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Go Sun Smart

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Abstract

This is the story of Go Sun Smart, a worksite wellness program endorsed by the North American Ski Area Association and funded by the National Cancer Institute. Between 2000 and 2002 we designed and implemented a large-scale worksite intervention at over 300 ski resorts in North America with the objective of reducing ski area employees and guests risk for skin cancer by adopting sun safe practices. The following narrative describes the intervention in toto from its design and implementation through assessment. Our theory driven, experimentally tested intervention was successful in reducing employees' risks for skin cancer during and after the ski season. We also succeeded in making ski area guests more aware of the need to take sun safe precautions with both themselves and their children.

Keywords

Diffusion of Innovations Theory; Persuasion; Ski Industry; Sun Safety

For the past decade, we have been immersed in an unusual large-scale consulting and research project to bring sun safety to the North American ski industry. As may be the case with many consulting projects, ours started with an informal conversation among friends at a professional convention, the 1996 National Communication Association meeting. We discussed whether we could translate our professional experience with organizational and health communication research and practice into a project to reduce the risk for skin cancer among people who work

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and recreate in alpine environments. This informal conversation proved to be more than idle convention chatter. Not only were we able to develop and deliver a project similar to the one initially envisioned, but also we were able test its efficacy among people who work and recreate under conditions that increase their exposure to ultra-violet radiation (UVR) and risk for sunburning, factors significantly associated with the occurrence of skin cancer, and distribute the project throughout the industry.

This is the story of Go Sun Smart (GSS), a worksite wellness program endorsed by the North American Ski Area Association (NSAA) and funded by the National Cancer Institute (NCI). This narrative describes the scope and magnitude of the project, and the lessons learned from its design, implementation, and assessment. It focuses on: (1) primary and secondary clients for the project, (2) objectives of the project, (3) formative research and needs assessment to design the program, (4) theory and research that informed the program, (5) representative examples that illustrate the actual deliverables, and (6) methods of assessing project effectiveness.

Clients

GSS served several clients. Our primary client was the snow sports industry, including ski resort operators, their employees and guests, and industry professional associations (i.e., NSAA, National Ski Patrol, Professional Ski Instructors of America, and American Association of Snowboard Instructors). To secure this client base, we initially contacted key managers at ski resorts in California with whom we had previously consulted or met. Having established in earlier research that guests at ski resorts were not engaging in sun safety behaviors (Buller, Andersen, & Walkosz, 1998), we explored with these key managers their interest in participating in a program intended to reduce workers' and guests' risk for skin cancer.

We learned that managers were interested in their liability in worker compensation cases where an employee's skin cancer was attributed to the outdoor work environment. Anecdotally, more than a few managers disclosed first-hand experiences with melanoma and nonmelanoma skin cancers that they suspected were a result of their own long-term exposure to UVR. Managers emphasized that while reducing the UVR-related risks of guests at their resorts was important, reducing such risks among employees was their most pressing concern.

Given this evidence of industry interest in a worksite sun safety program, we next approached the leadership of the NSAA, headquartered in Lakewood, Colorado. NSAA is the principal professional association for ski resorts in North America and the 145,000 workers employed at them. Securing NSAA support was essential, since it is the primary channel for disseminating information in the industry, including safety programs.

We presented to NSAA a persuasive case detailing the level of risk for skin cancer among outdoor workers in the snow sports industry, and we discussed how an on-site wellness program not only could reduce this risk but also might influence liability issues and was consistent with the industry's other risk reduction programs (e.g., hydration, altitude sickness, and injuries). We also explained that the campaign would be unobtrusive and free to the association and its members in return for access to employees and guests for the purpose of program evaluation. This would serve to inform, we added, resort managers, industry groups, and the field of health communication about the effectiveness of the program we would create. These discussions elicited three important commitments from NSAA: (1) access to the membership of the NSAA and introductions to resort managers; (2) support for accessing resort employees and guests to conduct research; and (3) introductions to the leaders of the National Ski Patrol, Professional Ski Instructors of America, and American Association of Snowboard Instructors.

