A multi-theoretic approach to promoting occupational sun safety policy at public employers

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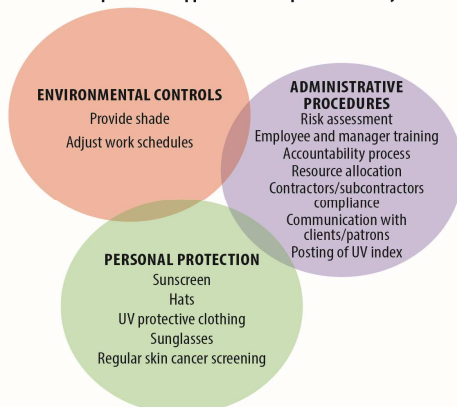2. Mikonics, Inc. Auburn, CA, USA

Abstract. Efforts to improve occupational sun safety have been undertaken in Australia, New Zealand, and North America. Sun Safe Colorado is an occupational sun safety program that promoted the adoption of workplace sun safety policies. It was implemented in 50 local government workplaces, i.e., municipalities, counties, and special districts, in Colorado, USA. Three stage-oriented theories guided communication strategies: Diffusion of Innovation, Social Penetration, and Stages of Relational Development. The employers demonstrated a strong interest in occupational sun safety, education, and policy adoption.

Introduction

Skin cancer is the most common cancer in the United States and rates are rising (melanoma grew 3% per year since 2004) (American Cancer Society, 2013). Melanoma prevention is critical as a public health issue and because $66.9 billion in total productivity losses were attributed to melanoma-related mortality from 1990-2008. Preventing NMSC is also a priority due to its high prevalence (3.5 million cases in 2013); recurrence; treatment disfigurement and costs ($2.1 billion for treatment; $961 million for lost productivity); and association with other cancers.

Occupational sun exposure often gets limited attention, despite its association with skin cancer. Eight percent (8%) of the U.S. workforce labors outdoors and are exposed to dangerous ultraviolet radiation (UV), the primary cause of skin cancer. Many outdoor workers experience chronic UV exposure that is linked to squamous cell carcinoma (SCC) and possibly melanoma, and experience intermittent, severe exposure that may be related to melanoma, basal cell carcinoma, and SCC.

FIGURE 1: Comprehensive Approach to Workplace Sun Safety

ENVIRONMENTAL CONTROLS
Provide shade
Adjust work schedules

ADMINISTRATIVE PROCEDURES
Risk assessment
Employee and manager training
Accountability process
Resource allocation
Contractors/subcontractors compliance
Communication with clients/patrons
Posting of UV index

PERSONAL PROTECTION
Sunscreen
Hats
UV protective clothing
Sunglasses
Regular skin cancer screening

Occupational sun protection programs often use a bottom-up approach by focusing on educating outdoor workers to voluntarily adopt personal sun protection practices. These programs can significantly improve workplace sun safety, including work by our research team.

Alternative approaches include top-down policy development and implementation that promotes action at all organizational levels. The adoption of workplace health policies has improved employee health outcomes. For workplace sun protection, a comprehensive approach is recommended that includes: (1) a focus on environmental controls (e.g., providing shade in work areas and adjusting work schedules), (2) administrative procedures (e.g., conducting risk assessments, providing routine employee and supervisor training, monitoring policy, allocating resources, and requiring contractor compliance) and (3) personal sun protection by employees (e.g., encouraging or requiring sunscreen, protective clothing, hats, and eyewear) are promising options (see Figure 1). Comprehensive policies are optimal because they can integrate sun protection programs into an organization's ongoing operations and brand them as part of its health and safety efforts.

Sun safe Colorado

Sun Safe Colorado (SSC) is an occupational sun safety program that promoted sun safe policy adoption in a randomized controlled trial to cities, counties and special taxing districts in Colorado, USA. A total of 98 organizations were enrolled in the program with 50 randomized to the intervention and 48 to the control conditions. Eligibility requirements included having outdoor workers employed in public works, parks and recreation, or public safety, where employees tend to work outdoors. The focus of this report is on the theory-driven approaches used to encourage organizations to adopt sun safe policies.

Multi-theoretic approach to sun safe policy

Each intervention organization was assigned a Sun Safety Coordinator who was responsible for the intervention activities that included: conducting pre-meeting organizational policy reviews to determine the organization's policy needs; scheduling meetings with key contacts to explain the program goals and components; and, providing support (e.g., employee sun safety trainings, consultations) for organizational policy adoption.

Three stage-based theories (Social Penetration [Altman and Taylor, 1987], Stages of Relations Development [Knapp, 1984], and Diffusion of Innovations [Rogers, 2005]) based on interpersonal communication and adoption of innovations guided five progressive modules followed by the Sun Safety Coordinator. At the outset, SSC established a foundational relationship with the organizations as a base from which to promote sun safe policy adoption. Because interpersonal relational theories explain how relationships are initiated, developed and maintained, they provided the framework for the development of relationships in SSC.

Each of the five modules had a protocol that included

objectives and procedures, sample scripts, and materials to provide to the worksite. See Figure 2 for materials utilized in the intervention.

SSC Intervention Materials:

- Sun Safe Colorado Website
  - Online policy writing tool
- Toolbox Materials for Sun Safety
  - Why Become Sun Safe
  - Skin Cancer Prevention 101
  - Role of the worksite in Skin Cancer Prevention
  - Overcoming Barriers
  - Misconceptions About Sun Safety
  - Identifying Team Members
- Sun Safety Worksite Guide
- Inventory of Sun Safety Strategies for Policy Development
- Employee Risk Brochure
- Posters
- Tip cards
- Employee Sun Safety Training
- UV Camera Visits
- Onsite Shade Audit
- Health Fairs

Figure 2. Intervention materials

During the two-year intervention period, the SSC staff employed the materials to make 156 in-person visits with employers, conduct 93 sun safety training sessions with employees, and participate in 12 worksite health fairs.

Discussion

Overall, the SSC worksites demonstrated a strong interest in occupational sun protection, employee education and policy adoption. The sun safety trainings and UV camera visits helped to establish the need for sun safety for both management and employees. The utility of policy to clarify responsibility (organizational or individual) for recommended sun protection practices was an important feature of policy development. Many organizations not only saw the need for a policy but also found ways to adopt new sun safety polices or integrate sun safety into their existing health and safety policies and/or manuals. Preliminary data indicates that approximately 38% of the intervention organizations adopted a sun safety policy. We found that sun safety policy adoption was feasible with a systematic, theory-driven approach.

References

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