The "Total Worker Health" Concept

A Case Study in a Rural Workplace

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Objective: This case study was conducted to identify barriers of integration of health protection and health promotion in rural workplaces with tailored interventions that address the identified barriers. **Methods:** Data on a workplace's ability to integrate wellness programs and health protection programs were collected through a questionnaire along with a seven-question interview. Descriptive statistics were used to analyze the quantitative data. Qualitative measures were assessed using thematic analysis. Based off the results of the assessments, the company received tailored training sessions. **Results:** The largest hindrance to organizational support was time. However, improved knowledge about the need and importance of integration helped the participants to conceptualize and plan for more collaboration between departments. **Conclusions:** New ways to increase integration at workplaces, especially rural workplaces are needed. More comprehensive interventions that include management are also needed.

Keywords: assessment, evaluation, health disparities, health promotion, health protection, rural health, Total Worker Health, workplace

W orkplaces everywhere struggle with cost incurred in areas of both health protection and health promotion. Rural locations can present additional challenges for workplaces wanting to create a healthier work environment. A commentary concerning rural health disparities[1] proposed a "rural culture" health determinant may exist that influences health behaviors of rural populations. Unhealthy rural lifestyles (higher rates of tobacco use, sedentary lifestyle, and unhealthy diets) often lead to workforces that experience higher rates of morbidity and mortality than suburban locations. These behavioral disparities of rural populations are correlated with lower income and less education which can often result in the need for culturally sensitive interventions.[1] Interventions designed for rural populations that are not sensitive to local traditional cultures are often ineffective. Influences of health-related behaviors in rural areas are rooted in relationships between individuals, organizations, communities, families, and friends.[1]

There are certain identified factors associated with rural workers' and their participation in workplace health promotion programs.[2] Attitudes, perceived norms, and benefits influenced participation rates, as well as perceived support and pressure from coworkers and supervisors. Rural populations have been found to be less likely to use preventive screening services or wear safety belts compared with urban or suburban areas.[3]

BACKGROUND

The assessment, implementation, and evaluation of health promotion programs in rural workplaces often lack the rigor needed for effective programming. In rural businesses, human resource professionals are often the key individuals responsible for managing their workplace health promotion programs.[4] These key individuals may or may not have adequate training to plan effective health promotion programs. The study also found that many rural businesses are struggling to effectively evaluate these programs and do not offer substantial incentives to increase participation. The study concluded that human resource professionals must tie the success of the workplace health promotion program directly to the financial position of the business through effective evaluations and by offering ample incentives.[4]

In 2014, a Center for Disease Control and Prevention (CDC) funded statewide assessment of workplace health promotion programs was conducted to determine the availability of these programs in Kentucky. The study determined that poor lifestyle habits that contribute to chronic diseases are not being addressed in the majority of Kentucky's workplaces.[5] Kentucky, a rural state, could potentially address unhealthy lifestyles through integration of comprehensive health promotion programs and established health protection programs.

The Total Worker Health (TWH) concept could be a catalyst for building a culture of health in rural workplaces if effective assessments, interventions, and follow-up methods are practiced. TWH is defined as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness-prevention.[6] TWH creates a shared responsibility for health and safety between employer and employee. An integrated approach to workplace health improves health behaviors and employee participation in occupational safety and health, and health promotion programs while reducing occupation injury rates, health care costs, administrative costs, and costs resulting from lost productivity or increased work absenteeism.[7]

As mentioned in the Comparative Effectiveness Review (2016) of Total Worker Health, future research needs to include diverse geographic regions of the United States, noting that at the time of this report, only one study had been conducted in the Southeastern region.[8]

A Report from the Federal Partners Meeting of the National Institutes of Health Pathways to Prevention Workshop: Total Worker Health—What's Work Got to Do with It? (2016) recommends that a consensus-based conceptual framework to guide future intervention research be developed which is broad enough to include alternate types of work settings, broad types of workers, and diverse worker demographics.[9]

The mixed method assessment designed for this case study could begin to address the need for a culturally sensitive instrument that accounts for the norms of a geographic area. Also, the tailored interventions and follow-up included in this case study could be an

element of the consensus-based conceptual framework recommended by the Federal Partners of the NIH Workshop.[9]

The purpose of this study was as follows:

- To identify barriers of integration in rural workplaces through both quantitative and qualitative assessments.
- To develop and implement interventions that address identified barriers.
- To evaluate the effectiveness and sustainability of the interventions.

