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Pulling the Tap: Examining Ergonomic Intervention on Bartenders Experiencing Occupational Deficits

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A Doctoral Experiential Capstone Project Final Report

Presented to the Faculty of Western New England University

In Partial Fulfillment of the Requirements for the

Entry-Level Doctorate

in

Occupational Therapy

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by

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July 2024

Pulling the Tap: Examining Ergonomic Intervention on Bartenders Experiencing Occupational Deficits

A Doctoral Experiential Capstone Project Final Report

By

Makayla Descault, OT/s

July 2024

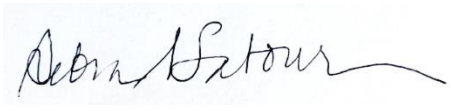
APPROVED BY:

_____ __7/19/24___

Dr. Erin Murray, OT, OTD-PP, OTR/L Date

Faculty Mentor

APPROVED BY:



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Debra Latour, OT, PP-OTD, M.Ed., OTR, FAOTA 7/23/2024

Doctoral Experiential Coordinator Date

Abstract

Musculoskeletal disorders causing chronic pain has become a growing issue in the brewing industry and has caused workers to be prone to musculoskeletal disorders (MSDs) and chronic pain. The explanation for this trend is due to engagement in repetitive motions such as lifting heavy or awkward objects, reaching, standing, bending, or twisting repetitively. Long term, these injuries can negatively impact occupational engagements outside of work. Current literature indicates that ergonomic educational programs can reduce musculoskeletal injuries for workers and be cost effective for small businesses. Data gathered from previous case studies related to breweries and ergonomic programs was used to deconstruct the positive correlation between workers in the brewery industry and improved productivity due to modifications in their body mechanics and strengthening and stretching routines. The implementation of an ergonomic program is largely attributable to changes in staff productivity and reducing susceptibility to injury.

This doctoral experiential capstone project was conducted with a focus on the implementation of ergonomic education, including preventative strategies and environmental modifications, to help reduce brewery workers' susceptibility to musculoskeletal disorders. The study evaluated the effectiveness of an online ergonomic intervention of front of house employees in breweries from across the United States of all differing ages and brewery experience. This research will allow for current and future students to learn about occupational therapy's role in ergonomics within the work environment and serve as an additional experiential learning opportunity. The overarching goal of the doctoral capstone was to evaluate the effectiveness of an online ergonomic program for front of house staff in breweries through the implementation of ergonomic intervention including preventative strategies and environmental modifications to help reduce brewery workers' susceptibility to musculoskeletal disorders and occupational deficits.

Introduction/Background

Introduction

For employers, ergonomics is an important consideration when designing the workplace environment for employees. Oguns (2023) found that there was correlation between improved productivity and ergonomics, as well as an improvement in mental health for employees working desk jobs and with repetitive upper body movements. The seminal article by Resnick & Zanotti (1997) found that employees benefited from ergonomic improvements in their work environment through modifications of workstations which in turn improved productivity. Deouskar (2017) also determined that ergonomics played a significant role in the workplace for employees and influenced physical and mental wellbeing. While the research supports the effectiveness of ergonomic intervention, there is a lack of educational opportunities provided in the workplace, specifically for front of house employees in the breweries.

In 2011, Ramsey et. al. published an evaluation report of a brewery in Colorado on behalf of NIOSH due to concerns of poor ergonomics and MSDs with their canning employees. The researchers recommended environmental adaptations, workstation adjustments, and ergonomic education for managers and employees. They also found that employees did not feel the brewery provided sufficient ergonomic training nor did employees take active steps to engage in training activities resulting in decreased levels of participants for safety training. This lack of engagement in proper body mechanics is due to the gap in care of educational opportunities related to ergonomics in the workplace.

As employees continue to work using improper body mechanics, they tend to see an increase in the number of reported work-related pain and injuries. These changes in health can have an impact on the work performance and productivity within the work environment, as well

as the employees' engagement in occupations outside of work. If employees are provided with educational opportunities related to ergonomics prior to their work experience, their susceptibility to musculoskeletal disorders can be decreased. Occupational therapy practitioners are capable of addressing these and providing education to fill the gap within the brewing industry.

Transtheoretical Model (TTM)

The transtheoretical model (TTM) was utilized throughout the development of the doctoral experiential capstone process. This model uses six stages of change that unfolds over a period of time. During the early stages of change, individuals apply cognitive and evaluation processes in order to progress forward. During the later stages, conditioning and environmental controls support the move to termination. While progression through these stages can occur linearly, it is common for individuals to recycle through the stages or regress to earlier stages from later ones (Transtheoretical Model of Behavior Change, 2022) before making a behavior change. This ability of moving back and forth between stages allows for a personalized approach.

This model was chosen based on the overarching goal of promoting intentional behavior change. The researcher created educational material to be delivered to the participants as the preparation stage where the participant can use the tools and strategies as a guide to take the next step into action. By providing the participants with educational strategies, the researcher is promoting the behavior change of using proper body mechanics, to eventually sustain those behaviors and reduce the susceptibility to musculoskeletal disorders.

Doctoral Experiential Project Overview

The Doctoral Experiential (DEx) Capstone is the final component of the Doctor of Occupational Therapy (OTD) program for students at Western New England University. Over a fourteen week period, students apply the knowledge and skills that they gained throughout their

academic courses and fieldwork experiences to design and implement a community experiential and scholarly project that meets the needs of a population and/or community partner organization. The DEx capstone is composed of two parts: the community experiential and a scholarly project.

Experiential Component

The community experiential component of the capstone entailed developing and implementing an online ergonomic educational program for front of house brewery employees to increase their reported knowledge of ergonomics in order to reduce their susceptibility to musculoskeletal disorders and in return decrease occupational deficits. The program included three lessons: Ergonomics 101, Environmental Adaptations, and Preventative Strategies. Ten checkpoint questions were formulated to assess competency throughout the modules. The researcher also created a pretest and posttest survey that was taken by the participants before the educational module was completed, and immediately after the module was finished. The pretest contained sixteen multiple-choice questions and the posttest included seven questions with an additional section for feedback. Both the pretest and posttest included questions to evaluate the participants level of ergonomic knowledge, strategies they use in the workplace to reduce risk for musculoskeletal disorders, how often they consider proper body mechanics when engaging in work-related tasks, and to determine the effectiveness of the ergonomic module. Refer to Appendix M for more information on the Pre-Test and Appendix N for more information on the Post-Test. This program can be implemented and used within the brewing industry as an educational tool and to help reduce the susceptibility for musculoskeletal disorders and occupational deficits. Additional information related to the educational module has been redacted at this time due to submission for publication and hosting of the program on the Brewer's Association. Refer to Appendix Q for more information.

The community experiential capstone project also included a presentation to the rehabilitation department at Gaylord Hospital. This presentation involved a thorough report on the doctoral experiential capstone overview, the researcher's development and goals of the capstone project, and the relevance and importance of ergonomics within the rehabilitation setting. This presentation was meant to further the researcher's research and educate additional populations and settings on the importance of ergonomics in the workplace. Refer to Appendix P for more information.

Scholarly Component

The scholarly component of the doctoral experiential capstone project is multifaceted as well. The researcher performed task analyses utilizing the Rapid Entire Body Assessment (REBA) as a tool to evaluate the risk for musculoskeletal disorders that are associated with specific job tasks. The researcher used the REBA to assess two different job tasks of front of house brewery employees: pouring beer using a tap handle and managing a cash register. The information gathered during this phase was used to help guide the work-tasks to focus on when creating the educational module. Refer to Appendix O for more information.

The researcher also developed a survey that consisted of fourteen multiple-choice questions, with an "other" option to allow write-in responses if needed. The survey was administered to gather background data on participants' demographics, knowledge of ergonomics, strategies they currently use in the workplace, the impact of work-related pain on occupations both during and outside of work, if they had taken any ergonomic training courses previously, and areas that they felt they needed additional information related to ergonomics. Participants rated their level of ergonomic knowledge on a scale of 1-5, with the following interpretations: 1 - no knowledge, 2 - feel somewhat knowledgeable, 3 - feel knowledgeable, 4 - feel more

knowledgeable, 5 - feel very knowledgeable. This survey was intended to gather information and use the data to develop educational ergonomic modules that related to the needs of the industry based on the initial survey results. Refer to Appendix L for more information.

Discussion and Recommendation

Results

The research examined the effect of the ergonomic educational program on the level of ergonomic awareness among front of house brewery workers, as well as the likelihood of occupational deficits due to work-related pain or injury. The findings of this study support the effectiveness of an educational program enhancing brewery workers' knowledge related to ergonomics in the workplace.

The quantitative findings from the survey indicated that there was a correlation between work-related pain and occupational deficits due to work-related pain, as well as a correlation between receiving training and ergonomic knowledge. However, this was only true if participants reported working both jobs, as a front of house employee, as well as a brewer. If a participant only worked strictly as a front of house employee, there was no relationship between experiencing work related pain and that pain causing occupational deficits outside of the workplace. From this data, the researcher can infer that individuals who work both jobs may also be working in a small brewery or overexerting themselves due to multiple job roles they have to fill.

The qualitative findings from the survey indicated that environmental aspects that impacted work performance and/or increased/caused pain the most was location of heavy objects followed by location of machinery, type of flooring, and placement of items such as glassware. It can be inferred that location of heavy objects or items placed too high or too low to the ground requires

consistent bending below the waist and reaching above shoulder height which can lead to increased pain/injury.

An additional item of interest was found when coding the "additional comments" write in section of the survey. 10 participants submitted additional comments, the majority of which were related to an interest in learning more about ergonomics. However, one comment stated that, "body aches are pretty standard" and another stated that, "a lot of this is just common sense in this industry." These comments display a possible need for a shift in the mindset regarding the culture of health and wellness for brewery staff. Further research should be conducted on this topic to gather more data.

During the task analysis and Rapid Entire Body Assessment (REBA), approximately forty beers were poured, and the electronic cash register was used eighteen times during the evaluation. Both tasks were found to be of medium risk for developing a musculoskeletal disorder and the repetitive nature of these tasks shows the importance of having them addressed during the educational program for front of house brewery employees.

Strengths

There were several strengths throughout the capstone project. The educational program was designed for applicability and potential for sustainability among workers in the brewing industry. The program targeted areas of knowledge that were reported by the population as areas where they could use valuable strategies and resources. By providing brewery workers with the gap in knowledge, the program has potential for impacting the industry and reducing risk for musculoskeletal injuries. The reports of increased level of ergonomic awareness and likelihood of applying the strategies to their everyday job routine can lead to reduced work-related pain/injury, improved work performance and productivity, and sustained engagement of ergonomic practice

within the workplace. Providing brewery owners/managers with educational resources is also a strength. The educational program provided participants with knowledge on the concept of ergonomics, as well as preventative strategies and environmental modifications to help improve proper body mechanics and reduce the risk of musculoskeletal injuries in the brewery. These resources can now be used as valuable references and tools for workers to directly apply these strategies into their everyday job routine.

Limitations

There were three limitations identified from the project: number of participants, time constraints, and the application used for the educational module. For the initial survey, the researcher received sixty-one responses, which is a strength for the program. However, for the educational module, only two participants initiated the program, with only one fully completing all components. Having a small sample size may have limited the generalizability of the findings.

Time constraints could have also impacted several aspects of the capstone project. The researcher only had a total of fourteen weeks to complete the entire capstone project. This only allowed for the survey and educational program to be accessible to the targeted population for a short period of time. Access to the education program was only given for a total of four weeks. Having additional time to complete the program could have allowed for stronger outcomes or more time for the researcher to recruit for a wider range of possible participants.

The third limitation includes the application used to complete the educational module. Once publishing the ergonomic course on Edapp, it was brought to the researcher's attention that participants were required to download the Edapp application onto an electronic device and create an account in order to complete the module. This prerequisite may have limited the opportunity for a larger sample size.

Recommendations

Based on the significant reports from community members of the impact the educational modules had on their knowledge and applicability to their settings, there needs to be educational opportunities for ergonomic related training within the brewing industry. There is a lack overall for current services that relate to this unique population.

One recommendation is using the educational module in the breweries as an orientation training for employees. Whether employees have received previous training or not, this educational tool can be used as a refresher or as a guide for new strategies or tools in the workplace.

A second recommendation is posting a QR code of the educational module around the brewery as a resource for employees to refer to when they might be experiencing exacerbated pain or new injuries. This reference can guide employees in using proper body mechanics around the entire work setting.

Online ergonomic programs may be an effective method of improving the knowledge of brewing staff on preventative strategies and environmental adaptations; however more research needs to be done on the long term impact of ergonomic programs and a decline in development of MSDs. Occupational deficits may be improved indirectly through an ergonomic program as well but this will require a research study with fewer time constraints and the ability to track participants for an extended period of time.

Learning Outcomes

Throughout the doctoral experiential capstone project, the researcher has grown tremendously in her research abilities, as well as her clinical skills related to ergonomics not only within the targeted population of brewery employees, but for all populations and settings. The

researcher has familiarized herself with the components to delivering an ergonomic assessment to assess the risk for musculoskeletal disorders, how to interpret the results of the assessment to design and implement client-centered interventions, and how to deliver educational resources to different populations both virtually and in-person. As the program progressed, several changes were made to meet the needs of the population, such as the materials and education delivered in the educational modules to provide tools and resources that were most beneficial to employees based on their reported needs. The researcher's passion and dedication to continue to further her research and knowledge shows in her future career path and continued delivery of presentations in future events and conferences.

Learning Objective 1

"The researcher will demonstrate proficiency in delivering health and wellness education regarding reaching for workplace items and bottling/canning in the workplace environment using proper body mechanics through a developed ergonomics program to decrease incidence of work-related pain and injury."

In order to create a health and wellness program for the targeted population of front of house employees within breweries, the researcher conducted a needs assessment and thorough literature review. As part of the needs assessment, the researcher developed a survey that was sent out to the state guilds in order to collect demographic data, as well as direct responses from brewery employees regarding how much knowledge they currently had related to ergonomics, and the areas where they felt they still needed additional information or tools within the workplace. Using the information gathered from both the literature review and the survey, the researcher created an ergonomic module specific for the population and needs of the community. This module contained three lessons, each providing education on the overall concept of ergonomics, modifications within

the workplace, and preventative strategies to reduce susceptibility of musculoskeletal disorders. These lessons were specific to modifying the work environment for front of house employees in the brewery to create a safe, ergonomic appropriate environment. By the end of the module, all participants reported that the information provided was one-hundred percent applicable to their job role and setting.

Learning Objective 2

"By the end of the ergonomics program, participants will demonstrate increased participation in work-related tasks (e.g. bottling/canning, extended periods of standing) due to decrease levels of pain while engaging in work tasks and use of best practices for proper ergonomics, lifting, bending, and reaching techniques as measured by a pre / post questionnaire."

The researcher developed a post questionnaire to be completed by the participants after completing all three lessons of the ergonomic module. This posttest was created as a tool to evaluate the effectiveness of the ergonomic educational module for front of house employees within the brewery. After complete review and coding of the post questionnaire, it was found that all participants reported increased likelihood to apply the new knowledge and education to their everyday work routine. These results support that the ergonomic educational module was effective in increasing employees' reported likelihood to apply ergonomics to their everyday work routine in order to help reduce their susceptibility to musculoskeletal disorders.

Learning Objective 3

"By the end of the ergonomics program, participants will demonstrate increased knowledge of ergonomics by identifying and incorporating proper body mechanic techniques for specific work-related tasks as measured by a pre / post questionnaire."

The researcher developed a post questionnaire to be completed by the participants after completing all three lessons of the ergonomic module. This posttest was created as a tool to evaluate the effectiveness of the ergonomic educational module for front of house employees within the brewery. After complete review and coding of the post questionnaire, it was found that all participants reported an increased level of knowledge when compared to the prequestionnaire. The participants also reported specific strategies/tools that they learned from the educational module, listing a new strategy from each of the three lessons. These results support that the ergonomic educational module was effective in increasing front of house employees' reported level of knowledge related to ergonomics.

Learning Objective 4

"The researcher will develop and deliver an in-service to the rehabilitation department at Gaylord Hospital related to the capstone project and the relation of ergonomics specific to the rehabilitation setting."

After thorough review of the literature including ergonomics, the population of front of house employees in breweries, and the needs of the population, as well as development of the capstone project, the researcher created a PowerPoint presentation that was delivered to the rehabilitation department at Gaylord Hospital. This presentation included concepts such as an overview of the doctoral capstone process, the development and goals of the researcher's capstone project, and how the topic of ergonomics relates to the rehabilitation department and how it can be used in their work setting. The goal of this presentation was to further the research on the targeted population related to ergonomics and provide education on occupational therapy's role on ergonomics within the workplace, and hopefully further the use of proper body mechanics in

additional work settings outside of the researcher's targeted population in order to reduce susceptibility to musculoskeletal injuries among all populations and settings.

Additional Information

Please use the following link to view the student's e-portfolio: https://sites.google.com/view/makayla-descault-ots/home

Appendices

Please see the following appendices for more information about important aspects of the doctoral experiential capstone process:

Appendix A: Mentorship Agreement

Appendix B: Memorandum of Understanding

Appendix C: Institutional Review Board (IRB) Submission Form

Appendix D: Institutional Review Board (IRB) Appendices

Appendix E: Institutional Review Board (IRB) Amendment Form

Appendix F: Institutional Review Board (IRB) Amendment Appendices

Appendix G: Institutional Review Board (IRB) Approval Form

Appendix H: Doctoral Experiential Short Proposal

Appendix I: Needs Assessment

Appendix J: Literature Review

Appendix K: Final Learning Objectives & Evaluation

Appendix L: Initial Survey

Appendix M: Pre-Test Questionnaire

Appendix N: Post-Test Questionnaire

Appendix O: The Rapid Entire Body Assessment (REBA)

Appendix P: Presentation to Rehabilitation Department at Gaylord Hospital

Appendix Q: Manuscript Receipt

Appendix A

Division of Occupational Therapy Western New England University Doctoral Experiential Capstone Mentorship Agreement

Doctoral Student: Makayla Descault, OT/s
Doctoral Experience Site: Western New England University
Site Mentor: Nikki Lavery, OTD, OTR/L, CKPD, CEAS
Faculty Mentor: Erin Murray, OT, OTD-PP, OTR/L

This Mentorship Agreement is effective April 8, 2024 by and between the above named Occupational Therapy Doctoral (OTD) student, Doctoral Experiential Site Mentor, and the Western New England University OTD Faculty Mentor. The following lists the learning objectives for (student), the supervision/mentoring plan, and the responsibilities of all parties involved.

Doctoral Experiential Learning Objectives:

Upon completion of the OT Doctoral Experiential Capstone project, OTD Students will demonstrate, through observed professional interactions and through reflective and professional writing, that they have become self-aware, self-determined learners, competent entry-level practitioners, and transformative leaders, as measured by:

1. Documentation of their experience in collaboration for program or service delivery with professionals and/or members of consumer groups who are not occupational therapists. This includes being able to negotiate the role of occupational therapy as part of an interprofessional team.

2. Documentation of a needs assessment for a particular population and using said assessment as the foundation for planning a successful Doctoral Experiential Capstone project. Additional evidence will include feedback from consumers that indicates the impact of the project on the population they represent.

3. Demonstration of proficiency with the use of personal computers, learning platforms, electronic health records and assistive technology sufficient to fully document the Doctoral Experiential for WNE as well as for members of the population served by that project.

4. Recognition and description of the diverse systems of service delivery that are most cost-effective and considerate for health, social, and educational settings, both traditional and nontraditional. Through both clinical and reflective writing, sensitivity to cultural, linguistic, and other diversities and the ability to describe solutions for care disparities.

5. Documentation of the ability to work with others to identify meaningful objectives, organize, manage, and motivate people and resources, communicate effectively, and oversee action to accomplish stated program or service goals.

6. Articulation of the therapeutic/clinical reasoning (procedural, interactive, narrative, ethical, scientific, pragmatic) process used during planning, delivery, and evaluation of population-based and evidence-driven occupational therapy services through both clinical and reflective writing. Demonstration of the ability to implement, in existing programs, and plan for in developing programs, an occupational therapy process that is occupation-based, client-centered, culturally sensitive, and ethically appropriate.

7. Documentation of experiential and scholarly projects that reflect the literature in the field and that use responsive, ethical methods. The scholarly process and results should be accessible to the college and the community, especially to the population served by the project. A report of the project, presented in a professional format that others can replicate or build upon, will be evidence of accomplishment.

8. Articulation of a clear awareness of their own personal and professional strengths and boundaries and identify supports and strategies for goal achievement through both clinical and reflective writing.

