

A. COVER PAGE

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|--|---|
| Project Title: Organizational Approaches to Total Worker Health for Low-Income Workers | |
| Grant Number: 5R01OH010811-04 | Project/Grant Period: 08/01/2016 - 07/31/2020 |
| Reporting Period: 08/01/2019 - 07/31/2020 | Requested Budget Period: 08/01/2019 - 07/31/2020 |
| Report Term Frequency: Annual | Date Submitted: 10/28/2021 |
| Program Director/Principal Investigator Information: GLORIAN C SORENSEN , BA PHD MPH Phone Number: (617) 632-2183 Email: glorian_sorensen@dfci.harvard.edu | Recipient Organization: DANA-FARBER CANCER INST 450 Brookline Avenue BOSTON, MA 022155450 DUNS: 076580745 EIN: 1042263040A1 RECIPIENT ID: |
| Change of Contact PD/PI: NA | |
| Administrative Official: PAULA A LONGDEN 450 Brookline Avenue Boston, MA 022155450 Phone number: 617-582-8875 Email: grantsandcontracts@dfci.harvard.edu | Signing Official: PAULA A LONGDEN 450 Brookline Avenue Boston, MA 022155450 Phone number: 617-582-8875 Email: grantsandcontracts@dfci.harvard.edu |
| Human Subjects: NA | Vertebrate Animals: NA |
| hESC: No | Inventions/Patents: No |

B. ACCOMPLISHMENTS

B.1 WHAT ARE THE MAJOR GOALS OF THE PROJECT?

B.1 What are the major goals of the project?

Our long-term goal is to contribute to the evidence base for effective policies, programs, and practices that will improve the overall safety, health and wellbeing of low-wage workers.

Our objective is to develop and test feasible intervention methods to modify the work organization and support improvement in our study outcomes among one group of low-wage workers: food service employees. Our central hypothesis is that an intervention targeting the work organization and environment, as well as individual safety practices and health behaviors, will show promising improvements in MSD pain/injury, well-being, work engagement and turnover intention.

Our objectives are closely aligned with the National Occupational Research Agenda for the service sector (e.g., Strategic Goal 3, to eliminate health disparities for priority population workers; Goal 10.3 to test comprehensive OSH programs for food service; Goal 16.4, to test MSD interventions for service industries with high MSD risk).

The outcome of this research is expected to be a new intervention model for application of integrated interventions to promote the health, safety, and well-being of low-wage food service employees.

As indicated in the Year 1 progress report we have modified the health behaviors targeted in the aims:

Specific Aim 1: Identify factors in the work organization, expected to be associated with musculoskeletal pain and injury, worker engagement, turnover intention and well-being, which can be feasibly modified through changes in management practices.

Specific Aim 2: Determine the feasibility and potential efficacy of an integrated TWH intervention designed to improve the work organization and environment, and workers' pain and injuries, work engagement, turnover intention and well-being.

B.1.a Have the major goals changed since the initial competing award or previous report?

No

B.2 WHAT WAS ACCOMPLISHED UNDER THESE GOALS?

File Uploaded : B.2. Accomplishments_rev.pdf

B.3 COMPETITIVE REVISIONS/ADMINISTRATIVE SUPPLEMENTS

For this reporting period, is there one or more Revision/Supplement associated with this award for which reporting is required?

No

B.4 WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED?

File Uploaded : B.4. Training and Professional DevelopmentFINAL.pdf

B.5 HOW HAVE THE RESULTS BEEN DISSEMINATED TO COMMUNITIES OF INTEREST?

Because of worksite closures due to COVID-19, we were unable to complete final data collection and findings on potential improvements in working conditions and workers' safety, health and well-being are not available for dissemination. Rather, we utilized our robust process evaluation data to assess intervention feasibility and qualitative data to identify organizational factors contributing or hindering intervention implementation. Our contributions and dissemination efforts focus on manuscripts that promote an expanded understanding of the complexities of implementing an organizational intervention in a complex settings and in particular a manuscript that illustrates for practitioners how we used the Harvard T H

Chan Center for Work, Health, and Wellbeing's TWH Implementation Guidelines to develop and implement an organizational intervention improve pain, injury, and well-being. (See Publications)

At the conclusion of the study, we disseminated intervention materials and resources to our community partner for use in other non-study food service accounts.