METHODS

Case Study Participant

This case study was part of a larger study that identified a convenience sample of workplaces in rural locations with established programs in employee health and safety. The participant of the case study was an aluminum rolling plant located in rural south central Kentucky. This company is the single largest rolling mill producing aluminum sheet for beverage cans in North America. It is considered an industry leader in health and safety. They employ 1110 workers and provide world-class benefits. The work structure includes continuous operations and the team concept.

Instruments

Information on a workplace's ability to integrate workplace wellness programs and workers' health protection programs was collected through the administration of a structured questionnaire along with a seven-question interview. The wellness manager and the occupational health manager or upper management completed the questionnaire followed by the interview. The first instrument administered was the Harvard Integration Instrument designed by the Harvard School of Public Health Center for Work, Health & Well-being.[10] The quantitative instrument contains 23-items that measure the elements of integration present at a workplace. Following the questionnaire, a seven-question interview was conducted to gather additional qualitative information. The results obtained through the questionnaire and interviews were used to develop recommendations that the company could implement to support well-being in the workplace. The research team met with study participants three times throughout the project: twice to complete the pre and post pilot study questionnaire and qualitative interview, and once for the intervention training session. The total amount of time required was approximately 3 hours and 25 minutes.

Harvard Indicators of Integration Instrument

The assessment instrument was a 23-questionnaire designed by the Harvard School of Public Health Center for Work, Health & Well-being.[10] The questionnaire provides a list of actions or policies that companies may have in place to create safer and healthier environments. Participants must indicate if the integration item is fully achieved, partially adopted, or absent.

Barriers to Integration of Workplace Health and Safety Questionnaire

The questionnaire consisted of a set of open-ended items designed to gather additional information regarding barriers to integration of workplace health and safety. Thematic analysis was utilized to provide information in addition to the data captured through quantitative measures. The qualitative questionnaire also allowed key Workplace Health Promotion (WHP) stakeholders an opportunity to provide his or her unique perspective regarding integration. The questions addressed factors such as barriers to healthy lifestyles, organizational support, adequate training, and education related to workplace health and safety, interdepartmental collaboration, and the utilization of incentives.

INTERVENTION

As a result of the assessments conducted in this study, a toolkit was designed to address identified barriers to the implementation of the TWH concept in a rural workplace. The first section of the toolkit consists of a definition of TWH to ensure that participants had a foundational understanding of the concept. The organizational, individual job-related and environmental factors were also presented to expose participants to issues that could be identified within their own workplace. The next section contains the Hierarchy of Controls,[11] followed by the Hierarchy of Controls Applied to NIOSH Total Worker Health. This allows participants to see how the basic concepts of health promotion and health protection are closely related and how the process can work better together, rather than disconnected in silos. The third section contains results of the quantitative assessment and the qualitative assessment (pre and post). Strengths, weaknesses, opportunities, and threats (SWOT) analysis was included at the end of this section, which provided participants the opportunity to examine their workplace in a comprehensive manner through recall of methods that work well and those that may not work as well. Recommendations are the next section. Again, based off the results of the assessments, the company receives tailored recommendations for their policies, practices, and programs and the potential opportunities to make them more effective for the TWH concept. The action plan follows recommendation and allows participants to work through the defining elements of TWH and address obstacles, solutions, resources, and next steps. This action plan also assigns responsibility for each element for accountability purposes. The Appendix of the toolkit includes leadership aids that would help upper management in communication efforts to support the TWH concept and concludes by providing small steps which would allow workplaces to pick from a list of simple ways that a workplace can begin integrating safety, health, and well-being.

DATA ANALYSIS

Descriptive statistics were used to analyze the quantitative data. The analysis for this paper was generated using Qualtrics software, Version 2017 of Qualtrics (Provo, UT) and IBM SPSS Statistics (IBM Corp, Armonk, NY) for Macintosh, Version 23.0. Qualitative measures were assessed using thematic analysis. Qualitative data were analyzed using structural analysis in which the participants' answers were first labeled and then grouped according to theme to identify common barriers to the integration of workplace health and safety. Pre and post data were then compared.

RESULTS

Harvard Indicators of Integration Instrument

The quantitative instrument measured 23 elements of integration at the workplace. Each item was given a score ranging from 0 to 2 and included responses of fully achieved (2 points), partially adopted (1 point), or absent (0 points). Each survey scored had a possible range of 0 to 46 points with higher scores indicating greater integration of health promotion and health protection. One safety and one wellness manager from the participating company completed the instrument.