Doctoral Experiential Capstone Group and/or Individual Learning Objectives:

WNE OTD students participate in a group mentorship/supervision model in which a small group of students work together with a faculty mentor to develop, implement, and evaluate individual Doctoral Experiential Capstone projects which focus on a specific topic, population, and/or setting. Group objectives, which address the desired outcomes of all of the group members' individual Doctoral Experiential Capstone projects, may be written. These are optional. Individual student learning objectives are written by each student based on a literature review and needs assessment, consultation and planning with their site, faculty, and peer mentors. These objectives are specific to each individual Doctoral Experiential Capstone project. They identify the desired outcomes of this student's Doctoral Experiential Capstone project are:

9. The researcher will demonstrate proficiency in delivering health and wellness education regarding reaching for workplace items and bottling/canning in the workplace environment using proper body mechanics through a developed ergonomics program to decrease incidence of work-related pain and injury.

10. By the end of the ergonomics program, participants will demonstrate increased participation in work-related tasks (e.g. bottling/canning, extended periods of standing) due to decreased levels of pain while engaging in work tasks and use of best practices for proper ergonomics, lifting, bending, and reaching techniques as measured by a pre / post questionnaire.

11. By the end of the ergonomics program, participants will demonstrate increased knowledge of ergonomics by identifying and utilizing 3 proper body mechanic techniques they use every day in their specific work-related tasks during the workday as measured by the pre / post questionnaire.

12. The researcher will develop and deliver an in-service to the WNE OTD students related to ergonomics and the changes recorded from the pre / post questionnaire obtained at the end of the research.

Doctoral Experiential Capstone Management/Supervision Plan:

- The student will be mentored and supervised by the site mentor and the faculty mentor.
- The student will only participate in activities as assigned by the site or faculty mentor.
- If the student is providing skilled occupational therapy services, the supervision guidelines for the provision of occupational therapy services by students for each particular state is required.
- If the site mentor is not available to supervise the student on a particular date, the site and mentor will provide a replacement supervisor for that particular time period.
- The student may spend additional time at other locations within the site organization as
- assigned by the site mentor.
- This is a 560-hour doctoral experience. At least 80% of those hours must be spent at the Doctoral Experiential Capstone project site. Any unexcused absences must be made up to get to 560 hours to ensure successful completion of the doctoral experience. This must be arranged with the site mentor and approved by the faculty mentor.
- Any concerns should be brought to the attention of the faculty or site mentor. If they are not able to be resolved, they should be brought to the attention of Debra Latour, Doctoral Experiential Capstone Coordinator, debra.latour@wne.edu or 413-782-1449.
- Responsibilities of all Parties: Verifying the hours the student completed.

The Doctoral Experiential Capstone Student is responsible to:

- Complete all required academic classes and fieldwork prior to beginning the Community Experiential portion of the Doctoral Experiential Capstone project;
- Develop and maintain a structure for working with their team to conduct and complete their Doctoral Experiential Capstone project. This should include clearly delineated responsibilities and timelines, both individual and group;
- Actively participate in all aspects of the Doctoral Experiential, including:
    - Developing a proposal and work plan;
    - Negotiating a community partnership specific to each individual project;
    - Finding and using appropriate resources;
    - Completing all necessary forms and assurances;
    - Arranging and maintaining communication systems for regular information and consultation with your faculty and community mentor(s);
    - Obtaining IRB review and approval as needed;
    - Collecting, managing, and analyzing of data as proposed;
    - Preparing and presenting a final portfolio format report of project outcomes/findings.
- Arrange for transportation, housing, as needed to conduct the Doctoral Experiential Capstone project;

- Complete 560 hours (14 weeks full-time) of doctoral experience, at least 80% of which (448 hours) must be completed at the doctoral experience site. Any unexcused absences must be made up to get to 560 hours to ensure successful completion of the doctoral experience. This must be arranged with the site mentor and approved by the faculty mentor.
- Comply with all laws, policies, and procedures of the Doctoral Experiential Capstone site, the Doctor of Occupational Therapy Program, Western New England University, state licensure boards, and the American Occupational Therapy Association;
- Demonstrate the standards of professional behavior outlined in this WNE OTD student manual, including HIPAA/FERPA, OSHA, patient rights and the AOTA Code of Ethics;
- Assume a leadership role for the Doctoral Experiential Capstone, demonstrating respectful interaction and communication with fellow students, community partners, faculty and community mentors and other individuals who are part of the Doctoral Experiential;
- Demonstrate a professional approach to the Doctoral Experiential Capstone, including effective time management, observing deadlines, initiating, reading and responding to communications from the Doctoral Experiential Capstone team and other members of the OTD Program and WNE, and taking responsibility for your own skills and career development;
- Evaluate the Doctoral Experiential Capstone supervisors and site to help continue to improve educational outcomes.

<u>The Doctoral Experiential Capstone Faculty Mentor is responsible to:</u>

- Coordinate Doctoral Experiential Capstone group supervision meetings with students who have registered for the assigned Doctoral Mentorship sections
- Oversee the conceptualization and development of each group members Doctoral Experiential Capstone proposal, including oversight, review, final approval and grading of the implementation project;
- Participate in recruitment of and negotiation with community partners regarding site and mentorship agreements and detailed plans for roles, responsibilities, schedules and communication plans for the Doctoral Experiential Capstone project;
- Communicate and provide feedback regularly to the team, especially the students, in person, or via Skype, telephone, email or other methods;
- Collaborate with site mentor and leadership team on any concerns regarding student performance, site management, etc.;
- Oversee the implementation of the Doctoral Experiential Capstone project work plan using evidence-based mentoring and teaching strategies;
- Support, review and finally approve the report and presentation of the project outcomes and findings, and grading of the implementation course.

<u>The Doctoral Experiential Capstone Site Mentor is responsible to:</u>

- Agree to work with Western New England University OTD program, including the identified faculty mentor and OTD student(s) for the duration of the Doctoral Experiential Capstone project, including providing site orientation and delineating mentorship responsibility at their community/agency site location(s);

- Collaborate with the faculty mentor to guide the student(s) through the needs assessment component of the project proposal, to oversee its implementation and to collaborate in managing any problems which may arise;
- Provide guidance on the logistics of completing the Doctoral Experiential Capstone project at the site, including scheduling for the student, on-site support and supervision, and arranging access to necessary resources;
- Collaborate with the faculty mentor to evaluate the student team's on-site performance, and final project report and presentation;
- Actively participate in regular communication with the other OTD students in your group and your faculty mentor in person, virtually (Skype, Adobe Connect, etc.), by email or other means, including giving both verbal and written feedback on implementation and documentation;
- Develop and maintain a system for documenting students' experiential hours on site and the tasks and activities accomplished during those hours (as identified in the work plan);
- Provide a written evaluation (in a format provided by the WNE OTD program) of each student's work, including on and off-site activities for the doctoral experiential, at midterm and at the end of the experiential.

<u>The Doctoral Experiential Capstone Coordinator is responsible to:</u>

- Develop Doctoral Experiential Capstone Policies and Procedures;
- In consultation with the WNE Attorney, develop and negotiate the Doctoral Experiential Memorandum of Understanding/Agreement;
- Review the CV, resume and supporting documents to verify that the site mentor is qualified to serve. This ensures that the student is mentored by an individual with expertise consistent with the student's area of focus. This individual may or may not be an occupational therapist.
- Coordinate and collaborate with University, College, Department, and Program administrators, faculty and staff to assure that the Doctoral Experiential Program follows the appropriate rules and procedures;
- Plan and convene Doctoral Experiential meetings including training;
- Develop and maintain communication systems for collaboration and accountability
- Oversee the Doctoral Mentorship and Experiential courses;
- Oversee the development and presentation of Doctoral Experiential portfolios;
- Evaluate and report the outcomes of the Doctoral Experiential.

By signing this agreement, all parties agree to the provisions above.

Site Mentor Dr. Nicole Lavery, OTD, OTR/L, CKTP, CEAS	Date
Nicole L. Lavery, OTD, OTR/L	2/6/2024
Student Makayla Descault, OT/s	Date:
Makayla Descault, OT/s	1/19/2023
OTD Faculty Mentor Erin Murray, OT, OTD-PP, OTR/L	Date
	1/3/24
Doctoral Experiential Capstone Coordinator Debra Latour, OT, PP-OTD, M.Ed., OTR	Date 1/22/24
Debra L Latour	

Appendix B

DEPARTMENT OF OCCUPATIONAL THERAPY
DOCTORAL EXPERIENTIAL CAPSTONE
AGREEMENT Memorandum of Understanding

Doctoral Student(s): Makayla Descault, OT/s (a "Student")
WNE OTD Faculty Mentor: Erin Murray, OT, OTD-PP, OTR/L (the "Faculty Mentor")
Doctoral Experiential Site: Western New England University
Site Mentor: Dr. Nicole Lavery, OTD, OTR/L, CKTP, CEAS (the "Site Mentor")
Doctoral Experiential Capstone Coordinator: Debra Latour, OT, PP-OTD, M.Ed., OTR (the "Capstone Coordinator")

This Agreement (the "Agreement") is made and effective as of April 8, 2024, by and among the above-named Student, Faculty Mentor, Site, Site Mentor, Capstone Coordinator and Western New England University, College of Pharmacy and Health Sciences, Division of Occupational Therapy (the "University").

Recitals

The University offers a Doctor of Occupational Therapy (OTD) degree program that requires an advanced doctoral experiential project as part of the graduate curriculum. This advanced doctoral experiential project includes both experiential (practicum) and scholarly components. In order to ensure that its students meet the requirements for the degree of Doctor of Occupational Therapy and occupational therapy licensure in the United States, the University has established the OT Doctoral Experiential Capstone project (the "Project"). This Agreement pertains only to the Project.

The Site is the operator of one or more facilities in which such educational experiences presently exist or may be developed. The University and the Site desire to establish a relationship pursuant to which the University shall identify the Site as an appropriate setting for such training, and select students enrolled in the OTD program for placement with the Site for the purpose of completing a Project, upon the terms and conditions hereinafter set forth. The Site is willing to identify one or more of its employees with appropriate professional credentials and experience to serve as Site Mentors and to accept the Student for the purpose of facilitating the Project.

Terms

In order to accomplish the foregoing purposes, and for good and valuable consideration, the parties hereby agree as follows:

1. **Description of Project.**

    a. The Project will be 14 weeks in duration (560 hours) and will occur while the Student is registered for the courses OTD 780 Doctoral Experiential 4: Implementation/Capstone and OTD 785 Doctoral Experiential 4: Mentorship,

which are part of the University's OTD curriculum. The Project may be completed on a full or part-time basis consistent with the individualized specific objectives of the OTD Doctoral Experiential Capstone Mentorship Agreement (Appendix A). No more than 20% (112 hours) of the 560 hours may be completed outside of the defined mentored practice setting(s).

b. Students enrolled in OTD 780 and OTD 785 have not completed their OTD education and are only qualified to participate in a volunteer capacity. No direct care occupational therapy services may be provided by Students unless a licensed occupational therapist is providing supervision in accordance with applicable law, including 259 C.M.R. 3.00.

c. The Faculty Mentor and the Site Mentor will be University employees. The Faculty Mentor and Site Mentor shall not be eligible for or entitled to any additional compensation and or benefits for their services rendered in connection with this Agreement. The Capstone Coordinator will arrange and confirm assignment and placement of each Student with the Faculty and Site Mentors.

d. Refer to the attached Mentorship Agreement (Appendix A) that details the general student learning objectives and up to four (4) individual learning objectives as agreed upon by the Student, Faculty Mentor and Site Mentor.

2. Obligations of the University, Faculty Mentor and Capstone Coordinator.

a. The University shall assume and maintain full responsibility for the administration of its Division of Occupational Therapy, including Program planning, curriculum design and courses.

b. The University shall coordinate with the Site in developing the details of the Project, including course and Project outlines and objectives, Project dates and deadlines, and the Student(s) assigned to the Site. The University will designate a Capstone Coordinator and Faculty Mentor to work with the Site and Site Mentor(s) to coordinate the Project.

c. The University shall provide an orientation and make available ongoing education to the Site and Site Mentors. Site Mentors shall have expertise consistent with the Student's area of interest and may include occupational therapists, health care practitioners, education professionals, administrators, and policy experts. The University will make available to all Site Mentors the OTD Doctoral Experiential Manual and the Mentorship Agreement.

d. The University will inform Students of their responsibility to follow all rules, regulations, policies, and procedures of the Site, those contained in the Division of Occupational Therapy Student Handbook, and all applicable federal and state laws.

e. The University will appoint the Site Mentors as Adjunct Instructors of Occupational Therapy. However, the Site Mentors shall not be employees of the University, shall

not be eligible for compensation or benefits from the University and shall remain employees of the Site at all times.

f. The Capstone Coordinator will assign Students to the Site only after all appropriate immunizations, background checks, training, and all other Site requirements have been met.

g. The University will secure and maintain appropriate general and professional liability insurance covering the activities of the Student and the Faculty and Site Mentors with respect to their activities at the Site, with limits of at least $1,000,000 per occurrence and $3,000,000 annual aggregate, with insurance carriers or self-insurance programs covering the University and its employees. The University shall promptly notify the Site of any cancellation or termination of such insurance. The Site and Students are responsible for any additional professional liability insurance or other insurance that they may wish to purchase on their own.

h. The University will ensure that each Student has satisfied the health insurance requirements of the University and the Division of Occupational Therapy prior to assignment to the Site.

i. The University will instruct Students in applicable privacy laws, including the Health Insurance Portability and Accountability Act of 1996 (HIPAA), prior to assignment to the Site and as outlined in the OTD Student Handbook.

j. The University will withdraw a Student from the Site if, after consultation with the Site, the Faculty Mentor, Capstone Coordinator and the Chair of the Division of Occupational Therapy, the University determines such action to be warranted.

k. The Capstone Coordinator will investigate any issue related to the Faculty Mentor, the Site, the Site Mentor, or the Student that is deemed to be impacting the Project and take such corrective action as it deems appropriate in its discretion.

l. The Capstone Coordinator will provide the Site with a copy of the Mentorship Agreement (sample attached) with dates of placement and names and contact information for the Faculty Mentor, Site Mentor and Student for each Student assigned to the Site.

3. Obligation of he Site and Site Mentor.

a. The Site shall work with the University and the Student to accomplish the objectives of the Project. This shall include the development and approval of a Project Proposal which outlines the experiential and scholarly components of the Project. The Site shall provide facilities, equipment, services, and personnel deemed appropriate for each Student to complete the Project. The University will provide individualized objectives for each Student assigned to the Site.

b. The Site and Site Mentor shall supervise each Student's work and provide written and other evaluations of each Student as reasonably requested by the University and as required by the University's accrediting bodies.

c. The Site shall assign a Site Mentor who is appropriately licensed and experienced to provide appropriate guidance and supervision of the Student and the Project.

d. The Site and Site Mentor shall collaborate with the Faculty Mentor and Student to guide each Student through the needs assessment component of the Project Proposal; provide guidance on the logistics of completing the Project; prepare the final Project report and presentation; actively participate in regular communication with the Student and Faculty Mentor; and develop and maintain system for documenting the Student's experiential hours at the Site and the tasks and activities accomplished during those hours (as identified in the objectives).

e. The Site will inform the Student and the University of any rules, regulations, policies, and/or procedures of the Site with which the Student and/or the University must comply.

f. The Site will permit the Student to access all appropriate personnel, facilities, equipment, supplies, services, and patient records necessary to fulfill the Project objectives.

g. The Site and Site Mentor shall provide the Student with opportunities to participate in the learning environment which may include grand rounds, specialty clinics, office visits, lectures, conferences, in-services, interprofessional team meetings, etc.

h. The Site may suspend and/or terminate any Student's assignment to the Site as a result of health status, repeated poor performance after notice and an opportunity to correct, or other considerations that the Site deems detrimental to patients' or consumers' well-being or the achievement of teaching objectives. Except in emergency circumstances, the Site will not exercise such right until it has consulted with the Capstone Coordinator or the Chair of the University's Division of Occupational Therapy and given the University and the Student a reasonable opportunity to remedy the circumstances that the Site believes warrant suspension or termination.

i. The Site will permit Division of Occupational Therapy faculty or appropriate designees, with reasonable advance notice, to visit the Site for routine assessment and follow-up, to inspect the Site's facilities and services that are available to the Student, to monitor Student progress, and to inspect and consult with appropriate personnel. Upon reasonable advance notice from the University, the Site and the Site Mentor shall participate in accreditation processes as reasonably requested by the University.

j. The Site will make emergency medical care available to Students on the premises through the Site's procedure for handling emergencies. Cost of such emergency care shall be the responsibility of the Student except in cases of gross negligence on the part of the Site.

k. The Site shall obtain and maintain commercially reasonable insurance covering its activities and the activities of its employees and agents.

l. The Site shall be solely responsible for the treatment and care of its clients and patients and for compliance with all laws that apply to its facilities.

4. Mutual Obligations.

a. The Capstone Coordinator, Faculty Mentor, and Site Mentor or other designee of the Site will oversee implementation of the Project and plan for: (i) Project goals and objectives; (ii) Student placement and orientation; (iii) preparation and periodic review of program objectives; (iv) community experiential and scholarly Project activities, especially those that take place at the Site; (v) quality assurance review by the University via evaluation of the Student, the Site, and Site Mentor; and (vi) procedures and timelines for evaluating the Project experience.

b. Each party (the "Indemnifying Party") shall indemnify and hold harmless the other party and its trustees, directors, officers and employees (each, an "Indemnitee") from and against all liabilities, damages, fines, penalties, costs and expenses (collectively, "Liabilities") that arise out of any third-party claim or action alleging (1) any negligent or more culpable act or omission of the Indemnifying Party or its employees or agents, or (2) any material breach of applicable law by the Indemnifying Party or its employees or agents. The Indemnifying Party's obligations pursuant to this Section shall not apply to the extent that any Liabilities arise out of any Indemnitee's negligent or more culpable act or omission, material breach of applicable law, or material breach of this Agreement.

c. Each party shall comply with applicable infection control protocols established by the CDC and other relevant federal, state, and local public health authorities, including but not limited to increased hygiene and sanitation policies, frequent hand washing, the wearing of face masks or shields, and physical distancing guidance when appropriate in a clinical setting.

d. No party to this Agreement shall discriminate against any employee, student or person on account of race, color, religion, sex, sexual orientation, gender identity or gender expression, ancestry, age, national origin, disability or any other status protected by applicable law.

5. Termination.

a. This Agreement shall terminate automatically if all Students assigned to the Site cease to be enrolled at the University for any reason or upon completion of all Projects that are the subject of this Agreement.

b. The University may terminate this Agreement if, after consultation with the Site and Faculty Mentors, the Capstone Coordinator and the Chair of the OTD, the University determines such action to be warranted based on the Student's behavior or failure to comply with their obligations hereunder or under any other applicable University policy.

c. The Site may terminate this Agreement if it has permanently terminated the participation of all Students pursuant to Section 2(H).

6. Miscellaneous Provisions.

a. For purposes of this Agreement, and except as otherwise agreed in writing, no Student will be considered an employee of the University or the Site, but rather will be treated as a student in the doctoral education phase of their professional education. The Students shall not be entitled to any compensation for services rendered in connection with this Agreement and shall not be eligible to participate in any employee benefit program of the University or the Site including Worker's Compensation.

b. The University's employees, including the Faculty Mentor and Capstone Coordinator, shall have no personal liability for act or omission in connection with this Agreement or the Project. The Site's sole remedy for such acts or omissions shall be against the University.

c. Any use of the University's name, insignia, or logo in any descriptive or promotional literature or communication of any kind with respect to the Project must comply with applicable University policies.

d. This Agreement, as amended from time to time, constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all previous negotiations, commitments and writings with respect to such subject matter.

e. This Agreement may not be amended except by a writing signed by all parties. Notwithstanding the foregoing, the University may replace the Faculty Mentor, Site Mentor or Capstone Coordinator with individuals other than those named above by giving written notice to the Student.

f. This Agreement may not be assigned in whole or in part without the consent of the other parties. Notwithstanding the foregoing, the University may change the Faculty Mentor or the Capstone Coordinator with the prior written consent of the

Site, which shall not be unreasonably withheld or delayed, and the Site may change the Site Mentor with the prior written consent of the University, which shall not be unreasonably withheld or delayed.

g. Nothing in this Agreement shall be construed to create a partnership, joint venture, agency or other relationship between the parties. The relationship between the parties is solely that of independent parties to a contract. Neither party is authorized to act on behalf of or bind the other party.

h. This Agreement shall be solely and exclusively governed by and construed and enforced in accordance with the laws of the Commonwealth of Massachusetts without giving effect to any law that would result in the application of a different body of law. All disputes under or in connection with this Agreement shall be brought and resolved only in a court of competent jurisdiction located in Hampden County, Massachusetts, and each party hereby irrevocably consents to the jurisdiction of such courts and waives any objections thereto.

