



Firefighters as distributors of workplace safety and health information to small businesses



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ARTICLE INFO

Article history:

Received 15 December 2015
Received in revised form 23 February 2016
Accepted 23 March 2016
Available online 28 March 2016

Keywords:

Small business
Dissemination
Intermediary
Occupational safety and health
Diffusion

ABSTRACT

Background: Small businesses bear a large burden of injury and death, and are difficult to reach with occupational safety and health (OSH) information. The National Institute for Occupational Safety and Health (NIOSH) developed a pilot study testing the feasibility of fire departments disseminating OSH information to small businesses during fire inspections.

Methods: Two sets of postcards were developed with unique, trackable URLs for the NIOSH Small Business Resource Guide. One set was distributed by firefighters, the other was mailed to small businesses. Participating inspectors were met with to discuss their experience.

Results: Neither distribution method resulted in a substantial number of site visits. Inspectors believed distributing postcards was an easy addition to their duties, and saw value in safety information.

Conclusions: There are barriers beyond awareness of availability that prevent small business owners from seeking OSH information. Research should focus on identifying barriers and developing better OSH information diffusion mechanisms.

Published by Elsevier Ltd.

1. Introduction

Small businesses comprise a vital part of the United States economy. There are 39.8 million workers in businesses with fewer than 100 employees, comprising 34.3% of the American workforce (Caruso, 2015). Evidence suggests that employees of small businesses are at a higher risk and share a disproportionate burden of injury and death compared with employees at larger businesses (Hasle and Limborg, 2006; Hasle et al., 2012; Olsen et al., 2012; Page, 2009; Mendeloff et al., 2006; Sørensen et al., 2007; Breslin et al., 2010; Legg et al., 2015; Micheli and Cagno, 2010). However, occupational safety and health (OSH) research, assistance efforts, and government regulation often focus on larger businesses (Hasle et al., 2012; Page, 2009; Champoux and Brun, 2003). Smaller businesses generally do not hire staff devoted to safety and health activities and often lack the ability to identify and control hazards (Hasle and Limborg, 2006; Hasle et al., 2012; Olsen et al., 2012; Lentz and Wenzl, 2006; Champoux and Brun, 2003). Smaller businesses may need more assistance from external organizations (e.g., government and insurance agencies) to protect the health and safety of their workers than larger businesses, but external forces

are often ill-suited to support OSH in smaller businesses due to factors such as geographical dispersion and variability of work settings (Sinclair et al., 2013; Olsen et al., 2012; Page, 2009; Lentz and Wenzl, 2006; MacEachen et al., 2010; Legg et al., 2015; Champoux and Brun, 2003).

A primary approach for providing OSH assistance to smaller businesses is distributing OSH information. Schulte et al. (2003) identified three stages of OSH information dissemination: (1) transmitting or distributing information; (2) the receipt of information; and (3) the processing and ultimate use of information. However, the authors suggest that critical OSH information may not always reach the business owner, or, if it does, the information may not be what is needed. Furthermore, a review of the literature on OSH in small enterprises concluded written information has little effect, and that a personal contact between a business owner and a trusted intermediary is more effective (Hasle and Limborg, 2006). Thus, a more tailored approach, beyond simply distributing written OSH information is needed to assist small businesses.

Given that outreach to small businesses is difficult, especially when they are not members of a trade association or larger organization, it has been suggested that partnerships with influential individuals or groups can aid diffusion of OSH information (Bruening et al., 2015; Hasle and Limborg, 2006; Sinclair et al., 2013). Researchers from the National Institute for Occupational Safety and Health (NIOSH) developed a diffusion model for small

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businesses in which an initiating organization (often a governmental public health/safety organization) works with an intermediary organization to transmit OSH information to small businesses (Sinclair et al., 2013). Intermediaries are organizations that deliver goods or services to small businesses and that might also deliver OSH information and programs. In this model, emphasis is placed on both the intermediary and the small business, ensuring that the goals of the intermediary align with both the initiator and the small business in order for diffusion to be successful. This approach has been supported in demonstrations using accountants (Hasle et al., 2010), as well as trade associations, chambers of commerce, insurance providers, and equipment suppliers (Cunningham and Sinclair, 2015).

