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A Conceptual Framework for Upgrading Safety Performance by Influence Safety Training, Management Commitment to Safety and Work Environment: Jordanian Hospitals

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ABSTRACT

Workplace safety is vital for the continuous operation, survival and optimal functionality of organizations (James & Zoller, 2017; Kabir, Watson, & Somaratna, 2018), especially in developing countries such as Jordan. Indeed, safety at workplaces, worksites and across various organizational structures is critical to the overall performance and existence of organizations including those in healthcare (Beus, Dhanani, & McCord, 2015). Scholars, industry practitioners, and relevant stakeholders have both acknowledged and underscored the need for improved safety performance indicators in organizations and related work-settings (Cornelissen, Van Hoof, & De Jong, 2017; Dababneh, Fouad, Jaleel, & Majeed, 2018; Mullen, Kelloway, & Teed, 2017). To serve this objective, this paper develops a conceptual framework of safety performance based on the social exchange theory (SET). The main aim of this study is to create a framework for examining the causal links between safety training, management commitment to safety, and the work environment with the level of safety in the Jordanian healthcare context. Accordingly, this study presents a framework that considers safety training and management commitment to safety as important dimensions of safety management practices.

Keywords: Management Commitment to Safety, Safety Performance, Safety Training, Work Environment.
JEL Codes: H20, H21, J28.

1. Introduction

Workers face numerous hazards that can occur through chemical, biological, psychological, and ergonomic exposures (Balanay, Adesina, Kearney, & Richards, 2014; Hofmann, Burke, & Zohar, 2017). Consequently, accident, injuries, and fatality rates are still commonly used as metrics for accessing safety

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performance in organizations (Erdogan, Ozyilmaz, Bauer, & Emre, 2018; So & Rho, 2017). The impact of these metrics can be seen in the form of various direct costs that accrue to organizations as a result of poor safety performance indicators. These costs accrue in the form of medical and health bills, claims for deaths and permanent incapacitation, penalties, damage of work equipment, litigation expenses and related encumbrances (Battaglia, Frey, & Passetti, 2014; Feng, 2013; Namian, Albert, Zuluaga, & Jaselskis, 2016). Indirect impacts are also likely to accrue to organizations in instances of poor safety performance metrics. These encumbrances occur in the form of increased insurance costs, production losses, pain, suffering, grief, increased staff turnover, and related issues (Bahn, 2013; Battaglia et al., 2014; Hajmohammad & Vachon, 2014; Shannon et al., 1996).

According to the International Labour Organization, current global statistics indicate estimate 2.78 million annual fatalities in workplaces due to poor safety systems, management practices, human-error factors and structural inefficiencies. Of the 7,500 people who die daily, 1,000 die from occupational injuries, and 6,500 die from work-related illnesses. For non-fatal occupational injuries, figures suggest that 374 million people are involved annually (International Labour Organization, 2017; Hämäläinen, Takala, & Kiat, 2017). The consequences of these global statistics are that the economic costs of workplace accidents, injuries and fatalities are alarming and concern for addressing the issues of safety in work places has arisen. In support of this, Takala and Young (2014) noted that the economic costs of safety vary between 1.8% and 6.0% of the Gross Domestic Product (GDP) of countries.

In the Middle East and in the Jordanian setting, accidents in the workplace are also of concern to researchers and industry practitioners (Eskandari et al., 2017), although accurate data are difficult to obtain because of incomplete databases and flawed collection methods. For example, from 1980-1993, the general occupational fatality rate in Jordan was estimated at 25 per 100.000 per year, using data that relied on social security figures. Data for workers in the Jordanian healthcare sector are even rarer and more inaccessible (Abozead, Abuhasheesh, Nawafleh, Kawafha, & Al-tarawneh, 2015; Dababneh et al., 2018). However, Al-Abdallat, Oqailan, Al Ali, Hudaid and Salameh (2015) estimated a 1.1% fatality rate among Jordanian healthcare workers between 2008 and 2012.

Notwithstanding that much has been identified as being among the possible effects of poor safety performance, and some measures have been taken to curb these menaces, work-related incidences still occur. As such, to avoid the increasing magnitude of occurrences occasioned by poor safety performance, the need for improved safety in organizations and related work-setting cannot be over-emphasized (Fernández-Muñiz, Montes-Peón, & Vázquez-Ordás, 2017; Hofmann et al., 2017).