[SIGNATURE PAGE FOLLOWS]

The Student:

Name: Makayla Descault, OT/s
Signature: Makayla Descault, OT/S

Western New England University:

Faculty Mentor:

Name: Erin Murray, OT, OTD-PP, OTR/L
Signature: _____

Debra Latour PP-OTD, M.Ed., OTR/L
Doctoral Experiential Capstone Coordinator

The Site:

Legal name of Site:
_____
Name and title of authorized signatory:
_____
Signature: _____

Name of Site Mentor: Dr. Nicole Lavery, OTD, OTR/L, CKTP, CEAS
Signature: Nicole L. Lavery, OTD, OTR/L

A. Maria Toyoda, Ph.D.
Provost and Vice President of Academic Affairs

WESTERN NEW ENGLAND UNIVERSITY
INSTITUTIONAL REVIEW BOARD (IRB) SUBMISSION FORM
FOR PROPOSAL TO USE HUMAN PARTICIPANTS IN RESEARCH
FWA00010736

Last Modified September 21, 2022

Information regarding the annual meeting schedule of the Institutional Review Board, submission deadlines and requirements, and contact information may be found on the IRB section of the Academic Affairs website located at: https://www1.wne.edu/academic-affairs/institutional-review-board.cfm

Date of Application: (MM/DD/YYYY) 05/05/2024

1. Responsible Project Investigator **(Note: students/ residents cannot serve as PIs):** Dr. Erin Murray

Phone No.:

Address (Campus address, including box #, if available):

E-mail:

2. Investigator (e.g., Graduate Student) **(Note: Please list any additional investigators in Appendix):** Clara Jayne Davenport

Phone No.:

Address (Campus address, including box #, if available): 1215 Wilbraham Rd, Springfield, MA 01119

E-mail:

3. Collaborations: Does this project involve any collaborators not part of the faculty/staff at WNEU? [ ] No [X] Yes

Please specify: Nicole Lavery, OTD, OTR/L, CKTD, CEAS

4. Title of Project: Barreling Down on Ergonomics to Increase Occupational Functioning

5. Submission Type: [X] New [ ] Renewal [ ] Amendment

6. Anticipated Project Duration:

From MM/YYYY: 04/2024

To MM/YYYY: 04/2025

NOTE: Any research project that undergoes full board review and continues for longer than one (1) calendar year requires annual renewal.

7. Non-Technical Synopsis: (Please provide a brief abstract in non-scientific terms.)

This research will focus on ergonomics (the study of body and positioning in the workplace) and individuals working at breweries producing 15,000 or fewer barrels brewed per year. People working in the brewing industry are at an increased risk of workplace injuries such as back pain and sprains that can reduce work efficiency, decrease their quality of life, and hinder their participation in activities of daily living and functional daily tasks. A task analysis will occur at a brewery and then an online ergonomic program will be established which will include stretching/exercising routines, modifications to the daily work activities, and education on how to implement better ergonomics at work. These interventions will be monitored to determine the effectiveness of an ergonomic program for brewers.

8. Background: (Please provide a brief narrative review of the literature and basis of the study.)

While the results of the impact of poor ergonomics on the musculoskeletal system is a well-researched topic, few programs have been implemented in the brewery industry setting to improve ergonomic conditions. Since 2013 around 6,000 new breweries have opened in America and the brewing industry currently employs 2.0 million individuals (John Dunham & Associates, 2021). In 2022, the American Journal of Occupational Therapy published a study that found that brewers in America felt that workplace safety hazards increased likelihood of injury due to improper ergonomics and negatively impacted their daily occupations outside of work (Lavery et. al., 2022). Several case studies on the ergonomic implementation of individual breweries have been shown to be successful in reducing musculoskeletal injuries in Chile and England (Nino et. al., 2021) however none have been implemented and researched in America.

9. Objective: (Briefly state the objective of the research.)

The researcher's aim is to examine whether the effectiveness of ergonomic education will decrease musculoskeletal injuries and symptoms in the brewery industry to improve brewers' engagement with ADLs and IADLs, as well as quality of life. The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

10. Type of research participant (Include all that apply.) **Indicate the approximate number in each category.**

Undergraduate WNE student (18 years old or older) #	0	Undergraduate WNE student (less than 18 years old) #	0	Graduate or Law WNE student #	0
WNE employee (18 years old or older) #	0	WNE employee (less than 18 years old) #	0	Minor not otherwise specified (less than 18) #	0
Off-campus participants (specify including age and #)	18-105 years old Maximum of 500 participants	Special population (e.g., prisoner, pregnant, disabled) (specify including age and #)	0		
Other (specify including age and #)	0				

11. Recruitment of participants (Check all that apply.)

- [ ] Unpaid classroom volunteer
- [ ] Paid classroom volunteer
- [x] Unpaid nonclassroom volunteer
- [ ] Paid nonclassroom volunteer
- [ ] Other (Please specify)

How will participants be recruited (please attach any flyers, email content, etc.)? Please list all inclusion/exclusion criteria.

Participants for the survey (see Appendix A for recruitment email) and the virtual education modules (see Appendix L for recruitment email) will be recruited by emailing the state brewers' guilds and requesting they forward the survey and modules to their members. Participants for the activity analysis will be recruited in person (see Appendix K for verbal transcript) after receiving consent from the brewery owners to recruit at their place of business (see Appendix E). The inclusion criteria include individuals who are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study. Exclusion criteria includes individuals under 18 years old, and if you are not employed at a brewery or employed in a position that does not involve brewing or pouring and serving beer.

12. Expected study duration and compensation.

Expected Duration (e.g., total hours and length of involvment (days, months) per participant):

The maximum duration for each participant for the task analysis is 30 minutes.

The maximum duration for each participant to complete the survey is 15 minutes.

The maximum duration for each participants in completing the ergonomic modules and pre/posttest surveys is 75 minutes

Expected participant compensation (Check all that apply.)

[X] No compensation [ ] $$ compensation

[ ] Other (Please specify)

If applicable, please specify $$ rate

13. Location of the research (Check all that apply)

[X] On-campus [ ] On-Line [X] Off-Campus

Please specify site (e.g., Springfield campus, Southborough, specific off-campus location)

Western New England University

Note: If off-campus locations are included, please attach a signed permission from a responsible individual (e.g., business owner, school superintendent, principal) for each location.

14. Will the participants be exposed to more than minimal risk?

[ ] Yes [X] No

Please briefly describe any anticipated risks, discomforts, or inconveniences related to participation, and what will be done to minimize these.

Participants will not be exposed to any risks in this study. As written in the Consent Forms (see appendix B, F, & G), participation in this study is voluntary and you may refuse to take part in the research or withdraw at any time without penalty.

15. Describe consent and/or procedure (attach copies of written informed consent form or information sheet and use consent form checklist to ensure that it contains required elements). Who is obtaining consent? Where and when will it be obtained? How will it be obtained from non-English speakers, if relevant? **Attach copies of consent and assent forms.**

There are three consent forms. The first is Informed Consent for participants of the survey (Appendix G), the second is an Informed Consent for participants of the task analysis (Appendix F), and the third is an Informed Consent for participants of the ergonomic educational program (Appendix C). In the consent forms, there is a section on risks, including feelings of distress, discomfort, and fatigue. Participants have the right to refuse to participate or withdraw without penalty. "You may decline to answer any questions and may voice any concerns to the investigator at any time." Participants will be given the opportunity to ask questions at any time via email or telephone.

16. Confidentiality and anonymity of information obtained (Check all that apply)

[X] Participants' responses will be anonymous. (Data are collected in a way that no one (including the researcher) can identify the individual associated with any particular result or response, e.g., a survey with no names or other identifying information.)

[ ] Participants' responses will be confidential. (Records are maintained in a way that ensures only the researchers have access to any information or results linked to a specific individual.)

[ ] Other (Please specify)

17.Does the research involve the use of deception?

Yes [ ] No [X]

If "Yes" please elaborate in the space below, describing the deception used and providing a justification of the need for deception.

18. Does the research involve debriefing of participants?

Yes [ ] No [X]

If "Yes" please provide an explanation in the space below describing how (e.g., spoken, with written statement) and when the participants will be debriefed. If "No" please provide an explanation of why debriefing is not necessary. Provide a copy of the debriefing statement as an attachment, if relevant.

Participants will not be debriefed due to time constraints.

19. Data collection methods: Describe data collection methods to be used (e.g., survey instruments - **copies must be submitted as attachments**), the types of data to be collected (e.g., electronic, hard copy, video), where it will be stored and for how long, who will have access to the data and any security protections that will be put in place.

A mixed methods survey (Appendix H for survey) will be delivered electronically to the emails of the state guilds (see Appendix B for list of emails) after giving consent (Appendix G). Information gathered from this survey will include current knowledge of use of proper body mechanics in the workplace and areas where brewery workers feel like they need more information/knowledge. The researchers will code the survey to identify common themes and use this information to develop educational modules.

Task analyses will be performed at Kismet Brewing Company (see Appendix E for letter of support from the brewery & Appendix F for Informed Consent) in order to gain information on daily work-related tasks at breweries and improve the researchers' understanding of the ergonomic components. There will be no direct contact with the participants after signing the consent form and this information will be applied to the educational program.

Pre/posttest surveys (see Appendix J for surveys) will be delivered electronically to the emails of the state guilds (See Appendix B for the list of contact information) after providing consent to participate (see Appendix C for Informed Consent). Information gathered from the surveys include current knowledge of use of proper body mechanics in the workplace, current and/or past work-related pain and/or injury, current strategies used in the workplace to reduce injury and/or pain, and activities that are impacted by work-related pain. The researchers will code the surveys to identify common themes and measure the effectiveness of the educational modules.

No names will be recorded on any study documents. Data downloaded from the website for analysis will be stored in electronic form on the researchers' password-protected laptops for six years. The Google Forms data is stored on that website in a password protected site. It will be downloaded to the researchers' password-protected laptops and saved for six years.

20. In the space below, please provide a thorough description of the research procedure(s), including design, what specific procedures will be used in each phase of the study, etc.

The research procedure will include a mixed methods study in which task analyses at a brewery (see Appendix E for Letter of Support with Kismet Brewing Company) will be performed to observe brewery employees participating in work-related tasks and develop key strategies/modifications that could be implemented into the ergonomic modules based on our observations. Permission to recruit workers to observe from the brewery will be acquired by walking into the brewery or calling over the phone and discussing the project proposal with the owners/managers (see Appendix K for verbal transcript). Participants recruited from the brewery post consent from the owners/managers will be given the consent form so the researchers can perform the activity analysis (see Appendix F).

State guilds will be recruited to forward a survey to their members (Appendix A). The mixed methods survey (see Appendix H) will be delivered electronically to the emails of the state guilds (see Appendix B) after the members consent to participate (Appendix G). The data collected from the survey will be coded to identify common themes and key information to be included in the ergonomic modules. Information gathered will include job position, current level of knowledge on proper body mechanics, and areas where brewery workers feel like they need more information/knowledge. The researchers will code this survey.

The observations at Kismet Brewing Company and data collected from the survey will be used to develop ergonomic modules. These modules will provide education to participants on how to use proper body mechanics while engaging in work-related tasks to their current job position, as well as environmental modifications. Additionally, they will be educated on preventative interventions to decrease the likelihood of musculoskeletal injury due to repetitive motions and poor ergonomics. Participants will be recruited via email (see Appendix L for email transcript) through the state brewers guilds (see Appendix B for list of state guilds emails for recruitment) to complete one and/or two ergonomic modules dependent on job description.

State guilds will again be recruited to forward invitations to their members (Appendix L). The Informed Consent form for the ergonomic modules and pre/posttest surveys (Appendix C) will be forwarded electronically to the guild member emails (see Appendix B for list of state guild emails); the surveys (Appendix J) will be forwarded after consent. The data collected from the pre/posttest surveys will be coded to identify common themes and the effectiveness of the ergonomic modules. Participants will complete pre/posttest surveys (see Appendix J) that will be used to measure the effectiveness of the educational ergonomic modules. Information gathered will include current knowledge of proper body mechanics, current and/or past work-related pain and/or injury, current ergonomic practices/strategies that are used at work, and routines that are impacted due to work-related pain and/or injury. For more information see Appendix J for the pre/posttest survey.

No names of individuals or breweries will be recorded on any study documents. Data downloaded from the website for analysis will be stored in electronic form on the researchers' password-protected laptops for six years. The Google Forms data is stored on the website in a password protected site. It will be downloaded to the researchers' password-protected laptops and saved for six years.

21. Are you applying for an exemption? [X] Yes [ ] No

NOTE: If "Yes" please submit the Exemption Code # in the space below, citing your specific reason. For a listing of reasons, go to http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html (Refer to 46.104.)

Code 46.104. The research study involves the encouragement of behavior change to improve ergonomics in the brewery industry. Research involves collecting information from the participants through daily data entry into an application.

22. Online Training Requirement

The IRB has a mandatory training requirement prior to protocol approval. Training is conducted through the Collaborative Institutional Training Initiative (CITI) Program. Instructions on how to access this training can be obtained at https://www1.wne.edu/academic-affairs/institutional-review-board.cfm. **Please attach a current copy of your certificate to your application submission.**

23. Assurances:

I certify that I have read and followed the the Belmont Principles (http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html) and the American Psychological Association's* ethical principles concerning research with human participants (http://www.apa.org/ethics). I will adhere to the policies and procedures explained therein. Should changes in the procedure or consent form described above (or in related documents) become advisable, I will submit them to the IRB for approval. I understand that the responsibility for the ethical conduct of the study rests with the responsible faculty investigator. I agree to report any participant complaints that may arise to the IRB.

NOTE: It is strongly recommended that all researchers consult the education training materials available on human subjects research protection at: http://www.hhs.gov/ohrp.

(*Departments or Colleges/Schools that have established their own Human Subjects Committee may substitute the appropriate professional organization's ethical guidelines for research after approval from the IRB.)

1. Responsible Project Investigator's Signature:		Date	05/06/2024
2. Investigator's Signature, If Different		Date	05/06/2024
3.Investigator's Signature, If Different:		Date	05/06/2024
4.Investigator's Signature, If Different:		Date	
5.Investigator's Signature, If Different:		Date	

You may not begin conducting any aspect of the proposed study until such time as you have received written approval for the proposal.

Appendix D

Institutional Review Board (IRB) Appendices

Appendix A Email Transcript for Participant Recruitment for Survey

Dear (insert state guild),

We are occupational therapy doctoral students from Western New England University and we are working towards our doctoral project which focuses on improving ergonomics within the brewery industry. The name of our study is “Barreling Down on Ergonomics to Increase Occupational Functioning”. As part of our research, we created a survey to gather more information from brewery employees to guide our project. We are reaching out to you to ask if you are willing to forward the following survey to the members of your guild. We are interested in the perspective of both servers/bartenders and brewers. This survey should take no more than 15 minutes and can be completed via computer or mobile device.

https://forms.gle/fkVpm97bSEbfmdEd6

This study has been approved by the Western New England University Institutional Review Board (IRB). All information gathered will be confidential and no names will be included in findings to the public.

We look forward to hearing back from you. Thank you for your time and assistance with our research. If you have any questions or concerns, please let us know.

Best,

Clara Davenport, OT/s
Makayla Descault, OT/s

Appendix B
List of State Guild Contact Information for Recruitment

Name of Brewers Guild	State	Contact
Arizona Craft Brewers Guild	Arizona	info@craftbeeraz.com
Brewers Guild of Alaska	Alaska	https://web.brewersguildofalaska.org/contact
Arkansas Brewers Guild	Arkansas	https://arkansasbrewersguild.com/
California Craft Brewers Association	California	https://web.californiacraftbeer.com/contact/
Colorado Brewers Guild	Colorado	https://coloradobeer.org/contact-us/
CT Brewers Guild	Connecticut	ctbrewersguild@connecticut.beer
Florida Brewers Guild	Florida	membership@flbrewersguild.org
Georgia Craft Brewers Guild	Georgia	https://web.georgiacraftbrewersguild.org/contact
Hawaiian Craft Brewers Guild	Hawaii	https://www.hawaiibeer.org/#ContactUs
Idaho Brewers United	Idaho	IdahoBrewersUnited@gmail.com
Illinois Craft Brewers Guild	Illinois	info@illinoisbeer.com

Brewers of Indiana Guild	Indiana	https://drinkin.beer/contact/
Iowa Brewers Guild	Iowa	iabrewersguildboard@gmail.com
Kansas Craft Brewers Guild	Kansas	https://kansascraftbrewersguild.com/pages/contact-us

Kentucky Guild of Brewers	Kentucky	https://www.kygbrewers.org/contact-us
Louisiana Craft Brewers Guild	Louisiana	info@LaBeer.org
Maine Brewers' Guild	Maine	https://mainebrewersguild.org/about/contact-us/
Brewers Association Of Maryland	Maryland	info@marylandbeer.org
Massachusetts Brewers Guild	Massachusetts	KATIE@MASSBREWERSGUILD.ORG
Michigan Brewers Guild	Michigan	info@michiganbrewersguild.org
Minnesota Craft Brewers Guild	Minnesota	https://www.mncraftbrew.org/contact/
Missouri Craft Brewers Guild	Missouri	https://www.mocraftbeer.com/contact-us.html
Montana Brewers Association	Montana	info@montanabrewers.org

Nebraska Craft Brewers Guild	Nebraska	director@nebraska.beer
Southern Nevada Brewers Guild	Nevada	info@nvbeer.com
New Hampshire BRewers Association	New Hampshire	info@nhbrewers.org
Brewers Guild of New Jersey	New Jersey	alexis@brewersguildnj.com
New Mexico Brewers Guild	New Mexico	director@nmbeer.org
NYC Brewers Guild	New York	https://www.nycbrewed.com/contact
New York State Brewers Association	New York	https://newyorkcraftbeer.com/contact/
North Carolina Craft Brewers	North Carolina	lisa@ncbeer.org

Guild		
North Dakota Brewers Guild	North Dakota	mike@laughingsunbrewing.com
Ohio Craft Brewers Association	Ohio	https://ohiocraftbeer.org/contact/
Oklahoma Craft Brewers Association	Oklahoma	hello@craftbeerok.org
Oregon Brewers Guild	Oregan	info@oregonbeer.org

Brewers of Pennsylvania	Pennsylvania	https://www.brewersofpa.org/contact/
Pittsburgh Brewers Guild	Pennsylvania	https://pittsburghbreweries.com/
Lancaster County Brewers Guild	Pennsylvania	https://www.lancasterbreweries.org/#contact
Rhode Island Brewers Guild	Rhode Island	info@ribrewersguild.org
South Carolina Brewers Guild	South Carolina	info@scbeer.org
South Dakota Craft Brewers Guild	South Dakota	info@sdcraftbrew.org
TN Craft Brewers Guild	Tennessee	https://tncraftbrewers.org/contact/
Texas Craft Brewers Guild	Texas	https://texascraftbrewersguild.org/contact/
Utah Brewers Guild	Utah	https://utahbrewersguild.org/contact-us
Vermont Brewers Association	Vermont	admin@vermontbrewers.com
Virginia Craft Brewers Guild	Virginia	cbarnett@vacraftbrewersguild.com

WA Brewers Guild	Washington	shawna@washingtonbrewersguild.org
Wisconsin Brewers Guild	Wisconsin	info@wibrewersguild.com

Wyoming Craft Brewers Guild	Wyoming	wyocraftbrewersguild@gmail.com

Appendix C
Informed Consent Form for Educational Program

Western New England University
College of Pharmacy / Health Sciences
Informed Consent Form

Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning

Primary Investigator/Institution: Dr. Erin Murray, Clara Jayne Davenport, & Makayla Descaults/Western New England University

Introduction

We are inviting you to participate in a research study. This study has been approved by the institutional review board (IRB) at Western New England University (WNEU). You were invited by Clara Davenport and Makayla Descault to participate because you work at or own a brewery. This research consent form explains why this research study is being done, what is involved in participating, the possible risks and benefits of participation, and your rights as a participant in this study. This study will take place from April 2024 to July 2024 in partnership with the Department of Occupational Therapy at the College of Pharmacy & Health Sciences at Western New England University. Please read this form carefully and ask any questions that you may have.

