because hazards employees might impact the leadership style's effectiveness (Bazzoli et al., 2020; Darey-Baah et al., 2020). Scholars investigate leadership in safety, safety-critical, and non-safety-critical environments. To create an

HRO, the organizational leadership must commit to changing behaviors to achieve the desired outcomes. Leading by example, admitting mistakes, and allowing themselves to be vulnerable with subordinates serve to connect with employees and encourage them to emulate the leader's actions (Martinez-Corcoles, 2018). Leadership is necessary when responding and recovering from organizational disruptions, but the leadership style that bests resolve the disruptions is unknown (Azadegan, et al., 2021). Ete et al. (2021), stated leaders should operate with behavioral integrity, or their effectiveness and ability to build trust with subordinates will be compromised.

The messaging conveyed by leaders should be focused on operating safely. Leader commitment to safety must be communicated effectively to motivate employees by showing concern for their safety and welfare (Nordin et al., 2021). Front-line supervisors must be aware of their body language, facial expressions, and demeanor to ensure they are not displaying judgment, disdain, or frustration when an incident occurs but instead should focus on the immediate well-being of the employee and their needs (Ndana, 2021). Warehouse leaders have a responsibility to maintain procedural integrity based on organizational practices and be prepared to control deviations from prescribed duties. Leaders must be prepared to detect and react to unanticipated events that could threaten the process or the safety of employees (Jeelani et al., 2021). Willis et al. (2021) added that leaders must understand and utilize the full-range leadership model (transactional, transformational, and passive) in varying combinations to lead employees and improve safety behavior effectively. Clayton (2019) suggested that leaders should not underestimate the value-added of getting to know employees and providing consistent

recognition of the safety culture. Warehouse leadership displaying genuine care for their employees can help build trust in the leadership and improve the organizational safety culture.

Transactional Leadership

Some leaders may find the transactional leadership style effective when implementing organizational safety expectations. Transactional leaders are goal-oriented and focus on leveraging economic exchange with employees to manage, monitor, and control objectives and desired outcomes (Kahn et al., 2020). Abdul Halim et al. (2021) suggested leaders who use the transactional leadership style maintain organizational policies over personal employee growth. Addo and Dartey-Baah (2020) added that transactional leadership enforces the exchange between leaders and employees, such as rewards for the performance of organizational requirements. Bazzoli et al. (2020) further stated transactional leaders use contingent rewards and management-by-exception-active styles to observe employee safety behaviors and reward or provide corrective actions when policies are violated, all before a safety incident can occur. Within the safety realm, transactional leaders display vigilance in upholding organizational policies, monitoring results, and working to correct errors which foster safety climate and behaviors (Bazzoli et al.). Bazzoli et al., added transactional leaders ensure corrections are made to violations to allow error recovery and provide employees with the opportunity to learn from the situation. Crosby (2021) suggested the results achieved by autocratic leaders are due to direct supervision, which also indicates if not present, employees will not perform and therefore not fully embrace the organizational culture. The transactional leadership

style should be utilized when improving a warehouse safety culture because employees must understand the expectations, and those who violate them should be immediately reprimanded.

Transformational Leadership

Leaders who utilize the transformational leadership style can influence employees to improve safety posture by displaying a genuine interest in their well-being. The transformational leadership style stimulates employees and fosters safety through inspirational motivation by showing concern for their personal development (Addo & Dartey-Baah, 2020; Bazzoli et al., 2020). Kahn et al. (2020) stated transformational leadership is also known as charismatic leadership based on the leader's ability to persuade employees to look beyond the limit of their job description. Kahn et al. added transformational leadership positively impacts innovative and supportive safety cultures. The HRO principles display employees' vital role in establishing a safe work environment. Employees must feel confident in their abilities and trust in their leadership to identify potential safety risks and provide suggestions to mitigate risks.

Connecting with employees on a personal level can impact their views on safety. Transformational leaders use personal and social identification to influence employees to adopt the leaders' values and enhance safety consciousness, behaviors, communication, and outcomes (Bazzoli et al., 2020). Muchiri et al. (2019) added the transformational leader could connect with employees through idealized influence, individualized social considerations, mental and intellectual stimulation, and inspirational motivation. These traits are necessary when establishing a safety culture in a warehouse. Transformational

leaders promote and encourage whistleblowing behavior because employees are comfortable expressing their views on safety incidents, reporting colleague wrongdoing, and not fearing retaliation by addressing harmful safety incidents (Bazzoli et al.). Shi and Mohamed Zainal (2021) suggested by observing leadership safety commitments; employees could positively view management, moving them to be more safety conscious. Feldman et al. (2019) added teams operate at a higher level and achieve more remarkable outcomes due to the transformational leadership style.

Laissez-Faire Leadership

Leaders must provide guidance, direction, and hold employees accountable for their actions. The Laissez-faire leadership style is considered destructive and can negatively affect safety culture due to underdeveloped safety conduct and the belief that employees do not need supervisor support or intervention (Alheet et al., 2021; Bazzoli et al., 2020). Kahn et al. (2020) suggested that the laissez-faire leadership style should not be considered a style because those who use it serve in a title-only leadership position. Laissez-faire leaders have no desire to make management decisions or take responsibility. Crosby (2021) stated teams were unproductive, suffered from low morale and high tension, and lacked harmony under the laissez-faire leadership style. Bazzoli et al., described the laissez-faire leadership style as passive, negatively affecting safety culture due to their lack of safety consciousness and willingness to follow organizational safety practices strictly. Warehouse leaders who display the laissez-faire leadership style will only react to safety incidents once they become too serious to ignore, provide little guidance to employees, and create stress, frustration, and infighting within the

workgroup. This leadership style is detrimental to a safety culture because all leaders must display the same commitment and enthusiasm to provide a safe warehouse. Prussia et al. (2019) added the leader's carefree and cavalier attitude toward safety could result in employees rationalizing risk-taking, which can result in safety incidents.

Employee Engagement and Empowerment

Front-line leaders serve as the medium between C-suite executives and employees. Leaders must be skilled in leadership techniques and trained in the various safety tools to provide guidance and structure to employees. Employee engagement is described as a leader's ability to engage employees to express themselves physically, emotionally, and intellectually while performing their assigned roles (Chaudhary, 2019). Employee empowerment is critical when teaching tools that impact organizational safety, such as stop work authority (Cutchen, 2021; Havinga et al., 2021). Empowered employees continuously use their experience to proactively observe processes and suggest ways to revise, improve, or address complex problems (van Assen, 2021). Stewart (2020) further added those who have expressed personal accountability within the organization should be placed in areas of increased responsibility and delegated to complete specific tasks, which will result in the employee feeling a sense of empowerment. Chemin (2021) added appointing individuals as team leaders resulted in increased team performance and knowledge-sharing. The employee will feel confident and empowered in their actions and can serve as an example for other employees to emulate and will build trust between the employees and warehouse leadership further providing a way to bridge safety expectations and safety culture.

Safety Accountability and Enforcement

To successfully impact and create a warehouse safety culture, leaders must be confident, competent, and display transparency with the organizational expectations and consequences. Stewart (2020) stated that leaders should foster an environment where employees take personal accountability for their actions, and the leader must encourage employees to own their behavior and understand the consequences. By holding employees accountable, leaders can build trust within a team. Pro-social rule breaking (PSRB) are behaviors exhibited by employees that intentionally violate policies, rules, and administrative regulations based on a belief their actions benefit the organization (Wang & Shi, 2021). Wang and Shi continued; some employees may participate in PSRB because they view the rule as hindering their ability to be productive. Inclusive leadership is a leadership style in which the leader values employee opinions and affirms their contributions (Wang & Shi). The inclusive leadership style can result in employees' continued PSRB behavior because they feel the leaders support it. Leaders are responsible for treating all violations of organizational policies the same, holding employees accountable, and reaffirming that while they value the employees' contributions, they will uphold the corporate policies. Employees who continue to violate the rules are at an increased risk of safety incidents or fatalities. Warehouse leaders must work swiftly to correct the behavior or remove the employee.

Impacts of Employee Turnover on Safety Culture

Organizations that experience high levels of turnover risk degradation of safety culture if strong routines and expectations are not set. In organizations with high

turnover, three mechanisms must be in place to ensure HRO operations continue to run smoothly: (a) mid-level leaders have experience in the current operation gained over time and by functioning in similar roles elsewhere, (b) leadership and employees served in similar roles in other organizations and bring with them shared experiences, and (c) teams are created and remain the same until continuity is broken for refit (Rochlin et al., 1987). An example of the last mechanism being applied to warehouse operations would be maintaining current teams during a high operational season and conducting job changes or hiring events when operations allow proper time allocated for training new employees. Zivkovic et al. (2021) defined organizational commitment as an individual's attitude that connects or reinforces the individual's identity with an organization. Zivkovic et al. identified three dimensions of organizational commitment consisting of (a) affective commitment- employees want to stay within the organization, (b) normative commitment- employees feel as if they need to stay within the organization, and (c) continuous commitment- employees feel they must stay within the organization. As warehouse leaders learn their employees' personalities and values, they will be equipped with enough information to determine where their employees should be slotted in the three dimensions of organizational commitment.

Information Management

HRO Principles 1, preoccupation with failure, and 4, commitment to resilience, can be associated with information management. Information management provides leadership tools that can be used to support safe employee behaviors by identifying potential breakdowns in the system, continuous improvement techniques to update safety

policies, and data collection to identify areas of increased accidents. According to Beno et al. (2021), organizational safety can be improved by taking proactive actions to prevent or reactive actions in response to a safety incident. The goal is to engage employees and provide them with various means to support the organizational safety program. By giving employees detailed safety tools, expectations, and plans, employees can work toward achieving a safe work environment.

Employees will have different levels of engagement with leadership and comfortability in participating in safety improvement programs. By providing multiple options for an employee to participate, the organization will have a better opportunity to get employee buy-in and ultimately improve the organizational safety culture. Organizations must be careful when creating outcome-focused safety goals because it can result in employees believing they must reach a specific goal, which can be viewed as leadership caring more about reaching the goal than identifying potential safety areas to address (Ndana, 2021). The program will then become requirement based instead of creating an environment where employees observe processes critically to identify a possible point of safety failure. Warehouse leaders should consistently inform the team that negative metrics represent the proper functioning of the safety program and should continue to encourage honest, transparent safety feedback.