The work environment denotes the physical, social and psychological characteristics of a work setting (Bergström, Miller, & Horneij, 2015; Dai, Lan, & Lian, 2014; Dul & Ceylan, 2014; Salin, 2015; Searcy et al., 2016). The work environment is concerned with all aspects of the strategy and management of a work system and how that system interacts with employees and their places of work (Searcy et al., 2016). For example, the work environment is noted as having a very strong impact on organizational outcomes (Porter, Riesenmy, & Fields, 2016; Stalpers, de Brouwer, Kaljouw, & Schuurmans, 2015; Searcy et al., 2016; Zúñiga et al., 2015; Balkan & Serin, 2014). Nonetheless, the investigation of work environment as a mediator in illuminating the relationship among safety training, management commitment to safety and safety performance is, to the best of the researcher's knowledge, unavailable. This first look at this is an objective of this study and is intended to be an original contribution to the body of knowledge in the safety research area.

Many previous studies contain empirical evidence of the role that management practices can play in enhancing the safety performance of their subordinates (Hofmann, Burke, & Zohar, 2017; Neal, Griffin & Hart, 2000; Vinodkumar & Bhasi, 2010). Because management practices play crucial roles in ensuring staff compliance with safety in the organization, this paper provides a theoretical framework to provide an explanation for the relationship between safety management practices and safety performance in the work environment among nurses in Jordanian hospitals rather just measuring outputs such as accident and death rates. Improvements in such input safety performance indicators are critical because of insights that they can give on organizational performance indicators.

2. Underpinning theory

The social exchange theory (SET) is one of the most influential concepts used in the recognition of workplace behaviour (Cropanzano & Mitchell, 2005). The keystone of the SET is that interactions

providing more benefits than costs will produce lasting mutual trust and attraction (Blau, 1964). These social relations involve both material benefits (i.e., salaries, bonuses, gratuities and allowances) and psychological rewards (status, loyalty and approval) (Yukl, 1994). Central to both the SET and the norm of reciprocity is the concept of unspecified obligations. Unspecified obligations relate to the behaviour of humans in that when one person does a favour for another, the expectation is that some form of future return will be given by the person receiving the favour. These obligations may be enacted in the form of organizationally acceptable behaviors that should result in a perceived balance in the exchange relationship (Blau, 1964; Gouldner, 1960; Rousseau, 1989). An improvement in safety performance (indicative of safety behaviours) is one typical example of the application of the SET.

Relating the above position to the present study, the expectation is that, when nurses perceive that the activities of management will lead to excellent safety management practices in relationship to the safety of the nurses, then these nurses will develop positive perceptions of the user-friendly nature of their work environment. This should, in turn, lead to ensuring improvements in their safety performance indicators. Interestingly, in the safety research area, this position has been proven (Huang, Wang, Ding, & Xia, 2016; Reader, Mearns, Lopes, & Kuha, 2017; Zohar et al., 2014). Built on the above, this current framework uses SET theory as the underpinning theory.

3. Safety performance

Earlier definitions posit that safety performance is an all-inclusive set of regulations, laws and activities directed towards improving safety in organizations (Kohli, 2007; Xia, Griffin, Wang, Liu, & Wang, 2018), which is customarily self-reported (Andersen, Nørdam, Joensson, Kines, & Nielsen, 2018) but eventually directed towards promoting the safety and health of workers (Zahoor, Chan, Utama, Gao, & Zafar, 2017). In recent iterations, safety performance refers to the level of safety in an organization as occasioned by actions and inactions of organizational members, systems and structures (Fernández-Muñiz et al., 2017; Gunduz & Laitinen, 2018; Jahangiri et al., 2017). Characteristically, safety performance is used to refer to the level of safety that determines the incidences of workplace accidents, injuries and fatalities (Curcuruto, Conchie, Mariani & Violante, 2015; Mullen et al., 2017; Wu, Liu, Zhang, Skibniewski, & Wang, 2015). Safety performance also denotes the proclivity for accidents to happen, which may or may not result in injuries, fatalities and property damage (Erdogan et al., 2018).

