completed a survey containing questions about their TWH leadership practices (developed by researchers) and change readiness– stage, need, efficacy, and personal valence of change and training instrumentality and motivation (developed by other researchers). After they finished participating in the goal-setting platform and coaching sessions, they were asked about their TWH leadership practices in a survey. We also collected goal success information from the online goal-setting platform. Finally, after completing the program, we interviewed each leader 1) to understand their reactions to the program and 2) to learn about the ways in which they have changed their business's TWH practices and culture as well as their own health.

Analysis. We will use linear mixed modeling with a random intercept for leader to compare self-reported TWH leadership practice responses from before to after the program (H1). We will evaluate change readiness as a moderator of this change by including it in the model as a covariate and as an interaction with time (H3). Goal attainment (H2) will be evaluated by calculating the percent of successful goals completed within the goal-setting platform. All qualitative interviews will be content analyzed by two researchers to determine themes in leaders' responses to each of our questions.

Results. As of January 2018, we completed two cohorts of leaders and will complete two more cohorts by Summer 2019. In total, we expect to be able to share results from 47 leaders from 30 organizations. The organizations represent service (50%), public administration (17%), and retail (10%) industries and 20% of them are from rural communities. The businesses have on average 45 employees (Range=4-430). Results will be available to present by the time of the conference.

Conclusions/practical implications. Our study contributes to the TWH literature in several ways. First, it describes the first TWH leadership program evaluated in the empirical literature. Second, it focuses on underserved workplaces– small business. Third, we will be able to put our findings into context by evaluating leaders' readiness for change. In future research we plan to evaluate how the TWH leadership program impacts business and employee outcomes such as changes to TWH adoption and implementation, employee morale, retention, and health/safety.

## Introducing Total Worker Health to Small Businesses: A Community-based Approach

*Brenda Jacklitsch (CDC/NIOSH)*

PROBLEM STATEMENT: Small businesses deliver fewer workplace health promotion and occupational safety and health activities than larger businesses [Linnan et al. 2008; Sims 2008], need more external assistance with integrated safety and employee health programs such as Total Worker Health [Newman et al, 2015], and endure a higher burden of occupational injuries and illnesses [Mendeloff et al. 2006]. Business size has also been shown to be one of the best predictors of a small business's involvement with workplace health promotion and safety activities [Linnan et al. 2008; Sinclair and Cunningham 2014]. Many factors, such as these, affect small businesses' lack of motivation to engage in prevention: lack of resources, isolation, low probability of inspection, and inaccurate perceptions of illness and injury rates [De Kok 2005; Hasle and Limborg 2006; Lentz and Wenzl 2006; Parker et al. 2007; Sinclair and Cunningham 2014].

Procedures. This study targeted two communities, Northern Kentucky and Greater Cincinnati. The goals of this study were (1) to understand perceptions of the cost and benefits of TWH approaches among small business owners/operators and employees; (2) to understand perceptions of TWH among community organizations that serve small businesses; and (3) to explore methods for encouraging use of TWH approaches by small businesses. Study steps included: (1) identifying and recruiting intermediaries, (2) deciding the best approach through discussions with the intermediaries, (3) small business recruitment and baseline interviews with the owner or manager, (4) engaging with small businesses via consultations and provided TWH-like services, (5) using exit interviews to determine small business reactions to TWH, and (6) asking intermediaries to reflect on the experience during a final debriefing.

Analyses. All interviews were recorded and transcribed. The transcribed interviews were analyzed by an inductive approach with thematic coding and a subsequent iterative process for further clarification of themes [Braun 2006; Gale et al. 2013]. First, the team independently reviewed the transcripts and then together reached consensus on important themes. Second, the team systematically coded interesting features, direct quotations, and patterns across the data set, reviewing coding differences until consensus was reached. Third, the data were reviewed, grouped, and collated into potential themes. Fourth, the team used the constant comparison method to examine and refine the themes by comparing and contrasting information within each interview and across all the interviews and focus groups [Boeije 2002; Corbin and Strauss and Corbin 2014]. Finally, the team conducted ongoing analysis to refine each theme and condense into a cohesive narrative.

Results. Small businesses in 3 Cincinnati communities and 4 Northern Kentucky sectors (i.e., construction, childcare, manufacturing, municipalities) participated, resulting in a total of 49 baseline interviews, 3 focus groups (Cincinnati only), and 26 exit interviews. Drivers to TWH varied from employers realizing the value of prevention to feeling that wellness and safety were the "right thing to do." Employers described barriers to TWH that included lacking knowledge, financial resources, time, interest; and some viewed wellness as an individual's responsibility. Participants' responses involved various themes, including: available resources (e.g., lack awareness and accessibility, matching needs, affordability), safety and wellness concerns (e.g., stress/mental health/burnout, community safety, unhealthy habits, health insurance cost, overall health), challenges implementing wellness initiatives (e.g., budget, time, staff interest, lack of leadership, employee privacy), and crossover combination safety and wellness (e.g., makes sense, too jumbled). Study participants described some of the outcomes and benefits, including: healthy/happy employees, productive/energized employees, business benefits, feeling valued, better teamwork, and a safer work environment. Participants also were asked about what they planned to do about TWH moving forward and themes included: individual responsibility, doing small things, motivation, and very specific ideas. During the final focus group with intermediaries, small business employers were described as caring for their employees and being receptive to the idea of TWH. Intermediaries felt that wellness was harder to sell than safety and therefore needs to be framed as a business proposition, a benefit to the company's bottom line, and needs to be tailored to the individual business. Another issue reported by intermediaries was that most small businesses lack resources or organizational structures to sustain TWH.