At the request of an intervention site manager, we developed a Tip Sheet for managers on how to engage employees in TWH approaches to address conditions of work available in English and Spanish. The Tip Sheet is posted on The Harvard T.H. Chan Center for Work, Health, and Wellbeing's Resource page (<https://centerforworkhealth.sph.harvard.edu/resources/tip-sheets>).

B.6 WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH THE GOALS?

Not Applicable

B.2. Accomplishments

1. Major activities

Low-wage workers, often employed in jobs that pose high health and safety risks, are a high priority for the National Institute for Occupational Safety and Health (NIOSH). Of concern, these positions may also pose elevated risks related to job insecurity; unstable work hours, contributing to insecurity about earnings; high physical work demands; repetitive work; and low job decision latitude and autonomy. The food industry employs a significant number of low-wage workers, often in contracted settings. In the US, this rapidly growing industry includes 9.5 million workers, many of whom are immigrants. The Workplace Organizational Health Study aimed to address the challenges of low-wage workers in the US food service industry through an intervention designed to improve organizational conditions of work.

This proof-of-concept trial was conducted in collaboration with a large, multinational company that provides food service through contractual arrangements with corporate clients. The participating worksites were located in corporate settings in the Greater Boston area. Because organizational policies and practices were managed across different levels of the organization, the study team collaborated with company representatives at the national and district levels to ensure their support, leverage resources at the national and district levels, and facilitate buy-in from worksites participating in the study. Formative qualitative research was conducted to prioritize outcomes, assess working conditions, and formulate essential intervention elements. The researchers evaluated the worksite-based intervention in a Proof-of-Concept trial, an approach used to demonstrate feasibility or potential efficacy, typically on a small scale as a milestone toward full development of a “concept.” Ten worksites were selected from 60 eligible worksites in the geographical region to participate in this cluster randomized trial. Following completion of baseline assessments, worksites were blocked on size and randomly assigned to intervention or control conditions. The 13-month intervention was launched in five intervention sites in October 2018. The worksite-based intervention focused on improving three working conditions: safety and ergonomics; work intensity; and job enrichment. One control site was closed prior to the end of the study, leaving five intervention sites and four control sites. Post-intervention data collection began in mid-January 2020 and continued as feasible until early March 2020. Due to increasing restrictions related to the COVID-19 pandemic, final data collection could not be completed in four sites, thus leaving only five of the original ten sites in the study. Publications from this study are included in this report.

2. Specific objectives

The Workplace Organizational Health Study was designed to test the *a priori* central hypothesis that a multi-level participatory intervention targeting the work organization and environment could be feasibly implemented and would show promising improvements in worker health, safety, and well-being. Formative research conducted early in the study was used to finetune the study’s aims. The study’s *specific aims* were to:
Specific Aim 1: Identify factors in the work organization, expected to be associated with musculoskeletal pain and injury, worker engagement, and well-being, which can be feasibly modified through changes in management practices.

Specific Aim 2: Determine the feasibility and potential efficacy of an integrated Total Worker Health[®] intervention designed to improve the work organization and environment, and workers’ pain and injuries, work engagement, and well-being.