Purpose of the Study

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with activities of daily living and instrumental activities of daily living, as well as quality of life . The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

Description of the Study Procedures

If you are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study and agree to participate in this study, you will be asked to take part in an online ergonomic training program where you will complete educational modules related to ergonomics, as well as competency checkpoints throughout the module. These modules will provide education on how to use proper body mechanics while engaging in required work-related tasks, as well as environmental adaptations. In addition, you will be educated on preventative interventions to decrease the likelihood of musculoskeletal injury due to repetitive motions and poor ergonomics. You will be asked to complete a pre and post test survey in order to measure the effectiveness of the program. You will be asked to participate in one educational module specific to your position of work (front of house or back of house) that will take up to 60 minutes to complete. You will have access to the module via delivery of email after completing the pre-test survey. The total maximum duration for each participant is 2 hours.

Risks or Discomforts of the Study

There are risks to participating in any research study. It is unlikely that you will be at risk for any physical or psychological harm as a result of your participation in this study. You may find the questions or the interview to cause distress and/or fatigue. You may decline to answer any questions and you may voice concerns to the investigators at any time.

Benefits of Being in the Study

The benefits of participation is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. The ergonomic modules will benefit brewery employees by providing preventative education to help decrease likelihood of musculoskeletal injuries and pain due to repetitive motions and poor body mechanics, as well as environmental modifications.You will receive no payment for participating in the study.

Costs of Being in the Study

There will be no cost to you for participating in the study.

Confidentiality

Research studies have a risk for some loss of privacy. To help prevent the loss of privacy, your name, place of work, or other identifying information will not be recorded on any study documents. All records will be kept strictly confidential. Electronic files will be password-protected and hard copies will be stored in a locked cabinet for six years. Only the study staff will have access to the files. None of the data that we may publish or present in any reports, presentations, or papers will include any information that can identify you as a participant in this study.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information, including place of work, will not be used for these purposes without your specific permission. None of the information that we may publish or

present in any reports, presentations, or papers will include information that can identify you as a participant in this study.

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You have the right to choose not to sign this form. If you decide not to sign this form, you can still participate, however, you will not be included in the study. You can stop being in the study at any time. Tell the research investigator immediately if you are thinking about stopping or decide to stop. Leaving the research study will not affect your medical care or your relationship with Western New England University.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this research study before, during, or after the research. If you have any questions about the study at any time, please contact Clara Jayne Davenport via telephone number (415) 806-4032, Makayla Descault via telephone number (860) 940-4871, or Dr. Erin Murray via email at erin.murray@wne.edu.

If you wish to speak to the Institutional Review Board (IRB), then please contact Dr. Jessica Carlson, Professor of Psychology and Chair of the WNEU IRB, Jessica.outhouse@wne.edu or via telephone at 413-796-2325 or Dr. Minna Levine, College of Pharmacy / Health Sciences, Member of the IRB at minna.levine@wne.edu. This research project has been reviewed and approved by the Western New England University Institutional Review Board.

Statement of Consent

Your check of the Agree box below indicates that you understand this form and you have decided to volunteer for this study. It also indicates you have read and understood the information provided here. You have had a chance to ask any questions you had. You are 18 years old or older, currently employed at a brewery, and are willing to participate in the study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form

for your records. Clicking on the “Agree” button indicates that

• You have read the above information

• You voluntarily agree to participate

• You are currently employed at a brewery

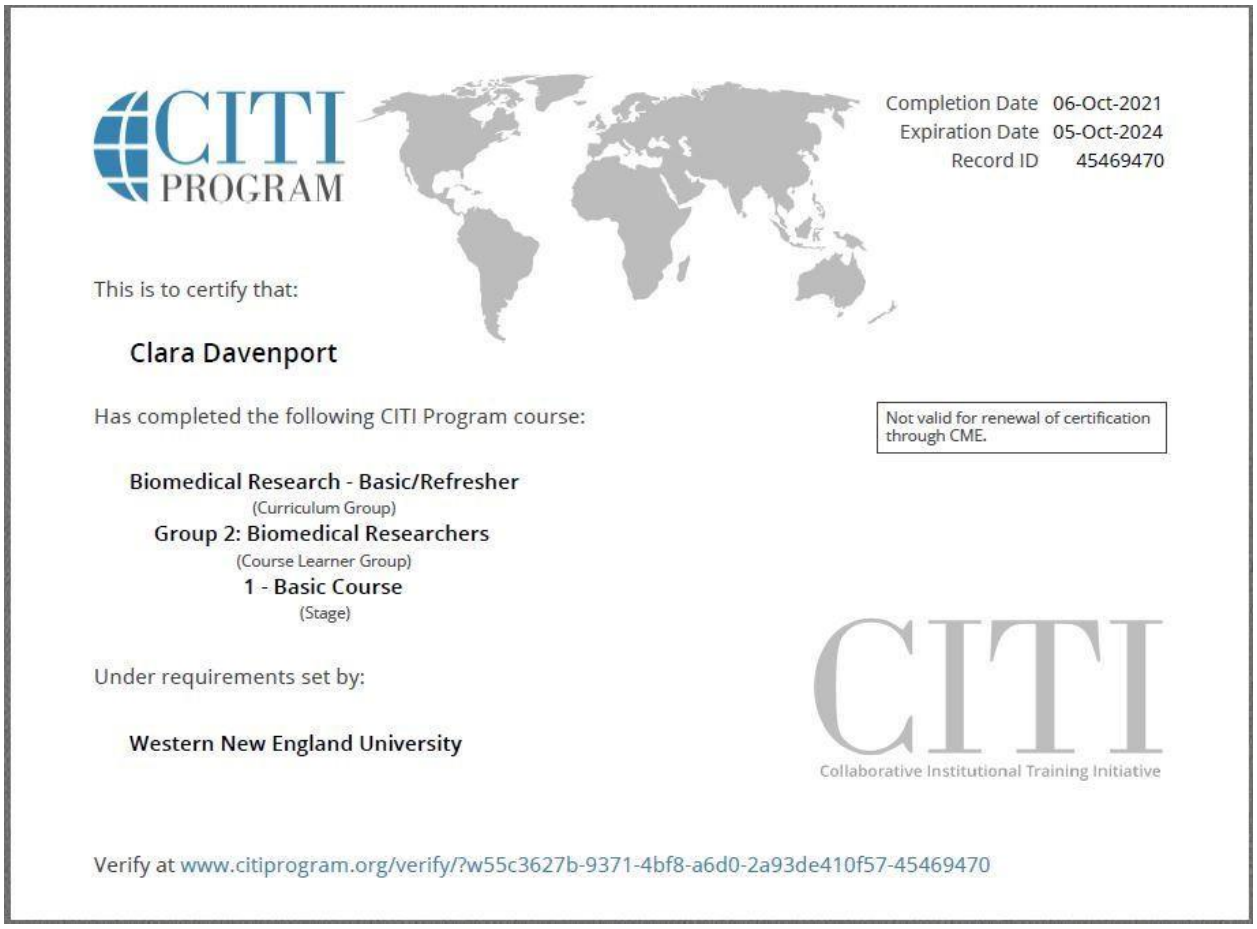
• You are 18 years of age or older

☐ Agree

☐ Disagree

Appendix D

CITI Certification



CITI PROGRAM

Completion Date 06-Oct-2021
Expiration Date 05-Oct-2024
Record ID 45469470

This is to certify that:

Clara Davenport

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Biomedical Research - Basic/Refresher
(Curriculum Group)
Group 2: Biomedical Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Western New England University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w55c3627b-9371-4bf8-a6d0-2a93de410f57-45469470

CITI PROGRAM

Completion Date 07-Nov-2021
Expiration Date 06-Nov-2024
Record ID 45941810

This is to certify that:

Makayla Descault

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Biomedical Research - Basic/Refresher
(Curriculum Group)
Group 2: Biomedical Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Western New England University

CITI
Collaborative Institutional Training Initiative

101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Generated on 12-Apr-2024. Verify at www.citiprogram.org/verify/?we9f23008-2508-4b73-bb65-06b6d21592f5-45941810

CITI PROGRAM

Completion Date 10-Mar-2022
Expiration Date 09-Mar-2025
Record ID 47888790

This is to certify that:

Erin Murray

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social & Behavioral Research - Basic/Refresher
(Curriculum Group)
Group 3: Social-Behavioral-Educational Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Western New England University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w944ab7ea-14ff-4b05-9230-585f940f5827-47888790

CITI PROGRAM

Completion Date 30-Oct-2021
Expiration Date 29-Oct-2024
Record ID 45828543

This is to certify that:

Nicole Lavery

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Human Subject Research
(Curriculum Group)
CHESS & MCHPS
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Gannon University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w344f0c0a-8ad5-4fec-9834-578ba7a8eac3-45828543

Appendix E

Email Letter of Support from Kismet Brewing Company

From: Kismet Brew Co kismetbrewco@gmail.com
Sent: Friday, April 26, 2024 10:40 AM
To: Clara Davenport <clara.davenport@wne.edu>
Subject: Re: Reaching out about ergonomic program

Hey Clara!!

So glad to hear from you. Hope all is going well for you two. I would happy to help in any way I can.

Cheers!

Rich LaSousa

On Apr 24, 2024, at 5:07 PM, Clara Davenport <clara.davenport@wne.edu> wrote:

Hello,

My name is Clara. I'm a graduate student for an occupational therapy program at Western New England University and we had discussed Kismet Brewing participating in Makayla and my research and educational program on ergonomics in breweries. If you're still interested we would like to work with you. The project would be started as soon as the IRB is approved and plan to be completed mid July.

Let me know what you think and if you have any questions.

Thank you!

Clara Jayne Davenport, OT/s
Makayla Descault, OT/s

Appendix F

Informed Consent Form for Participants in Task Analysis at Kismet Brewing Company

Western New England University
College of Pharmacy / Health Sciences
Informed Consent Form

Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning

Primary Investigator/Institution: Dr. Erin Murray, Clara Jayne Davenport, & Makayla Descaults/Western New England University

Introduction

We are inviting you to participate in a research study. This study has been approved by the institutional review board (IRB) at Western New England University (WNEU). You were invited by Clara Davenport and Makayla Descault to participate because you work at or own a brewery. This research consent form explains why this research study is being done, what is involved in participating, the possible risks and benefits of participation, and your rights as a participant in this study. This study will take place from April 2024 to July 2024 in partnership with the Department of Occupational Therapy at the College of Pharmacy & Health Sciences at Western New England University. Please read this form carefully and ask any questions that you may have.

Purpose of the Study

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with activities of daily living and instrumental activities of daily living, as well as quality of life . The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

Description of the Study Procedures

If you are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study and agree to participate in this study, the researchers' will perform a task analysis (breakdown of task/activity into each step) by observing you engaging in daily work-related tasks for up to 30 minutes. There will be no direct impact on your daily work schedule or tasks.

Risks or Discomforts of the Study

There are risks to participating in any research study. It is unlikely that you will be at risk for any physical or psychological harm as a result of your participation in this study. You may voice concerns to the investigators at any time. Individuals have the right to refuse or withdraw from participating at any time.

Benefits of Being in the Study

The benefits of participation is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. The ergonomic modules will benefit brewery employees by providing preventative education to help decrease likelihood of musculoskeletal injuries and pain due to repetitive motions and poor body mechanics, as well as environmental modifications.You will receive no payment for participating in the study.

Costs of Being in the Study

There will be no cost to you for participating in the study.

Confidentiality

Research studies have a risk for some loss of privacy. To help prevent the loss of privacy, your name, place of work, or other identifying information will not be recorded on any study documents. All records will be kept strictly confidential. Electronic files will be password-protected and hard copies will be stored in a locked cabinet for six years. Only the study staff will have access to the files. None of the data that we may publish or present in any reports, presentations, or papers will include any information that can identify you as a participant in this study.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information, including place of work, will not be used for these purposes without your specific permission. None of the information that we may publish or present in any reports, presentations, or papers will include information that can identify you as a participant in this study

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You have the right to choose not to sign this form. If you decide not to sign this form, you can still participate, however, you will not be included in the study. You can stop being in the study at any time. Tell the research investigator immediately if you are thinking about stopping or decide to stop. Leaving the research study will not affect your medical care or your relationship with Western New England University.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this research study before, during, or after the research. If you have any questions about the study at any time, please contact Clara Jayne Davenport via telephone number (415) 806-4032, Makayla Descault via telephone number (860) 940-4871, or Dr. Erin Murray via email at erin.murray@wne.edu.

If you wish to speak to the Institutional Review Board (IRB), then please contact Dr. Jessica Carlson, Professor of Psychology and Chair of the WNEU IRB, Jessica.outhouse@wne.edu or via telephone at 413-796-2325 or Dr. Minna Levine, College of Pharmacy / Health Sciences, Member of the IRB at minna.levine@wne.edu. This research project has been reviewed and approved by the Western New England University Institutional Review Board.

Statement of Consent

Your check of the Agree box below indicates that you understand this form and you have decided to volunteer for this study. It also indicates you have read and understood the information provided here. You have had a chance to ask any questions you had. You are 18 years old or older, currently employed at a brewery, and are willing to participate in the study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form

for your records. Clicking on the “Agree” button indicates that

• You have read the above information

• You voluntarily agree to participate

• You are currently employed at a brewery

• You are 18 years of age or older

☐ Agree

☐ Disagree

Appendix G

Informed Consent Consent Form for Survey

Western New England University
College of Pharmacy / Health Sciences
Informed Consent Form

Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning

Primary Investigator/Institution: Dr. Erin Murray, Clara Jayne Davenport, & Makayla Descaults/Western New England University

Introduction

We are inviting you to participate in a research study. This study has been approved by the institutional review board (IRB) at Western New England University (WNEU). You were invited by Clara Davenport and Makayla Descault to participate because you work at or own a brewery. This research consent form explains why this research study is being done, what is involved in participating, the possible risks and benefits of participation, and your rights as a participant in this study. This study will take place from April 2024 to July 2024 in partnership with the Department of Occupational Therapy at the College of Pharmacy & Health Sciences at Western New England University. Please read this form carefully and ask any questions that you may have.

Purpose of the Study

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with activities of daily living and instrumental activities of daily living, as well as quality of life . The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

Description of the Study Procedures

If you are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study and agree to participate in this study, you will be asked to complete a 10 question survey related to your knowledge of proper body mechanics and its impact on both your work performance and engagement of activities outside of work. The survey will take each participant a maximum of 15 minutes to complete.

Risks or Discomforts of the Study

There are risks to participating in any research study. It is unlikely that you will be at risk for any physical or psychological harm as a result of your participation in this study. You may voice concerns to the investigators at any time. Individuals have the right to refuse or withdraw from participating at any time.

Benefits of Being in the Study

The benefits of participation is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. The ergonomic modules will benefit brewery employees by providing preventative education to help decrease likelihood of musculoskeletal injuries and pain due to repetitive motions and poor body mechanics, as well as environmental modifications.You will receive no payment for participating in the study.

Costs of Being in the Study

There will be no cost to you for participating in the study.

Confidentiality

Research studies have a risk for some loss of privacy. To help prevent the loss of privacy, your name, place of work, or other identifying information will not be recorded on any study documents. All records will be kept strictly confidential. Electronic files will be password-protected and hard copies will be stored in a locked cabinet for six years. Only the study staff will have access to the files. None of the data that we may publish or present in any reports, presentations, or papers will include any information that can identify you as a participant in this study.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information, including place of work, will not be used for these purposes without your specific permission. None of the information that we may publish or present in any reports, presentations, or papers will include information that can identify you as a participant in this study

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You have the right to choose not to sign this form. If you decide not to sign this form, you can still participate, however, you will not be included in the study. You can stop being in the study at any time. Tell the research investigator immediately if you are thinking about stopping or decide to stop. Leaving the research study will not affect your medical care or your relationship with Western New England University.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this research study before, during, or after the research. If you have any questions about the study at any time, please contact Clara Jayne Davenport via telephone number (415) 806-4032, Makayla Descault via telephone number (860) 940-4871, or Dr. Erin Murray via email at erin.murray@wne.edu.

If you wish to speak to the Institutional Review Board (IRB), then please contact Dr. Jessica Carlson, Professor of Psychology and Chair of the WNEU IRB, Jessica.outhouse@wne.edu or via telephone at 413-796-2325 or Dr. Minna Levine, College of Pharmacy / Health Sciences, Member of the IRB at minna.levine@wne.edu. This research project has been reviewed and approved by the Western New England University Institutional Review Board.

Statement of Consent

Your check of the Agree box below indicates that you understand this form and you have decided to volunteer for this study. It also indicates you have read and understood the information provided here. You have had a chance to ask any questions you had. You are 18 years old or older, currently employed at a brewery, and are willing to participate in the study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the “Agree” button indicates that

• You have read the above information

• You voluntarily agree to participate

• You are currently employed at a brewery

• You are 18 years of age or older

☐ Agree

☐ Disagree

Appendix H

Survey for Data Collection to Develop Ergonomic Modules

1. What state is your brewer located in?
2. What is the categorization of the brewery you currently work for?
    a. Taphouse
    b. Microbrewery
    c. Brewpub
    d. Regional brewery
    e. Large brewery
    f. Other: _____
3. What is your current job position at the brewery where you are employed?
    a. Back of house (brewer)
    b. Front of house (bartender or server)
    c. Both front of house and back of house
    d. Other (please specify): _____
4. On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, what is your level of knowledge on the concept of using proper body mechanics (the way you move to maintain balance, posture, and alignment) while engaging in work-related tasks?
5. Have you received an orientation or training from your employer related to proper body mechanics?
    a. Yes
    b. No
        i. If you replied yes to the above question and did receive a training or orientation, where did it take place?
6. Have you ever had to complete work tasks while injured and/or in pain?
    a. Yes
    b. No
7. What strategies do you currently use during working hours in order to improve body mechanics?
    a. Stretching
    b. Exercise breaks every 30 minutes if completing repetitive task
    c. Alternating between sitting and standing
    d. Using equipment (e.g. handcart, reacher, etc.) consistently
    e. Using proper lifting techniques
    f. None
    g. Other: _____

8. What strategies do you currently use during working hours in order to improve environmental aspects of your job?
    a. Use of gloves
    b. Keg dolly's
    c. Pallet jacks
    d. Table/production lines at waist height
    e. None
    f. Other: _____
9. Do environmental aspects of your job (e.g. placement of glassware, location of grain bags) impact work performance and/or cause/increase pain?
    a. Yes
    b. No
        i. If you replied yes to the above question, which environmental aspects impact work performance and/or increase/cause pain?
            1. Placement of items such as glassware
            2. Location of machinery (e.g. draft beer dispenser, fermentation tank, grain mills, canning/bottling lines. Packing stations)
            3. Location of heavy objects (e.g. kegs)
            4. Type of flooring (e.g. hardwood floor vs floor mats)
            5. Other: _____
10. Does work-related pain/injury impact your engagement in activities outside of work?
    a. Yes
    b. No
        i. If you replied yes to the previous question, please select all activities that are impacted:
            1. Dressing self
            2. Bathing/showering
            3. Hobbies or leisure activities
            4. Rest and sleeping
            5. Mobility (e.g. walking, sitting to standing)
            6. Other (please specify): _____
11. Please identify all of the areas in which you feel you need information/strategies related to use of proper body mechanics in your work setting:
    a. Lifting/carrying heavy objects
    b. Reaching above shoulder height
    c. Stretching/exercises
    d. Environmental design
    e. Other (please specify): _____

12. Please include any additional thoughts/comments here:
13. If you are interested in completing a free body mechanics course which takes no more than 30 minutes, please fill in your email below:

Appendix I

Additional Investigator

Name: Makayla Descault

Phone number: (860) 940-4871

Address: 1215 Wilbraham Rd, Springfield, Massachusetts 01119

Email: Makayla.Descault@wne.edu

Name: Nicole Lavery

Phone Number: (814) 450-7169

Address: 109 University Square, Erie, PA 16541

Email: lavery003@gannon.edu

Appendix J

Pre/Post Test Survey

Pretest:

1. Of the following, approximately how many barrels of beer does your brewery produce per year?
    a. 0-1500 barrels
    b. 1500-5000 barrels
    c. 5000-15000 barrels
    d. 15000 or more barrels
2. What is your job position at the brewery you are currently employed at?
    a. Back of house (brewer)
    b. Front of house (bartender or server)
    c. Both (front of house and back of house)
    d. Other (please specify): _____
3. Do you currently or have you in the past experienced work-related pain/injury?
    a. Yes
    b. No
        i. If yes, on a scale of 0-10, what is/was your average level of pain throughout your work day?
        ii. If yes, do any of the following activities exacerbate your pain?
            1. Lifting below the knees
            2. Twisting
            3. Bending
            4. Prolonged standing
            5. Reaching above your shoulders
            6. Other (please specify): _____ iii. If yes, where was/is the location of your pain?
            1. Lower back
            2. Shoulders
            3. Wrist/hand
            4. Other (please specify): _____
4. Has your work-related pain or injury ever impacted your engagement/participation in your work routine?
    a. Yes
    b. No
        i. If yes, what activities have been impacted due to work-related pain?
            1. Lifting 50 lbs or more

2. Lifting below the knees
3. Reaching above your shoulders
4. Prolonged standing
5. Other (please specify): _____

5. Has your work-related pain or injury ever impacted your engagement in activities outside of work?
    a. Yes
    b. No
        i. If you replied yes to the previous question, please select all activities that are impacted:
            1. Dressing self
            2. Bathing/showering
            3. Hobbies or leisure activities
            4. Rest and sleeping
            5. Mobility (e.g. walking, sitting to standing)
            6. Other (please specify): _____
6. Are there any strategies or techniques you have used to decrease your pain during work?
    a. Yes
    b. No
        i. If yes, what strategies/techniques have you used?
            1. Taking standing/walking breaks
            2. Stretching/exercise
            3. Use of equipment such as floor mats or adjustable chairs/tables
            4. Other (please specify): _____ ii. If yes, how often did you engage in those strategies?
                1. Every 30 minutes
                2. Every 60 minutes
                3. Only during my lunch break time
                4. Other (please specify): _____
7. On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, what is your level of knowledge on the concept of using correct body mechanics (the way you move to maintain balance, posture, and alignment) while engaging in work-related tasks?
8. On a scale of 1-5, with 1 being never and 5 being always, how frequently do you consider proper body mechanics when engaging in your everyday job routine?