Characteristically, accident metrics (Vinodkumar & Bhasi, 2010) and human factor components (Cooper, 2015; Curcuruto et al., 2015; Mullen et al., 2017) are noted as the core components of the indicators of the level of safety performance in organizations. Definitions of safety performance have been suggested along these lines. Griffin and Curcuruto (2016) and Hon, Chan, and Yam (2014) see safety performance as activities or conduct that people display in places of work to promote the health and safety of employees, customers, the public, and the environment. Thus, organizations seek improved safety performance indicators so as to prevent their workers from getting involved in and suffering from accidents (Erdogan et al., 2018; Osman, Awang, Hassan, & Yusof, 2015; Wachter & Yorio, 2014).

The maintenance of safety remains a challenge for organizations (Clarke, 2016; Hofmann et al., 2017; Yang, Wang, Chang, Guo, & Huang, 2009). Accordingly, Hughes, Tippett, and Thomas (2004), Kaynak, Toklu, Elci, and Toklu (2016), and Zohar and Polachek (2014) submitted that one critical component of an organization's performance metrics should be the level of safety performance in those organizations, irrespective of other organizational performance indicators. Indeed, some researchers posit that a critical factor in the success of any organization is how such organizations effectively prevent occupational accidents (Erdogan et al., 2018; Shahin, Naftchali, & Pool, 2014).

Consequently, numerous researchers and industry practitioners have suggested that organizations implement practices that are capable of influencing the behaviours of workers to improve safety performance outcomes (Cigularov, Chen, & Rosecrance, 2010; Kao et al., 2017; Zohar, Huang, Lee, & Robertson, 2014). Notwithstanding the large number of empirical endeavours that have been conducted in the safety research area with the aim of suggesting workplace practices capable of improving safety performance outcomes, many dangers and hazards have not been completely eliminated from the workplace (MaGuire, 2017). To achieve this end, calls for further studies aimed at examining organizational and workplace practices and how they are able of eliciting high safety performance outcomes across industries have been made (Durdyev, Mohamed, Lay, & Ismail, 2017; Ioannou, Harris, & Dahlstrom, 2017). Thus, this paper proposes a conceptual framework with safety

training and management commitment as important dimensions for enhancing safety performance in the work environment.

4. Work environment

The work environment contributes to the physical, social and psychological characteristics of a work setting (Bergström, Miller, & Horneij, 2015; Dai, Lan, & Lian, 2014; Dul & Ceylan, 2014; Salin, 2015; Searcy et al., 2016). Additionally, the work environment deals with all features of the strategy and management of the work system and how the system interacts with employees and their places of work (Searcy et al., 2016). A better work environment or perceptions of a good work environment are related to several organizational performance indicators. For example, work environment is noted as having a very strong influence on organizational outcomes (Porter et al., 2016; Stalpers, de Brouwer, Kaljouw, & Schuurmans, 2015; Searcy et al., 2016; Zúñiga et al., 2015). However, the examination of work environment as a mediator in explaining the relationship between safety training, management commitment to safety and safety performance is, to the best of the researcher's knowledge, unavailable.

As some researchers have noted, a stable work environment leads to greater job satisfaction (Atefi, Abdullah, & Wong, 2014; Ketterman, Fu, & Jones-Holguin, 2016), improved quality of care and lowers harm to patients in the healthcare setting (Newhouse et al., 2013). Indeed, nurses working in a better work environment in China were noted as delivering safe care with low dissatisfaction or work burnout (You et al., 2013). On the other hand, several factors are usually associated with a poor work environment; hence, the need for management of organizations to be responsible for ensuring stable work environments so that their employees can work safely (Dai et al., 2014; Nguyen, Dang, & Nguyen, 2015; Porter et al., 2016; Zúñiga et al., 2015).

However, within the context of this study, the work environment will be examined based on organizational characteristics inherent in healthcare facilities that should improve safety performance outcomes among the nurses. Hence, the rationale for proposing to examine work environment as a mediator within the context of the preset study is thus noted. That is, the work environment is a key determinant of organizational outcomes. Also, organizational factors influence the characteristics of the work environment. Therefore, safety training and management commitment to safety (an organizationally induced factor) should have an effect on work environments, which, in turn, should affect the safety performance indicators of employees.

Based on the above, the following hypotheses are developed in relationship to work environment being a mediator in the relationship between safety management practices and safety performance.