3. Significant results

The Workplace Organizational Health Study tested the implementation of an organizational intervention to promote and protect the safety, health, and well-being of low-wage food service workers employed in contracted cafeterias. Because final survey data collection from workers could not be completed due to COVID-19 shutdowns, final analyses focused on two key questions assessed in the five sites randomly assigned to the intervention: (1) to what extent was the intervention implemented as planned (fidelity) and what was the “dose” of intervention implemented; and (2) to what extent did the organizational and broader contexts hinder or facilitate the process of implementing the intervention? Over the 13-month intervention, research team representatives met approximately monthly with site managers, delivering consultation and technical assistance related to safety and ergonomics, work intensity, and job enrichment, and implementing approximately two-thirds of the intended contact points. In addition, the intervention implementation included collaboration with a multi-level leadership team, which was engaged to provide resources and support for the intervention. This study benefited from a rigorous process tracking framework and carefully analyzed

quantitative and qualitative data to shed light on the implementation process. By assessing the context of the food service setting in which the intervention was situated, the study team explored factors hindering and facilitating the implementation of the intervention. The financial pressures, competing priorities and the fast-paced work environment placed constraints on site managers' availability and limited the full implementation of the intervention. Despite strong support from corporate senior leadership, barriers in implementing the planned intervention included financial demands that drove work intensity; turnover of site and district managers disrupting continuity in the intervention implementation; and staffing constraints that further increased the work load and pace. Findings underscore the need for ongoing commitment and support from both the parent employer and the host client. This study also underscored the significance of contractual relationships with client/host organizations, which were often central decision makers around changes to the work environment and may need to be involved from the inception of planning for such interventions. Despite these challenges, research staff were able to provide consultation and technical assistance in monthly meetings with site managers, implementing two-thirds of the intended contacts with site managers by phone and in person, and to engage district and senior leaders in intervention planning and identifying resources to support its implementation.

Due to the COVID-19 shutdowns, final data collection from frontline workers and some site managers was curtailed, and as a consequence, findings on potential improvements in working conditions and workers' safety, health and well-being are not available. Nonetheless, an important contribution of this study is found in the process evaluation of intervention implementation, thereby providing an intermediate indicator of impact.

4. Key outcomes and other achievements

This study points to several key recommendations. These study results underscore the importance of the work context in planning for and implementing organizational interventions. The work environment was characterized by a hierarchical process in which site managers reported to district managers, were dependent on senior leadership for corporate resources, and were constrained by contracts with client companies that hosted the work environment. Although the study team worked closely with site managers responsible for worksite operations, they found that many organizational changes required resources and support from decision makers at other levels. These findings highlight the need for identifying the key gatekeepers and decision makers for targeted organizational changes. Future research will also benefit from considering the increasing complexity of work relationships, especially in fissured work settings. The contributions of this study include an expanded understanding of the process of implementing an organizational intervention in a low-wage food service setting; consideration of the complexities introduced by the fissured work environment, with blurred accountability for worker health and safety; and insights into the barriers to and facilitators of the process of implementing this organizational intervention in this complex setting.

The study faced several limitations. Foremost among these was the timing of the final data collection, which was not completed due to COVID-19 shutdowns. Due to incomplete final data collection, it was not possible to analyze the process evaluation data alongside the quantitative health and well-being outcomes and to report quantitative changes in working conditions. Lacking the ability to collect final outcome data limited the conclusions drawn from this study, necessitating instead a primary focus on process data rather than on the effects of the intervention on changes in working conditions and worker safety, health and well-being, as intended. Also, sites were not equally represented in the final qualitative data collection due to site closures and worker lay-offs. Instability in sites and personnel turnover further complicated the study. Although we could never have foreseen the impact of the COVID-19 pandemic on this study and its follow-up data collection, future studies may benefit from collecting interim qualitative data collection with key stakeholders.

To support the dissemination and utilization of these findings, the research team used these experiences to illustrate the application of TWH approaches presented in a set of guidelines titled *Implementing an Integrated Approach: Weaving Worker Health, Safety, and Well-being into the Fabric of Your Organization*. (See Nagler et al 2021.) The researchers illustrated key characteristics of a TWH approach (leadership commitment; participation; positive working conditions; collaborative strategies; adherence; data-driven change); and guidance on intervention planning (engaging collaborators; planning; implementing; evaluating for improvement). The Guidelines provided a flexible and iterative process to plan the intervention to improve safety and ergonomics, work intensity, and job enrichment. Intervention approaches and materials were also shared with the corporate research partner.