Posttest:

1. On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, after completing the educational program, what is your level of knowledge on the concept of using correct body mechanics (the way you move to maintain balance, posture, and alignment) while engaging in work-related tasks?
2. On a scale of 1-5, with 1 being not significant at all and 5 being very significant, how applicable do you feel the information provided in the educational modules relates to your everyday job routine?
3. On a scale of 1-5, with 1 being never and 5 being always, how likely do you think you will apply the ergonomic strategies/modifications to your everyday job routine?
4. After completing the educational program, were there any strategies/techniques and/or ergonomic topics that were new information to you?
    a. Yes
    b. No
        i. If yes, what new strategies and/or areas did you learn (select all that apply)?
            1. Proper lifting techniques
            2. Proper reaching techniques
            3. Proper twisting/bending techniques
            4. Standing
            5. Rest breaks
            6. Environmental modifications
            7. Other (please specify): _____

Appendix K

Verbal Transcript for Participant Recruitment in Task Analysis

Hello, my name is Makayla **OR** Clara. I am an occupational therapy student at Western New England University in Springfield, Massachusetts. I came to visit today to ask if your brewery would be interested in joining an ergonomic program that my classmate and I are planning for our doctorale capstone. We have been doing research on common injuries for people working in the food service industry and found that there is less information on brewers and their staff. We are hoping to complete a task analysis (breakdown of task/activity into each step) of your brewery and staff in order to obtain information for our research project related to possible recommendations that can improve staff health and reduce the likelihood of further injuries in the future. Studies have shown that improving ergonomic workplaces can improve productivity and reduce call outs. This would be free for your organization and results would be shared with you and your team. If you are interested in learning more, my email is clara.davenport@wne.edu **OR** makayla.descaults@wne.edu.

Appendix L

Email Transcript for Participant Recruitment for Educational Modules

Dear (insert state guild),

Hello again, thank you for forwarding our survey to your guild members. As a reminder, our names are Clara and Makayla and we are occupational therapy doctoral students from Western New England University. The name of our study is “Barreling Down on Ergonomics to Increase Occupational Functioning”. This project involves the implementation of ergonomic training and education in your workplace through online educational ergonomic modules. This includes education on safety awareness and strategies for engaging in proper body mechanics within your brewing environment. Attached is a link to the educational modules on body mechanics for both servers/bartenders and brewers working at breweries. We would appreciate it if you could forward this email to the breweries in your guild. The modules should take no more than 30 minutes.

[insert link here]

This study has been approved by the Western New England University Institutional Review Board (IRB). All information gathered will be confidential and no names will be included in findings to the public.

We look forward to hearing back from you. Thank you for your time and assistance with our research. If you have any questions or concerns, please let us know.

Best,

Clara Davenport, OT/s
Makayla Descault, OT/s

Appendix E

Institutional Review Board (IRB) Amendment Form

AMENDMENT FORM

If you change anything about your methods, the people working on the project, or the participants involved, you need to submit an Amendment form.

Western New England University IRB and Human Subjects

Committee AMENDMENT

Form FWA00010736

Any change to an approved research protocol, including research plan, consent process and form, co-investigators, other research personnel, and/or methods of subject recruitment, requires submission of an Amendment. Attach a detailed explanation of the reason(s) you are seeking to modify your previously approved research project. Also attach any revised instruments, questionnaires, letters of cooperation, informed consent forms, etc.

Amendments to protocols may not be initiated until IRB approval has been obtained.

Protocol Number: COP-IRB #226

Protocol Title: Barreling Down on Ergonomics to Increase Occupational Functioning

Responsible Project Investigator: Erin Murray, Clara Jayne Davenport, Makayla Descault

The following change(s) is/are being proposed for the above protocol:

__ Title change

__ Addition or removal of PI, co-PI, or key personnel

_X_ Addition, deletion, or change of recruitment instrument, oral script, survey instrument, web-based instruments, questionnaires, advertisement flyers, funding sources etc. Please attach changed documents.

__ Addition or deletion of cooperating institutions

__ Change in number of participants

__ Change in study population

__ Revised Informed Consent Form. Please attach.

__ Change in Methodology

__ Other, explain:_____

Summary of Changes:

The above proposal indicates that there is an addition to our survey. We are including gender identification demographic question (see #4 in the attached document). The addition of this question is due to a recommendation from our site mentor who is a brewery owner. Gender is a relevant consideration for ergonomics and body mechanics when considering types of injuries.

INSTITUTIONAL REVIEW BOARD ACTION

X Certified as Exempt from Review

__ Approved under Expedited Review

__ Approved by the Full Board

Minna Levine 5/8/2024

IRB Representative's Signature Date

Appendix F

Institutional Review Board (IRB) Amendment Appendices

Appendix H

Survey for Data Collection to Develop Ergonomic Modules

1. What state is your brewer located in?
2. What is the categorization of the brewery you currently work for?
    a. Taphouse
    b. Microbrewery
    c. Brewpub
    d. Regional brewery
    e. Large brewery
    f. Other: _____
3. What is your current job position at the brewery where you are employed?
    a. Back of house (brewer)
    b. Front of house (bartender or server)
    c. Both front of house and back of house
    d. Other (please specify): _____
4. What is your gender identification?
    a. Male
    b. Female
    c. Prefer not to answer
    d. Other: _____
5. On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, what is your level of knowledge on the concept of using proper body mechanics (the way you move to maintain balance, posture, and alignment) while engaging in work-related tasks?
6. Have you received an orientation or training from your employer related to proper body mechanics?
    a. Yes
    b. No
        i. If you replied yes to the above question and did receive a training or orientation, where did it take place?
7. Have you ever had to complete work tasks while injured and/or in pain?
    a. Yes
    b. No
8. What strategies do you currently use during working hours in order to improve body mechanics?
    a. Stretching
    b. Exercise breaks every 30 minutes if completing repetitive task
    c. Alternating between sitting and standing
    d. Using equipment (e.g. handcart, reacher, etc.) consistently
    e. Using proper lifting techniques
    f. None
    g. Other: _____
9. What strategies do you currently use during working hours in order to improve environmental aspects of your job?

a. Use of gloves
b. Keg dolly's
c. Pallet jacks
d. Table/production lines at waist height
e. None
f. Other: _____

10. Do environmental aspects of your job (e.g. placement of glassware, location of grain bags) impact work performance and/or cause/increase pain?
    a. Yes
    b. No
        i. If you replied yes to the above question, which environmental aspects impact work performance and/or increase/cause pain?
            1. Placement of items such as glassware
            2. Location of machinery (e.g. draft beer dispenser, fermentation tank, grain mills, canning/bottling lines. Packing stations)
            3. Location of heavy objects (e.g. kegs)
            4. Type of flooring (e.g. hardwood floor vs floor mats)
            5. Other: _____
11. Does work-related pain/injury impact your engagement in activities outside of work?
    a. Yes
    b. No
        i. If you replied yes to the previous question, please select all activities that are impacted:
            1. Dressing self
            2. Bathing/showering
            3. Hobbies or leisure activities
            4. Rest and sleeping
            5. Mobility (e.g. walking, sitting to standing)
            6. Other (please specify): _____
12. Please identify all of the areas in which you feel you need information/strategies related to use of proper body mechanics in your work setting:
    a. Lifting/carrying heavy objects
    b. Reaching above shoulder height
    c. Stretching/exercises
    d. Environmental design
    e. Other (please specify): _____
13. Please include any additional thoughts/comments here:
14. If you are interested in completing a free body mechanics course which takes no more than 30 minutes, please fill in your email below:

Appendix G

Institutional Review Board (IRB) Approval Form

WESTERN NEW ENGLAND UNIVERSITY | WNE
COLLEGE of PHARMACY and HEALTH SCIENCES

Subgroup of the IRB & Human Subjects Committee FWA00010736 Approval Form&

Responsible Director: _____Dr. Levine _____

Title of Project: Barreling down on ergonomics to increase occupational functioning

College Proposal Number: ___COP-IRB#226

_X____ This research proposal is exempt under Federal Regulation _____*45 CFR 46.104.d.2.i*

It is deemed acceptable according to the Belmont Principles and the American Psychological Association's Ethical Guidelines for the Use of Human Participants for a period of one year.*

_____ This research proposal has undergone an expedited review under Federal Regulation _____. It is deemed acceptable according to the Belmont Principles and the American Psychological Association's Ethical Guidelines for the Use of Human Participants for a period of one year.*

_____ This research does not qualify for exemption or expedited review and will need to be reviewed by the entire board.

Signature__ Minna Levine

_____Date_____5/7/2024_____

Renewal requests due before ___5/7/2025_____

& Note: Authority to approve exempt or expedited research originating within the College of Pharmacy.

* Note: It is your responsibility to notify the IRB of any adverse events that occur during your research.
You must also request an additional review before you introduce changes to the proposed protocol. Maintain a copy of your original application, any requested changes, and this signed approval form. You will need to submit these if you apply for a renewal.

Appendix H

Doctoral Experiential Short Proposal

Barreling Down on Ergonomics to Increase Occupational Functioning

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A Doctoral Experiential Capstone Project

Presented to the Faculty of Western New England University

In Partial Fulfillment of the Requirements for the

Entry-Level Doctorate

in

Occupational Therapy

---

by

July 2023

Barreling Down on Ergonomics to Increase Occupational Functioning

A Doctoral Experiential Capstone Project Proposal

By

Makayla Descault, OT/s
July 2023

APPROVED BY:

Erin Murray, OT, OTD-PP, OTR/L
Faculty Mentor

7/12/23
Date

APPROVED BY:

Debra Latour, OT, PP-OTD, M.Ed., OTR
Doctoral Experiential Coordinator

7/12/2023
Date

Western New England University
Occupational Therapy
Doctoral Experiential Capstone Proposal/Plan Short Form Draft

Students Name: Makayla Descault, OT/s
Date of Proposal Submission: July 9, 2023

Faculty Mentor(s): Erin Murray, OT, OTD-PP, OTR/L

Sites: Kismet Brewing Company, Clocktown Brewing Company

Site Mentor(s): Nikki Lavery, OTD, OTR/L, CKPD, CEAS (to be confirmed)

Tentative Title: Barreling Down on Ergonomics to Increase Occupational Functioning

Executive Summary:

The proposed project is to create an ergonomic program for individuals working at breweries in Connecticut and Massachusetts. The purpose of this program is to reduce the risk of musculoskeletal injuries in order to improve the participants' engagement in their preferred occupations and improve productivity.

Introduction/Background:

This project was first proposed to research bartenders and ergonomic concerns in Massachusetts. The topic evolved to focus specifically on breweries due to their growth over the last ten years. In Massachusetts, there were 146 new breweries opened and in Connecticut there were 107 new breweries opened (Brewers Association, n.d.-a; Brewers Association, n.d.-b). As craft breweries became more common in the workforce, there is a risk of more musculoskeletal injuries due to poor ergonomics. It was found by Lavery, et. al. (2022) that brewers who reported work-related injuries were more likely to experience occupational deficits outside of work. Ergonomics of brewers and other individuals working at breweries, such as bartenders, servers, and bottlers, have been evaluated in previous case studies. It was found that consistent ergonomic injuries were related to awkward lifting and posture, reaching, and repetitive movements (Nino, et. al., 2021; Jones, et. al., 2005; Ramsey & Wiegand, 2011).

Ergonomic programs are recommended by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety & Health (NIOSH) as a way to reduce the likelihood of musculoskeletal injuries and improve productivity (NIOSH, 2017). Finnie (2019), a physical therapist who now owns and operates a brewery, implemented the recommended style of ergonomic program with his employees. Finnie presented on the structure and key aspects of reducing musculoskeletal concerns for brewers. The same recommendations were

made in the research by Nino, et. al. (2021). The program for this doctoral capstone will be designed and implemented based on recommendations from the above research and organizations.

Doctoral Experiential Project Overview:

The community experiential of the DEx capstone project involves the implementation of an ergonomics program into breweries located in Massachusetts and Connecticut over a five week period. The researcher's aim is to examine the effectiveness of ergonomic education in the brewery industry. The expected benefit is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. This program will include an ergonomics evaluation for each participant, the implementation of an exercise/stretching program, education on how to use proper body mechanics while engineering in the required tasks of their job position, and the implementation of an application in which participants will record data such as pain level each day of the five week program. This program will target stretching and strengthening in microbrewery employees to reduce musculoskeletal concerns.

The scholarly component of the proposed DEx capstone project will be to add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

The DEx capstone project ideas have been thoroughly discussed and approved by both the faculty and site mentor.

Learning Objectives:

1. The researcher will demonstrate proficiency in developing an ergonomic health and wellness education regarding reaching for workplace items and bottling/canning in the workplace environment with proper body mechanics/posture to decrease work-related pain and injury incidence and improve occupational performance.
2. By the end of the ergonomics program, participants' knowledge with use of best practices for proper ergonomics, lifting, bending, and reaching techniques will increase as measured by a pre / post questionnaire.
3. By the end of the ergonomics program, participants with use of best practices for proper ergonomics, lifting, bending, and reaching techniques will decrease as measured by (application name).

Anticipated Needs:

Materials/equipment: REBA, yoga mats, music, theracane, back braces, pens and pencils, paper, color printer, Canva subscription (maybe)

Staffing: brewers will be observed while working so they will be paid for that time, they will not be compensated when using the application if they are not working at the time

Space: breweries provide their space

Preliminary Budget:

Preliminary Budget		
Anticipated Expenditures	**Approximate Cost**	**Potential Funding Sources**
Brewers Association Membership	$175.00	TBD
Ergonomics Compliance Training	$36.95	TBD
Brewery safety video courses	$0.00	TBD
Exercise program materials (yoga mats)	$8.99 each	TBD
Theracane	$17.91 each	TBD
Mueller Sports Medicine Adjustable Back Brace	$15.97 each	TBD

Doctoral Experiential Evaluation Plan:

The DEx Capstone project will be evaluated by completion of an evaluation form, determining if the learning objectives were met, and measuring the overall success of the ergonomics program from the pre / post questionnaire and the application where participants will document their level of pain each day of the program. This evaluation will determine if the ergonomics program was successful in increasing participants knowledge in ergonomics such as lifting and bending techniques, as well as if the program was successful in decreasing pain in participants in order to reduce musculoskeletal concerns. The ergonomic program will be continued through the Adult & Aging Practice IV course.

The Social Cognitive Theory (SCT) is a dynamic, ongoing process that explores the reciprocal interactions of people and their environment, and the psychosocial determinants of health behavior. According to this theory, there are three main factors that influence health behavior change: self-efficacy, goals, and outcome expectancies. As individuals adopt new behaviors, this causes changes in both the environment and in the person.

The Social Cognitive Theory (SCT) is known to be particularly useful in rural communities for examining how individuals interact with their surroundings (Latour, 2023). It can be used to understand the influence of social determinants of health and a person's past experiences on behavior change. This theory is the most appropriate for the implementation of an ergonomics based training program in the microbrewery industry. The primary goal of the students' proposed project idea is to improve ergonomics in individuals employed at microbreweries by considering their environment and implementing preventative strategies in order to influence behavior change. The SCT has been used successfully as the underlying theory for behavior change in many areas, one being pain control. Pain is a key aspect of the ergonomics training program. While preventative strategies and education of proper body mechanics is delivered to improve ergonomics, the program also looks to reduce musculoskeletal disorders. When looking at ergonomics and musculoskeletal disorders, pain is the first factor to be considered.

Comments/Additional Information

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WNE OTD DEx WORKPLAN

Activity/Task	**Outcome**	**Timeline**	**Person(s) Responsible**	**Resources Needed/Comments**
Orient to program site to tour the facility & meet with potential participants	Finalize and secure program sites, educate site owners/managers on program plan and its benefits to their facility, and answer any questions	Summer 2023	Clara, Makayla, site mentor?	- communication between researchers and brewery owners/managers - final program plan
Brewery Safety video courses	Learn about the process of brewing and safety concerns that can arise	Summer 2023	Clara & Makayla	https://www.brewersassociation.org/edu/online-courses/
Ergonomic compliance training	Learn about proper body mechanics, workplace environment set up, and lifting and reaching techniques	Summer 2023	Clara & Makayla	https://www.compliancetrainingonline.com/ergonomics-labor-industry.cfm

Develop an exercise/stretching program that would best benefit workers related to musculoskeletal concerns	Implement the program on site in order to assess and reduce workers pain and risk for musculoskeletal concerns	Summer 2023	Clara & Makayla	https://www.brewersassociation.org/seminars/the-ergonomics-of-brewing-avoiding-injury-and-staying-the-course-in-the-brewery/
Develop a pre / post questionnaire related to employees level of knowledge on ergonomics	Deliver the questionnaire prior and post the implementation of the program in order to measure the success rate of the program related to knowledge of ergonomics	Summer 2023	Clara & Makayla	- understand ergonomics and what is involved - understand ergonomics in the brewing community - identify the knowledge of ergonomics employees in a brewery should know

Appendix I

Needs Assessment

The Efficacy of Ergonomic Intervention on Individuals Employed at Micro-Breweries To Prevent Musculoskeletal Disorders

Problem/ Unmet Need

Individuals working in the food service industry are typically expected to work long hours and stay on their feet for extended periods of time. One of the most common challenges to healthy ergonomics in the industry are repetitive motions; lifting heavy or awkward objects and standing in awkward postures caused by leaning, reaching, or bending. Workers in this industry are prone to musculoskeletal disorders, making ergonomics the top reason for injury claims.

Current literature indicates there is insufficient evidence to support the efficacy of preventative strategies to reduce work-related injuries among individuals in the brewery industry. One of the reasons why small companies do not consider ergonomic evaluations as a way to improve processes and increase productivity is the lack of ergonomic knowledge and successful examples of benefits obtained by the application of ergonomic principles (Nino et al., 2021).

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with ADLs and IADLs, as well as quality of life.

Target Population

According to the Brewers Association, 9,247 breweries were operating in the United States in 2021 (Brewers Association, n.d.). In 2020, Dunham & Associates performed a biennial

economic impact study of the brewery industry in America on behalf of The Beer Institute and the National Beer Wholesaler's Association. They reported that there were over two million jobs created by the brewing industry and 883,000 of those jobs were from retail based (John Dunham & Associates, 2021). There is no current research specifying staff who only serve beer at breweries, however, according to the U.S. Bureau of Labor Statistics, as of 2023 there were an estimated 711,140 bartenders employed in the United States. The population will be recruited via email among all states so long as they are currently employed at a brewery as a brewer or pouring and serving beer.

Literature Review

Jones et. al. (2005) performed a case study on a pub in British Columbia, Canada. This study was meant to observe and analyze the ergonomic strain of the bartenders, cooks, and waitresses in order to determine the most likely areas of work-based injury. After this analysis, they implemented educational and environmental interventions to reduce likelihood of ergonomic based injuries for the staff. A task analysis of typical activities for each group was performed and it was found that the lumbosacral region was at high risk from tasks involving lifting and high reaching. Suggestions were made to modify each task based on the environment of the pub in order to reduce future musculoskeletal injury.