With access to this large and diverse industry secured, we applied to NCI for support and funding. The application we submitted in 1998 detailed a theoretic rationale, supporting body of literature, and hypotheses and research questions to justify the project and study, and a field experiment that would test the effectiveness of our worksite health communication program. After two rounds of peer reviews by a panel of select social and health scientists, GSS was officially approved for funding in 2000.

Objectives

Excessive exposure to UVR in sunlight is both the primary and the most easily prevented cause of skin cancer (American Cancer Society, 2007; Center for Disease Control, 2002). While this fact makes outdoor work (Marlenga, 1995; Rigel, Lebwohl, Rigel, & Rigel, 2003; Stepanski & Mayer, 1998) and recreation (Dozier & Wagner, 1997; Kricker, Armstrong, English, & Heenan, 1995; Newmann, Agro, Woodruff, & Mayer, 1996) potentially hazardous for people, the nature of the alpine environment in winter makes it especially hazardous for ski workers and their guests. High elevation, in combination with abundant sunlight and sunlight reflected from snow and ice, intensifies the effects of UVR substantially (Blumthaler & Ambach, 1988; Reiter, Munzert, & Sladovic, 1982).

Thus, the primary and admittedly immodest objective of GSS was to change the sun safety behavior of an entire industry through a theory-driven worksite wellness campaign. A secondary objective was to facilitate the dissemination of the sun safety messages in the wellness campaign to ski resort guests by encouraging employees to champion sun safety to guests and placing messages in areas where guests recreate.

Formative Research and Needs Assessment

Development of GSS was preceded by formative research and needs assessment. To insure program implementation and program success, and to pretest prototype persuasive messages, we needed to understand fully the nature of employee and guest populations, as well as the industry's common work procedures. We led focus groups (n=159 employees) at all 26 resorts to collect information about the sun protection behaviors, interests, and values of resort personnel. For example, current sun protection knowledge and behaviors, methods for disseminating sun safety information, risk-taking tendencies, work, and customer service procedures were explored in focus groups. Employees also reviewed and evaluated preliminary sun safety messages and graphics prepared by professional designers familiar with health campaigns.

Interviews with key administrators (one per resort) also were conducted with administrators ranging from CEO to director of the ski patrol. These interviews reduced uncertainty about ski area policies and procedures that might affect employee sun protection (e.g., uniform design, provision of sunscreen) and program implementation.

This formative research helped us both conceptually and operationally. The focus groups revealed that employee's perceived elimination of sun tanning as completely unrealistic. Group interviews also revealed that they believed they could significantly reduce the frequency and severity of sunburns if provided with the information and motivation to do so. We also learned that information overload from resort and commercial product messages was common among employees, especially during the opening of the ski season. Thus, materials we produced and disseminated would have to rise above considerable background noise. Finally, we confirmed during these discussions our belief that ski area employees are much higher in sensation seeking than the norm; therefore, our materials would need to be high in sensation value (e.g., novel and vivid) (Donohew, Lorch, & Palmgreen, 1998).

Administrator interviews proved mutually beneficial. We allayed concerns that our program would prove overly burdensome for managers or diminish the quality of service provided to guests. Information disclosed to us revealed the considerable diversity in management style, safety practices, and available technology (e.g., e-mail systems and websites) that affected our decisions about materials and dissemination channels.

Finally, we conducted a formative survey of employees to describe their demographic and job characteristics, skin sun sensitivity and their history of skin cancer, current knowledge and attitudes related to sun safety, existing sun safety practices at work (e.g., using sunscreen and lip balm with SPF 15 or more, wearing hats and sunglasses/goggles, and seeking shade), and perceptions of local opinion leadership on safety issues among employees (e.g., by ski patrollers).

Theory and Research Behind GSS

On-site wellness programs are not just communication campaigns; they are also *instructional communication* campaigns. In creating GSS, therefore, we wanted to make sure that it was conceptually and operationally based not just on our own research, but also on theory and research that had proved useful in both instructing and persuading people to adopt preventive health measures. The overarching theory that guided us in the development of GSS was Rogers's *Diffusion of Innovation Theory* (DIT), which has been successfully used across diverse cultures to promote the adoption of preventive health practices such as water purification, birth control, and HIV prevention (Rogers, 2003). DIT also has been used by instructional communication researchers to cast teachers in the role of innovators, course content as innovative ideas and practices, and students as potential adopters (e.g., Hurt, Scott, & McCroskey, 1977). DIT explains the adoption and practice of preventive behavior such as sun safety as a process in which persuasive messages are disseminated through multiple communication channels. These messages introduce and inform a target population about an innovative idea, product or practice such as sun safety. Concomitantly, such messages are aimed at influencing people to adopt the innovation. DIT provides guidelines to facilitate the target populations' adoption of an innovation, which in this case was defined by three preventive behaviors recommended by national health authorities: (a) applying sunscreen and protective lip balm, (b) wearing a hat, and (c) wearing UVR protective eyewear.