Safety Management

Safety management procedures should be established in the C-suite with stakeholder buy-in resulting in organizational priorities. According to Bjelle and Sydnes (2019), organization managers have two analytical processes to study safety

management: top-down and bottom-up models. Implementing a safety management system can effectively manage risk using top-down, organizational-wide processes, procedures, and policies (Adjekum & Tous, 2020). Front-line leaders take the priorities of upper management and implement them across the organization. Utilizing tools such as continuous improvement, Gemba, mindfulness audits, and near-miss events, warehouse leadership can create a safety culture by establishing guidelines to monitor the programs progress and make changes to ensure continued support and implementation of the policies. Belle and Sydnes added the bottom-up model employees use the information provided by upper management as a guideline but utilize their job knowledge and experience to evaluate situations and adjust to maintain a safe environment, such as in HRO Principle 4, commitment to resilience. The bottom-up model results in no formal documentation that can assist in tracking overall safety trends. OSHA (2022) suggested organizations implement three action items to establish and monitor safety management programs: (a) monitor performance and progress, (b) verify the program is implemented and is operating, and (c) correct program shortcomings and identify opportunities to improve.

Organizations should invest in safety management software and technology to track and analyze potential areas with high safety incidents and occurrences. HRO socio-technical systems are necessary for observing the transformation of safety culture (Jablonski & Jablonski, 2021). According to Yang et al. (2018), big data visualization is the most valuable asset organizations have when implementing safety decision-making and management. Big data is defined as large amounts of information retrieved through

structured, semistructured, or unstructured means. The information can be analyzed to impact safety decision-making. Organizations can benefit from deep learning and machine learning to investigate safety incidents and identify countermeasures to prevent similar future incidents from occurring (Hou et al., 2021). Without a clear plan to address the most significant safety concerns and prioritize by severity, leadership can quickly become overwhelmed with the number of accidents, near-miss opportunities, or employee suggestions. Safety management software or other means of tracking incidents are vital to creating a safety culture in a warehouse where numerous potential safety incidents can occur.

Safety Tools

The establishment of safety tools is necessary to create a warehouse safety culture. Organizations cannot create safety policies or procedures and expect the safety culture to improve without the direct intervention of organizational leadership. Organizational policies should be clear and concise and guide what is considered safe and unsafe behavior (Lal Kaila, 2021). Leaders must be proficient in the methodology and capable of properly training their employees to utilize the tools. St. Aubin and Pater (2021) shared new generations of leaders may view safety and the role of safety leadership differently than their predecessors due to changes in generational beliefs and attitudes. Safety incidents should be deconstructed and studied by simulation or debriefing. A simulation consists of (a) an introduction of the incident, (b) simulation briefing, (c) theory input, (d) scenario briefing, (e) scenario, (f) debriefing, and (g) ending (Serou et al., 2020). A typical debriefing consists of an overview of events that lead to the

safety incident, and warehouse leadership should display transparency to build trust by allowing employees such as trainers or safety personnel to participate in the debriefing. There is a direct correlation between organizational safety culture and safety performance (Lal Kaila, 2021). A stronger safety culture will improve safety performance though leaders and employees holding each other accountable for safety expectations.

The Use of Continuous Improvement, Kaizen, and 5S Methodology to Improve Safety Culture

Continuous improvement, Kaizen, and 5S can all be used to improve safety culture by identifying necessary steps within a process, removing unnecessary tools or steps from the process, identifying potential failures within the system, and creating visual management tools through a Pareto chart. Lack of organization and cleanliness in operational areas can lead to safety incidents and accidents, and organizations should utilize the 5S methodology strategically, which is part of total quality management tools and consists of the following steps: (a) sort (seiri), (b) set in order (seiton), (c) shine (seiso), (d) standardize (seiketsu), and (e) sustain (shitsuke; Beno et al., 2021; Singh et al., 2021). Implementing the 5S method will allow employees to identify ways to improve the process through observations and positively affect safety. According to van Assen (2021), employee involvement in continuous improvement is vital to improving organizational processes, decision-making, and goal setting. HRO Principle 5, deference to expertise, focuses on utilizing those with expertise, often the front-line employee performing the task, with the best opportunity to provide valuable insight into organizational change.

Gemba Walk

The Gemba walk is a lean management tool utilized to improve efficiency in manufacturing. When trying to improve warehouse safety culture, the Gemba walk is a powerful tool leadership can use not only to increase employee safety engagement but also to leverage their experience to identify potential safety risks in a process before they happen. Maamri et al. (2020) describe the name Gemba as a "real place," and the Gemba walk as the most fundamental component of lean leadership, which cooperates between leaders and employees to identify potential safety risks or areas value that can be added within the organization. Front-line workers utilize their experience and expertise to identify safety concerns and connect with leadership to conduct a Gemba walk. The results of the Gemba walk are annotated on a Gemba board where potential risks are displayed graphically by name and the number of safety occurrences identified by employees. The Gemba board serves as a visual indicator where collective team engagement quickly identifies problems through recording and analyzing data, such as leading and lagging indicators and countermeasures.

The organizational priorities are displayed in column form, with each column showing the overall status, usually portrayed with a percentage and colors such as red or green, leading and lagging indicators, and countermeasures. Once a specific occurrence is visibly higher than the other safety occurrences on the Gemba board pareto (graph), the leadership then connects with the employees to determine the best course of action to correct the potential safety risk. This process increases employee buy-in, safety engagement, and safety ownership. The Gemba walk process can be applied to four HRO

principles and is vital in establishing a warehouse safety culture. The Gemba walk process promotes trust, communication, and solution-oriented behaviors and improves employee confidence to openly express safety concerns with leadership through direct interaction (Maamri et al., 2020; Micieta et al., 2021). The countermeasures suggested by employees are analyzed by leadership, and the leaders will determine which countermeasure to use.

Leading Indicators

Visual indicators can simplify establishing safety expectations. The leading indicators are used to measure the actions taken by warehouse management and employees to improve safety and provide a visual indicator displaying the improvements made over a designated period, usually daily or weekly (Ndana, 2021). According to Zwetsloot et al. (2020), leading indicators should comprise existing or potential risks and ways to reduce or mitigate the risk and provide data that can be used in evidence-based organizational decision-making. Leaders should fully understand the role of leading indicators because individuals often mistake leading indicators such as incident rates as lagging indicators (Walaski, 2020). Performance indicators are essential to the organization's safety strategy and should be linked to strategic processes (Medne & Lapina, 2019). Displaying performance indicators is necessary when establishing safety culture.

Lagging Indicators

Lagging indicators play a vital role in the Gemba process. Lagging indicators are essential when conducting a Gemba walk and creating a Gemba board. According to

Ndana (2021), lagging indicators are used to focus on broad topics such as injuries or safety incidents and provide a method to track performance and progression over a designated time. The lagging indicators provide management with a tool to study past situations due to the ease of identifying, collecting, and analyzing data (Ndana, 2021). When creating lagging indicators, management must ensure they are specific and easily understood by employees. Xu et al. (2021) stated some organizations improperly utilize lagging indicators while trying to manage organizational safety performance due to their inability to predict or improve future safety performance. Costin et al. (2019) added that new technology provides organizations with better means to measure employee safety behaviors throughout a project. Warehouse leadership should continue to identify ways to easily track safety incidents through technology that visually represents problem areas.

Safety Mindfulness Practices

Prior to undergoing any task, employees and leaders should visualize the task and steps necessary to complete the task in their minds. Safety mindfulness is described as focusing intentionally on a task, in a non-judgmental and open-minded way, in one's mind (Liang et al., 2022; Vu et al., 2022). Weick and Sutclifffe (2011) suggested that when an HRO deploys all five principles, they move into a state of collective mindfulness where they create systems capable of turning their concerns of potential failures into routines to address these concerns. Mindfulness as a component of safety behavior and HRO Principle 4, commitment to resilience, implies employees are encouraged to utilize their expertise in a process or task to picture how or when a potential situation can occur and the steps they would take should the problem happen. Safety mindfulness practices

move the employee from safety compliance to safety awareness, where they actively work to prevent an incident instead of simply complying with safety incident mitigation techniques. Mindfulness is often associated with meditation, and organizations often utilize phrases such as "5 for safety," "time-out," "safety stand-down," or "take two." The basic concept of these terms consists of (a) stop and think before acting, (b) look and identify all potential hazards or risks, (c) assess the potential damage that can result, (d) manage by communicating with others and implementing risk mitigation techniques, and (e) safely complete the task (Martinez-Corcoles & Vogus, 2020; SafetyRisk, 2018).

Mentally visualizing the successful completion of a task prior to executing is important. According to Hales and Chakravorty (2016), mindfulness exercises utilize qualitative techniques to encourage direct attention to a task to promote understanding and how specific actions can improve process performance. Hales and Chakravorty continue to state three activities operationalize mindfulness within organizations, (a) frequent meditation, (b) objectively solving problems using context-specific solutions, and (c) communicating the specific problem with others. For employees to feel comfortable enough to utilize mindful behaviors, leadership must foster an environment of open communication and acceptance. According to Shi and Mohamed Zainal (2021), safety-specific transformational leadership can improve safety climate and employee perception of safety by displaying management's commitment to safety practices. Motivational leaders influence employee behavior by challenging employees to look beyond the limits of their job description. Isaksson et al. (2022) suggested organizations should conduct daily safety briefs consisting of short meetings where any incident that

occurred within the last 24 hr is discussed, and the steps to address or resolve the incident are shared.

Near-Miss Event

The near-miss event can serve multiple purposes when trying to build or assess the current state of an organization's safety culture. A near-miss is an adverse event that has the potential to cause an injury to an individual or damage to a system but does not happen (Gnoni et al., 2022). Azadegan et al. (2019) suggested there is strong empirical evidence that near-miss events are effective in organizations identifying safety incidents or errors. The premise of the near-miss is based on Herbert Heinrichs's theory of the safety pyramid, where near-miss opportunities serve as the base, and fatalities sit atop the pyramid. Heinrich theorized that there were 29 minor injuries for every major injury and 300 near-miss events. Hendrich and Haydar (2017) stated after HRO training was presented to executives and leaders, the organization experienced an increase in near-miss reporting but obtained evidence of unreported near-miss opportunities.

Gnoni et al. (2022) suggested managers should encourage safe communication and consciousness among employees to support near-miss reporting. Westreich et al. (2021) added managers must create an environment where employees feel incentivized to report near-miss events. Each near-miss event should be investigated, the root cause identified, lessons shared, and practices adjusted to prevent the same near-miss event in the future (Hasanspahic et al., 2020). Serou et al. (2021) suggested organizations can attain high safety standards by highlighting minor incidents or near misses to measure the organization's systems or reporting and investigating policies. According to Azadegan et

al. (2019), despite the empirical evidence that the near-miss opportunity can inform the leadership of a potential issue before one arises, some organizations consider the near-miss opportunity superstitious learning and do not embrace the process.

