

Health Literacy as a Predictor of Worker Perceptions of Safety in the Workplace

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Keywords: Safety Climate, Safety Culture, Health Literacy

1. Introduction

Safety culture and climate are conceptual terms about the safety of work environment. Popularly, safety culture is described as the perception “how we do our work when nobody sees us” and safety climate is defined as “this is the safe way to finish our job”. Parameters such as social environment, individual differences (such as risk taking potential), and variations in behavioral compliance have been correlated with workplace safety and climate. A positive safety culture and climate contribute to a safe working environment by reducing risk to its lowest level. The result of working in a safe work environment is evidenced by fewer injuries and work-related illnesses. However, workers’ risk taking attitude often overcomes the necessity to perform safe actions in their jobs. Such behavior has often been correlated with production pressure of the work, especially for a dynamic work environment like construction. However, due to such unsafe actions, workers often suffer from poor health status and long-term illnesses. Thus, it is unclear whether the impact on health outcomes acts as an important consideration when workers make unsafe decisions. Health literacy is the degree to which individuals have the ability to understand and carry out appropriate choices related to health. The overall goal of this paper is to find out whether health literacy can be a significant predictor of workers’ perceptions of safety in the workplace.

2. Background

Organizational safety climate has been defined as the extent to which the employees of an organization would prioritize the importance of safety procedures and policies of the workplace (Neal, Griffin, & Hart, 2000). It is widely accepted that management commitment, employee empowerment and organizational commitment ensure a positive safety culture and climate. According to Newaz et al. (2019), psychological commitment towards safety can be observed as a contract made by an employer that needs to be reciprocated by an employee. This ‘psychological contract of safety’ or PCS is a vital factor in explaining how the workers decode a supervisor’s behavior. Hence, the result of this study was applicable only in predicting and modifying a supervisor’s behavior in order to achieve improved outcomes of safety.

Occupational health and safety researchers have studied safety data literacy in order to find out patterns and trends in near misses, injuries and illnesses that will predict the onset of a disaster (Wang et al., 2019). Undoubtedly, this proactive strategy is advantageous in reducing risk to its lowest level; however, it does not guarantee a similar reduction in workers’ critical behavior.

Health literacy has been correlated with disease management by means of understanding, evaluating and using health information (Heide, 2018). The perception of poor or good health is supposed to influence the actions of the workers at least in terms of utilizing the health care systems (Goto et. al., 2019; Glassman et. al., 2019). This can be an allegory for having positive safety culture and climate: workers’ health literacy level can motivate or discourage them to focus on the workplace safety. There is no information in the literature regarding this hypothesis. Therefore, we seek to contribute to the

literature by investigating worker health literacy as a predictor of their perception of safety culture or climate in the workplace.

3. Method

3.1 Participants

To date, the survey instrument has been administered to 149 employees working in the occupational sector. One survey had to be excluded from the data analysis due to incomplete data. Employees were chosen for sampling based on convenience for the authors. Only one employee (not included in the 149) approached refused to complete the survey. The occupational sectors represented are as follows: industrial plant ($n=60$; 40%), manufacturing ($n=40$; 27%), construction ($n=22$; 15%), landscaping ($n=7$; 5%), and other ($n=20$; 13%).

All persons who agreed to participate were given an English language survey. Only one participant indicated that English was a second language, but was also fluent in English. Twenty-one percent of the individuals surveyed said that they served as supervisors. Over 80% of the participants were Caucasian and 17% were African-American with the remaining identifying with other races. There was only one Hispanic participant. Finally, 40% of the participants were between 18 and 29 years of age, 17% were 30-39, 16% were 40-49, and 27% were 50 or older.

3.2. Measures

Safety climate was assessed using the methodology adopted by Gittleman et al. (2010). The survey instrument contained a total of 14 items which assessed the participants' perceptions of safety. The items used a 5-point Likert-type scale, with response categories ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Perceptions of safety were assessed using five items related to safety practices, 2 items related to safety knowledge, 3 items related to safety behaviors, 1 item related to fatigue and safety, and 1 item related to management's commitment to safety. Health literacy was assessed using the 10-item Fostering Literacy for Good Health Today (FLIGHT) scale developed and validated by Ownby and his colleagues (2014).

3.3. Survey Administration and Data Collection Status

After background information about the survey was shared and consent was obtained, paper and pencil surveys were given to participants by the one of the authors in a face-to-face environment, typically in small groups. Some employers allowed for administration of the survey at the work site. Others were administered in participant homes or public places like coffee shops. Survey data were collected over a three month period from February to April, 2019. Data collection is ongoing. In addition, after initial analysis of the survey data, the authors intend to collect semi-structured interview data to provide more context for the data analysis.

4. Results and Limitations

Demographic data were presented in Section 3.1 above. At the time of this writing, preliminary results about the nature of health literacy as a predictor of workplace safety climate are not available due to the lack of variation in health literacy among the participants. The authors are continuing data collection efforts with the intent of completing the study in time to present meaningful results at the conference.

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