Lavery et. al. (2022) sought to determine the most common injuries that brewers in America experience at their workplace and how it impacts their daily lives. They used a survey to gather data and received 191 responses from around the United States. Based on the results of the survey, the authors found that common injuries included musculoskeletal injuries, which is consistent with other studies on the food service industry (Jones, et. al., 2005). Brewers also

reported that the injuries they received at work negatively impacted their occupational activities outside of work. The authors found that there was a statistically significant correlation between these two concerns. This study reflects the need for ergonomic and safety interventions to be implemented in industrial brewing spaces around the United States in order to reduce musculoskeletal injuries and their impact on the staff's activities of daily living outside of work.

Nino et. al. (2021) evaluated the production process of an artisan brewery in Valdivia, Chile in order to identify opportunities for improvement based on ergonomic principles. The critical areas identified from an ergonomics point-of-view that exposed workers to high physical risk factors included manual handling, awkward postures, and repetitive movements. Workers were required to lift, carry, and stack malt bags and beer kegs, manipulating each load from the ground level 28 times a day. These tasks forced workers to engage in repetitive movements and awkward postures due to consistently reaching and bending. The authors recommended the use of mechanical aids such as load-lifting equipment in order to prevent the appearance of occupational diseases related to musculoskeletal disorders.

Filiaggi & Courtney (2003) reviewed the occupational hazards of the food and eating industry due to the high incidence of non-fatal injuries. They found that the majority of injuries were tears, strains, and sprains. Overexertion and falls were two of the most common causes of these injuries, as well as being hit by an object (Filiaggi & Courtney, 2003). The authors made recommendations in order to reduce the incidence of injury in the food and eating sector. This included buy-in from management and staff, which is necessary to maintain safety protocol and reinforce it in the daily workplace. They also recommended safety modeling and training that is integrated into the work environment instead of being part of an outside training module. Lastly,

they recommended holding the employees accountable for their own safety by integrating it into performance reviews.

Resource Availability

Resources include access to the state guilds for breweries in the United States, including the email of their representatives and list of each brewery in the guild.

Barriers

According to the Bureau of Labor Statistics, there was a 130.7% turnover rate for employees in the restaurant/food service industry in 2020 (Carouthers, 2021). This may negatively impact the gathering of information if there is a lack of consistency in participants, especially considering a virtual educational program. Delivering an online program, carryover of ergonomic practices into the breweries may be inconsistent and difficult to monitor. Additionally, there may be difficulty maintaining the ergonomic practices being taught due to the preconceived structure of breweries. Many breweries are constructed based on aesthetics instead of worker safety consideration. This could cause challenges when trying to change their view on work culture or make suggestions to change the work setting and reduce their commitment to following correct ergonomic procedures. Many ergonomic devices are expensive, such as high quality seats, and breweries do not have a lot of financial overhead. Industrial brewing equipment is often built into the facility and cannot be moved, which may make it difficult to alter the environment in order to improve ergonomics. The spaces may not be large enough for additional modifications as well.

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Appendix J

Literature Review

Ergonomics & importance/impact on productivity

For employers, ergonomics is an important consideration when designing the workplace environment for employees. Oguns (2023) found that there was correlation between improved productivity and ergonomics, as well as an improvement in mental health for employees working desk jobs and with repetitive upper body movements. The seminal article by Resnick & Zanotti (1997) found that employees benefited from ergonomic improvements in their work environment through modifications of workstations which in turn improved productivity. Deouskar (2017) also determined that ergonomics played a significant role in the workplace for employees and influenced physical and mental wellbeing. It was also determined by Cinkay (2023) that implementation of long term ergonomic orientations and interventions decreased workers compensation claims in a hospital setting.

Breweries & ergonomics

In 2011, Ramsey et. al. published an evaluation report of a brewery in Colorado on behalf of NIOSH due to concerns of poor ergonomics and MSDs with their canning employees. The researchers recommended environmental adaptations, workstation adjustments, and ergonomic education for managers and employees. They also found that employees did not feel the brewery provided sufficient ergonomic training nor did employees take active steps to engage in training activities resulting in decreased levels of participants for safety training.

Nino, et. al. (2021) performed a task analysis and used the Manual Handling Assessment Charts (MAC) tool in order to modify the environment of the two manual tasks determined to be the most detrimental for a small-scale brewery in Chile. They found that environmental adaptations

and body mechanics training decreased the MAC scoring which showed the effectiveness of ergonomic intervention to decrease excessive exertion on the body due to lifting and repetitive movements. Brents, et. al. (2021) and Ji, et. al. (2023) determined that repetitive keg lifting caused overexertion and increased likelihood of MSDs.

Ogundiran, et. al. (2020) performed a study to determine if there was an increase of MSDs for brewery employees who worked at breweries for extended periods of time in Southwest Nigeria. The authors found that brewery employees did report high MSDs over time, especially with injuries to the lower back. In 2022, Lavery et. al. found that brewery employees reported being more prone to workplace injuries related to repetitive motions, twisting, and bending. The authors found a significant correlation between work-place MSDs and decreased ability to engage in daily occupations outside of work. Mgbemena (2022) focused on environmental adaptations and furniture adjustments for brewers in Nigeria and found that brewery employees reported improved ergonomics when spaces were modified to decrease strain on the body due to unconventional workplace environments.

Bartenders & ergonomics

Currently there is limited recent research on the impact of ergonomics on bartenders. In 2005, Jones, et. al. performed a case study at a pub in British Columbia to determine ergonomic factors increasing the risk of MSDs. The authors found that modifications of tasks for the bartenders was effective for reducing strain on the upper body. Filiaggi & Courtney (2003) concluded that restaurant workers overall were susceptible to ergonomic-based hazards from the profession. Similar to Jones, et. al., Filiaggi & Courtney found that overexertion and repetitive movements were two factors that increased likelihood of MSDs for employees. One common job for bartenders at breweries is working a cash register or other payment device. While no studies

have been completed with bartenders, Algarni, et. al. (2020) found that supermarket cashiers had an increased likelihood of lower back and neck MSDs. This role contains similar job roles as a bartender, however a cashier would likely be handling the register at an increased volume compared to a bartender.

Ergonomic programs & education

MSDs are an increasing health problem in the workplace due to a lack of awareness and knowledge of ergonomic practices. Attia, et. al. (2023) performed a study to identify the level of ergonomic awareness and work-related musculoskeletal disorders among staff nurses in Oman and found a significant correlation between ergonomic awareness and their working ability concluding that there is a need for ergonomic awareness in the workplace for a sustainable and safe working environment. Similarly, Oladeinde, et. al. (2015) carried out a study to examine the level of awareness and knowledge of ergonomics among medical laboratory scientists and also found that the application of ergonomics in the work environment was poor and there was a need for daily ergonomic education.

Research supports how ergonomic education can help in reducing the risk for MSDs and encouraging use of proper body mechanics in the workplace. In America, organizations such as the Occupational Safety and Health Administration (OSHA) and the National Institute of Occupational Safety and Health (NIOSH) investigate workplace environments and set the standards for safety and health, including ergonomics in a variety of workplaces. Both organizations have found that ergonomic training and education improve productivity and decrease likelihood of MSDs developing. In 2020, Abdollahi, et. al. performed a study to examine the effectiveness of an ergonomic educational program among nursing staff who work in the operating room. The authors found that those who participated in ergonomic education including knowledge

on prevalence of MSDs and methods in preventing them, there was a significant decrease in the risk of MSDs after completion of the educational program. This data determined that ergonomic education including on-site job training should be incorporated into work environments in order to reduce workplace injuries, as well as frequent call outs. Wurzelbacher, et. al. (2020) performed a study to determine the effectiveness of ergonomic interventions among material handling operators. These interventions included implementation of strategies that encourage use of proper body mechanics such as equipment like lift tables and anti-fatigue mats. Participants reported a significant decrease in upper extremity pain frequency and severity after participating in the ergonomic intervention routinely. Anti-fatigue mats were specifically associated with decreased frequency of low back pain.

While engaging in poor ergonomics can negatively impact your work performance, it can also have an influence on the engagement in occupations in your daily life. Sohrabi & Babamiri (2022) conducted a study to evaluate the effectiveness of an ergonomics training intervention on MSDs, quality of work-life, and occupational psychosocial stresses among office workers.

Zerguine, et. al. conducted a systematic review in order to identify the outcomes of online office ergonomics training. The authors found that most of the trainings focused on ergonomic elements including posture, musculoskeletal health, and knowledge. They determined that a more instructional approach involving learning activities and instructions will help to increase efficiency and learning outcomes.

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Appendix K

Final Learning Objectives & Evaluation

DOCTORAL EXPERIENTIAL CAPSTONE STUDENT LEARNING OBJECTIVES & EVALUATION PLAN

This Experiential Learning Plan and Evaluation requires documentation of a formal evaluation mechanism and objective assessment of the student's performance during and at the completion of the doctoral experiential component. The student, the faculty mentor, and the site mentor collaborate to ensure completion of the doctoral experience.

Student Name: Makayla Descault, OT/s

DEx Capstone Site: Western New England University

DEx Capstone Dates: April 8, 2024 – July 12, 2024

DEx Capstone Site Mentor: Nikki Lavery, OTD, OTR/L, CKTP, CEAS

DEx Capstone Faculty Mentor: Erin Murray, OT, OTD-PP, OTR/L

WNE OTD Learning Objectives: What does the student want/need to know? What skills does the student need to develop?

Evidence of Accomplishment: How will performance be measured and evaluated and by whom? Name the activity, project, or skill that will be accomplished. Identify the target date of completion. At midterm and final, present evidence of progress and/or accomplishment

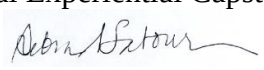
Progress: Site and faculty mentor will rate student's progress at midterm and final

Comments: The faculty and site mentors and the student should provide written comments regarding the student's progress on each objective at midterm and final

Initial Approval of DEx Capstone Student Learning and Evaluation Plan

I agree with the above-stated objectives and feel that all learning objectives are obtainable within the fourteen (14) - week timeframe. I believe that the stated objectives encompass all aspects of the student role in this doctoral experience. I understand that the site mentor or student can add additional objectives at any time as the situation and experience dictate, with the approval of the faculty advisor. Any objectives that are proposed to be removed will need to be approved by the faculty mentor.

Site Mentor Signature Date 4/12/24	Student Signature Date
Nicole J. Lavery, OTD, OTR/L	Makayla Descault, OT/s 4/12/24

OTD Faculty Date 4/12/2024	OTD Doctoral Experiential Capstone Coordinator:  Date: 4/15/24

LEARNING OBJECTIVES & EVALUATION PLAN

<table>
<tr><td colspan="2">WNE OTD Objective #1

Document my experience in collaboration for program or service delivery with professionals and/or members of consumer groups who are not occupational therapists. This includes being able to negotiate the role of occupational therapy as part of an interprofessional team.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

Delivering virtual educational modules on the topic of ergonomics to brewery workers/owners that provides strategies and techniques for safety awareness in order to reduce musculoskeletal concerns and increase productivity within the organization.</td></tr>
<tr><td colspan="2">Who is responsible?

Researchers (Makayla Descault, OT/s & Clara Davenport, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

Survey, documenting tools (laptops), online site to develop modules, activity analysis, EBP</td></tr>
<tr><td colspan="2">What is the timeline?
14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Development and delivery of educational modules with completion of pre/post questionnaire by participants for data analysis and results</td></tr>
<tr><td>Midpoint

☐ Accomplished
X Making Progress
☐ Not Progressing
☐ Needs Attention</td><td>Comments

Making great progress re: development of modules.</td></tr>
<tr><td>Final

X Accomplished
☐ Making Progress
☐ Not Progressing
☐ Needs Attention</td><td>Comments: program was created and sent out to brewers. Program was well done, clear and based on evidence.</td></tr>
</table>

<table>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">WNE OTD Objective #2

Documentation of a needs assessment for a particular population and using said assessment as the foundation for planning a successful Doctoral Experiential Capstone Project. Additional evidence will include feedback from consumers that indicates the impact of the project on the population they represent.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

Conducting and updating needs assessment</td></tr>
<tr><td colspan="2">Who is responsible?

Researchers (Makayla Descault, OT/s & Clara Davenport, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

Access to target population, online databases, survey</td></tr>
<tr><td colspan="2">What is the timeline?

Weeks 1-5</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Short report of the updated needs assessment</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student has completed a needs assessment and will continue to modify as needed.</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments
Needs assessment completed</td></tr>
<tr><td colspan="2">WNE OTD Objective #3</td></tr>
</table>

<table>
<tr><td colspan="2">Demonstrated proficiency with the use of personal computers, learning platforms, electronic health records and assistive technology sufficient to fully document the Doctoral Experiential Capstone Project for WNE as well as for members of the population served by that project.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

Development of online modules to be delivered electronically to participants for engagement in learning opportunities and completion of learning checkpoint questions. WNE OTD laptops used to record and document the data collected throughout the doctoral experiential capstone, as well as completing and uploading the planned activities for the doctoral experiential capstone. Conducted research using online data bases.</td></tr>
<tr><td colspan="2">Who is responsible?

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

Wi-Fi, access to online modules, WNE OTD laptops, online data bases</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Program materials, submission of reflection assignments</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments: The online module utilized a program new to the student. The student demonstrated proficiency with this platform</td></tr>
<tr><td colspan="2">WNE OTD Objective #4</td></tr>
</table>

Recognize and be able to describe the diverse systems of service delivery that are most cost-effective and considerate for health, social, and educational settings, both traditional and nontraditional. through both clinical and reflective writing, be able to articulate a sensitivity to cultural, linguistic, and other diversities and describe solutions for care disparities.	
Planned activity or Methodology *The researcher will complete activity analyses in breweries including skilled observation. The researcher will provide cost-effective strategies/techniques that are easily implemented and a part of their everyday work routine.*	
Who is responsible? *Researcher (Makayla Descault, OT/s)*	
What resources are needed? *Access to targeted population, online databases*	
What is the timeline? *14 weeks*	
Evidence of accomplishment *Collection of data/program materials, submission of reflection assignments*	
Midpoint ☐ Accomplished X Making Progress ☐ Not Progressing ☐ Needs Attention	Comments
Final X Accomplished ☐ Making Progress ☐ Not Progressing ☐ Needs Attention	Comments: Online module was free and offered a proficient training option for the desired population
WNE OTD Objective #5 Document the ability to work with others to identify meaningful objectives, organize,	

<table>
<tr><td colspan="2">manage, and motivate people and resources, communicate effectively, and supervise action to accomplish stated program or service goals.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

The researcher will work with additional researcher in developing an educational ergonomic program. Brewery workers/owners will be recruited from surrounding states for a diverse population of participants</td></tr>
<tr><td colspan="2">Who is responsible

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

WNE laptops, access to target population, access to online databases</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Collection of program materials, submission of reflection assignments</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student researcher has successfully created a survey and virtually administered it to breweries.</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments:
Completed the program and received input from the population</td></tr>
<tr><td colspan="2">WNE OTD Objective #6:

Through both clinical and reflective writing, be able to articulate the therapeutic/clinical reasoning (procedural, interactive, narrative, ethical, scientific, pragmatic) process that I use during planning, delivery, and evaluation of population-based and evidence-driven occupational therapy services. demonstrate the ability to implement, in existing programs,</td></tr>
</table>

<table>
<tr><td colspan="2">and plan for in developing programs, an occupational therapy process that is occupation based, client centered, culturally sensitive, and ethnically appropriate.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

The researcher will collect data from online databases, analyze and synthesize the information related to ergonomics and existing research, and use this information to develop educational ergonomic modules to deliver to participants.</td></tr>
<tr><td colspan="2">Who is responsible?

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

WNE laptops, access to online databases, EBP</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Scholarly component</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student has done extensive research on ergonomics in preparation for delivery of modules.</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments
Student completed their research report</td></tr>
</table>

WNE OTD Objective #7:
Document and experiential and scholarly project that reflects the literature in the field and uses responsive, ethical models. The scholarly process and results should be made accessible to the college and the community, especially to the population served by the project. A

<table>
<tr><td colspan="2">report of the project, presented in a professional format that others can replicate or build upon, will be evidence of accomplishment.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

Literature review, needs assessment, task analysis/skilled observation, poster presentation, delivery of in-service to the rehabilitation department at Gaylord Hospital</td></tr>
<tr><td colspan="2">Who is responsible?

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

WNE laptop, access to online databases, access to target population</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Final report of doctoral research project</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

The student completed a scholarly report containing all of the required components</td></tr>
<tr><td colspan="2">WNE OTD Objective #8:

Through both clinical and reflective writing, be able to articulate a clear awareness of my own personal and professional strengths and boundaries and identify supports and strategies for goal achievement.</td></tr>
<tr><td colspan="2">Planned activity or Methodology</td></tr>
</table>

<table>
<tr><td colspan="2">The researcher will submit reflective assignments of personal growths and areas of achievement. The researcher will work alongside and communicate with additional researcher, site mentor, and faculty mentor throughout the duration of the research project.</td></tr>
<tr><td colspan="2">Who is responsible?

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

Support & constructive feedback from mentors, EBP, resources</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Completion of learning objectives</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student is readily available for meeting and receptive to all feedback.</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student is responsive to both positive and constructive feedback for all materials and assignments apart of capstone.</td></tr>
</table>

WNE OTD Objective #9
The researcher will demonstrate proficiency in delivering health and wellness education regarding reaching for workplace items and bottling/canning in the workplace environment using proper body mechanics through a developed ergonomics program to decrease incidence of work-related pain and injury.

Planned activity or Methodology *The researcher will deliver educational ergonomic modules for participants to follow through while completing learning checkpoints in between sections of the module in order to ensure retainment of the information. The modules will contain information related to the importance of ergonomics and additional strategies/techniques for engaging in proper and safe body mechanics in the brewing industry such as exercise routines and adaptive changes in the environment. These strategies will be implemented into participants' everyday routine.*	
Who is responsible? *Researcher (Makayla Descault, OT/s)*	
What resources are needed? *Educational ergonomic modules, WNE laptops, access to online databases, EBP*	
What is the timeline? *14 weeks*	
Evidence of accomplishment *Completion of educational ergonomic modules and checkpoint questions, followed by delivery to participants via electronically*	
Midpoint ☐ Accomplished X Making Progress ☐ Not Progressing ☐ Needs Attention	Comments Student researcher is continually gathering material for modules.
Final X Accomplished ☐ Making Progress ☐ Not Progressing ☐ Needs Attention	Comments Student developed ergonomic module relevant to the needs of the population and findings of the literature.

WNE OTD Objective #10: By the end of the ergonomics program, participants will demonstrate increased participation in work-related tasks (e.g. bottling/canning, extended periods of standing) due to decreased levels

<table>
<tr><td colspan="2">of pain while engaging in work tasks and use of best practices for proper ergonomics, lifting, bending, and reaching techniques as measured by a pre / post questionnaire.</td></tr>
<tr><td colspan="2">Planned activity or Methodology

The researcher will deliver educational ergonomic modules for participants to follow through while completing learning checkpoints in between sections of the module in order to ensure retainment of the information. The modules will contain information related to the importance of ergonomics and additional strategies/techniques for engaging in proper and safe body mechanics in the brewing industry such as exercise routines or adaptive changes in the environment. These strategies will be implemented into participants' everyday routine. By the end of the research, participants will report the level of pain they experience throughout the workday and how it impacts their performance in work-related tasks.</td></tr>
<tr><td colspan="2">Who is responsible?

Researcher (Makayla Descault, OT/s)</td></tr>
<tr><td colspan="2">What resources are needed?

Survey (pre/post questionnaire), educational ergonomic modules</td></tr>
<tr><td colspan="2">What is the timeline?

14 weeks</td></tr>
<tr><td colspan="2">Evidence of accomplishment

Collection of data from the pre/post questionnaire will measure the participants' responses related to pain; analysis of these results will compare the difference in responses between the pre/post questionnaire</td></tr>
<tr><td>Midpoint

☐ Accomplished

X Making Progress

☐ Not Progressing

☐ Needs Attention</td><td>Comments

Student has created a survey in preparation for ergonomic modules.</td></tr>
<tr><td>Final

X Accomplished

☐ Making Progress

☐ Not Progressing</td><td>Comments

Participants reported increased level of ergonomic knowledge on posttest.</td></tr>
</table>

☐ Needs Attention	

WNE OTD Objective #11 By the end of the ergonomics program, participants' will demonstrate increased knowledge of ergonomics by identifying and incorporating proper body mechanic techniques for specific work-related tasks as measured by the pre / post questionnaire.	
Planned activity or Methodology *The researcher will deliver educational ergonomic modules for participants to follow through while completing learning checkpoints in between sections of the module in order to ensure retainment of the information. The modules will contain information related to the importance of ergonomics and additional strategies/techniques for engaging in proper and safe body mechanics in the brewing industry such as exercise routines or adaptive changes in the environment. By the end of the modules, participants will be able to identify these strategies and implement them into their everyday work routine.*	
Who is responsible? *Researcher (Makayla Descault, OT/s)*	
What resources are needed? *Survey (pre/post questionnaire), educational ergonomic modules*	
What is the timeline? *14 weeks*	
Evidence of accomplishment *Collection of data from the pre/post questionnaire will measure the participants' responses*	
Midpoint ☐ Accomplished X Making Progress ☐ Not Progressing ☐ Needs Attention	Comments
Final X Accomplished ☐ Making Progress	Comments Participants reported learned strategies and likelihood of applying to everyday work routine on posttest.