Stop Work Authority

Stop work authority is a powerful tool leaders can use to establish trust and accountability within employees. Trusting employees to recognize potentially dangerous situations and stop the work is an example of improving safety culture. According to Havinga et al. (2021), organizations should create policies and procedures outlining how work should safely be performed and the conditions in which risks or unsafe actions should stop work. Authority-to-stop-work polices are required in high-risk organizations, and employees should be willing to challenge leadership if safety is compromised (Havinga et al., 2021). Rochlin et al. (1987) discussed the obligation of low-ranking U.S. Navy personnel to suspend flight operations without seeking supervisor approval when safety was involved. Although the action is reviewed later, the service member will be praised in public if they are correct, and no penalization will happen if it were the incorrect call. Warehouse leadership should ensure the same actions are taken when stop work authority is exercised.

Alternative Theories Considered

Social Cognitive Theory

In 1941, Neal Miller and John Dollard stated individuals would emulate behaviors and tasks of other individuals if they are motivated to do so, which they labeled social learning theory. Between 1961 and 1963, psychologist Albert Bandura continued to

develop social learning theory based on observations of an experiment conducted with children called the Bobo doll experiment. In the experiment, children watched videos of adults beating and berating a clown doll named Bobo. The children were later placed in a room with the Bobo doll, and they emulated the action previously observed by the adults. Bandura suggested observational learning and modeling was based on five factors: (a) observations, (b) attention, (c) retention, (d) reproduction, and (e) motivation (Bandura, 1993; Schunk & DiBenedetto, 2020). According to Bandura (1993), behavior is modeled through observations, emulation, and the perception of anticipated rewards or punishments. The organizational training documents analyzed demonstrated how the organization modeled employee training like Bandura's findings on observations, emulation, and punishment.

Bandura updated social learning theory in 1986 to social cognitive theory after surmising that meaningful learning occurs before an individual executes an action, which arises cognitively. O'Kelley (2019), stated when new employees arrive at an organization, they pay close attention to the efforts of others and imitate those actions to be accepted by the group. The organization began behavior modeling from the moment new employees entered the organization through the mandating of safety school. O'Kelley added that Bandura described learning as a process that occurs socially, reciprocating personal, behavioral, and environmental factors. Bandura described the three factors as triadic reciprocity or reciprocal interactions. According to Schunk and DiBenedetto (2020), reciprocal interactions are all reciprocal, meaning they influence each other positively or negatively. Schunk and DiBenedetto added that a person could affect their behaviors,

which affect the environment; similarly, behaviors and the environment can affect an individual. Individuals' actions reflect their environments by expressing environmental circumstances (Chen et al., 2019). Social cognitive theory assumes one change in the reciprocal interactions will result in a difference in the other factors.

In the warehouse, the personal aspect of reciprocal interactions consists of safety goals, communication, safety feedback, and leadership. Behavioral reciprocal interactions consist of safety advocacy, stop work authority, mindfulness, and safety accountability. The environmental aspect of reciprocal interactions in the warehouse consists of safety management, continuous improvement, near-miss events, and the Gemba walk. Warehouse managers could influence employee acceptance of safety expectations through warehouse reciprocal interactions, as part of social cognitive theory. Social cognitive theory also has four factors that affect individual behavior: (a) goals, (b) outcome expectations, (c) self-efficacy, and (d) socio-structural variables (O'Kelley, 2019). The combination of these factors develops an individual's level of self-efficacy. According to Bandura (2002), the elements included perceived efficacy, which is used to regulate an individual's ability to learn; social effectiveness to manage relationships; and self-regulatory efficacy, which prevents an individual from engaging in risk-related behaviors and resisting internal or external pressures.

Self-Efficacy Theory

Albert Bandura developed the self-efficacy theory in 1977. Self-efficacy was initially part of social learning theory, which was later updated to social cognitive theory in 1986. Self-efficacy describes an individual's confidence in their ability to complete a

task. According to Prussia et al. (2019), self-efficacy is directly related to the successful application of social cognitive theory and an individual's personal beliefs in their ability to achieve desired outcomes in a task or process. Ozer (2022) suggested self-efficacy and resilience are vital attributes that are required for an individual to develop themselves, reach personal goals, and positively affect the trajectory of their lives. According to Bandura (1993, 1997), individual efficacy is perceived and exerted through four critical processes that consist of (a) cognitive, (b) motivational, (c) effective, and (d) selection processes.

Bandura (1993) suggested cognitive processes are initially formed through forethought or mindfulness. Individuals determine their anticipated success or failure based on their confidence level in a task. Those who imagine successful completion have a higher level of efficacy than those who imagine themselves failing at a task. Motivation is also developed cognitively through exercising forethought and the anticipated successful completion of a task. Bandura added individuals with high self-efficacy view unsuccessful completion of a job as not exerting more effort. At the same time, those will low self-efficacy view failure of a task as a lack of individual skill. Affective processes address the thought process associated with the job. According to Menon and Lefteri (2021), those who believe they can accomplish a task are more driven to achieve it. Those with high levels of efficacy think of competing in a job that controls the stress level they feel when attempting the task. Those with low levels of efficacy will think negatively of them failing the job, which will increase stress, anxiety, and feelings of self-doubt.

The selection process describes an individual's ability to shape the physical environment by selecting tasks they feel they can complete through perceived self-efficacy. According to Bandura (1993), the higher the self-efficacy, the more the individual will be willing to make career choices that will improve their future by developing themselves through education, training, and increasing their willingness to stay within the organization. According to Bandura and Locke (2003), individual efficacy can increase by observing individuals with high self-efficacy complete tasks. As individuals watch others, they visualize themselves completing the job successfully, increasing their positive mindfulness, motivation, and affective processes.

Transition

In Section 1, I defined this study's foundation and the business problem's background. This section identified the study's problem statement, purpose statement, and nature. I explained why I chose to conduct a qualitative single-case study and placed the interview questions used to identify managerial strategies to improve the warehouse safety culture. I presented the conceptual framework used along with operational definitions, assumptions, limitations, and delimitations. Lastly, in section 1, I utilized peer-reviewed resources to validate the methods used to address the business problem I aim to solve.

In Section 2, I defined the role of the researcher, study participants, research method and design, population, sampling, and the role of ethical research. I also described the data collection instruments, techniques, data organization, analysis, and data saturation. I completed Section 2 by explaining study reliability, validity,

dependability, credibility, transferability, confirmability, and data saturation as it pertains to this study. In Section 3, I present my research findings on manager strategies to improve warehouse safety culture. I used the identified themes based on my open-ended research questions to support my conclusions. I include implications for social change, recommendations for action, suggestions for future studies on warehouse safety, and my reflections on the research process and my analysis.

Section 2: The Project

In Section 2, I explore managerial strategies to improve warehouse safety culture. After describing my role as the researcher, I provide details on the study participants, who were all warehouse managers who had been successful in improving warehouse safety culture and who were responsible for implementing organizational safety guidelines, auditing safety processes, and enforcing safety standards. I discuss the research method, design, population, sampling, and the importance of ethical research. Then, I describe the data collection instruments and data collection, organization, and data analysis processes. I conclude this section by explaining the study's reliability and validity.

Purpose Statement

The purpose of this qualitative single-case study was to explore strategies that managers use to improve warehouse safety culture. The targeted population for this study was five warehouse managers from a single organization who were responsible on a daily basis for executing organizational safety policies, conducting safety audits, providing safety feedback, and successfully mitigating safety incidents. The geographic location was in the Midwest region of the United States. The study findings may inform business leaders of ways to improve the work environment by allowing employees more autonomy. Employees may require less direct supervision, which may lower employer financial liability and increase employee accountability for safety actions. The implications for positive social change could potentially include an increase in safety, mindfulness, and accountability within local families and the community.

Role of the Researcher

I served as the primary data collection instrument for this qualitative single-case study. According to Collins and Stockton (2022), the researcher acts as the primary research instrument. I identified an acceptable and valid research methodology; study design; participant requirements; and recruitment, participation, data collection, and analysis processes. I was responsible for executing the interviews and analyzing organizational documents. Mattimoe et al. (2021) added that the researcher is responsible for identifying and communicating the themes used in the study.

I have direct experience working in a warehouse. As the researcher, I understand that my unintended bias, opinions, and beliefs could have negatively affected the interpretation of the data received from study participants. According to Ellsworth (2021), research bias threatens the study's integrity in three areas: evaluation of the current research available, the conduct of the investigation, and communications of the research findings. To mitigate potential bias, I used interview protocols per Walden University guidelines. By using an interview protocol, a researcher is able to focus the participant on the relationship between the topic and the participant's experiences, beliefs, and values (Collins & Stockton, 2022).

Ethical research is necessary to ensure the quality and validity of a study. The 1979 *Belmont Report* of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research mandated three ethical principles researchers must adhere to, which are (a) respect for persons, (b) beneficence, and (c) justice. I used written interview protocols to protect the integrity of the interviews and to be consistent

with interview best practices. According to Heydon and Powell (2016), a written protocol is necessary to ensure the completeness and quality of evidence obtained. I obtained informed consent after I received Walden University's Institutional Review Board (IRB) approval. The consent form provided participants with an outline of the interview process, including the interview questions, means of recording, and their ability to end the interview at any time. I mitigated unintended bias while viewing and compiling the data by having the study participants individually review their interview findings. To ensure that my interpretation of the data represented their intended beliefs, I conducted member checking, which confirmed data saturation was met and no new information was identified.

Participants

The study participants were five warehouse managers from a single organization who were responsible for implementing organizational safety guidelines and enforcing safety standards. To obtain an adequate sample, I identified five warehouse managers who had successfully improved warehouse safety culture. According to Virzi (1992), observing four to five participants will provide qualitative researchers with knowledge of 80% of the problems at an organization. I partnered with organizational leadership, such as human resources and senior executives, to gain access to individuals that meet the requested eligibility criteria based on the level of success in implementing safety policies and achieving favorable results. According to Stuart and Moore (2021), researchers who have direct contact with participants can ensure that participants met all inclusion criteria. I established a working relationship with study participants by revealing personal

interests, communicating sincerely, and sharing why I was passionate about the study, making myself appear trustworthy and approachable. Altenmüller et al. (2021) suggested sharing interest and passion for the subject to be seen as personable.

Research Method and Design

This subsection includes details on the research method and design I used to explore managerial strategies to improve warehouse safety culture. The purpose of the research design is to answer a specific research question. In contrast, the research method identifies the means the researcher uses to collect data to answer the research questions (Kratochwill et al., 2023). According to Moon (2019), the selection of an appropriate research method helps to ensure that the data obtained from research is accurate based on the studied phenomena. For this study, I used the qualitative research method with a single-site case study design to explore real-time human behavior, experiences, beliefs, and values within a warehouse to investigate safety culture.