Our formative findings in the field led us to theory and research we believed would complement DIT. The initial stage in DIT, for instance, is the communication of knowledge, including attention to and awareness of a health message. Thus, in the effort to account for both competing employee and commercial messages and the higher level of sensation seeking reported among employees, GSS messages included graphic messages designed to create high sensation value, attract, and hold the attention of skiers and snowboarders. Sensation seeking research (Donohew et al., 1998) shows that high sensation seekers are more attentive and persuadable when exposed to high rather than low sensation value messages (e.g., messages with high novelty and vividness).

During focus-group sessions employees also told us that while they recognized the importance of sun safe behaviors such as applying sunscreen, they often forgot to do so. Thus GSS drew from Agenda-setting Theory (Dearing & Rogers, 1996), to increase the salience of sun safety in the workplace.

GSS messages also targeted the persuasion and decision stages of DIT to promote personal attitudes supportive of sun safety, create perceived norms for sun safety, and motivate sun protective behaviors. Persuasive messages contained theoretical principles from *Self-Persuasion Theory* (Bem, 1972), *Social Cognitive Theory* (Bandura, 1986), and the *Extended Parallel Processing Theory* on the effectiveness of fear appeals (e.g., perceived threat from

UVR will motivate sun safety when sun protection is effective and easy to adopt; Witte, 1992).

Another key principle in DIT is that desirable attributes of innovations affect adoption decisions. GSS messages were designed to emphasize to employees and guests that sun protection was easy to implement, personally advantageous, and compatible with worksite safety procedures in which they are already engaged.

Finally, DIT and research show that the local influence of opinion leaders on health and safety practices is crucial in convincing employees to adopt sun safety recommendations (Rogers, 2003). Formative research (focus groups, interviews, and survey) clearly identified ski patrollers and instructors as the local opinion leaders to which resort employees most often turn for guidance. Specific messages were designed to convince these opinion leaders to advocate sun protection to employees. Since ski patrollers and instructors have less routine contact with guests than do lift operators, we developed programs to encourage lift operators to talk with guests about sun safety. Opinion leadership was intended to occur through formal (safety meetings and ski lessons) and informal channels (chance encounters with guests).

Implementation

GSS was designed so that a new set of materials was released to ski areas every 6 weeks from late December through early March. We did this to rotate messages and thereby avoid message fatigue, as well as to tailor sun safety messages so that they would reflect the increased risk from UVR in the spring. In November and December 2001, we visited each contact person at the intervention resorts to review the implementation schedule and plan implementation activities. Ski area contacts received a detailed GSS program guide with written protocols for the implementation of the program materials, including devices to gain employee participation. GSS was formally implemented in January of 2002 and completed in April 2002.

Representative Deliverables

To reiterate, our primary goal was to reduce employee sunburning and excessive UVR exposure, the two factors most associated with the development of skin cancer. Thus, we created a worksite sun safety program that employed written, electronic, visual, and interpersonal channels of communication to promote sun-safe practices to employees. We began by first branding the program with a logo rated favorably in focus groups and a thematic message that could be communicated through interpersonal as well as mediated channels: “Use sunscreen, sunglasses, and a hat.” We promoted message discipline by redundantly communicating these simple but effective practices in all subsequent media. We capitalized on the brand with a variety of media, including professionally designed posters, signage, table tents and brochures, articles for employee newsletters, a website, and a comprehensive training module for supervisors to use as an educational resource during routine meetings (see http://www.gosunsmart.org).