☐ Not Progressing ☐ Needs Attention	

WNE OTD Objective #12: The researcher will develop and deliver an in-service to the rehabilitation department at Gaylord Hospital related to the capstone project and the relation of ergonomics specific to the rehabilitation setting.	
Planned activity or Methodology *The researcher will develop a PowerPoint presentation that disseminates the research process including the topic of the research, the topics importance and relevance to OT, the intervention plan, the data collection/analysis, and its relevance to a rehabilitation team. This presentation will then be delivered to the rehabilitation department at Gaylord Hospital for educational purposes and possible continuation of the research.*	
Who is responsible? *Researcher (Makayla Descault, OT/s)*	
What resources are needed? *Data collection/interpretation, WNE laptop*	
What is the timeline? *14 weeks*	
Evidence of accomplishment *Delivery of the PowerPoint presentation to the rehabilitation department at Gaylord Hospital*	
Midpoint ☐ Accomplished X Making Progress ☐ Not Progressing ☐ Needs Attention	Comments Student is actively creating modules, which when completed, can be presented as an in-service.
Final X Accomplished ☐ Making Progress	Comments Student developed a presentation related to capstone and rehab department and delivered at Gaylord Hospital

☐ Not Progressing ☐ Needs Attention	

DOCTORAL EXPERIENTIAL CAPSTONE STUDENT LEARNING OBJECTIVES & EVALUATION PLAN MIDPOINT

SITE MENTOR/STUDENT EVALUATION

Student evaluation of Site mentor, experience and self (please comment on opportunities provided, supervisory relationship and individual performance):

My site mentor has been very responsive and helpful with both constructive and positive feedback. I feel very supported by my site mentor with her experience and capability to boost my confidence and abilities throughout my capstone experience thus far. My site mentor has pushed me to develop my ideas to be new and larger than my original ideas. This has helped me in reflecting in all aspects of my research and developing my capstone project into something great and unique.

Site mentor evaluation of student performance (Identify if all objectives have been met. If yes, please comment on students' achievement for each objective. If no, please identify why goal not met):

Makayla has been working efficiently throughout her experience thus far. She has implemented feedback throughout the process and has effectively implemented the needs assessment survey to the brewery population. She has been communicative and open with her questions and findings. I look forward to the results of the survey and the teaching modules.

Please check one:

___x_____Sufficient progress has been made on the identified learning objectives and I recommend that the student continue this Doctoral Experiential Capstone.

_____The Student has NOT progressed towards achievement of the identified objectives for the Doctoral Capstone Experience. It is recommended that this Student's Learning and Evaluation Plan be reviewed and revised as needed

Site Mentor Signature Date: 5/28/24 Nicole J. Lavery, OTD, OTR/L	Student Signature Date: 5/28/24 Makayla Descault, OT/s

 OTD Faculty Date: 5/24/24	OTD Doctoral Experiential Capstone Coordinator Date

DOCTORAL EXPERIENTIAL STUDENT LEARNING OBJECTIVES & EVALUATION PLAN FINAL SITE MENTOR/STUDENT EVALUATION

Student evaluation of Site mentor, experience, and self (please comment on opportunities provided, supervisory relationship, and individual performance):

My site mentor has provided consistent feedback, both positive and constructive, throughout the entire duration of the 14 week doctoral experiential capstone. She thoroughly reads through each of the assignments, providing feedback with her personal knowledge and expertise with my targeted population and setting. She is responsive both via email and text, communicating times when she is most available, as well as when she might be busy and might not get back immediately. The support I have received from my site mentor has encouraged me to challenge my research abilities and develop my capstone into the best that it can. I feel as though my knowledge in the research field of occupational therapy has grown tremendously, as well as my confidence in the research I have created.

Site mentor evaluation of student performance (Identify if all objectives have been met. If yes, please comment on students' achievement for each objective. If no, please identify why goal not met):

Please check one:

x Sufficient progress has been made on the identified learning objectives and I recommend that the student continue this Doctoral Experiential Capstone.

_____ The Student has NOT progressed towards achievement of the identified objectives for the Doctoral Capstone Experience. It is recommended that this Student's Learning and Evaluation Plan be reviewed and revised as needed.

Site Mentor Signature Date: 7/15/24 Nicole J. Lavery, OTD, OTR/L	Student Signature Date: 7/14/2024

OTD Faculty Date 7/16/24 	OTD Doctoral Experiential Capstone Coordinator Date

Appendix L

Initial Survey

Thank you for participating in this survey. Below is a consent form. There will be no personal or identifying information gathered from this survey. After pressing "agree" you will have access to the survey which should take no more than 15 minutes to complete.

Informed Consent

Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning

Primary Investigator/Institution: Dr. Erin Murray, Clara Jayne Davenport, & Makayla Descault/Western New England University

Introduction

We are inviting you to participate in a research study. This study has been approved by the institutional review board (IRB) at Western New England University (WNEU). You were invited by Clara Davenport and Makayla Descault to participate because you work at or own a brewery. This research consent form explains why this research study is being done, what is involved in participating, the possible risks and benefits of participation, and your rights as a participant in this study. This study will take place from April 2024 to July 2024 in partnership with the Department of Occupational Therapy at the College of Pharmacy & Health Sciences at Western New England University. Please read this form carefully and ask any questions that you may have.

Purpose of the Study

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with activities of daily living and instrumental activities of daily living, as well as quality of life . The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

Description of the Study Procedures

If you are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study and agree to participate in this study,

you will be asked to complete a 10 question survey related to your knowledge of proper body mechanics and its impact on both your work performance and engagement of activities outside of work. The survey will take each participant a maximum of 15 minutes to complete.

Risks or Discomforts of the Study

There are risks to participating in any research study. It is unlikely that you will be at risk for any physical or psychological harm as a result of your participation in this study. You may voice concerns to the investigators at any time. Individuals have the right to refuse or withdraw from participating at any time.

Benefits of Being in the Study

The benefits of participation is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. The ergonomic modules will benefit brewery employees by providing preventative education to help decrease likelihood of musculoskeletal injuries and pain due to repetitive motions and poor body mechanics, as well as environmental modifications. You will receive no payment for participating in the study.

Costs of Being in the Study

There will be no cost to you for participating in the study.

Confidentiality

Research studies have a risk for some loss of privacy. To help prevent the loss of privacy, your name and place of work will not be recorded on any study documents. We will assign a research identification number to all participants which will be included in all study documentation. All records will be kept strictly confidential. Electronic files will be password-protected and hard copies will be stored in a locked cabinet for six years. Only the study staff will have access to the files. None of the data that we may publish or present in any reports, presentations, or papers will include any information that can identify you as a participant in this study.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information, including place of work, will not be used for these purposes without your specific permission. None of the information that we may publish or present in any reports, presentations, or papers will include information that can identify you as a participant in this study

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You have the right to choose not to sign this form. If you decide not to sign this form, you can still participate, however, you will not be included in the study. You can stop being in the study at any time. Tell the

research investigator immediately if you are thinking about stopping or decide to stop. Leaving the research study will not affect your medical care or your relationship with Western New England University.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this research study before, during, or after the research. If you have any questions about the study at any time, please contact Clara Jayne Davenport via telephone number (415) 806-4032, Makayla Descault via telephone number (860) 940-4871, or Dr. Erin Murray via email at erin.murray@wne.edu.

If you wish to speak to the Institutional Review Board (IRB), then please contact Dr. Jessica Carlson, Professor of Psychology and Chair of the WNEU IRB, Jessica.outhouse@wne.edu or via telephone at 413-796-2325 or Dr. Minna Levine, College of Pharmacy / Health Sciences, Member of the IRB at minna.levine@wne.edu. This research project has been reviewed and approved by the Western New England University Institutional Review Board.

Statement of Consent

Your signature indicates that you understand this form and you have decided to volunteer for this study. It also indicates you have read and understood the information provided here. You have had a chance to ask any questions you had. You are 18 years old or older, currently employed at a brewery, and are willing to participate in the study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the "Agree" button indicates that

• You have read the above information

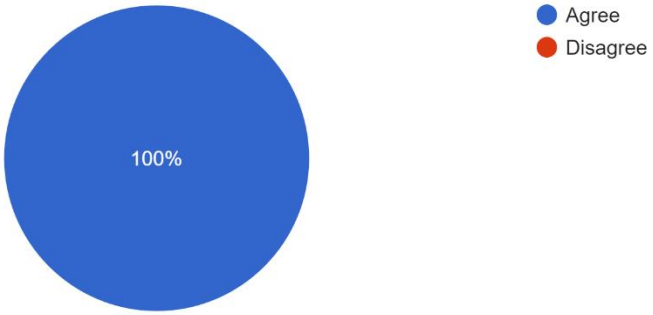
• You voluntarily agree to participate

• You are currently employed at a brewery

• You are 18 years of age or older

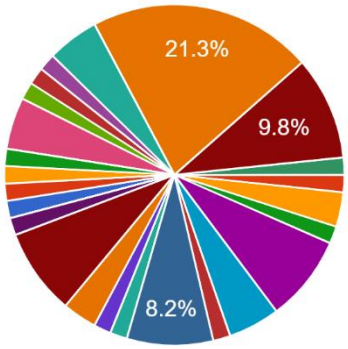
Informed Consent Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning Primary Investigator/Institution: Dr. Er...d at a brewery • You are 18 years of age or older

61 responses



What state is your brewer located in?

61 responses

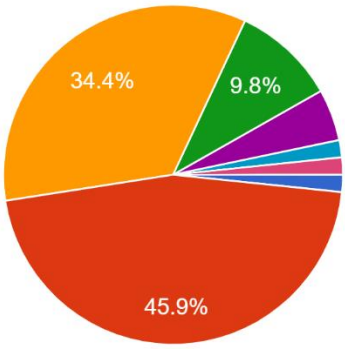


AL
AK
AZ
AR
CA
CO
CT
DE

1/7

What is the categorization of the brewery you currently work for?

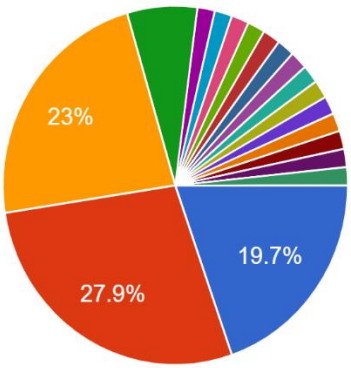
61 responses



Taphouse
Microbrewery
Brewpub
Regional brewery
Large brewery
Microbrewery with a taproom
Microbrewery and Brewpub

What is your current job position at the brewery where you are employed?

61 responses

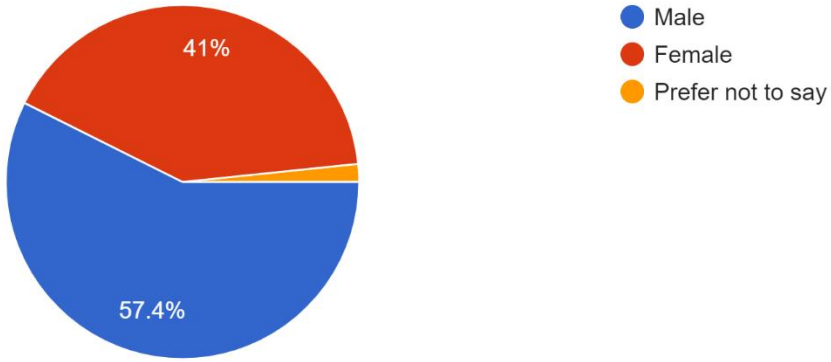


Front of house (e.g. bartender or server)
Back of house (e.g. brewer)
Both front of house and back of house
Owner
events now, previously brewer
Founder/CEO
marketing
General Manager

1/3

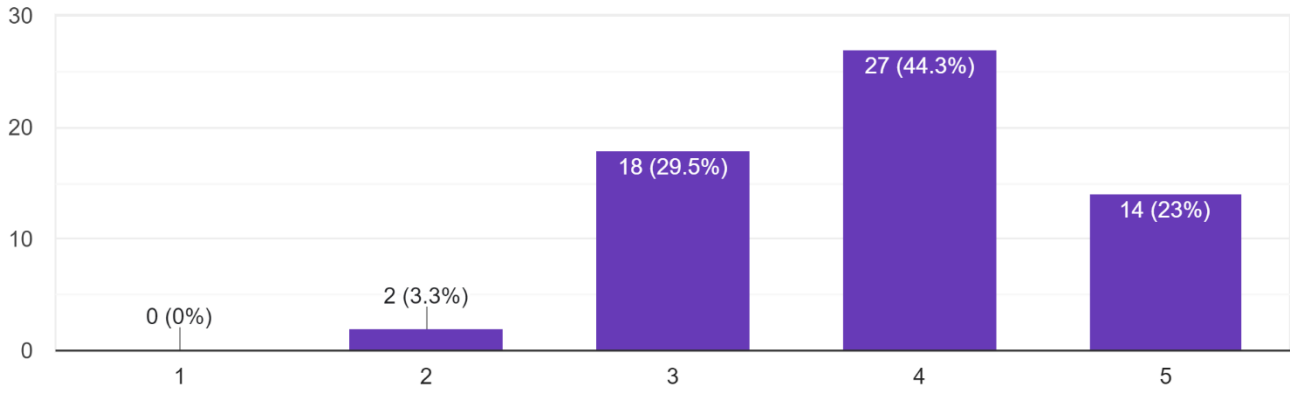
What is your gender identification?

61 responses



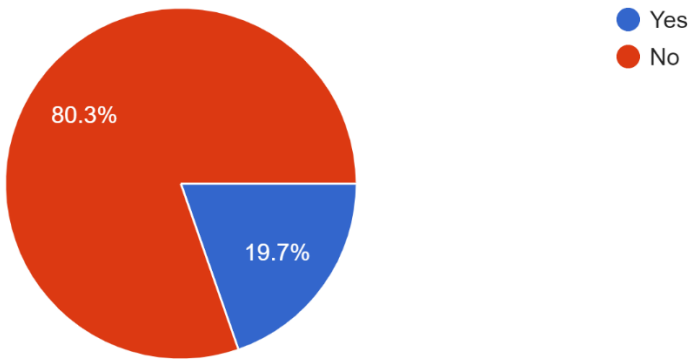
On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, what is your level of knowledge on the concept of using proper body mec...lignment) while engaging in work-related tasks?

61 responses



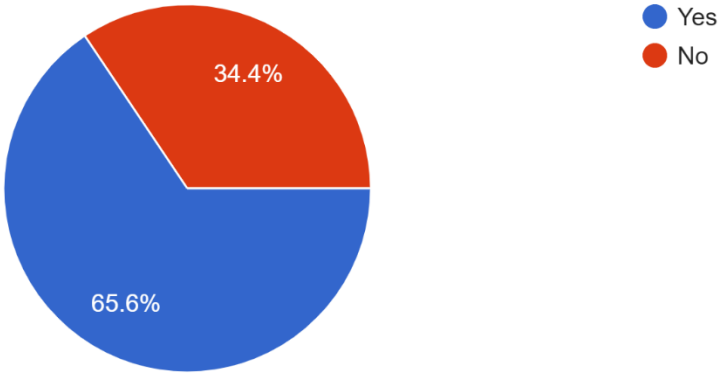
Have you received an orientation or training from your employer related to proper body mechanics?

61 responses



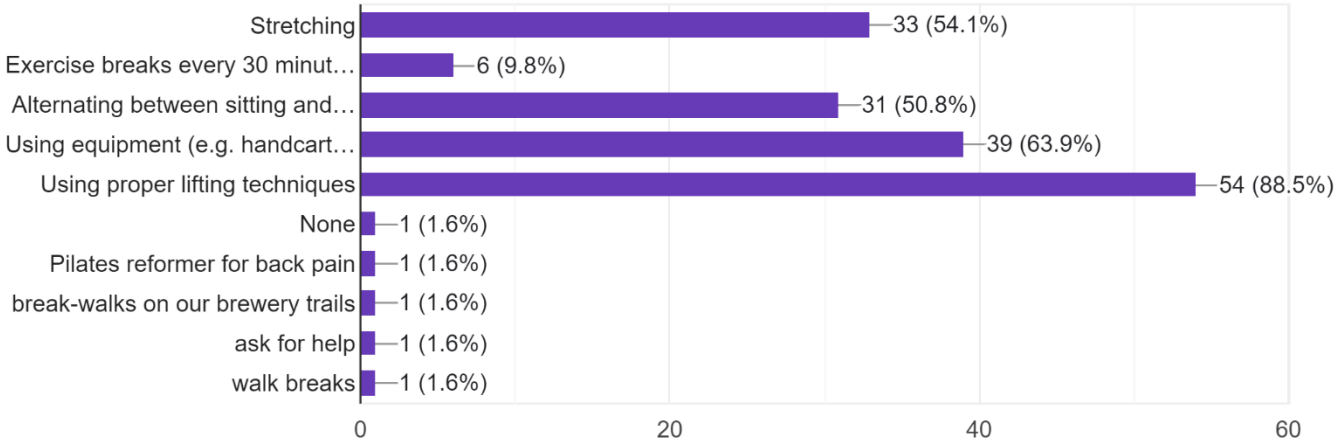
Have you ever had to complete work tasks while injured and/or in pain?

61 responses



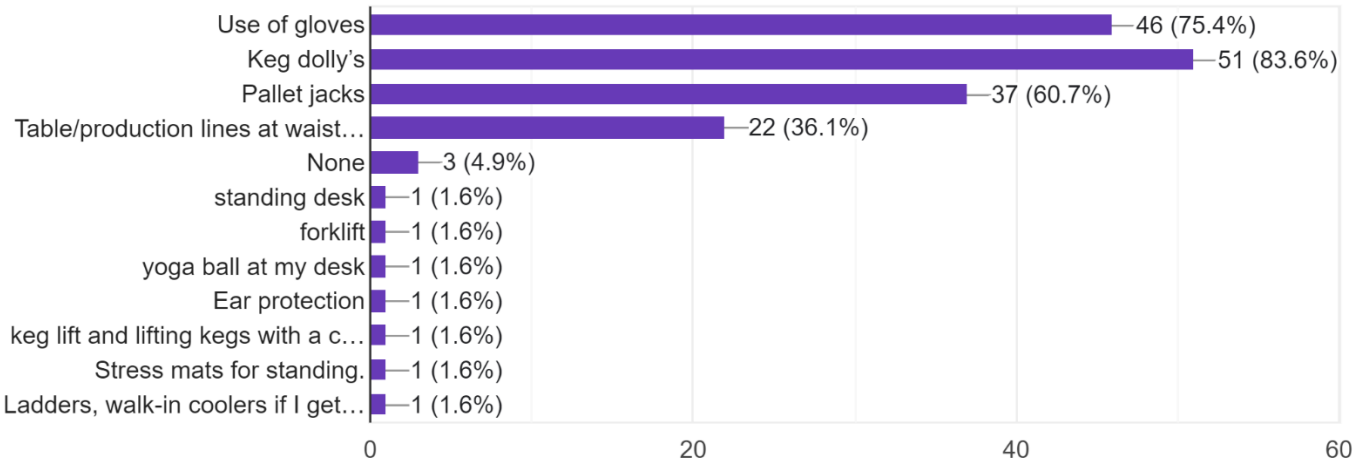
What strategies do you currently use during working hours in order to improve body mechanics?

61 responses



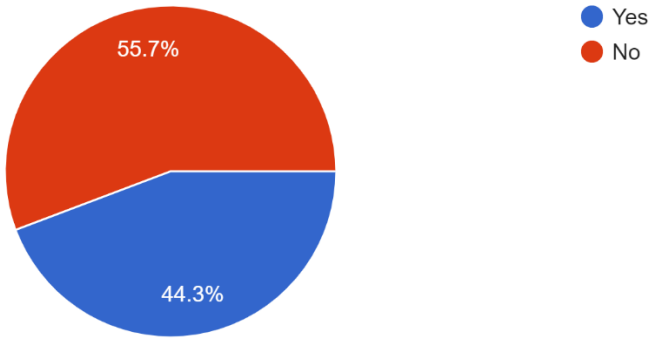
What strategies do you currently use during working hours in order to improve environmental aspects of your job?