Research Method

I considered three research methods for my study on managerial strategies to improve warehouse safety culture: (a) qualitative, (b) quantitative, and (c) mixed method. I used the qualitative research method for this study because I wanted to explore how managers impact warehouse safety culture as lived through human interactions and experiences. Qualitative research is necessary for answering the questions of how, what, and why a particular organizational initiative may fail or succeed based on interactions of those directly impacted by the initiative (Trent & Cho, 2020). The qualitative method was chosen because I could gain insight into what factors influence individuals' actions and

experiences in their interactions utilizing non-statistical data collection means. According to Mwita (2022), in qualitative studies, researchers have four primary data collection techniques: (a) interviews, (b) focus groups, (c) direct observations, and (d) document analysis. I used interviews and document analysis as my primary means to obtain the necessary data for this study and utilize the other data collection methods as a secondary source of information.

The quantitative research approach was not chosen because I was not using closed-ended questions, testing hypotheses, or utilizing numbers to reach a statistical conclusion. Bloomberg and Volpe (2018) added in quantitative research, cause and effect are used to prove or disprove a theory through direct observations and comparing variables. In quantitative research, the researcher suggests a theory supported by a hypothesis and draws conclusions based on observations and statistical data analysis (Hou, 2021). The quantitative method is considered confirmatory, used to produce objective-based data confirmed, and verified through statistical analysis.

The mixed-method approach was not chosen for this study for the same reason the quantitative method was not chosen, because I was not testing hypotheses or utilizing statistical data to research the business problem. Hou (2021) defined mixed-methods research as a method used that combines a story with statistical data to investigate and answer complex social or behavioral issues. Stoecker and Avila (2021) added the mixed-method approach is used to resolve the argument that qualitative or quantitative methods are better than the other. The mixed-method process is both confirmatory and exploratory

and allows researchers to be methodologically eclectic based on statistical knowledge and researcher intuition (Stoecker & Avila, 2021).

Research Design

For this study, I decided to use the case study research design. Siedlecki (2020) defined case studies as a flexible research approach that includes various methods to obtain necessary data. I chose this design because it best fits my need to study a phenomenon holistically and in real time. To identify managerial strategies to improve a warehouse safety culture, I collected data from multiple sources, including interviews and organizational historical documents on safety, to investigate the phenomenon. The case study design is most advantageous when a phenomenon, process, or event must be explored with limited cases to observe (Siedlecki, 2020). The proposed study was a single-case study of a warehouse in the Midwest region of the United States.

The ethnographic design studies individuals' cultures in real-time through face-to-face, informal, in-depth conversations, and observations (Kelley et al., 2021). This method was not chosen for this study because the ethnographic design required direct observations and participation over a period that exceeded the available time. The phenomenological design attempts to identify and make sense of the lived experiences of a group, both personally and socially, which provides the researcher with a greater understanding of the experience (Birhanu et al., 2022). This research design was not chosen because the study focus is managerial strategies to improve a warehouse safety culture, which requires me to observe various possibilities for the phenomenon outside of individual lived experiences. Data saturation is defined as the point where the researcher

can no longer obtain new information through the data collection process (Mwita, 2022). Guest et al. (2020) added data saturation is a conceptual way to estimate and assess research sample size. I ensured data saturation by utilizing open-ended interview questions, document analysis, member checking, and triangulation until common themes were identified, and no new information was presented. My goal was to ensure if the study was replicated, no additional themes would be identified.

Population and Sampling

When conducting qualitative research, population and sample size are vital to ensure a rich understanding of the research subject. According to Gill (2020), in qualitative research, the standard sampling methods are listed as (a) convenience, (b) snowball, (c) purposive, and (d) theoretical. In this study, I utilized critical case sampling, which is a proponent of purposive sampling. Johnson et al. (2020), identified purposive sampling utilizes the intentional selection of individuals to participate in the research. Johnson et al. added that if the research question requires a participant with a particular experience, use critical case sampling. In my study aimed to identify management strategies to improve warehouse safety culture, my research population consisted of five warehouse managers responsible for implementing warehouse safety standards that have demonstrated their ability to improve safety culture successfully. Interviewing four to five participants will identify 80% of discovered problems (Virzi, 1992). The research questions determine the sampling size, approach, and conceptual framework chosen for the study (Farrugia, 2019).

I ensured data saturation through open-ended interview questions, conducting organizational safety, training, historical incident review document analysis, member checking, and triangulation until common themes were identified, and no new information emerged. When conducting participant interviews, 80% to 92% of all qualitative research concepts were identified within the first ten interviews, with five or six being the average number to reach data saturation (Guest et al., 2020). Study participants were selected based on their current role as a warehouse manager responsible for implementing safety expectations and their demonstrated ability to improve warehouse safety culture successfully. I conducted one-on-one interviews with selected participants that took place through social distancing means, utilizing Zoom teleconference software. The interviews were recorded, and I advised participants to conduct the interview in a location free of distractions. Utilizing online communication mediums such as Zoom could have negatively affect my ability to observe face-to-face social cues such as body language. The online communication methods can increase participant ease if the participant faces challenges or stress associated with face-to-face interviews (Balconi et al., 2022). My goal was to provide an environment where participants felt comfortable with no external distractions that can interfere with the interview or their ability to share their views uninterrupted.

Ethical Research

Before conducting any research interviews, the participant organization and interview participants signed consent forms that were used to inform them of their rights within the data collection process. The Partner Organization Agreement for DBA Case

Study informed the partner organization of requested documents for analysis, expectations of confidentiality, ethical standards, and the purpose of the study. Similarly, the Business Leader Interview Consent Form for DBA Case Study provided the participant's information about the interview process, ethical requirements, and how to revoke consent to withdraw from the study. Participants had the right to withdraw consent at any time and end their participation in the data collection phase of the research. Participants who retract their consent are informed the information they did provide will not be used in the study (Gogtay, 2021). No participants revoked their consent. Participants were not compensated for their time. Walden University's IRB granted me as the researcher, permission to begin the interview process once all necessary documents were obtained and validated. Sipes et al. (2020) added that researchers are responsible for obtaining written consent from potential study participants and ensuring ethical behaviors during the research.

I ensured that no identifiable information was included in the study, which could compromise the identity of the research participants. Siedlecki (2020) suggested that protection of research participants should be a top priority because the loss of confidentiality can undermine the validity of the research. Taquette and Borges da Matta Souza (2022) added that the ethical principles applied to research development are intended to protect participants, dignity, and assurance of human freedom. I requested the participating organization accept the conditions in the Partner Organization Agreement for DBA Case Study. All collected and compiled research data will be stored securely in electronic formats under password protection for 5 years. Identifiable information

received in the data collection phase for participants and the partner organization do not appear in the study. Participant names were protected by utilizing pseudonyms. Participants were identified as P1 through P5, with the letter P representing the participant and the number corresponding to the participant's sequence in the interview process. Researchers must ensure participants' confidentiality to maintain anonymity (Jenkins et al., 2020). Professionals have an ethical obligation to safeguard participants' privacy and gain consent for passive data collection, linkage, and securely archiving potential replication data (Plutzer, 2019). I obtained Walden University IRB approval (no. 12-15-22-1030099) before conducting this doctoral study.

Data Collection Instruments

I served as the primary data collection instrument for this qualitative single-case study on managerial strategies to increase warehouse safety culture. I utilized semistructured research participant interviews with open-ended questions, conducted an extensive literature review, and analyzed organizational archival data on safety incidents and training. DeJonckheere and Vaughn (2019) used semistructured interviews, flexible interview protocols, and follow-up questions to probe participants' thoughts, beliefs, and feelings on the research topic. Hamilton and Finley (2019) added semistructured means interview questions are specified but do not have to be asked in order and can be asked in a conversational style instead of reading questions verbatim. Johnson et al. (2020) added that qualitative research and typical data collection consist of interviews, documentation reviews, and analysis. Interview protocols represented the means to collect data from research participants through open-ended questions, follow-up questions from the

researcher, and the ability to share relevant information about the research topic. According to DeJonckheere and Vaughn (2019), the researcher must establish trust and a rapport with study participants and demonstrate trustworthiness within the research. I completed the data collection process, and the data were reviewed, coded utilizing ATLAS.ti, and I identified themes for further analysis. The organizational safety training records and incident documents were studied to align the information with the coded themes to identify correlations between the interview and records.

I enhanced the reliability and validity of the study by conducting follow-up interviews and member checks with study participants to validate their questions and responses verbatim. During the follow-up, participant views, beliefs, and experiences as I interpreted it was also validated. Johnson et al. (2020) suggested researchers avoid using language rich with adjectives and connotations when writing, as it inserts the researcher's opinion. I then used a transcript review and coded data, themes, and organizational safety, training, and incident review archival data to triangulate the raw data. I scheduled follow-up interviews with participants and utilize member checking to ensure participants intended views were properly represented. I wrote a succinct synthesis for each question based on participant responses. I provided the participant with a printed copy and inquired if the synthesis reflected the intended answers and if there were any additional information they would like to provide. All participants validated their responses, and no new information was added. One participant reiterated safety is the priority of the organization. The interview protocol in the Appendix displayed transparency and

professionalism in the process. Kekeya (2021) added research integrity is maintained when the researcher follows research protocols.

Data Collection Technique

Data were collected, compiled, and analyzed to conduct this study to address the research question of what strategies managers can use to improve the warehouse safety culture. The data collection techniques I used for this study consisted of semistructured interviews, open-ended questions, a review of professional literature, and a review of organizational safety data, training materials, and historical safety incident review documents. According to Kekeya (2021), the semistructured interview is intended to ask general questions that are uncategorized to steer the interview participant into a more meaningful conversation about the research topic. The interview design gave me verbal and nonverbal data from participants as they expressed their views, opinions, experience, and feelings on the research subject. Kekeya continued by stating the advantages of the case study is participants are involved in the subject of the research, and their interactions and experience can help the researcher blend their experiences with the investigation, resulting in a study that is easily understood and relatable to others. Kekeya addressed the disadvantages or limitations of the case study because the research findings can be exaggerated, resulting in inaccurate data for the studied phenomenon.

In preparation for the interviews, I utilized the sample interview protocol shown in the appendix. As I prepared my interview protocol, I simultaneously requested interview participation consent in writing. Once permission was received and confirmed, I provided the participants with a copy of the primary research question and interview

questions through the email address provided on the consent form. I then scheduled interviews and follow-ups during times convenient for the participant. On the day of the interview, I verified the participants were in a calm and distraction-free space and shared information about myself, and why the subject was important to me to gain trust prior to reading my opening script.

All participants chose to be interviewed through technological means via Zoom, and I ensured my location was quiet and distraction-free. I again informed the participant the interview would be taped and recorded for validation purposes, would be no longer than 60 min unless they consented to extend beyond that timeframe, and reminded the participant they could end the interview at any time. As I conducted the interview, I observed the participant for non-verbal cues, paraphrased as needed, and ask probing follow-up questions to explore their experiences extensively. I ensured the last question was a wrap up question allowing the participant to share any pertinent information not previously addressed. I ended the interview by thanking the participants for their time and confirming the follow-up interview. I created the member checking documents and provided them to participants through email. At the follow-up interview, I member checked data interpretation and interview transcript review with the participants 2 weeks later. Member checking consisted of providing the participant with a copy of the interview questions and a brief, concise synthesis of their provided answers to the questions. During the follow-up interview, no new information was identified. All participants stated my interpretation conveyed what they expressed. Once validation was confirmed, I thanked each participant and end the interview process.