Case Study

There were two participants from the chosen workplace. Both were in middle management with one participant from workplace wellness and one from safety.

Pretest Results:

The individual scores were 32 points (manager 1) and 46 points (manager 2) for an average score of 39 points out of a possible

TABLE 1. Indicators of Integration*

Indicator	Pretest			Posttest		
	Absent	Partially Met	Fully Achieved	Absent	Partially Met	Fully Achieved
Top management expresses its commitment to a workplace culture and environment that supports employee health.			X			X
Senior leadership allocates adequate human and financial resources to implement programs to promote and protect worker health.			X			X
Decision-making about policies, programs, and practices related to worker health is coordinated across departments, including those responsible for occupational safety and health and those responsible for worksite wellness.			X			X
Efforts to promote and protect worker health include both policies about the work organization and environment, and education and programs for individual workers.			X			X
Incentives are offered to employees to complete activities to stay healthy (eg, attend a training on health/safety), reduce their high risk behavior (eg, quit smoking), and/or practice healthy lifestyles (eg, gym membership discounts).			X			X
Workplace benefits exist that address health, safety, and well-being (eg, health care coverage, flex-time, paid sick leave, screening and prevention coverage, and wellness opportunities).			X			X
Data related to employee health outcomes are integrated within a coordinated system.			X		X	
High-level indicator reports (eg, "dashboards") on integrated programs are presented to upper level management on a regular basis, while protecting employee confidentiality.			X			X
The content of educational programs, such as classes, online courses or webinars, or toolbox talks, addresses potential additive or synergistic risks posed by exposures on the job and risk-related behaviors.			X			X
The content of educational programs, such as classes, online courses or webinars, or toolbox talks, acknowledges the impact of job experiences and the work environment on successful health behavior change.			X			X
Both worker and worksite health are included as part of the organization's mission.		X			X	
Processes are in place to coordinate and leverage interdepartmental budgets allocated toward both worksite wellness and occupational safety and health.		X			X	
Program managers responsible for worksite wellness and occupational safety and health are trained to coordinate and implement programs, practices, and policies for both worksite wellness and occupational safety and health.		X				X
Operations managers are trained to ensure employee health through coordination with and support for occupational safety and health and worksite wellness.		X				X
Job descriptions for staff responsible for worksite wellness and occupational health and safety include roles and responsibilities that require interdepartmental collaboration and coordination of worksite wellness and occupational safety and health programs, policies, and practices.		X			X	
Performance metrics for those responsible for worksite wellness and occupational safety and health include success with interdepartmental collaboration and coordination of worksite wellness and occupational safety and health programs, policies, and practices.		X			X	
Both managers and employees are engaged in decision-making about priorities for coordinated worksite wellness and occupational safety and health programs, policies, and practices.		X			X	
Joint worker-management committees addressing worker and worksite health reflect both worksite wellness and occupational safety and health.		X				X
Workers are actively engaged in planning and implementing worksite wellness and occupational safety and health programs and policies.		X				X
Incentives are offered to managers who protect and promote health (eg, accomplish health and safety in their departments and encourage reporting of hazards, illness, and injuries, and near misses; lead and encourage their employees in health promotion and protection efforts).		X			X	
The effects of worksite wellness and occupational safety and health programs are monitored jointly.		X			X	
Professional development strategies include training and setting goals at performance reviews related to interdepartmental collaboration and coordination of worksite wellness and occupational safety and health programs, policies, and practices.	X				X	
Worksite wellness and occupational safety and health vendors have the experience and expertise to coordinate with and/or deliver approaches that support the coordination and collaboration of worksite wellness and occupational safety and health efforts.	X				X	

*Harvard School of Public Health Center for Work, Health, & Wellbeing. Harvard Indicators of Integration Instrument (2013).

46 points at pretest. There were 10 elements identified as fully achieved by both participants at pretest. Eleven elements were identified as partially adopted by at least one participant at pretest. Only two elements were identified as absent by at least one participant at pretest.

Pretest Qualitative Interview

The qualitative interview showed major barriers to workplace health and safety were time, knowledge level of new employees, and employees' mindsets outside of the workplace. The largest hindrance to organizational support is time. Finding time to incorporate safety and wellness without taking away from production is a challenge. Interdepartmental collaboration is hindered by the ability to communicate with all parties involved. There is strong infrastructure and culture of health and teamwork that promotes collaboration. Each employee watching out for others is key to engaging all employees and maintaining a high level of safety and wellness. Health Savings Accounts are used as incentives for wellness initiatives. Safety focuses on leading and lagging indicators and there is not strong support for additional incentives. The major barrier to integration is the lack of time devoted to meet together. Therefore, both parties felt there is partial integration, but not full.