Because ski area employees generally are not confined to a conventional workspace and tend to take their scheduled breaks outdoors, we distributed materials throughout the resort. Messages were strategically featured in places our formative research suggested were heavily trafficked by employees; for example, large and small posters in work and break areas, table tents in food and beverage stations, and prominent signage at the base of heavily used ski lifts and on lift poles, electronic super signs, and white-boards commonly posted at the top and bottom of ski lifts. To reinforce these messages, we created and placed window decals in work areas, clings in bathroom areas, and distributed logo art on buttons and personal water bottles to employees.

The preceding contained a variety of verbal and symbolic messages designed to promote sun safety. Several posters and lift signs, for example, were designed to increase the perceived risk associated with excessive UVR exposure (i.e., sunburn) but at the same time reinforce the fact that the risk could be reduced by following our thematic message: "Use sunscreen, sunglasses, and a hat" (Witte, 1992). Two other posters were designed to remind employees to carry sunscreen with them and frequently reapply it, so that they could overcome a barrier to effective sunscreen use *they* had identified in focus groups. Three small posters and the table tent provided facts about UVR exposure and sun safety designed to increase perceived risk and answer common questions that employees asked about skin cancer and sun protection during formative research. Our research also suggested that women were more likely to wear sunscreen than men but less likely to wear hats, so we also created posters to counteract both groups' predispositions.

The window and bathroom clings we created encouraged employees to serve as opinion leaders (Rogers, 2003) on sun safety, engage in self-persuasion, and further reinforced the idea that practicing sun safety was the norm rather than exception. To overcome language barriers one cling visually showed that sunglasses, sunscreen, and a hat "added up" to being sun smart.

The GSS website (http://www.gosunsmart.org) contained messages for employees and guests. It included descriptions of simple sun safety strategies, information to increase perceived risk for skin damage, information on UVR and sun safety, answers to frequently asked questions, and links to other online resources about skin cancer. The website content was expected to create perceptions that sun safety was easy, advantageous, and compatible with mountain safety procedures.

Our instructionally based training program contained six stand-alone instructional modules, a comprehensive instructor's guide, slides (in flip chart and Microsoft PowerPoint formats), and employee brochures. It was designed for typical department meetings among supervisors, ski patrollers, ski instructors, lift operators, and other employees. Training messages used supervisors to make sun safety a routine agenda item for employees, help employees recognize their personal risk for skin cancer, and provide step-by-step instructions on how to take precautions that would reduce risk creating positive response, outcome, and self-efficacy expectancies (Bandura, 1986). A final unit provided supervisors and employees with techniques for discussing sun safety with coworkers and guests to generate self-persuasion and promote a perception that sun safety was normative at the ski area (Bem, 1972; Hansen & Graham, 1991), including short pre-prepared sun safety messages intended for oral communication in daily staff meetings. Because employees had identified ski patrollers and ski instructors as the most important opinion leaders at the ski areas (Rogers, 2003), their training explained and reinforced their position of influence among coworkers and guests, and taught them how to proactively use the GSS messages and materials to promote sun-safe behavior among coworkers and guests.

To complement the preceding, we sponsored the lift operations department at each ski area by providing them with a GSS banner, logo-branded gallon jugs of sunscreen, wide-brimmed hats, and a barbeque dinner where a researcher presented information on sun protection. Lift operators were identified and targeted for this special treatment because they are the youngest and lowest paid employees at ski areas. Focus groups and key informant interviews revealed that lift operators often report having little money for sunscreen, practice low rates of sun protection, and spend large amounts of time outdoors. Finally, lift operators have the most regular contact with guests. Thus, we believed that if we could induce lift operators to verbally communicate sun safety advice to guests, it would serve as still another source of self-persuasion among the operators themselves.

Assessment

We monitored the implementation of GSS in two ways. First, a research staff monitor made unannounced visits to each ski area. The monitor spent the first day inspecting the ski area and observing all visible program materials without the ski area contact person's knowledge and a second day with the contact person showing them all of the places where program materials were present. Second, data-collection staff recorded all printed and oral messages they witnessed around or on the chair lifts during each lift ride on which they interviewed guests.

The effectiveness of the worksite wellness program we created and implemented was evaluated in a randomized, pair-matched, nested-cohort, pretest–posttest design (Murray, 1998). The worksite served as the unit of randomization. Ski resorts were matched primarily on the basis of size and location to avoid contamination but also were matched on the basis of similar attributes such as ownership and organizational structure.