Due to the increased burden of occupational injury in small businesses and the difficulty of outreach, a pilot study was developed to examine the feasibility of NIOSH working with fire departments to disseminate OSH information to smaller businesses during fire inspections. A secondary objective was to examine small business owner response to OSH resources when delivered by fire inspectors, compared to the same information being provided by mail. Fire departments are trusted community organizations, or intermediaries, especially in regard to safety. Interventions using firefighters in community education have demonstrated success, including a face-to-face intervention to increase 911 calls and aspirin use in older adults experiencing chest pain (Meischke et al., 2006). Fire departments typically conduct annual inspections of all businesses within their service area, which could provide an opportunity for a trusted intermediary to provide small businesses with OSH materials. Using a combination of quantitative website tracking and qualitative focus groups/interviews, the authors aimed to determine if fire departments can be useful intermediaries for delivering OSH information.

2. Materials and methods

2.1. Procedures

In order to determine the feasibility of using fire departments to disseminate OSH materials, two sets of postcards were created. Both sets contained a unique URL linking to the online NIOSH Small Business Resource Guide (NIOSH, 2014). Other than the difference in URL, the postcards were identical. Both prominently feature the URL, and claim “Protect your employees. Save money.” They advertise the NIOSH Small Business Resource Guide as containing “a broad range of workplace safety & health information for busy small business owners and manager.” The first set was given to partner fire departments. The second set was mailed to small businesses. This second set was mailed to create a control condition comparable to methods of distributing OSH information used in previous studies. The unique URLs allowed the authors to monitor web visits resulting from the postcards.

For a period of three months, January through March 2015, the postcards were given by a fire department inspector to the business owner or manager who was on site at the time of the business’s annual fire inspection. The fire inspectors were instructed to identify the postcards as a source for safety information, and they were told to refer any questions to NIOSH. During the same time period, the other set of postcards was mailed to a similar set of small businesses in a comparable geographic area. The unique URLs were monitored through the end of April 2015 to determine how many website visitors had navigated to the Small Business Resource Guide via each set of postcards.

Following the project, the authors met with fire department staff involved in the project to discuss their perceptions of the pilot program. The debriefing meetings were conducted in person in two

focus groups of around 15 fire inspectors at the larger fire department, and an interview with one fire inspector at the smaller fire department. Approximately two-thirds of all fire inspectors participating in the pilot program participated in the debriefing meetings. The meetings were conducted at the firefighters’ convenience. All debriefing meetings were recorded and transcribed. They were then reviewed and analyzed for themes.

It was hypothesized that: (1) distribution of NIOSH information by the fire department would result in increased use of the NIOSH Small Business Resource Guide; (2) information distributed through fire inspections would generate more web traffic than information mailed to small businesses; and (3) fire inspectors would be able to distribute the postcard to small businesses without reporting undue burden.

2.2. Measures

Both sets of postcards contained identical content except that each set contained a unique URL, ensuring the ability to track web hits from the two different distribution channels. The metric utilized for this pilot study was “click-throughs,” the total number of times that visitors arrived at the Small Business Resource Guide via the postcard URLs. Additionally, qualitative information was collected from the fire inspectors during a debriefing meeting about their experience with the project. Discussion topics included perception of burden associated with the task, perception of the receptivity of the small business owner, and feasibility of expanding this distribution channel nationwide.

2.3. Participants

Nine fire departments in the Greater Cincinnati area were initially contacted and asked to participate in the pilot program. Fire departments were contacted based on either size of service area or previous willingness to assist in research. Three did not respond, one declined participation, three agreed to participate. Two more fire departments agreed to participate after the pilot subjects were chosen. They were told they would be contacted if the project expanded in the future. Participating fire departments were given postcards to distribute during the first three months of 2015. One fire department was in Northern Kentucky, and two were in Ohio. An unexpected set-back to the project was an unusually bad winter, with colder temperatures and more snow than average. All of the fire departments were unable to conduct all planned inspections during the program period, and a combination of weather and computer system problems caused one of the Ohio departments to drop out of the program. Thus, follow-up discussions and analysis only include data from two fire departments, or about 30 fire inspectors.

The mailed postcards were sent to small businesses in the Indianapolis, Indiana metropolitan area. Indianapolis was selected due to size and regional comparability to Cincinnati, while still being far enough away to avoid overlap. Addresses were obtained using a distribution list. Consistent with literature on OSH outreach to small businesses, franchises were excluded from the mailing list due to being part of larger companies (MacEachen et al., 2010; Hasle et al., 2012). Only businesses with fewer than 50 employees received the postcards.

3. Results

3.1. Web traffic

The two fire departments distributed a total of 625 postcards (275 by one and 350 by the other). There were seven

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