Posttest Results:

The individual scores were 41 points (manager 1) and 41 points (manager 2) for an average score of 41 points out of a possible 46 points at posttest. There were 14 elements identified as fully achieved by both participants at posttest. Five elements moved from partially adopted at pretest to fully achieved at posttest. The elements were as follows:

- Efforts to promote and protect worker health include both policies about the work organization and environment, and education and programs for individual workers.
- Program managers responsible for worksite wellness and occupational safety and health are trained to coordinate and implement programs, practices, and policies for both worksite wellness and occupational safety and health.
- Operations managers are trained to ensure employee health through coordination with and support for occupational safety and health and worksite wellness.
- Joint worker-management committees addressing worker and worksite health reflect both worksite wellness and occupational safety and health.
- Workers are actively engaged in planning and implementing worksite wellness and occupational safety and health programs and policies.

Nine elements were identified as partially adopted by at least one participant at posttest. Two elements moved from absent at pretest to partially adopted at posttest. The elements were as follows:

- Professional development strategies include training and setting goals at performance reviews related to interdepartmental collaboration and coordination of worksite wellness and occupational safety and health programs, policies, and practices.
- Worksite wellness and occupational safety and health vendors have the experience and expertise to coordinate with and/or deliver approaches that support the coordination and collaboration of workplace wellness and occupational safety and health efforts.

Additionally, one element moved from fully achieved at pretest to partially adopted at posttest. This element was:

- Data related to employee health outcomes are integrated within a coordinated system. No elements were identified as absent at

posttest. Details regarding which elements were identified as fully achieved, partially adopted, and absent at posttest may be found in Table 1.

Posttest Qualitative Interview

The qualitative posttest interview showed major barriers to workplace health and safety had not changed; however, the participants reported being able to understand and appreciate the need for integration more after the integration training session. The largest hindrance to organizational support was still time at posttest. However, improved knowledge about the need and importance of integration helped the participants to "see the big picture of why it is important to collaborate." Although participants reported that no new policies or programs had been implemented since the training session, they both indicated that additional collaboration between the departments was planned. There were also plans to draft documents to educate new employees and managers about the importance of integration. Participants reported that they felt more would have been implemented had there been more time between the training session and the follow-up posttest interview.

DISCUSSION

The benefits of integration of health protection and health promotion at the workplace have been documented.[6,7] However, there is limited information available regarding the assessment and implementation of TWH concepts at rural workplaces. It is also known that rural workplaces may face unique challenges due to cultural factors and demographics of the workforce[1,3,4] and that workplaces in rural states are unlikely to have comprehensive workplace health promotion programs.[5] This study provides insight into barriers to integration of health and safety. At posttest, only one element measured on the Harvard Integration Tool moved from Fully Achieved to Partially Met. This element was, data related to employee health outcomes are integrated within a coordinated system. Based on feedback from participants, it is likely that this change is a result of greater awareness and understanding of TWH concepts as a result of the tailored toolkit and training. Time, job/production demands, and attitudes and knowledge level of new employees were all identified as challenges to integration. However, at follow-up after health and safety managers received the tailored toolkit and training, there was increased awareness of TWH concepts, a greater understanding of the need to integrate, and planning was in place for ways to integrate programs, policies, and practices.

The case study design limits the generalizability of the findings to other worksites. However, the mixed methods approach and development of the tailored toolkit could be utilized with other companies in other geographic areas. Additionally, the time allotted to collect data, develop interventions, and conduct follow-up posttest assessment was not adequate. Managers indicated that the time between receiving the training and follow-up was not sufficient to implement any recommended changes in practices, programs, or policies.

CONCLUSION

Integrated approaches that involve both workplace health and safety can reduce injury, lower costs and improve employee health.[7] There is a need to find new ways to increase integration at workplaces, especially rural workplaces that may face unique challenges compared with urban and suburban workplaces. While the results of this study are promising, more research needs to be conducted on the impact of tailored toolkits and training on manager awareness of TWH concepts, and the implementation of integration into programs, practices, and policies. There is also a need for more comprehensive interventions that include upper and middle management as well as other employees. Supervisor support is a powerful predictor of

employee participation in wellness programs.[2] Therefore, gaining buy-in of upper management is essential for policy change to occur.

ACKNOWLEDGMENTS

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