Organizational climate for promotion of safe food handling practices: Development and validation of measures in foodservice organizations

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ABSTRACT

To date, little information is available regarding the role of organizational climate on workers’ safe food handling practices in the foodservice sector. Even less is known about research attempting to establish the measures of organizational climate for safe food handling practices. The proposed study aims to develop organizational climate measures for safe food handling practices and to assess reliability and validity of these measures. Organizational climate measures will be developed based upon an analysis of existing safety climate surveys, expert reviews, and pilot testing. The revised measures will be incorporated into a survey and tested using a sample of employees from both commercial and noncommercial foodservice organizations located in the state of Iowa. Cluster sampling technique will be employed for selecting the sample. The measures developed from this study may be used in future research to better understand the impact of climate for safe food handling on organization food safety outcomes.

Keywords: Organizational climate, safe food handling, foodservice, climate measurement.

INTRODUCTION

Over the last few decades, foodborne diseases have prevailed as a worldwide challenge with a high percentage of foodborne disease outbreaks associated with the foodservice industry (Cavalli & Salay, 2004; Sheppard, Kipps, & Thompson, 1990). In the United States (US), more than 40% of foodborne disease outbreaks reported between 1993 and 1997 involved retail foodservice establishments (Olsen, MacKinon, Goulding, Bean, & Slutsker, 2000). The growing numbers and types of foodservice establishments as well as the increasing amount of money spent for food away from home contributes significantly to the rising incidents of foodborne diseases (World Health Organization, 2010). Presently, most interventions that drive safe food handling practices in foodservices involve training, enforcement, and implementation of food safety management practices (such as a HACCP-based food safety plan). The literature is mixed regarding success of such interventions (Mitchell, Fraser, & Bearon, 2007; Yiannas, 2008), and even less persuasive regarding the effectiveness of knowledge-oriented training on safe food handling behaviors (Egan, et al. 2007; Rennie, 1995).

In today’s changing environment, many food safety professionals are suggesting food safety success requires going beyond traditional training, testing, and inspectional approaches (Arendt & Sneed, 2008; Ellis, Arendt, Strohbehn, Meyer, & Paez, 2010; Mitchell et al., 2007; Yiannas, 2008). There is growing interest in the potential role of organizational factors on changing food safety behaviors and practices among foodservice workers. The importance of work environment (Clayton & Griffith, 2008; Mitchell et al. 2007; Sheppard et al., 1990) and the organizational culture or climate (Yiannas, 2008) in improving employees’ safe food behaviors...
have been highlighted as another focus for improving food safety. A recent study in meat processing plants has identified various organizational factors affecting the culture of food safety management systems implementation (Ball, Wilcock, & Aung, 2010). In the field of occupational safety and health, the significance of organizational factors such as safety climate on employee safety behavior or performance is well documented (Clarke, 2000; Singla, Kitch, Weissman, & Campbell, 2006).

The concept of safety climate has been used in a broad spectrum of industries to describe an organization’s “state of safety” (Mearns & Flin, 1999, p.5). Climate was defined as “a summary of molar perceptions that employees share about their work environment…a frame of reference for guiding appropriate and adaptive task behavior” (Zohar, 1980, p.96). In the literature, the term safety climate is often used interchangeably with the term safety culture. However, culture and climate are distinct; and research emphases in previous works using the two concepts have different perspectives. Generally, the concept of culture is taken to mean something more complex than climate in the organizational literature. A number of researchers have proposed that safety climate provides a surface assessment of employees’ attitudes toward safety at a given point in time based on specific criterion; this could represent a snapshot of the prevailing safety culture (Flin, 2007; Guldenmund, 2000). Culture is difficult to measure; whereas safety climate can be tracked (Griffin & Neal 2000; Zohar 1980).

