

Evaluation of a NIOSH Alert to Reduce the Risks to Fire Fighters from Structural Collapse

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Deaths and injuries due to structural collapse during fires represent a significant problem among fire fighters. Between 1988 and 1997, structural collapse accounted for 65 of the total 335 fire fighter deaths occurring at structure fires. The National Institute for Occupational Safety and Health (NIOSH) Alert entitled Preventing Injuries and Deaths of Fire Fighters due to Structural Collapse provides scientific documentation of this hazard and provides recommendations that fire fighters can engage in to reduce their level of risk. An evaluation was conducted of a national dissemination of this Alert to American fire chiefs.

Method. The NIOSH Alert was sent to 36,000 fire chiefs, and a sample of 1,000 was then randomly selected to participate in a survey to evaluate the impact of the Alert on attitudes, intentions, and beliefs toward the NIOSH recommended safety behaviors for structural collapse situations. The Theory of Planned Behavior (Ajzen, 1991) and a stage

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model of persuasive message impact based on work by McGuire (1985) were used to evaluate the impact of the NIOSH Alert among this national sample of fire chiefs.

Results and Discussion. Regression analyses based on the Theory of Planned Behavior indicated that fire chiefs' attitudes toward engaging in safe behavior during structural fires ($b=.305$, $p<.01$), their perceptions of how others felt about them engaging in safe behavior ($b=.249$, $p<.01$), and their perceptions of control over these behaviors ($b=.317$, $p<.01$) were significant predictors of whether they intended to engage in specific safe behaviors during the next structural fire they were involved in. Analyses of the persuasive impact of the NIOSH Alert were also conducted. Using a stage model of persuasion, the percentage of respondents who reached each stage was calculated. Results suggested that the Alert is well liked (by 93.9% of respondents who recalled being exposed to the Alert)), is easy to read and understand (93.9%), captures attention (82.8%), and leads fire chiefs to think about the dangers of structural collapse (81.5%). However, weaknesses occurred at the following stages: exposure to the Alert, recall of information in the Alert, and action taken with regard to the Alert. Very low percentages of participants reported reaching these stages of persuasion (exposure: 31.2%; recall: 19% of those who were exposed; action: 18% of those exposed). Implications of these findings for developing future safety documents for firefighters will be discussed.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- McGuire, W. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *The Handbook of Social Psychology*, 3rd Ed., Vol. 1 (pp. 233-346).

**9:15-10:00 Opening Keynote Session: Occupational Safety and Health
Education, Training and Communication: Needs and Priorities
for the Future**

John Howard, MD, MPH, JD, LLM

Director, National Institute for Occupational Safety and Health
Washington, DC, USA

**10 am Break
Promenade Lobby
Lobby Level**

10:30-12:30 pm Concurrent Scientific Sessions

Communicating Hazard Prevention

McKeldon Room

Cabana Level, South

Moderator: *Sergio Iavicoli, MD, PhD, Italy*

- Trends and Priorities in Occupational Safety and Health in the European Union. *Sergio Iavicoli, MD, PhD, Italy. Coauthor: C. Grandi*
- Hazard Communication in the Workplace. *Jinky Leilanie D. Lu, Philippines*
- The European Campaign 2001 for OSH - Using an International Communication Code in a Regional Reality in Italy. *Idillio Tagliaferro, MD, Italy. Coauthor: Marco Nardi*
- Supervisory Training Practices in the Construction Industry. *Jacqueline Villnave, MHS, CIH, USA. Coauthors: Steven Hecker, MSPH; Marc Weinstein, PhD*
- Communicating Risk: A DOD Perspective. *R. Craig Postlewaite, DVM, MPH, USA*

Targeting Risk Communication

Lincoln Room

Cabana Level, North

Moderator: *Donald Eggerth, PhD, USA*

- Applying Communication Theory to Workplace Safety Messages. *Donald Eggerth, PhD, USA*
- Theoretically-based Eye Injury Prevention Messages: Working with Carpenters. *Catherine Inman, MD, MPH, USA. Coauthors: Vickie Lewis, MA; Larry Jackson, PhD; Doug Landsittel, PhD; Laura Blanciforti, PhD*
- Evaluation of a NIOSH Alert to Reduce the Risk to Fire Fighters from Structural Collapse. *Jennifer Wellbourne, PhD, USA. Coauthor: Steve Booth-Butterfield, EdD*

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