PRACTICAL implications. This study demonstrated how intermediaries and a variety of small businesses perceived TWH and interacted with each other when implementing TWH practices. Similar drivers, barriers, and themes might be expected in non-research settings,

therefore intermediaries can ready themselves to address or discuss these topics when working with small businesses.

CONCLUSIONS: For potential intermediaries wanting to introduce the concept of TWH to small businesses, it would be important to describe how wellness and safety can be integrated, demonstrate to employers the benefit to the business, provide access to financial resources for mitigating at least part of the initial cost of new programming, and build a relationship with the business as you guide them through the setup and implementation of a TWH program tailored for their specific needs.

**Assessment of Total Worker Health® Strategies as Indicators of Organizational Behavior in Small Business**

*Liliana Tenney (University of Colorado Denver)*

Introduction: Emerging evidence suggests that a more holistic approach is needed to optimize worker health, safety, and well-being in businesses of all sizes. Job injuries and fatalities persist at unacceptably high rates (Concha-Barrientos 2005). The workforce, like the rest of society, suffers from chronic health conditions that are both related to work-related and non-work factors, also at increasing rates (Sorensen 2011). Worker well-being is gaining traction as a unifying central objective in the occupational safety and health field that can be achieved by enhancing the physical workplace environment, including organizational level policies and strategies that help shape a culture of well-being the contributes to the nature of work and the work experience (Schill 2013). The National Institute for Occupational Safety and Health's (NIOSH) Total Worker Health® (TWH) approach is defined as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being. While research on TWH approaches hold promise for establishing new ways of meeting the needs of workers in small businesses, most TWH intervention studies to date have been conducted in large organizations, with little evidence to support the generalization of results to the small business setting (McCoy 2014, Newman 2015) . Our understanding of the current practices in small businesses and of the barriers to adoption, effectiveness, and sustainability of TWH programs remain extremely limited.

Objective: In order to identify potential opportunities to improve OSH solutions in small businesses, the current study characterizes current TWH practices across multiple industrial sectors and across the spectrum of organization sizes. We hypothesized that larger businesses offer TWH programming than do smaller enterprises. In considering TWH integration, we hypothesized that businesses that address workplace safety would be more likely to also address health promotion, regardless of business size. Our study objective was to conduct a cross-sectional assessment of the adoption of Total Worker Health® (TWH) policies and practices by business size and evaluate extent and associations of their safety and health policies and programs.

Methods. We conducted an analysis of 382 businesses that participated in an assessment, advising, and certification program, Health Links™. We measured organizational adoption of policies, programs, and strategies to advance the health, safety, and well-being of workers. Organizations were scored on six benchmarks: organizational supports, workplace assessment, health policies and programs, safety policies and programs, employee engagement, and evaluation.

Results. Among the 382 participating businesses, 78 (20%) were microbusiness (2 to 10 employees); 133 (35%) were small businesses (11 to 50 employees); 71 (19%) were medium sized businesses (51-200 employees), and 100 (26%) were large businesses (> 200 employees). The six benchmark scores were statistically significant associated with business size. Larger businesses were more likely to score higher across each Health Links benchmark indicating they are implementing more TWH strategies. The mean score for each of the benchmarks were significantly different among the four size categories: organizational support ($p=0.003$); workplace assessments ($p<0.001$); health policies and practices ($p<0.001$); safety ($p<0.001$); engagement ($p=0.004$); evaluation ($p<0.001$). Conclusions. While small businesses are implementing TWH, the level of implementation differs by business size. The smaller the organization, the greater the opportunity to address safety as a priority. Practical interventions, as well as dissemination and implementation research, should take business size into account to ensure TWH is both effective and sustainable in meeting the needs of employees.

Discussion: Small businesses are implementing TWH, and the level and type of implementation differs by business size. Interventions, as well as dissemination/implementation research, should take business size into account to ensure TWH is both effective and sustainable in reaching employers and meeting the needs of employees. Future research is needed to understand what community, organizational, and leadership factors drive the most change for improving employee health, safety, and well-being outcomes.

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**Independence Ballroom A**

## Work, Parenting, and Family Outcomes

**PAPER SESSION**

**Work breaks and upper respiratory infections among hospital patient care workers**

*Erika Sabbath (Boston College)*

Background. Common colds are the epitome of a minor illness, but they are miserable for many of the 72% of U.S. adults who suffer from them annually. Economists and business owners have long recognized how costly colds, flu, and other upper respiratory infections are. Each year, the U.S. economy accrues $40B in direct and indirect costs for colds and $27B for influenza. Psychosocial stress is one known risk factor for cold and flu susceptibility, but very few studies have tested whether stress from interpersonal or organizational aspects of work are associated with susceptibility. We hypothesized that poorer break-taking practices would be associated with higher likelihood of physician visits for upper respiratory infections in a cohort of hospital patient care workers.

Methods. Data are drawn from the Boston Hospital Workers Health Study (BHWHS), a longitudinal cohort of 15,000 patient care workers at two large academic medical centers in Boston. We used data from a subset of BHWHS workers (n=979) who responded to a survey (response rate=72%) and were members of the company's group health plan. The survey was conducted in October 2012, shortly before the onset of cold and flu season. We linked participants' responses to questions about break-taking norms in their units and their own break practices with health claims data for upper respiratory infections in the 12 months following the survey. We used logistic regression to test for differences in break practices observed between those with and without

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