<table>
<thead>
<tr>
<th>Industrial sector</th>
<th>Examples of Themes</th>
<th>Example of dimensions</th>
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<tbody>
<tr>
<td>Manufacturing/ production (Clarke, 2000)</td>
<td>Work environment, Management attitudes, Management actions, Safety management system</td>
<td>Design, hardware, equipment, workspace, Appreciation/value, priority, conflict, Reward, communication, information, Safety standard, regulation, maintenance</td>
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<tr>
<td>Health care/ hospital (Singla, et al., 2006)</td>
<td>Safety system, Management/supervision, Risk, Work pressure, Competence, Procedure/rules</td>
<td>Infrastructure, planning, coordination, Commitment to safety, adequacy of supervision and training, Risk taking, willingness to ask for help, Work task, Adequacy of crisis management, Report, compliance</td>
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Various dimensions of organizational safety climate have been reported in previous studies with a number of themes proposed to classify these dimensions that have emerged in manufacturing and health care sectors (Table 1). Initiatives to measure safety climate in health care organizations proliferated when this was identified as a key determinant of the ability to address and reduce risks to patients (McCarthy & Blumenthal, 2006). Recognition of the critical need to assess climate and the impact of innovative interventions aimed at improving it have led to the development of surveys designed to measure hospital workers’ perceptions of the “safety climate” (Singer et al., 2007). Similarly, the predictive ability of industrial safety climate measures on employees’ safety behaviors has been widely researched (Clarke, 2006; Zohar, 2003). Despite the significant contribution of organizational climate research in other fields, the role of organizational climate on foodservice workers’ safe food handling practices remains unexplored. To date, little has been published about measures of organizational climate for safe
food handling practices in the foodservice industry. Hence, the proposed study aims to develop organizational climate measures for safe food handling practices among employees in the foodservice sector and to assess the measures’ reliability and validity.

METHODS

Development of research instrument
The development of a scale to measure organizational climate for safe food handling practices, including establishing the psychometric properties (i.e. reliability and validity) of the scale will be based on the approach described by DeVellis (2003). Based upon review of existing safety climate surveys in health care organizations and review of the food safety literature, a list of key topics pertaining to the climate for safe food handling practices in foodservice organizations will be developed. A climate scale will be developed through the generation of an item pool. Content validity reviews from experts and pilot testing will be used to modify the scale accordingly. Pilot testing will be conducted with 15 hospitality students (i.e. undergraduate and graduate) with work experiences in commercial or non-commercial foodservice organizations. After appropriate revisions, a survey questionnaire consisting of the climate measures and basic demographic questions will be developed and used as the research instrument for this study.

Sample and data collection
A cross-sectional survey will be conducted with employees from both commercial and noncommercial foodservice organizations located in the state of Iowa. The sample will include all workers, with the exception of supervisors, managers, and administrators, at randomly selected licensed foodservice organizations. A list of commercial and noncommercial foodservice postal mailing address will be developed based on the new yellowpage.com website (http://www.yellowpages.com/). There are an estimated number of 598 commercial restaurants (http://www.restaurantiowa.com/) and an estimated of 600 non-commercial licensed foodservice establishments in Iowa (http://www.yellowpages.com/). From this developed alphabetized list, every third listed foodservice will be contacted and asked to participate.

The study will employ a cluster sampling technique for selecting the sample because it may be difficult or impossible to identify a complete sampling frame. This technique involves the selection of groups of study units (i.e. foodservice organizations) instead of individual study units (i.e. employee). This method will be used because of inability to create a current list of employees in licensed facilities, privacy issues for the employee, and high turnover within commercial foodservices. The survey booklet will include a cover letter of appeal and the questionnaire items. It will be distributed via mail to the selected foodservices; the manager will be asked to distribute to all employees who do not have any supervisory responsibilities. The survey will be self-administered with return mail postage included in order to allow the employee to mail the completed survey directly to the researcher. Pre-notification and reminders to managers will be used as suggested by Dillman (2007) and Mangione (1995) to reduce nonresponse errors.

Data analysis
Several statistical procedures will be used to ensure psychometrically sound measures. Construct validity of the climate measures will be tested using exploratory and confirmatory
factor analysis. Convergent and discriminant validity of the scale will be evaluated using correlation analysis.

LIMITATIONS

The investigator will not personally administer surveys; rather, the manager at the establishment will distribute the surveys. To minimize worker’s concern about confidentiality, a postage paid envelope will be provided. In addition, this study will depend upon sincere and honest responses of each participant. To maximize the integrity of the responses, voluntary participation in the survey, anonymity, and confidentiality will be emphasized.

SIGNIFICANCE OF THE STUDY

Findings from this study will fill an existing literature gap, providing insights on a fairly new, important, but underdeveloped research area in the foodservice setting. The measures developed from this study may be used in further research to better understand the impact of organizational climate for safe food handling in foodservices. The findings of this study could aid in the design and evaluation of organizational interventions developed to enhance food safety outcomes. According to Flin (2007), workers’ behaviors are partly influenced by the prevailing norm in their work environment. Therefore, a better understanding of the foodservice organizational climate will allow for interventions to improve safe food handling behaviors.

REFERENCES