This study contributes to an evolving literature on the role of the work organization in determining worker health outcomes and illustrates the application of a TWH framework in implementing an organizational intervention in the context of a participatory intervention in collaboration with a corporate partner.

B.4 What opportunities for training and professional development has the project provided?

Post Doctoral Student

Dr. Susan Peters, (BOccThy (Hons), PhD) received training and professional development through the Sodexo project since January 2017 first as a post-doctoral fellow with the Harvard TH Chan Center for Work, Health, and Wellbeing under the mentorship of Dr. Sorensen and following her promotion to Research Associate in 2019 and Research Scientist in 2021. Dr. Peters developed increased knowledge and skills in intervention design, organizational approaches to health and safety, outcome measurement, and strategies to facilitate and maintain community partnerships. This has been achieved through individual study, weekly mentorship with senior scientists and attendance at the Work, Stress and Health Conferences. She has been involved in all phases of study design including qualitative research to inform the focus on the intervention and outcomes, intervention development, and meetings with our community partner. As part of her involvement in this project, Dr. Peters led a scoping review focused on organizational interventions to improve low wage service workers' health, safety and wellbeing. This involved designing a protocol and conducting the review. She also participated in manuscript preparation.

Doctoral Students

Yasmine Bezzaz, Fulbright Fellow, pre-doctoral visiting student from 2019 – 2020 from the Faculty of Legal, Economic and Social Sciences, Rabat-Agdal Mohammed V University, Morocco participated in the project's Intervention Development and Investigator Team meetings and through the process of the development and implementation of the intervention added Total Worker Health® principles into her dissertation on the relationship between High Performance Work Practices, emotional exhaustion and disengagement from work.

Marta Pilotto, Fulbright Fellow and pre-doctoral visiting student in Comparative and European Legal Studies, University of Trento, Italy participated in this study from 2019 – 2020. Ms. Pilotto participated in the project's Intervention Development and Investigator Team meetings and through the process of the development and implementation of the intervention and added Total Worker Health® principles into her dissertation focused on the Organizational well-being in the Italian and U.S. occupational health and safety legal framework.

Hamid Roodbari, doctoral candidate at the Management School of the University of Sheffield, United Kingdom participated in this project from 2019-present. He participated with the team on the development of the implementation process tracking system. He also analyzed process tracking data and utilized the data for his dissertation work which has resulted in one published paper and a second paper in process. (See Publications).

Elisabeth Stelson, MSW, LSW, MPH received training and professional development through the Sodexo project from November 2018-July 2021 as a PhD student at the Harvard TH Chan Center for Work, Health, and Wellbeing under the mentorship of Dr. Sorensen. Ms. Stelson participated in intervention design, implementation, data collection and analysis, and manuscript writing with the Sodexo project. Through these activities and guidance from senior researchers on the team, Ms. Stelson developed increased knowledge and skills in intervention design, organizational approaches to health and safety, strategies to facilitate and maintain community partnerships, and collaborative research dissemination. As part of her involvement in this project, Ms. Stelson played a key role in the qualitative analysis of outcome data and contributed to two manuscripts accepted for publication.

MPH student

Deja Knight, MA, MPH and current doctoral student at John Hopkins Bloomberg School of Public Health received training on the Sodexo project from 2019 – 2020 while a Masters level student at the Harvard T H Chan School of Public Health. She worked under the mentorship of Dr. Sorensen and gained experience and contributed to intervention design and material development for organizational level approaches, interpretation of qualitative data, survey design, and developing interviewer administered survey administration protocols as well as field work for survey administration.

C. PRODUCTS

C.1 PUBLICATIONS

Are there publications or manuscripts accepted for publication in a journal or other publication (e.g., book, one-time publication, monograph) during the reporting period resulting directly from this award?