Data Organization Technique

The data collected for this research study is maintained electronically. The system I used to compile and organize the data consisted of taking field notes and assigning labels within the ATLAS.ti program. These systems allowed me to utilize visual graphics to draw conclusions by assigning phrases to codes such as, is part of, is associated with, contradicts, and is property of. I maintain the information on my self-encrypted devices, on my password-protected laptop computer and password-encrypted external hard drive, and securely store it in my password-enabled iCloud account to ensure it is safe and secure. According to Benadjila et al. (2022), self-encrypted disks utilize dedicated hardware and must be unlocked by the authenticator through a physical interface. All data is organized through file names and type labeling for easy retrieval. I informed all study participants that all data collected from interviews, organizational archival data, and research data will be stored securely for 5 years following Walden University's secure research guidelines and then properly destroyed.

Data Analysis

Data analysis aims to ensure research trustworthiness, rigor, and integrity. Johnson et al. (2020) added the researcher might analyze the data obtained from interview transcripts, observation notes, or written text by audit trails, peer review, triangulation, and computer software. According to Noble and Heale (2019), triangulation can validate research through its ability to explore different datasets and offer various points of interest in the studied phenomenon. Noble and Heale identified four types of triangulation that a researcher can use: (a) data, (b) investigator, (c) theory,

and (d) methodological. Data triangulation is used to study people, spaces, or periods. Investigator triangulation is used when multiple researchers are studying the same phenomenon collectively. Theory triangulation utilizes numerous theories to provide an interpretation of a phenomenon. Methodological triangulation utilizes various data collection methods such as observations, data collection, and interviews.

For this study, I used methodological triangulation, mind-mapping, and computer-assisted qualitative data analysis software ATLAS.ti. Noble and Heale (2019), added while triangulation in qualitative research is beneficial, it also has limitations, such triangulation may be time-consuming, and the researcher must be skilled enough to analyze the information adequately. Researchers have two approaches to analyzing data: (a) technological approach and (b) manual approach. Johnson et al. continued by saying that computer software can help the researcher with coding, sorting, and organizing data when analyzing large or complex data sets. Researchers utilizing the manual data analysis method must ensure they are extremely organized due to the large amount of raw data they will obtain from the study.

Yin (2016) utilized a five-step process for data analysis: (a) compiling, (b) dissembling, (c) reassembling, (d) interpreting, and (e) concluding. In the first step, all the raw data I received from the literature review, participant interviews, field notes, assigned labels, and organizational documents was compiled and loaded in ATLAS.ti for coding. I began by uploading the recorded Zoom video files to a transcription service called Otter.ai. Once the transcript output files were created, I viewed the recorded interviews through Zoom, while simultaneously reading the transcripts to make

corrections. I then created my member checking documents at this time and provided them to participants through email. I followed up at the established appointment time and confirmed no new information was provided. Step two consisted of identifying themes and codes I observed through manual means, along with the ATLAS.ti data analysis software used to sort the data as it is applied to the research question: What strategies do managers use to improve warehouse safety culture? I uploaded the Zoom video recordings, Otter.ai transcripts, and all organizational safety, training, and incident review material into the ATLAS.ti program.

I utilized deductive coding based on my literature review and the HRO principles. This strategy allowed me to observe organizational understanding of current industry wide safety trends and tools, while confirming which of the five HRO principles were most impactful in improving warehouse safety culture through a managerial lens. In step three, I reassembled the data contextually to analyze and identify patterns and made comparisons that led to additional themes. Utilizing the ATLAS.ti network manager function, I was able to arrange all identified codes, and drew lines connecting codes based off the previously mentioned example phrases. These phrases resulted in a clear visual representation of the link between the codes, the management types, and how warehouse safety culture can be improved through HRO principal implementation.

In step four, the finalized codes and themes for the study was interpreted and organized. During this time, I realized the codes, and strategies aligned with the alternate theory considered, Albert Bandura's social cogitative theory. Figure 2 is a visual representation of reciprocal interactions which would have been validated if I planned to

study improving warehouse safety culture through the lens of the employee. The data were compiled to simplify the information and I verified the data output's completeness, accuracy, and creditability. In step five, the study was concluded by explaining the research study findings by addressing the substantive evidence and suggesting potential future research.

The researcher must be mentally prepared because, intellectually, the data analysis phase of the study is the most challenging (Mattimoe et al., 2021). I continued to utilize technology to aid in the identification of themes, codes, and correlations to the research literature. Key themes were identified based on the coded data output of the ATLAS.ti software, which was then used to determine the connection between identified themes to the research literature and chosen conceptual framework. New literature that applied to improving a warehouse safety culture released after the beginning of this phase of the study was based on the key words and phrases identified in the review of the professional literature section of this study to ensure the most current research findings are included in this study.

Reliability and Validity

Reliability and validity are essential in qualitative research to display the research's trustworthiness, rigor, and quality. Reliability ensures the measures and instruments utilized in the study are consistent and will produce the same outcomes when applied by other researchers. Validity provides the criteria and instruments used in the study work as intended. If a measure is considered reliable, it is accepted as valid. In contrast, if a measure is accepted as valid, it is not necessarily accepted as reliable.

Reliability

To express reliability in my study I established dependability, consistency, and repeatability of my data. I achieved dependability of my data by employing member checking to ensure my interpretation of the data collected from my interviews were accurate and reflected the participants' views. At the close of the initial interview, participants were briefed on the next step in the process which included a copy of their provided answers as I interpreted them. At that time a follow-up interview was established 2 weeks later. I provided all participants with a member-checking form that summarized their answers to my research question. I then asked if my interpretation represented their views or was there additional information to add.

All participants stated the provided member-checking form did fully represent the information they tried to convey. Sürücü and Maslakçi (2020), added reliability is described as the ability of the research measuring instrument to be stable and consistent over time, that will yield similar results when used at different times. I ensured reliability by describing in detail the individual steps taken to collect, compile, and analyze the data. I also provided information on the software utilized, and the functions within the software that helped me reach my study findings. In qualitative research, establishing reliability is more complicated than in quantitative research, where you have consistent statistical analysis to validate the findings. Coleman (2021) suggests reliability in qualitative research is difficult to achieve because it lacks the statistical tests used in quantitative research, but through triangulation, reliability can be achieved.

Validity

Validity establishes the integrity and acceptance of the study's measures and reflects the accuracy of the studied concepts. According to Sürücü and Maslakçi (2020), validity measures the effectiveness of the measuring instrument used in the study, which ensures the study's ending analysis is accepted as accurate. Gitomer et al. (2021) added validity entails the researcher using various sources and evidence to support their interpretations of their assumptions and arguments based on the data. All qualitative research studies use different theories, methods, and measures, so researchers must know when proving validity, the process will not be consistent (Hayashi et al., 2021).

Credibility

Achieving credibility in research requires establishing confidence, accepting the theory and methodology, and identifying study limitations. The researcher must establish trustworthiness (Noble & Heale, 2019). According to Oddli et al. (2020), one of the critical aspects of credibility in research is there must be sufficient evidence and critical acceptance by members of that specific community in knowledge and tact. Confirming participant acceptance of the transcripts ensured the credibility of the study. Rudolph (2021) suggests obtaining credibility; the researcher must be able to provide an analysis that can be replicated, integrated, and critically examined by others. Vazire et al. (2022) added that the quality of the research affects the creditability and replicability of the research. I ensured credibility by utilizing triangulation and member-checking methods to ensure the data, methodology, theory, and design was accepted as creditable. The link between the accepted participant interviews, member checking, organizational historical

safety, training, incident review documentation, and literature review provide a detailed analysis that is creditable. The current study's creditability is supported by the similarities of its findings with those of the original HRO research.

Transferability

Transferability addresses the ability of the research to be externally validated and the findings capable of being applied to different situations or contexts. Transferability should be externally validated, and the research findings can be used for another research study (Vine et al., 2021). Munthe-Kaas et al. (2020) added a transferability checklist to ensure the conclusions, content analysis, and other guidance are beneficial to the researcher. The transferability of this study was established by explaining the data collection methods, interview protocols, and analysis techniques. The interview protocol served as the foundation of data collection, with multiple electronic tools being used to collect and compile the raw data, such as Otter.ai, Zoom, and ATLAS.ti. The context of the research is applying HRO principles to different industries to improve safety culture. Describing how the data was collected, analyzed, and findings reached results in transferability to externally validate the findings.

Confirmability

Confirmability established the trustworthiness of qualitative research. Stenfors et al. (2020) defined confirmability as the relationship between the utilized data, the study's findings, and how the results were made using quotes or descriptions. Nassaji (2020) suggested confirmability is considered one of the four principles of trustworthiness in qualitative research. Nassaji added that confirmability is measured in other researchers'

ability to interpret the study and the conclusion presented. Carcary (2020) added a researcher should conduct an audit trail that provides details around data collection, methodology, analytical choices the researcher took, and interpretations by the researcher, which helped them arrive at their research findings. To establish confirmability for this study, I ensured all interview recordings, interview transcripts, organizational training, safety, and historical incident review documents were uploaded into ATLAS.ti. I then conducted member checking to ensure all participant views were successfully conveyed. I conducted deductive coding based on the five HRO principles and the literature review. I was able to identify common codes based on the analyzed data utilizing the ATLAS.ti network manager function. This allowed me to correlate the data to HRO principles and develop strategies to improve warehouse safety culture.

Data Saturation

Data saturation is when researchers can no longer identify new relevant information during data collection (Mwita, 2022). Data saturation relies heavily on the sample size and sampling strategy to ensure enough data is obtained. The factors that affect data saturation are the quality of the data obtained, the nature of the study, the scope of the study, and the use of information obtained from study participants (Gill, 2020). Once data saturation is achieved, it represents the end of the data collection phase of the study. I conducted the following steps to reach data saturation.

During the interview process, I ensured participants provided relevant information by asking probing, follow-up questions. Once I asked the last interview question, I allowed participants to share any additional information pertaining to warehouse safety

and safety culture. I then briefed participants on member checking and scheduled follow-up interviews. I provided participants with a one paragraph synopsis of answers they provided during the interview via email. I then partnered with each one face-to-face to member check. All participants stated the synopsis represented their views and they had no additional information to add. At the close of the final member-checking follow-up, I began data analysis and realized I reached data saturation at the close of the fourth interview. The last participant confirmed the information provided by the other four participants, which confirmed I truly achieved data saturation.