H1: The work environment mediates the relationship between management commitment to safety and safety performance in the context of nurses in Jordan.

H2: The work environment mediates the relationship between safety training and safety performance in the context of nurses in Jordan.

5. Safety training

Safety training is one of the most important safety management practices that is capable of influencing high safety performance outcomes across an organization (da Cunha, Stedefeldt, & de Rosso, 2014; Demirkesen & Arditi 2015; Jafari et al., 2015; Namian, Albert, Zuluaga, & Behm, 2016). Safety training in organizations is done by way of formal orientation programs and on-going capacity building programs that are basic factors that can be used as safety performance indicators. Furthermore, the strength of safety training in explaining safety performance outcomes have been further highlighted by researchers as it is a true means of predicting accidents, and, by extension, shaping workers safety behaviours (Randles et al., 2010).

Specifically, safety training is defined as the transfer of knowledge relating to safety and how this knowledge so acquired can make workers work in as safe manners as possible and with no exposures to their well-being (Law, Chan, & Pun, 2006). Safety training has been identified as one of the most important safety management practices that is capable of influencing high safety performance outcomes across industries (Manu, Mahamadu, Ath, Heng, & Kit, 2017; Marín et al., 2017; Rose & Rae, 2017).

Safety training has been identified as a vital tool for determining general organizational success and the success of occupational health and safety programs (Hofmann et al., 2017; Vinodkumar & Bhasi,

2010; Wachter & Yorio, 2014). A reason attached to the value of safety training is that improvements in behavioural skills and attitudes are shaped by various safety-related training programs. Furthermore, improvements in safety-related outcomes in organizations are a function of systematically planned comprehensive occupational health and safety programs for new recruits, mentorship and succession planning programs, orientation for new staff and improvements in occupational health and safety systems (Barbaranelli et al., 2015). Moreover, organizations known for reporting low accidents and injuries rates have very active safety training programs (Brahm & Singer, 2013; Namian, Albert, Zuluaga, & Behm, 2016).

Several studies have examined safety training as a core component of safety management practice.

For example, Hasan and Jha (2013) opined that the effectiveness of training programs lies in developing training needs assessments, conducting training accordingly, and, by extension, modifications in work procedures. Other studies that have examined safety training as an important component of determining safety performance as well (Bieder, Gilbert, Journé, & Laroche, 2018; Gunduz & Laitinen, 2018; Ricci, Chiesi, Bisio, Panari, & Pelosi, 2016; Tabish & Jha, 2015).

Although the relationship between safety training and safety outcomes like injuries, accidents, incident, and fatalities were recognized in the aforementioned literature, little research has examined the impact of safety training on safety performance in the Jordanian setting and especially among nurses with a focus on work environment. Thus, the current paper contributes to the existing safety literature by adding a new antecedent, namely, safety training, through work environment and safety performance to the framework.

Overall, little research exists on how safety training affects safety performance in the Jordanian setting and especially among healthcare workers with nurses as a focus. In the light of the above, it is hypothesized that:

H3: There is a significant and positive relationship between safety training and safety compliance.

H4: There is a significant and positive relationship between safety training and safety participation.

H5: There is a significant and negative relationship between safety training and risky behaviour.

6. Management commitment to safety

Management commitment to safety is a key determining factor of safety performance in worksites (Vinodkumar & Bhasi, 2010). Management commitment to safety is the degree to which top-level management or organizations exhibit commitment to improving workplace safety that is often times displayed in the safety-related encouragement and support accorded employees (Mooren, Grzebieta, Williamson, Olivier, & Friswell, 2014). This commitment from top-level management helps to shape the perception of employees who eventually work in manners as safe as possible, and by extension improving on their safety-related behaviours in the form of a reduction in accidents, injuries and fatalities rates (Bosak et al., 2013).

Characteristically, management's level of commitment is demonstrated by their involvement in safety committees, job training for employees and the attention accorded safety in the phase of job design (Zohar, 1980). Some studies have examined management commitment to safety in relationship to its ability for influencing safety performance outcomes in organizations (Feng, Acord, Cheng, Zeng, & Song, 2011; Hosny, Ea, & Ea, 2017; Laurent, Chmiel, & Hansez, 2017; Lunau, Dragano, Siegrist, & Wahrendorf, 2017; Mooren et al., 2014; Nordlöf et al., 2017; Tholén, Pousette, & Törner, 2013; Vinodkumar & Bhasi, 2010).