Yes

Publications Reported for this Reporting Period

| Public Access Compliance | Citation |
|--------------------------|--|
| N/A: Not NIH Funded | Sorensen G, Peters S, Nielsen K, Nagler E, Karapanos M, Wallace L, Burke L, Dennerlein JT, Wagner GR. Improving Working Conditions to Promote Worker Safety, Health, and Wellbeing for Low-Wage Workers: The Workplace Organizational Health Study. International journal of environmental research and public health. 2019 April 24;16(8). PubMed PMID: 31022886; PubMed Central PMCID: PMC6518251; DOI: 10.3390/ijerph16081449. |
| N/A: Not NIH Funded | Peters SE, Nielsen KM, Nagler EM, Revette AC, Madden J, Sorensen G. Ensuring Organization-Intervention Fit for a Participatory Organizational Intervention to Improve Food Service Workers' Health and Wellbeing: Workplace Organizational Health Study. Journal of occupational and environmental medicine. 2020 February;62(2):e33-e45. PubMed PMID: 31815814; DOI: 10.1097/JOM.0000000000001792. |
| N/A: Not NIH Funded | Markkanen P, Peters SE, Grant M, Dennerlein JT, Wagner GR, Burke L, Wallace L, Sorensen G. Development and application of an innovative instrument to assess work environment factors for injury prevention in the food service industry. Work (Reading, Mass.). 2021;68(3):641-651. PubMed PMID: 33612509; DOI: 10.3233/WOR-203399. |
| N/A: Not NIH Funded | Roodbari H, Nielsen K, Axtell C, Peters SE, Sorensen G. Developing Initial Middle Range Theories in Realist Evaluation: A Case of an Organisational Intervention. International journal of environmental research and public health. 2021 August 7;18(16). PubMed PMID: 34444110; PubMed Central PMCID: PMC8394353; DOI: 10.3390/ijerph18168360. |
| N/A: Not NIH Funded | Nagler EM, Stelson EA, Karapanos M, Burke L, Wallace LM, Peters SE, Nielsen K, Sorensen G. Using Total Worker Health [®] Implementation Guidelines to Design an Organizational Intervention for Low-Wage Food Service Workers: The Workplace Organizational Health Study. International journal of environmental research and public health. 2021 September 6;18(17). PubMed PMID: 34501975; PubMed Central PMCID: PMC8430617; DOI: 10.3390/ijerph18179383. |
| N/A: Not NIH Funded | Sorensen G, Peters SE, Nielsen K, Stelson E, Wallace LM, Burke L, Nagler EM, Roodbari H, Karapanos M, Wagner GR. Implementation of an organizational intervention to improve low-wage food service workers' safety, health and wellbeing: findings from the Workplace Organizational Health Study. BMC public health. 2021 October 16;21(1):1869. PubMed PMID: 34656090; PubMed Central PMCID: PMC8520284; DOI: 10.1186/s12889-021-11937-9. |

C.2 WEBSITE(S) OR OTHER INTERNET SITE(S)

NOTHING TO REPORT

C.3 TECHNOLOGIES OR TECHNIQUES

| Category | Explanation |
|----------|-------------|
| | |

| | |
|--|---|
| <p>Evaluation Instruments</p> | <p>Starting with a similar tool developed for use in healthcare, we designed a safety and ergonomics assessment instrument through a collaborative, participatory process with the our collaborating Health and Safety division. This instrument enables the identification and assessment of key safety and health factors through a focused walkthrough of the physical work environment, and structured interviews exploring the organizational work environment. The application of this instrument is described in the following study paper.</p> <p>Markkanen P, Peters S, Grant M, Dennerlein J, Wagner G, Burke L, Wallace L, Sorensen G. (2021) Development and application of an innovative instrument to assess work environment factors for injury prevention in the food service industry. WORK 68(3):641-651. doi: 10.3233/WOR-203399</p> |
| <p>Interventions (e.g., clinical or educational)</p> | <p>In our manuscript cited below, we documented how we utilized the TWH Implementation Guidelines to develop and implement an organizational intervention to improve pain, injury, and wellbeing among low-wage food services workers. The paper, useful for practitioners, provides a real-world example of how the Guidelines can be used to develop a complex TWH intervention. The application of the Guidelines is likely transferable to other industries.</p> <p>Nagler EM, Stelson EA, Karapanos M, Burke L, Wallace LM, Peters SE, Nielsen K, Sorensen G. Using Total Worker Health® Implementation Guidelines to Design an Organizational Intervention for Low-Wage Food Service Workers: The Workplace Organizational Health Study. Int J Environ Res Public Health. (2021 Sep 06); 18(17). PMID: .Manuscript ID: ijerph-1311494; doi: 10.3390/ijerph18179383 34501975</p> |