Since this is not a research report, suffice it to say that the methods used in the preceding evaluation were based on rigorous criteria and can be examined in other publications (Andersen et al., 2008; Buller et al., 2005; Walkosz et al., 2007, 2008). More important to this narrative is what this evaluation revealed and the lessons we have learned as a consequence of the project in toto.

What We Found

GSS was largely successful. Our evaluation showed that the ski resort employees exposed to our campaign were significantly more aware of the importance of sun safety than the employees at resorts serving as a control group. Most (78%) of them reported at posttest that they were aware of our program. Even more of them reported (85%) that that they had received a written, electronic (36%), and spoken (54%) sun safety message. More gratifying, however, our assessment and evaluation also revealed a 14% reduction in sunburning among the employees at the ski areas receiving GSS (Buller et al., 2005). Further, this positive impact on employee sun exposure persisted into the following summer after many employees had left the resorts and were working at summer occupations, most often outdoors (Andersen et al., 2008). There also was evidence that GSS influenced guests to engage in more sun protection when they encountered the sun safety messages (Walkosz et al., 2008) and convinced parents to take more sun safety precautions with their children (Walkosz et al., 2007). Thus, in a very real sense, we met our primary and secondary objectives. We helped at risk employees reduce their risk of skin cancer by providing them with the necessary information and tools to do so. And we also disseminated and promoted sun safety to guests who recreated at the ski resorts in which we intervened.

Lessons Learned

We learned much from this project, beginning with Kurt Lewin decades ago insight that there are few things as useful as a good theory (Levin, 1951). This project was made significantly more robust because it was based on communication theory, primarily Roger's DIT rather than a potpourri of disjoined ideas and practices. The theory and research it has spawned focused our campaign and drove our successful intervention. From the project's inception, we viewed ski areas as organizations subject to the same regularities that govern the diffusion process in organizations more familiar to consultants.

We also relied on instructional communication research to develop the training and messages we created. The training was built on the principle of successive approximation and designed to promote self-efficacy among users by providing them with behaviors they could immediately adopt to reduce their risks from excessive UVR and sunburning. We also used modeling and

immediacy in the graphic posters we created. Because we were so often cast as instructors in our initial contacts with key managers and employees, moreover, we tried to practice what we had learned about effective communication in the classroom, including uncertainty reduction, interpersonal solidarity, and the nonverbal regulation of interaction.

Given the unique environment in which we worked, as well as the sheer size of the project, it probably comes as no surprise that we learned a number of practical lessons, too. We were repeatedly taught that a successful experimental intervention in a field setting requires dealing with dozens of unexpected exigencies that can impede the project. A representative list of ones with which we were confronted and forced to adapt included forest service regulations about signage, diverse aesthetic rules at resorts about message placement, commercial messages that competed for wall space, inclement and dangerous weather, travel delays, injuries to our staff, and the unforeseeable disruptions in resort operations caused by either too little or too much snow. We also had to learn to live with the fact that our intervention frequently had to take a justifiable backseat to more pressing organizational concerns of the moment; for example, the inevitable accidents that kick-start resorts' crisis-management teams. Thus, persistence, flexibility, sensitivity, and the willingness " to roll-up our sleeves" and get the job done when we arrived at the worksite became hallmarks of the GSS programs reputation for being up to any challenge or resort-side request.

We further discovered that in the process of creating and conducting this campaign, we needed to practice the very things we preach to our clients and students. We had to collaborate extensively on every aspect of the program, constructively manage internal and external conflicts, and adapt our interpersonal and presentational skills to diverse audiences. We also had to engage in effective impression management whether discussing the campaign with attendees at a meeting of the NSAA, talking about the importance of sun safety with 20-something lift operators and food servers, interviewing a hesitant guest while riding a chairlift, or presenting our findings to communication, health behavior, and public health scientists, and practitioners. And we learned without question that building strong relationships with each other and with our clients was as critical to our success as building a strong program such as GSS. Last, we learned one other valuable lesson. In the case of GSS, at least, the sum of the parts *truly is* greater than the whole.

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