Several have examined management commitment to safety. For example, Mooren et al. (2014) examined safety management interventions that have the capability to reduce injury outcomes among heavy vehicle transport workers in the United States. Similarly, Feng et al. (2011) sought to understand the relationship between management commitment to safety and patient safety culture in a Chinese hospital. Tholén et al. (2013) used a prospective longitudinal multi-level study design to examine the cause-and-effect relationships among psychosocial conditions, safety climate, and safety behaviour among employees in the construction industry. They noted that management commitment to safety was one factor that determined safety performance outcomes in the form of safety behaviours. Laurent et

al. (2017) examined the influence of perceived management commitment to safety (PMCS) to safety performance (behaviours). They found mixed results and opined that organizations need to be aware of the powerful role played by management in improving safety performance outcomes in an organization. Similarly, Lunau et al. (2017) found that levels of psychosocial risks are generally lower in countries with more developed management practices. Refaie (2013) reported that, though management commitment to safety did not have any statistical significance with safety performance (compliance and participation) in medium companies, the relationship was significant in large companies. Lastly, Al-Bsheish, bin Mustafa and Ismail (2017) developed a framework to examine the causal links between a physiological empowerment, respect, perceived management commitment to safety and safety performance based on previous studies.

In view of the literature, management commitment to safety is a vital component of safety management practices. This position is based on the findings from studies conducted in several work settings, social and demographic settings. However, the review further suggests a paucity of research in the Jordanian setting and especially among nurses attached to public facilities there, thus creating a theoretical gap. A study intended to address this issue and contribute to the existing literature in this field of study will be worthwhile.

Therefore, the following hypotheses are advanced in the light of above:

H6: There is a significant and positive relationship between management commitment to safety and safety compliance.

H7: There is a significant and positive relationship between management commitment to safety and safety participation.

H8: There is a significant and negative relationship between management commitment to safety and risky behaviour.

7. Conceptual framework

This conceptual framework supposes that safety training and management commitment to safety influence the safety performance through the work environment. Based on the strong relationship among safety training, management commitment to safety and safety performance found in previous studies, a mediation role of work environment is expected among safety training, management commitment, and safety performance. Consequently, this conceptual framework of safety performance plays a significant role in identifying the antecedents of the work environment to assist in the healthcare setting to enhance safety performance which, in turn, will maintain safety levels at the work site.

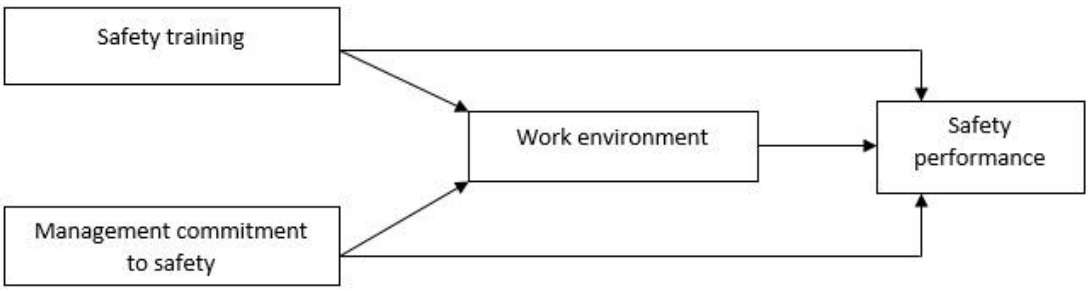

Figure 1: Conceptual framework.

8. Conclusion and recommendations

This conceptual paper was conducted to develop a framework that can be used to study the safety performance among nurses in Jordanian healthcare sitting by presenting the antecedents of the work environment and safety performance. Previous safety performance studies have recognized the importance of safety management practices in changing the safety performance level, particularly via safety training, management commitment to safety. This conceptual paper employed the social exchange theory to support this framework. This study contributes to the existing literature by theoretically demonstrating that safety training and management commitment to safety are the most important variables related to safety management practice dimensions. The current study suggested the

possible role of the work environment as a mediator between these antecedents. However, this study recommends investigating more antecedents of the work environment to enhance safety performance.

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