C.4 INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Have inventions, patent applications and/or licenses resulted from the award during the reporting period? No

If yes, has this information been previously provided to the PHS or to the official responsible for patent matters at the grantee organization?

C.5 OTHER PRODUCTS AND RESOURCE SHARING

| Category | Explanation |
|--------------------------------------|--|
| <p>Educational aids or curricula</p> | <p>At the request of an intervention site manager, we developed a Tip Sheet for managers on how to engage employees in TWH approaches to address conditions of work available in English and Spanish. The Tip Sheet is posted on The Harvard T.H. Chan Center for Work, Health, and Wellbeing's Resource</p> |

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|--------------------------------------|---|
| | <p>page (https://centerforworkhealth.sph.harvard.edu/resources/tip-sheets).</p> |
| <p>Educational aids or curricula</p> | <p>We provided the full intervention packet to our collaborators including front line huddle scripts, Action Planning forms, tips for managers on how to engage front line in improvements to the work environment, and forms and processes for engaging employees in more frequent job performance reviews. They expressed interest in utilizing across other non-study Business and Industry sector accounts as well as initiating in their Education sector.</p> |

D. PARTICIPANTS

D.1 WHAT INDIVIDUALS HAVE WORKED ON THE PROJECT?

| Commons ID | S/K | Name | Degree(s) | Role | Cal | Aca | Sum | Foreign Org | Country | SS |
|-------------|-----|-----------------------------|------------|---------------------------------------|------|-----|-----|-------------|---------|----|
| GSORENSEN01 | Y | Sorensen, Glorian C | BA,MPH,PHD | PD/PI | 1.0 | 0.0 | 0.0 | | | NA |
| GUNDERDA | N | Gundersen, Daniel Alexander | MA,PHD,BA | Co-Investigator | 1.0 | 0.0 | 0.0 | | | NA |
| | N | Wallace, Lorraine | | Managing Director | 4.8 | 0.0 | 0.0 | | | NA |
| | N | Benson-Whalen, Linnea | | Program Assistant | 3.0 | 0.0 | 0.0 | | | NA |
| | N | Burke, Lisa | | Intervention Development Specialist | 4.2 | 0.0 | 0.0 | | | NA |
| | N | Karapanos, Melissa | | Project Director | 6.0 | 0.0 | 0.0 | | | NA |
| ENAGLER1 | N | Nagler, Eve M | BA,MPH,SCD | Co-Investigator | 5.4 | 0.0 | 0.0 | | | NA |
| | N | Stelson, Elisabeth | | Graduate Student (research assistant) | 12.0 | 0.0 | 0.0 | | | NA |

Glossary of acronyms:

S/K - Senior/Key

DOB - Date of Birth

Cal - Person Months (Calendar)

Aca - Person Months (Academic)

Sum - Person Months (Summer)

Foreign Org - Foreign Organization Affiliation

SS - Supplement Support

RE - Reentry Supplement

DI - Diversity Supplement

OT - Other

NA - Not Applicable

D.2 PERSONNEL UPDATES

D.2.a Level of Effort

Not Applicable

D.2.b New Senior/Key Personnel

Not Applicable

D.2.c Changes in Other Support

Not Applicable

D.2.d New Other Significant Contributors

Not Applicable

D.2.e Multi-PI (MPI) Leadership Plan

Not Applicable

E. IMPACT**E.1 WHAT IS THE IMPACT ON THE DEVELOPMENT OF HUMAN RESOURCES?**

Not Applicable

E.2 WHAT IS THE IMPACT ON PHYSICAL, INSTITUTIONAL, OR INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?