Transition and Summary

In Section 1, I defined this study's foundation and the business problem's background. I explained the conceptual framework and semistructured research questions I used to identify managerial strategies to improve the warehouse safety culture. I utilized peer-reviewed literature to re-enforce the methods to address the business problem. In Section 2, I defined the role of the researcher, research method and design, population, sampling, and the role of ethical research. I addressed all data collection and handling aspects to ensure reliability and validity. In Section 3, I present the findings of my study based on the nine semistructured interview questions that were recorded and coded utilizing available software such as ATLAS.ti. I also address how the analysis can be applied to professional practice, implications for social change, and recommendations for further research on managerial strategies to improve the warehouse safety culture. I end Section 3 with my study reflections and provided a conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single-case study was to explore strategies that managers use to improve warehouse safety culture. In this section, I present the study's findings, discuss the study's potential implications for positive social change, and offer recommendations for actions and for further research. I used HRO theory as my conceptual framework to identify whether warehouse safety culture can be improved through implementation of the five HRO principles. I used the Zoom videoconferencing platform to conduct interviews using semistructured questions. The interview participants were five warehouse managers responsible for the enforcement of warehouse safety policies, with a history of successfully improving warehouse safety culture. The participant warehouse was in the Midwest region of the United States.

Presentation of the Findings

The overarching research question for this study was, what strategies do managers use to improve warehouse safety culture? I conducted semistructured interviews with five warehouse managers responsible for executing organizational safety polices, with a history of improving the safety culture within their teams. Interviewing four to five participants will allow a business researcher to discover 80% of the problems in an organization (Virzi, 1992). I asked nine interview questions to identify key strategies and organizational policies for improving warehouse safety culture. The five interviews resulted in data saturation as no new themes or information emerged.

In this study, participants are identified using pseudonyms (P1 through P5). I transcribed and validated the interview data by conducting member checking. I coded the interview data and organization historical documentations utilizing ATLAS.ti. The analysis yielded three emergent themes consisting of (a) safety communication, (b) safety management, and (c) leader training and development. Table 3 displays the emerging themes, coding frequencies, and coding percentages identified through ATLAS.ti.

Table 3

Emerging Themes, Coding Frequency, and Percentages

Emerging theme	*f*	%
Safety communication	90	42
Safety management	65	31
Leader training and development	58	27
Total	213	100

In this subsection, I discuss strategies to improve warehouse safety culture that emerged from the interviews. I correlate the study findings to both the conceptual framework and literature review.

Theme 1: Safety Communication

The first and most prevalent theme to emerge was the impact that safety communication had on warehouse safety culture. All participants expressed the importance of the organization to prioritize safety communication from the moment employees enter the facility. The organization conducts a foundational safety program called “safety school.” This initial training ensures that new hires know how to properly perform certain functions to keep themselves safe. New hires also learn about the

organization's expectations that they call out any unsafe behaviors regardless of the role or level of the individual violating the safety rules. P5 mentioned,

> There are several times where we have given feedback to seniors [managers.] We've also had several team members giving feedback to their immediate manager, when they're saying that, hey, potentially this could lead to a safety incident, how do we fix it?

Leaders work with new employees one-on-one and observe them provide safety feedback during the training phase. The new employee is reassured that the organization has an open feedback culture, and they should be comfortable providing safety feedback to anyone observed violating a safety rule.

Top-down communication emphasized and prioritized safety as the most important metric to achieve. Each participant discussed regularly scheduled communication statuses where upper management and organizational leadership shared new safety initiatives, addressed safety incident root causes, disclosed the outcomes of incidents reviews, and discussed safety concerns witnessed throughout the day. The consistent flow of information and shared knowledge results in an increase of safety mindfulness, participants noted. That information is then shared with team members at the start of every shift to increase safety awareness. By establishing an open feedback culture, the organization established a communication channel all employees can feel comfortable utilizing.

Organizations must also address barriers to communication to minimize any potential miscommunication that can result in a safety incident. P3 stated, "We begin

each day with a safety tip, but I think there's a couple of moments where, you know, team members had the understanding that they want to hit [production] numbers instead of their safety." When warehouse managers observe team members placing production goals over safety that is when they must provide feedback and explain why safety is more important. By acknowledging and identifying the barriers of communication, warehouse managers can determine whether the infraction is a lack of knowledge, lack of information, lack of attention to detail, or a conscious decision to disregard safety expectations. Reassuring the team member that safety is the number one priority can encourage employee buy-in and mitigate risky safety behaviors.

Strategy 1: Closing the Feedback Loop

The first strategy offered to improve warehouse safety culture is establishing a functional communication feedback loop where information flows freely. To accomplish this, leaders must establish a single path for information to flow and objectives to be clarified. In a warehouse this communication plan can come from the C-suite, senior leadership, or the safety manager. All safety-related incidents should be communicated at all levels to display transparency and provide necessary knowledge to understand and prevent trending safety incidents. All five participants shared that safety is the very first thing they discuss during team member prework start-up meetings, daily meetings, and communication statuses. P2 mentioned,

> It doesn't matter of you are an hourly employee or the general manager (GM) at the building, safety is number one in all aspects. A team member should be able to give feedback to the GM just like the GM can give feedback to a team member.

> We have stop work authority, where a team member can literally stop work if they don't feel safe.

P4 added,

> If I see something that's unsafe, giving that feedback, and then also documenting that feedback into a system, and then I mentioned that we report out on any safety near misses that we have seen at our regularly scheduled meetings throughout the shift.

Once the information flow path is established, it is important to have regular check points to discuss observations and share knowledge. Conversations must be documented to conduct follow-up assessments to monitor unsafe behaviors. The communication between leadership and employees should be effortless and continuous. Employees must feel comfortable to speak freely and openly about safety concerns, regardless of the individual receiving the information. Employees must also be able to accept safety feedback without becoming defensive, resulting in a communication barrier and preventing them from embracing the feedback and altering behaviors.

Strategy 2: Safety Incident Follow-Up

All five participants expressed the importance of conducting an incident follow-up immediately after an adverse event to compile as much data as possible. An organization should develop a system to track safety incidents, identify the root cause, and develop countermeasures to address the results of the investigation. There are often easily identifiable areas within a facility with the potential for increased safety risks, but it is important for the organization to analyze deeper to identify why an incident took

place in that area. P4 discussed how in the facility if there is an incident, they deploy a safety SWAT team consisting of a safety manager, general safety team (GST), team member trainer, department manager, and mechanic. The goal of this team is to first ensure the team member is not injured and reassure them that the purpose of the incident review is not to assign blame, but to learn from the incident and work to ensure it does not happen in the future.

The results of the incident are analyzed and shared with upper management. That information then leads to further partnership with the training operations manager (TOM), or maintenance to develop and deploy corrective measures. This could be a change in process that will be developed and shared by the TOM, or engineering countermeasures that physically make changes to the facility.

P2 shared the following example:

> There was an incident where a team member wasn't paying attention to his surroundings and backed into a conveyor that was behind them. Thankfully, nobody was behind him and pinned up against it. It was a pretty major near miss; we call it a near miss because nobody was injured in it. Property damage looked bad, but it wasn't, it was fixable without any monetary value. But looking at that, and what could have been the incident review resulted in a lot of different countermeasures coming out. For instance, angle iron on the floor was put up behind where that RC hit the conveyor, and what we call a lava area was put down. This means only powered industrial trucks around that area, and a pedestrian walkway was put in to make sure that pedestrians were out of the way

> of all equipment in that tight space. Then pallets that were down there were strategically moved at an angle, adding an extra four feet for the RC to maneuver when dropping off pallets. So that from one incident we had four or five different countermeasures to make that whole area a safer place for employees.

Organizations need to be transparent with the results of an incident such as injuries, equipment damaged, and safety countermeasures (Hendrich & Haydar, 2017; Nordin et al., 2021). Once the root cause is identified and countermeasures created, the organization must then determine a timeline to implement all safety countermeasures. Timelines to create training aids, share messaging with the facility, start the new process, and conduct follow-up audits to confirm compliance must be established. The incident follow-up is an important part of identifying safety opportunities. Incident follow-up also allows leadership to reaffirm their commitment to proving a safe environment for employees.

The historical incident review documentation analyzed confirmed the information received from the interview participants. The incident reviews provided details of past incidents and presented questions that resulted in the identification of the root cause. One of the safety documents reviewed was an information gathering guide presented to leaders to help them identify and analyze the root cause by asking specific questions. The safety information, historical incident review analysis, and training documentation resulted in triangulation of the data, which resulted in the identification of themes. Notes were taken and organized by entering them in the ATLAS.ti program. The tools of the

software allowed me to properly organize the data and draw conclusions based on visual diagrams.

Findings Related to High-Reliability Organization Theory

Of the five HRO principles, Theme 1 is most associated to preoccupation with failure, which is defined as how the organization actively seeks potential points of failure through risk assessments, reevaluating procedures, learning from past incidents, and establishing a continuous learning cycle to safeguard organizational reliability (Ford, 2018). Every aspect of the organizational safety program from policies, to how an incident is handled displays the organizations proactive measures to prevent safety incidents through constant learning. Safety incident follow-up and closing the feedback loop both rely on active communication to establish guidelines, set parameters, monitor progress, and share the outcomes. Each of the original HRO industries all established strategies to address safety and prevent catastrophic events.

Findings Related to the Literature Review

The findings that encompass Theme 1 are in line with the literature review. Safety communication is listed as an aspect of organizational management, incident follow-up is associated with information management, and feedback is associated with human management. The literature supports St. Aubin and Pater (2021) views that policies and processes, safety procedures and reporting, job descriptions, and regulatory requirements when investigating and reporting incidents must be supported by all leaders. The findings of the ATLAS.ti analysis and feedback received from the study participants are also in line with the literature. The findings also align with Beno et al. (2021), who stated

organizational safety can be improved by taking proactive steps to prevent or reactive actions in response to a safety incident. Digmayer and Jakobs (2022), provided extensive research on safety communication and its impact on organizational safety culture. The research confirms most organizational safety communication is exchanged in a vertical hierarchy with supervisors sharing safety priorities down to subordinates. The literature reaffirms the importance of properly structuring safety channels to ensure clear, concise, direct safety messaging and expectations.

Theme 2: Safety Management

The second theme to emerge from the analysis was safety management. To build a warehouse safety culture, the C-suite must establish safety management procedures that lay out guidelines to implement and monitor safety progress. Along with communication flow path, the organization must establish tools managers can use to execute safety procedures and create employee buy-in. The participating organization established safety routines and tools utilizing near-miss audits, safety audits, mindfulness audits, continuous improvement, and Gemba. The organization also utilizes safety management software that each manager is required to enter all safety incidents and near-miss events. P3 confirmed by sharing, “So something that’s been placed on the managers plate is to make sure we’re hitting at least three near-misses a day, in our critical safe behavior (CSB) metrics.” CSB are specific tasks performed in each department that have a history of resulting in the most injuries sustained.