NOTHING TO REPORT

E.3 WHAT IS THE IMPACT ON TECHNOLOGY TRANSFER?

Not Applicable

E.4 WHAT DOLLAR AMOUNT OF THE AWARD'S BUDGET IS BEING SPENT IN FOREIGN COUNTRY(IES)?

NOTHING TO REPORT

G. SPECIAL REPORTING REQUIREMENTS SPECIAL REPORTING REQUIREMENTS

G.1 SPECIAL NOTICE OF AWARD TERMS AND FUNDING OPPORTUNITIES ANNOUNCEMENT REPORTING REQUIREMENTS

NOTHING TO REPORT

G.2 RESPONSIBLE CONDUCT OF RESEARCH

Not Applicable

G.3 MENTOR'S REPORT OR SPONSOR COMMENTS

Not Applicable

G.4 HUMAN SUBJECTS

G.4.a Does the project involve human subjects?

Not Applicable

G.4.b Inclusion Enrollment Data

File(s) uploaded:
CumulativeInclusionEnrollmentReport.pdf

G.4.c ClinicalTrials.gov

Does this project include one or more applicable clinical trials that must be registered in ClinicalTrials.gov under FDAAA?

G.5 HUMAN SUBJECTS EDUCATION REQUIREMENT

NOT APPLICABLE

G.6 HUMAN EMBRYONIC STEM CELLS (HESCS)

Does this project involve human embryonic stem cells (only hESC lines listed as approved in the NIH Registry may be used in NIH funded research)?

No

G.7 VERTEBRATE ANIMALS

Not Applicable

G.8 PROJECT/PERFORMANCE SITES

Not Applicable

G.9 FOREIGN COMPONENT

No foreign component

G.10 ESTIMATED UNOBLIGATED BALANCE

Not Applicable

G.11 PROGRAM INCOME

Not Applicable

G.12 F&A COSTS

Not Applicable

Cumulative Inclusion Enrollment Report

This report format should NOT be used for collecting data from study participants.

Study Title:

Comments:

| Racial Categories | Ethnic Categories | | | | | | | | | Total |
|---|------------------------|------|-----------------------------|--------------------|------|-----------------------------|--------------------------------|------|-----------------------------|-------|
| | Not Hispanic or Latino | | | Hispanic or Latino | | | Unknown/Not Reported Ethnicity | | | |
| | Female | Male | Unknown/ Not Reported | Female | Male | Unknown/ Not Reported | Female | Male | Unknown/ Not Reported | |
| American Indian/ Alaska Native | | | | | | | | | | |
| Asian | | | | | | | | | | |
| Native Hawaiian or Other Pacific Islander | | | | | | | | | | |
| Black or African American | | | | | | | | | | |
| White | | | | | | | | | | |
| More Than One Race | | | | | | | | | | |
| Unknown or Not Reported | | | | | | | | | | |
| Total | | | | | | | | | | |

I. OUTCOMES

I.1 What were the outcomes of the award?