P5 stated,

> Critical safe behaviors are specific behaviors that we do and have to be very careful with. We have to ensure that we're following because those are the ones that lead to major injuries. We have that in every single department, and they have different critical safe behaviors.

P4 shared,

> So near miss observations as a leader, there's a requirement for that and should be something that I'm focusing on throughout the shift. So, if I see something that is unsafe, giving that feedback, and then also documenting that feedback into a system, then as I mentioned we report out on any safety near-misses that we have seen at our regularly scheduled meetings throughout the shift.

Participants shared that near-miss observations were used to identify potential areas where an incident may occur in the future. By entering near-miss observations, leaders could proactively work to mitigate incidents before they happen.

The organizations safety management process was set up in a way that provided leaders with a clear path to identify and address safety concerns in an organized way based on severity. Near-miss observations are entered into the safety management software, which results in the identification of safety concerns. Those concerns are then placed on the department Gemba board, which provides leaders with the CSB for the department. Leaders audited their teams and mark further safety occurrences on the Gemba board based on the CSB. The leader then partnered with team members, who are proficient with a history of safe operations in the unsafe task to develop countermeasures. Countermeasures were then discussed with senior leadership, the TOM, and CI OM to

decide which countermeasure to implement. The leaders then utilized continuous improvement practices to implement the countermeasures to mitigate near-miss opportunities and improve safety in that area. The countermeasure is then audited regularly to confirm the effectiveness of the countermeasure.

Strategy 1: Organization Safety Policies

Organizational safety policies and procedures start in the foundational safety school, which is required by all new hires to the company. The organization identified and demonstrated expectations for performing job functions in a safe manner and identified the steps to mitigate safety incidences. New hires were provided with multiple resources to understand policies, procedures, and communication expectations. The TOM is responsible for ensuring all training aids, and job aids are meeting the regulatory, procedural, and safety expectations of the organization. The organization identified safety precautions directly related to the operation of the warehouse and the equipment team members would be required to operate. The organization utilized SMART plans to determine appropriate training timelines, and process to proceed should an employee fail to meet training and safety expectations. According to Cooper (1998), organizational performance targets should be established utilizing a SMART plan.

Strategy 2: Safety Accountability

The organization established specific guidelines for employee accountability. All participants mentioned the importance of documenting conversations and holding team members accountable. Leaders must encourage employees to own their behavior while simultaneously creating an environment where employees take accountability for their

actions and understand the consequences of their decisions (Stewart, 2020). New hire accountability is established during the safety school. If a new hire fails to meet the physical or written expectations to demonstrate their ability to meet safety guidelines, they are provided additional attempts to meet those expectations in the areas they failed. P2 stated,

> So, in that case if they [new hires] failed their initial training, say they failed the written test, they'll have three opportunities to do it. So, they will start over, go back through, make sure they are retaining the information, and make sure they can operate.

P1 added,

> So more or less, if somebody isn't abiding by those [safety rules], then it's a standard write up situation, and then they have to obviously continue to be safe after they're written up, or they will end up possibly with the termination.

The organization's leadership ensured that all employees fully understood the safety expectations. All safety incidents were addressed by leader follow-up. Each participant expressed an escalation process that begins with a seek to understand conversation with the team member to determine the reason why the safety infraction took place. P3 shared the first step is to connect with the team member and have a verbal conversation. The next interaction would be a documented conversation, and further safety infractions would require partnership with human resources staff to place the team member on a corrective action. If a team member on a corrective action has another

infraction or incident, they are placed on a final warning corrective action. Any further safety related violations will result in termination.

Findings Related to High-Reliability Organization Theory

Theme 2 is aligned with HRO principal reluctance to simplify which is the interpretations of the organizations ability to understand their systems and processes completely, and any deviation from standard operating procedures can be a potential problem that is immediately analyzed to address unwanted system interactions. The interactions are corrected before the situation results in a significant system failure (Cantu et al., 2021). When participants described the tools available through safety management and techniques to hold employees accountable, they each discussed how the organization worked to identify potential problems in processes and the steps to correct the process failures. The TOM was mentioned multiple times as the point of contact to ensure all team members and leaders are properly trained in the updated processes to prevent safety incidents. The organization also established accountability protocols to provide increased levels of escalation leading to termination should employee safety behaviors fail to improve.

Findings Related to the Literature Review

The findings of this study aligned with Adjekum and Tous (2020), which stated a safety management system can effectively manage risk using top-down processes, procedures, and policies. The results of the interviews also align with OSHA (2022) which suggested organizations implement three action items to establish and monitor safety management programs: (a) monitor performance and progress, (b) verify the

program is implemented and is operating, and (c) correct program shortcomings and identify opportunities to improve. The organization established policies and procedures that mirror those suggested by OSHA. Samuels (2022) suggests organizations integrate a closed-loop system capable of identifying, analyzing, and tracking risks while consistently measuring and monitoring performance. By collecting safety data, the system can help identify risk through characterization, assessments, and auditing. The literature adds to the body of knowledge by focusing on strategies organizations can use to develop a strong and effective safety management system.

Theme 3: Leader Training and Development

The third and final theme to emerge from the participant interviews was the importance of the organization to establish leader training and prioritize development. All participants stated they were required to attend safety school when they first arrived at the organization. Once managers successfully demonstrated their ability to pass the physical and written requirements of safety school, they move on to additional safety training in their assigned departments. Along with department training, managers are required to complete computer-based training in a system called Workday, and monthly collective training provided by organizational leadership.

P4 mentioned,

> As managers we also go through safety school, and as I also mentioned the required trainings through workday. We've done meetings and trainings where the HR [human resources] leadership here has brought in professionals to talk

> through and give examples for leaders, and how to navigate different types of situations.

P5 shared,

> We go through the same training and anything that is new that's rolled out to team members will be first rolled out to managers so that they have a full understanding of what we are holding our teams accountable to. We have a TOM, they are the ones who are responsible for rolling out anything that's new, when it comes to safety, quality, productivity, or delivery.

P4 continued stating "we have a safety manager here as well who just recently connected with all of the frontline leaders, and frontline managers just to go over some of the tools that we can use." Collective leadership training and development increases knowledge, builds trust, and increases leadership's ability to lead (Wallace et al., 2021). P2 shared, "here at my organization, we have this thing called the safety steering team (SST), which is a safety team of execs." P2 continued to state the organization has a safety manager who meets with the SST regularly to discuss safety issues, develop safety training, and build a plan to ensure all warehouse leaders are trained. The organizations commitment to leadership development increased the confidence, knowledge, and leadership skills of the front-line managers, resulting in an increase in safety mindfulness. Safety mindfulness also provided leaders with the same foundational training opportunities improving their ability to properly monitor systems and personnel safety behaviors.

Strategy 1: Employee Engagement and Empowerment

Chaudhary (2019) defined employee engagement as a leader's ability to allow employees to express themselves emotionally, intellectually, and physically while performing assigned tasks. The partner organization utilized tenured team members to serve as employee trainers, GST, ERT, and subject matter experts during the gemba and continuous improvement processes. According to Stewart (2020) employees who have expressed personal accountability within the organization should be provided increased responsibility and delegated to complete specific tasks. By empowering those team members, and allowing them to provide input on important tasks, employee buy-in increases.

P4 mentioned,

> We have team members who are a part of the safety team, so GST, and ERT so general safety team, and then our emergency response team. One of the strategies that we use with those team members is weekly, we have GST walks that are facilitated by a leader, and we're specifically looking at a department. So going off trends from the previous week.

The GST walk is an event lead by a department manager, with team member representatives from each department. The team members provide valuable input on safety observations and provide input to develop countermeasures.

The GST walks provide valuable information to the organization by having tenured team members observe specific departments where previous safety incidents occurred, through the lens of an individual proficient in that task. The team members

serve as consultants, and the collective observations are discussed, placed on the Gemba board, increasing visibility at the organizational level, and the team members assist in developing countermeasures. The organization also appointed tenured team members as leads, which serve alongside the leader. The knowledge and confidence displayed by the leads, along with increased responsibility, serve as an example for other employees to emulate and strive to achieve.

Strategy 2: Mindfulness Practices

While conducting the interviews, 2 participants mentioned the use of daily start of shift meetings where safety is the first metric mentioned to employees. During these meetings, leaders share important safety updates or results of safety incidents to ensure safety is on the mind of all team members. Safety mindfulness is described as focusing directly on a task, in a non-judgmental and open-minded way, in one's mind (Liang et al., 2022; Vu et al., 2022). The goal of safety mindfulness is to move team members from safety compliance to safety awareness. Instead of simply complying to safety rules they actively work to address unsafe behaviors and utilize tools to mitigate safety incidents. Mindfulness exercises are used to encourage attention directly on a specific task to promote understanding and improve performance (Hales & Chakravorty, 2016). Team members must be able to mentally visualize the successful completion of a task prior to execution and be willing to provide safety feedback when they witness another team member not following safety processes.

Findings Related to High-Reliability Organization Theory

The findings of Theme 3 align with two of the five HRO principles. The first one is Principle 4, commitment to resilience, which implies that employees are encouraged to utilize their expertise in a process or task to picture how or when a potential situation can occur, and the steps they would take should the problem happen, also known as safety mindfulness. The second is Principle 5, deference to expertise which focuses on supporting employees with the most experience or expertise over individuals with a higher title or position in the organization (Veazie et al., 2022). According to Weick and Sutclifffe (2011) when an HRO deploys all five principles, they move into a state of collective mindfulness where the organization creates a system capable of turning safety concerns and potential points of failure into routines to address these concerns and mitigate safety incidents.

Findings Related to the Literature Review

The findings that encompass Theme 3 aligned with the literature review. Wallace et al. (2021), suggests leaders' development should take place on both an individual and collective level. This practice provides all leaders with the same foundational training necessary to improve warehouse safety culture. According to Cohrs et al. (2020), and London and Sherman (2021), new leaders can form individual identities and improve confidence with intentional leadership development training. Eide et al. (2020) suggests front-line leaders should build sustainability practices by being involved at the level that motivates and shapes employee safety behavior. Empowering and engaging team members build trusts and improves communication between employees and team

members. Chemin (2021) suggests appointing individuals as team leaders which can result in increased team performance and knowledge-sharing.