The Workplace Organizational Health Study addressed health and safety risks for low-wage workers in the food service industry by evaluating an intervention designed to improve organizational conditions of work. This proof-of-concept trial study tested the feasibility of an intervention targeting safety and ergonomics, work intensity, and job enrichment. The study was conducted in collaboration with a large, multinational company that provides food service through contractual arrangements with corporate clients, with participating worksites located in the Greater Boston area. Ten worksites were selected from 60 eligible worksites in the geographical region to participate in this study; these sites were randomly assigned to intervention or control conditions. The 13-month intervention was launched in five intervention sites in October 2018. Due to the worksite closures resulting from COVID-19 shutdowns, final data collection from frontline workers and some site managers was curtailed, and as a consequence, findings on potential improvements in working conditions and workers' safety, health and well-being are not available. Instead, the primary evaluation used process evaluation data to assess the intervention feasibility, and qualitative data to identify organizational factors contributing to or hindering intervention implementation. The intervention was tailored to each site based on understanding of the work context, work demands, and relationships. Approximately two-thirds of the planned in-person or phone contacts occurred. The research team additionally met regularly with senior leadership and district managers, who provided corporate resources and guidance. The financial pressures, competing priorities and the fast-paced work environment placed constraints on site managers' availability and limited the full implementation of the intervention. Findings underscore the need for ongoing commitment and support from both the parent employer and the host client. Although the study team worked closely with site managers responsible for worksite operations, they found that many organizational changes required resources and support from decision makers at other levels. These findings highlight the need for identifying the key gatekeepers and decision makers for targeted organizational changes. Future research will benefit from considering the increasing complexity of work relationships. The contributions of this study include an expanded understanding of the process of implementing an organizational intervention in a low-wage food service setting; consideration of the complexities introduced by contracted work environments, with blurred accountability for worker health and safety; and insights into the barriers to and facilitators of the process of implementing this organizational intervention in this complex setting. Intervention resources, disseminated with the corporate partner, illustrate the applicability of a Total Worker Health® model in implementing interventions to improve organizational conditions of work.

Publications:

Published

1. Sorensen G, Peters SE, Nielsen K, Stelson E, Wallace LM, Burke L, Nagler EM, Roodbari H, Karapanos M, Wagner GR. (Oct 2021) Implementation of an organizational intervention to improve low-wage workers' safety, health and wellbeing: Findings from the Workplace Organizational Health Study. *BMC Public Health*, 21, Article number: 1869 PMID: 33612509 DOI: 10.3233/WOR-203399
2. Nagler EM, Stelson EA, Karapanos M, Burke L, Wallace LM, Peters SE, Nielsen K, Sorensen G. Using Total Worker Health® Implementation Guidelines to Design an Organizational Intervention for Low-Wage Food Service Workers: The Workplace Organizational Health Study. *Int J Environ Res Public Health*. (2021 Sep 06); 18(17). PMID: Manuscript ID: ijerph-1311494; doi: 10.3390/ijerph18179383 34501975
3. Markkanen P, Peters S, Grant M, Dennerlein J, Wagner G, Burke L, Wallace L, Sorensen G. (2021) Development and application of an innovative instrument to assess work environment factors for injury prevention in the food service industry. *WORK* 68(3):641-651. doi: 10.3233/WOR-203399.
4. Roodbari H, Nielsen K, Axtell C, Peters SE, Sorensen G. (2021) Developing Initial Middle Range Theories in Realist Evaluation: A Case of an Organisational Intervention. *Int J Environ Res Public Health*;18:8360.
5. Sorensen G, Peters SE, Nielsen K, Nagler, E, Karapanos M, Wallace L, Burke L, Dennerlein JT, Wagner GR. (2019 Apr 24) Improving Working Conditions to Promote Worker Safety, Health and Wellbeing for Low-Wage Workers: The Workplace Organizational Health Study. *Int J Environ Res Public Health*;16(8). pii: E1449. doi: 10.3390/ijerph16081449. PMID: PMC6518251.
6. Peters SE, Nielsen KM, Nagler EM, Revette AC, Madden J, Sorensen G. Ensuring Organization-Intervention Fit for a Participatory Organizational Intervention to Improve Food Service Workers' Health and Wellbeing: Workplace Organizational

Health Study. J Occup Environ Med. (2020) Feb;62(2):e33-e45. Doi 10.1097/JOM.0000000000001792. PMID: 31815814.

In Preparation

7. Roodbari, H., Nielsen, K., Axtell, C., Sorensen. G. 'Testing Middle Range Theories in Realist Evaluation: A Case of an Organisational Intervention'. Targeted Journal: International Journal of Workplace Health Management.

Dissertation work: The Roodbari papers listed above were prepared as part of the dissertation work by Hamid Roodbari through the Management School of the University of Sheffield, United Kingdom.