Isaksson et al. (2022) stated organizations should conduct daily safety briefs where incident review outcomes are shared that occurred within the last 24 hr, and the steps taken to address or resolve the incident, improving safety in the warehouse. In a study conducted by Dursun and Şengül (2023), The researchers utilized two tools to measure safety performance: (a) exposure to occupational accidents and near-miss incidents, where participants answer either “yes” or “no”, and (b) safety behavior scale consisting of 6 questions on a Likert-type scale. The results determined there was a statically significant positive relationship between safety climate and safety compliance in the mining and construction industries. The results of this study contribute to the knowledge of this study by displaying safety mindfulness, or positive employee views on organizational safety climate directly impacts safety compliance and safety behavior.

Applications to Professional Practice

In this doctoral study I examined managerial strategies to improve warehouse safety culture. The findings and recommendations of this study can be applied to any type or size warehouse responsible for the storing, picking, and shipping of goods. According to Cooper (1998), 80% to 95% of all safety incidents are due to unsafe behaviors. Organizations must honestly assess the current posture of their safety program, policies, and negative trends, then work to change negative behaviors to improve warehouse safety culture. Organizations should treat safety as an organization wide structural change where there is a constant process of collecting information and sharing across multiple teams to

drive and improve safety behaviors, improve values, and create a safe culture (Hendrich & Haydar, 2017; Weick & Sutcliffe, 2011). The organization must take a top-down communication approach to ensure all leaders are aligned in the safety initiative, provide proper training on safety management systems, and establish polices to engage, empower, and hold employees accountable for their actions. If applied, the strategies in this study could improve the safety culture of an organizations warehouse.

Implications for Social Change

The implications for positive social change involve providing warehouse leadership with a resource to assess the effectiveness of their current warehouse safety culture and offer strategies to address areas that have higher reoccurrences of safety incidents. The results of this study can assist in building confidence, trust, and communication between warehouse leadership and employees. By removing barriers to communication, warehouse leaders increase knowledge sharing and employee engagement. By establishing a safe environment where employees feel comfortable providing difficult safety feedback to managers and peers, the gained confidence can assist employees in their everyday lives outside of the warehouse.

The societal implications for positive change come in the form of knowledge gained by employees as they interact with family, friends, and the community. Utilizing tools learned such as safety mindfulness or viewing everyday situations through a continuous improvement lens has the potential to positively affect the immediate environment. The increase in confidence and ability to communicate effectively in

difficult situations can improve relationships through increased understanding while positively being able to identify and remove communication barriers.

Recommendations for Action

Warehouse leaders may use the findings of this study as tools to assess the current state of their safety procedures and potentially implement some of the methods described in this study to improve warehouse safety culture. By focusing on safety communication, safety management, and leader development the organization can potentially increase employee engagement, leader understanding, and overall safety culture improvement. The information provided in this study can be used in warehouse leader training, disseminated when published, or shared during professional conferences. The following recommendations are suggestions organizations can implement to increase warehouse safety culture.

The first recommendation is to improve safety communication. Organizations should establish a top-down communication structure ensuring all safety messaging originates from the same source. This will limit the potential for confusion and increase understanding of the safety expectations. Policies should be created establishing open communication flow, such as an open-door policy or open feedback culture, which can assist in closing the feedback loop. The organization must also create incident follow-up protocols that identify the root cause of an incident and utilize transparency when sharing the results of incidents. Tenured employees serving as subject matter experts can be a valuable resource in determining countermeasures to prevent future incidents of the same

caliber. This practice not only can increase communication on multiple levels, but also increases trust between leaders and employees.

The second recommendation is improving safety management by establishing policies and tools that provide leaders and employees the necessary organizational safety guidance. The organization must invest in a system to monitor safety incidents based on location, personnel involved, and severity of the incident. The system will provide valuable information as to where the most prevalent incidents are located and what type of incident it was, such as strains and sprains or struck by/against. Policies and tools such as near-miss opportunities, Gemba or continuous improvement should be used to help leadership identify which areas of safety to focus on based on accident frequency. The organization must implement SMART plans to monitor organization performance targets and reassess if a target is not met. Policies should also be created to outline accountability techniques and levels of escalation. It is imperative that leaders are fair when holding safety violators accountable, which can increase trust in leadership and improve safety culture.

The third recommendation is organizations should conduct regularly scheduled leader training and development opportunities. Warehouse leaders should all receive the same foundational training and possess a complete understanding of the organizations safety policies and expectations. All leaders must be aligned and share the same messaging on the safety expectations, safety management system operations, and safety violation identification. Leaders must also focus on employee engagement and empowerment. Tenured employees with a history of safe operations should be provided

levels of increased responsibility and their experience used during incident follow-up. Tenured employees can assist in identifying countermeasures to lower safety incidents. Their involvement will build trust, increase knowledge sharing, and serve as motivation for other employees to emulate. The collaboration with leaders, and incident follow-up transparency can increase safety mindfulness within the organization.

Recommendations for Further Research

The purpose of this qualitative single-case study was to identify managerial strategies to improve warehouse safety culture. The limitations of my research were identifying managers with a history of successfully improving warehouse safety culture, who were willing to participate in my study and answer questions honestly. The second limitation was the interviews and reviewed documents resulted in viable codes capable of identifying strategies to improve warehouse safety culture. My initial recommendation for further research would be expand the research to multiple locations beyond the Midwest region of the United States. Expanding the research to other geographic location can result in a deeper understanding of safety culture, and different results may emerge based on location or type of warehouse.

The second recommendation would be to utilize HRO theory to improve warehouse safety culture through the lens of the employee. HRO theory relies heavily on building trust and communication between employees and leaders as they work together to build a system of checks and balances. Through leader interviews the most prevalent HRO principle was preoccupation with failure, which is defined by Ford (2018) as how the organization actively seeks potential points of failure through risk assessments,

reevaluating procedures, learning from past incidents, and establishing a continuous learning cycle to safeguard organizational reliability. This principle relies on the information being obtained with the help of employees, but leadership taking active steps to address safety issues. Employee contributions to safety may result in one of the other HRO principles as being more influential on improving warehouse safety culture.

The third recommendation for further research would be to utilize the quantitative or mixed method research method to utilize hypothesis and statistical analysis to identify ways to improve warehouse safety culture. The results can identify direct ways to improve warehouse safety culture with statistical certainty. The final recommendation would be to conduct the research with a focus on employee strategies to improve warehouse safety culture, utilizing Albert Banduras's social cognitive theory. As an alternative theory considered, the three themes identified (safety communication, safety management, and leaders training and development) were directly associated with Banduras's reciprocal interactions (personal, environmental, behavioral) displayed in figure 2 on page 50.

Reflections

The Walden University Doctor of Business Administration program was extremely challenging to me. Initially I thought I would be able to easily manage family life, career, and personal health. I later found out that it was a lot more labor intensive, and I would have to learn to manage my time effectively to be successful in this program. There were a lot of late nights, frustration, and feelings of inadequacies. During those times, I had to utilize the tools learned at the residency and reach out to fellow doctoral

students, my chair, Dr. Gossett, and my family for support. As I progressed through the program my understanding of research, scholarly writing, and analyzing information improved and I was able to apply it to my day-to-day life.

Working in a warehouse and observing safety related incidents on a regular basis, I wanted to use this study to establish a deeper understanding of safety culture and learn new strategies I may be able to use to improve safety in my facility. One of the outcomes of the study I found interesting, was individual leader leadership style had little impact on safety culture compared to upper managements prioritization of safety policies, expectations, and safety communication. I worked hard to ensure my individual bias was not interjected in this study and was able to accomplish that goal by utilizing the tools and methods taught by Walden University. I also gained valuable insight from my research participants which expanded my understanding of safety culture from a different lens. I know the knowledge I have gained during this process will benefit me in both my personal and professional life.

Conclusion

The goods we consume daily are stored and transported from warehouses on their journey to the consumer. Warehouses play a vital role in this supply chain and are filled with multiple dangers to those working within them resulting in a workplace injury happening every 7 seconds (Sadri & Salvador, 2019). Organizations have an obligation to provide a safe working environment to its employees. The aim of this doctoral study was to identify managerial strategies to improve warehouse safety culture. Five warehouse managers were interviewed using semistructured questions, member checking to validate

data, and data was analyzed using the data analysis software ATLAS.ti. Based on the interviews, literature review, and organization historical documents, three themes emerged: safety communication, safety management, and leader training and development. The results of this study provide various tools an organization can do to assess and apply to improve the safety culture of the warehouse. Through honest assessment, organizational safety policy prioritization, and effective communication, the organization can improve warehouse safety culture.

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Appendix: Interview Protocol

Hello, my name is Rasheen. You have been selected to participate in this interview today because you have been identified as a warehouse safety manager, supervisor, or team manager who is responsible for the implementation and enforcement of organizational safety policies. My research project focuses on managerial strategies to improve warehouse safety culture. The goal is to identify current organizational practices, leadership attributes, and leader training to identify strategies that can improve warehouse safety culture.

The criteria for selecting (5) interview participants are as follows: (a) participants must be a warehouse safety manager, supervisor, or team manager, (b) responsible for the implementation and enforcement of organizational safety policies. I will begin by ask a few background questions to ensure that you qualify for participation prior to conducting the interview. I will use a quiet, comfortable, and neutral setting (or technological means such as Skype, Zoom, or telephone) to conduct interviews privately, limiting distractions to obtain quality feedback.

During this interview I will take notes and ask additional questions to collect data for future analysis. To enhance the accuracy of the data collected, I would like to audio/video tape our conversation today. At the close of the interview, I will schedule a follow up with participants to confirm my interpretations of the information provided (member-checking). In accordance with the Walden University policies the information provided as well as all identifiable information will be kept confidential and stored electronically for a period of 5 years. If at any point during this process, you no longer

wish to participate in this study, you may withdraw at any time. In addition, you must sign a letter of consent in compliance with the Walden University Institutional Review Board (IRB), which governs the study of research participants. The document includes that: (1) all information collected will be held confidential, (2) your participation is voluntary, and you may withdraw at any time that you feel uncomfortable, and (3) no harm will be inflicted.

To respect your time, this interview is planned to last no more than 60 min. During this time, I have several questions to cover. For that purpose, I will be monitoring time. If time begins to run short, it may be necessary to interrupt you to push forward and complete the assessment. If at any point I need to gain clarity or expand on key ideas, I will ask addition probing questions.

Thank you for your participation.

☐ I consent to participate in the research interview.

☐ I do not consent to participate in the research interview.

Participant Name (Print) _____

Signature _____

Date _____

Research Question

What strategies do managers use to improve warehouse safety culture?

Interview Questions

1. How would you describe your current organizations safety culture?

2. How important is safety to your organization?
3. What strategies do managers use to improve warehouse safety culture?
4. What type of safety training does your organization conduct for employees?
5. What happens if an employee fails safety training?
6. What type of leader safety training is provided to managers?
7. What kind of follow up is performed at the close of a safety incident?
8. What type of accountability techniques are used when an individual violates the rules?
9. What else can you share with me about your views on warehouse safety culture and strategies to improve safety culture within your organization?