61 responses



Do environmental aspects of your job (e.g. placement of glassware, location of grain bags) ever impact work performance and/or cause/increase pain?

61 responses

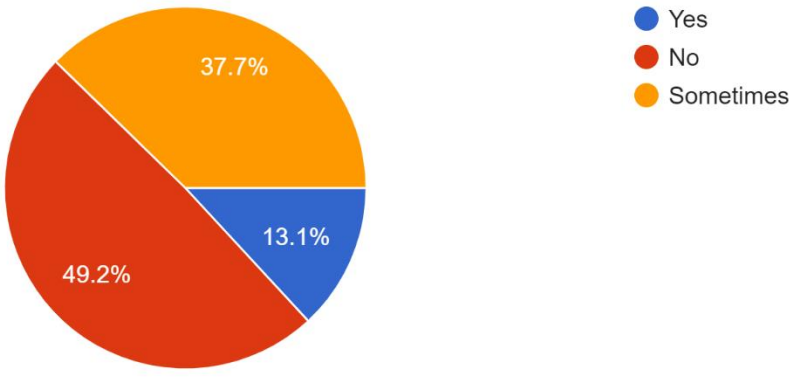


If you replied yes to the above question, which environmental aspects impact work performance and/or increase/cause pain?

28 responses

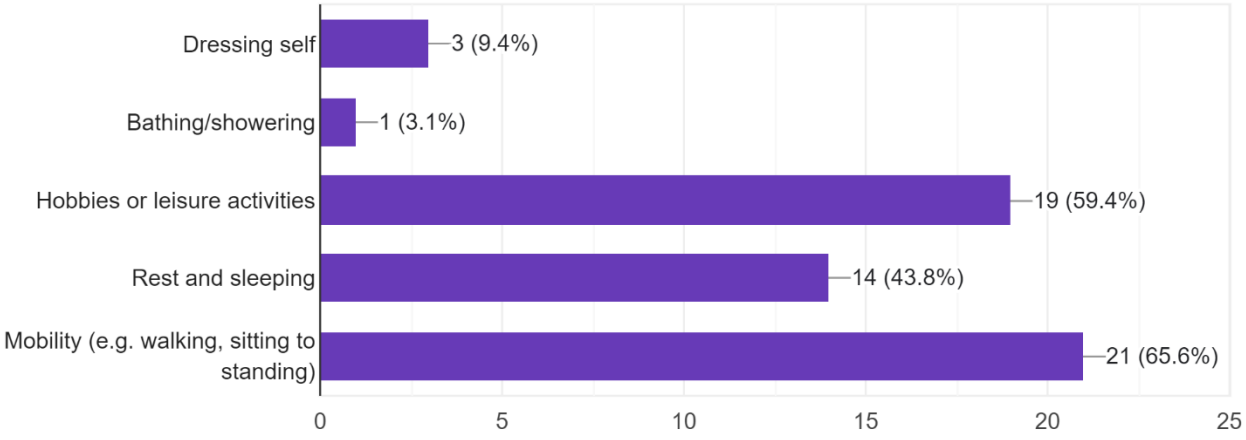
Does work-related pain/injury impact your engagement in activities outside of work?

61 responses



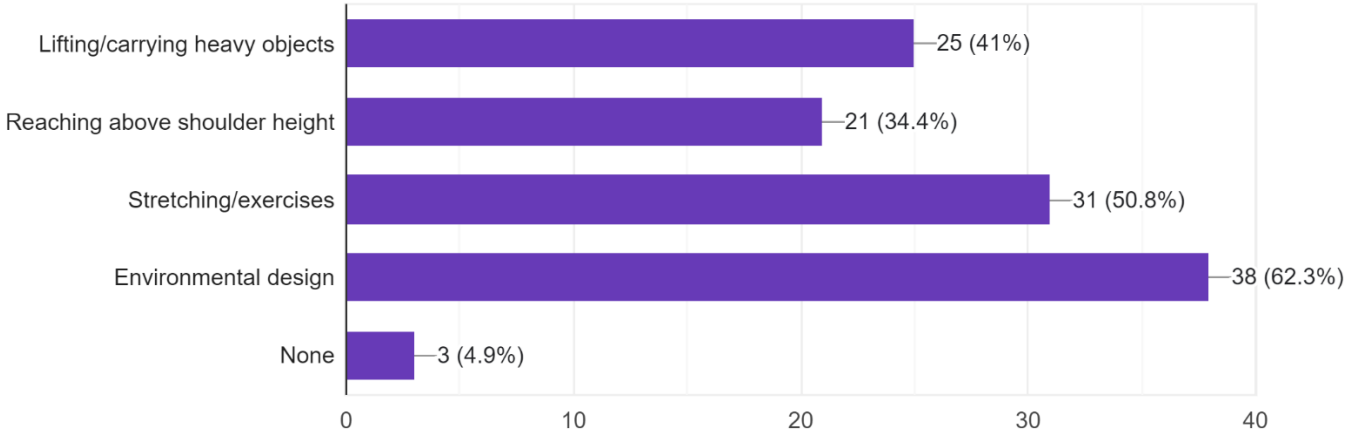
If you replied yes to the previous question, please select all activities that are impacted:

32 responses



Please identify all of the areas in which you feel you need information/strategies related to use of proper body mechanics in your work setting:

61 responses



Appendix M

Pre-Test Questionnaire

Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning

Primary Investigator/Institution: Dr. Erin Murray, Clara Jayne Davenport, & Makayla Descault/Western New England University

Introduction

We are inviting you to participate in a research study. This study has been approved by the institutional review board (IRB) at Western New England University (WNEU). You were invited by Clara Davenport and Makayla Descault to participate because you work at or own a brewery. This research consent form explains why this research study is being done, what is involved in participating, the possible risks and benefits of participation, and your rights as a participant in this study. This study will take place from April 2024 to July 2024 in partnership with the Department of Occupational Therapy at the College of Pharmacy & Health Sciences at Western New England University. Please read this form carefully and ask any questions that you may have.

Purpose of the Study

The researcher's aim is to examine the effectiveness of ergonomic education to decrease musculoskeletal injuries and symptoms in the brewery industry in order to improve brewers engagement with activities of daily living and instrumental activities of daily living, as well as quality of life . The expected benefit is to create a curated ergonomics program that is virtually accessible and free of charge, to provide further research on the topic for future ergonomic programs, and to bring awareness to the ergonomic concerns in the brewing community. This will add to the limited existing literature about the use of proper ergonomics in the workplace and how it reduces musculoskeletal concerns for improved occupational functioning within the industry.

Description of the Study Procedures

If you are 18 years old or older, currently employed at a brewery as a brewer or pouring and serving beer, and are willing to participate in the study and agree to participate in this study, you will be asked to take part in an online ergonomic training program where you will complete educational modules related to ergonomics, as well as competency checkpoints throughout the module. These modules will provide education on how to use proper body mechanics while engaging in required work-related tasks, as well as environmental adaptations. In addition, you will be educated on preventative interventions to decrease the likelihood of musculoskeletal injury due to repetitive motions and poor ergonomics. You will be asked to complete a pre and post test survey in order to measure the effectiveness of the program. You will be asked to participate in one educational module specific to your position

of work (front of house or back of house) that will take up to 60 minutes to complete. You will have access to the module via delivery of email after completing the pre-test survey. The total maximum duration for each participant is 2 hours.

Risks or Discomforts of the Study

There are risks to participating in any research study. It is unlikely that you will be at risk for any physical or psychological harm as a result of your participation in this study. You may find the questions or the interview to cause distress and/or fatigue. You may decline to answer any questions and you may voice concerns to the investigators at any time.

Benefits of Being in the Study

The benefits of participation is to provide further research on the topic for future ergonomic programs and to bring awareness to the ergonomic concerns in the brewing community. The ergonomic modules will benefit brewery employees by providing preventative education to help decrease likelihood of musculoskeletal injuries and pain due to repetitive motions and poor body mechanics, as well as environmental modifications. You will receive no payment for participating in the study.

Costs of Being in the Study

There will be no cost to you for participating in the study.

Confidentiality

Research studies have a risk for some loss of privacy. To help prevent the loss of privacy, your name and place of work will not be recorded on any study documents. We will assign a research identification number to all participants which will be included in all study documentation. All records will be kept strictly confidential. Electronic files will be password-protected and hard copies will be stored in a locked cabinet for six years. Only the study staff will have access to the files. None of the data that we may publish or present in any reports, presentations, or papers will include any information that can identify you as a participant in this study.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information, including place of work, will not be used for these purposes without your specific permission. None of the information that we may publish or present in any reports, presentations, or papers will include information that can identify you as a participant in this study

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You have the right to choose not to sign this form. If you decide not to sign this form, you can still participate, however, you will not be included in the study. You can stop being in the study at any time. Tell the

research investigator immediately if you are thinking about stopping or decide to stop. Leaving the research study will not affect your medical care or your relationship with Western New England University.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this research study before, during, or after the research. If you have any questions about the study at any time, please contact Clara Jayne Davenport via telephone number (415) 806-4032, Makayla Descault via telephone number (860) 940-4871, or Dr. Erin Murray via email at erin.murray@wne.edu.

If you wish to speak to the Institutional Review Board (IRB), then please contact Dr. Jessica Carlson, Professor of Psychology and Chair of the WNEU IRB, Jessica.outhouse@wne.edu or via telephone at 413-796-2325 or Dr. Minna Levine, College of Pharmacy / Health Sciences, Member of the IRB at minna.levine@wne.edu. This research project has been reviewed and approved by the Western New England University Institutional Review Board.

Statement of Consent

Your signature indicates that you understand this form and you have decided to volunteer for this study. It also indicates you have read and understood the information provided here. You have had a chance to ask any questions you had. You are 18 years old or older, currently employed at a brewery, and are willing to participate in the study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this

consent form for your records. Clicking on the “Agree” button indicates that

• You have read the above information

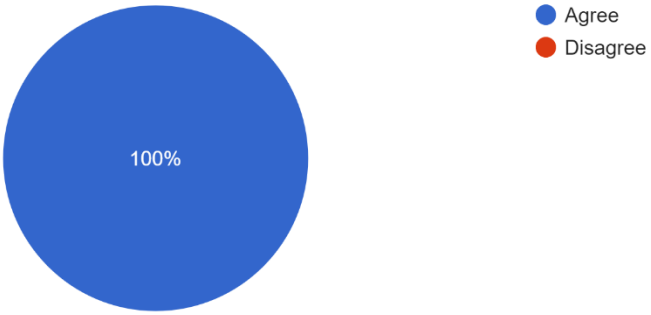
• You voluntarily agree to participate

• You are currently employed at a brewery

• You are 18 years of age or older

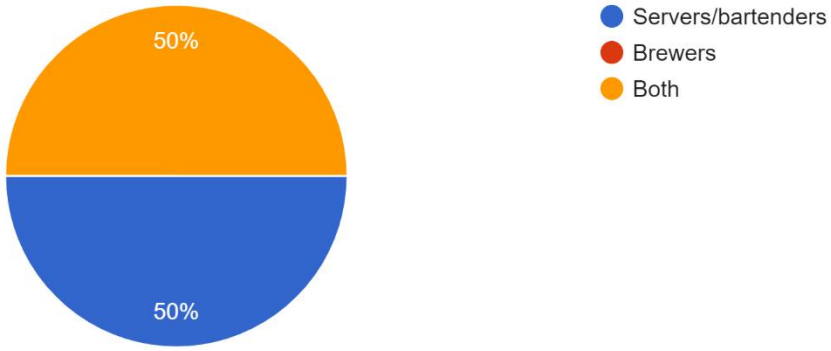
Title of Study: Barreling Down on Ergonomics to Increase Occupational Functioning Primary Investigator/Institution: Dr. Erin Murray, Clara Jay...oyed at a brewery • You are 18 years of age or older

3 responses



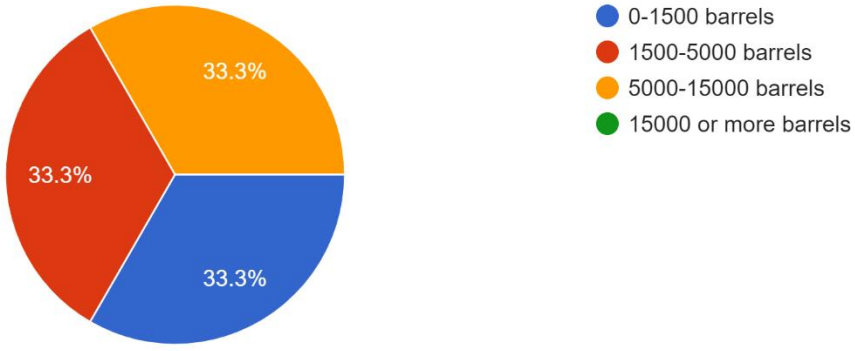
Which module are you taking?

2 responses



Of the following, approximately how many barrels of beer does your brewery produce per year?

3 responses

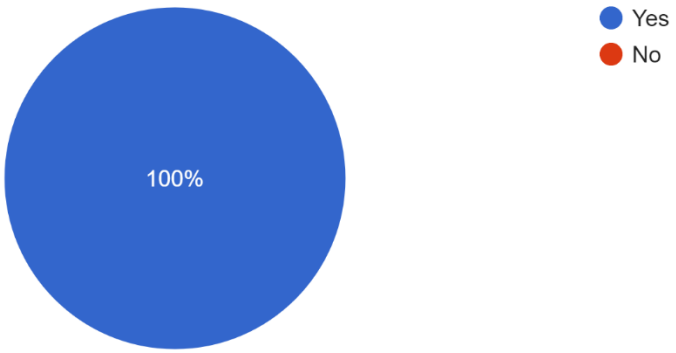


What is your job position at the brewery you are currently employed at?

3 responses

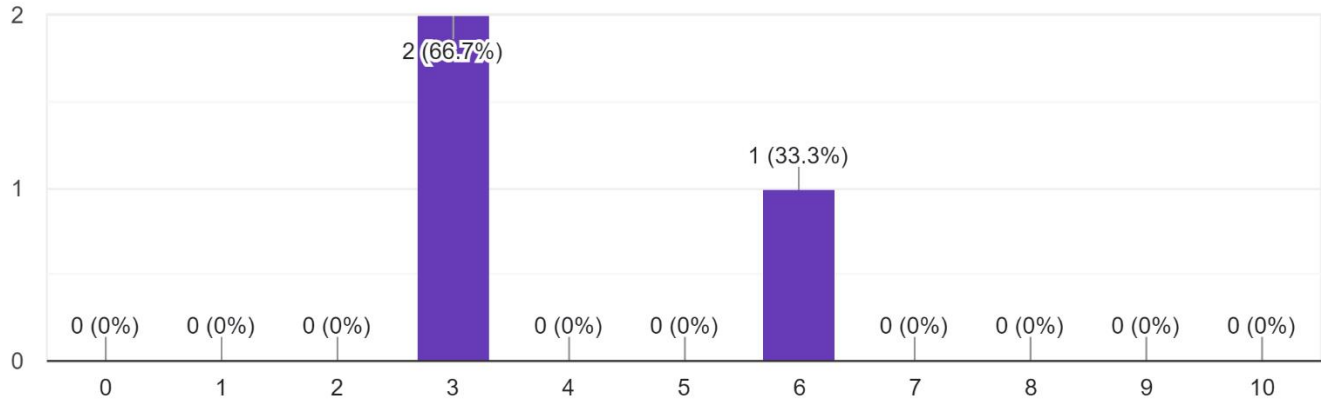
Do you currently or have you in the past experienced work-related pain/injury?

3 responses



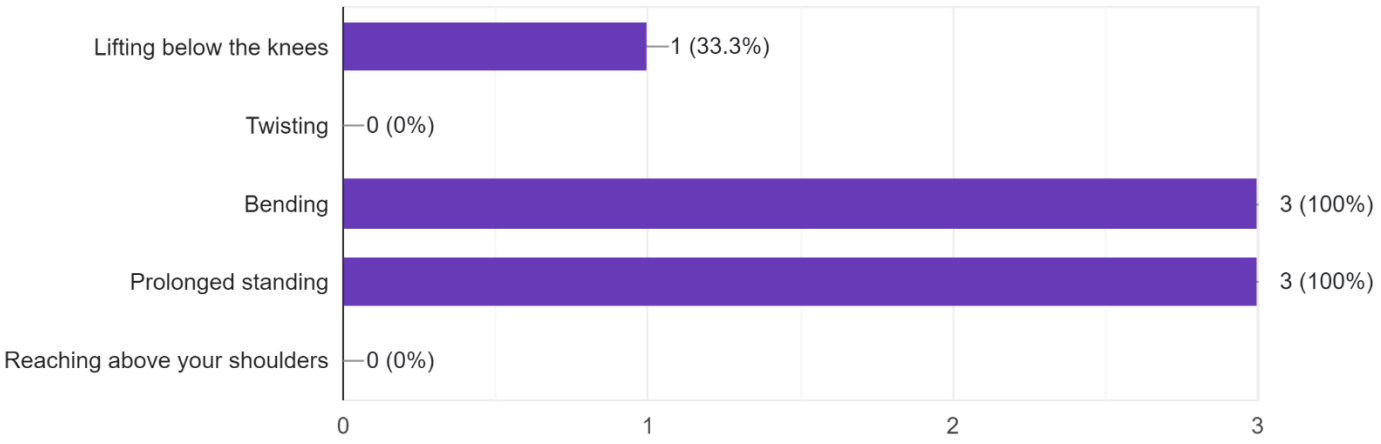
If you replied yes to the previous question, on a scale of 0-10, what is/was your average level of pain throughout your work day?

3 responses



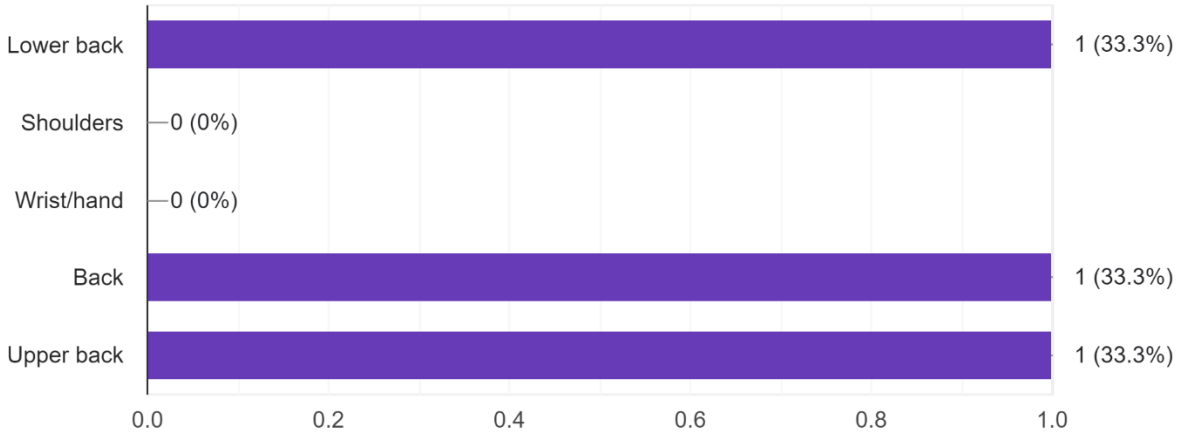
If you do experience pain, do any of the following activities exacerbate your pain?

3 responses



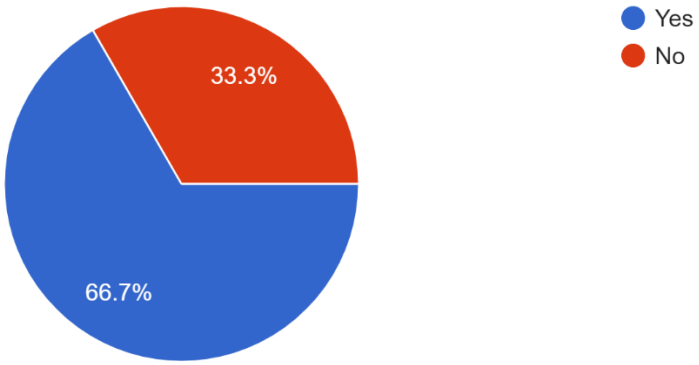
If you do experience pain, where was/is the location of your pain?

3 responses



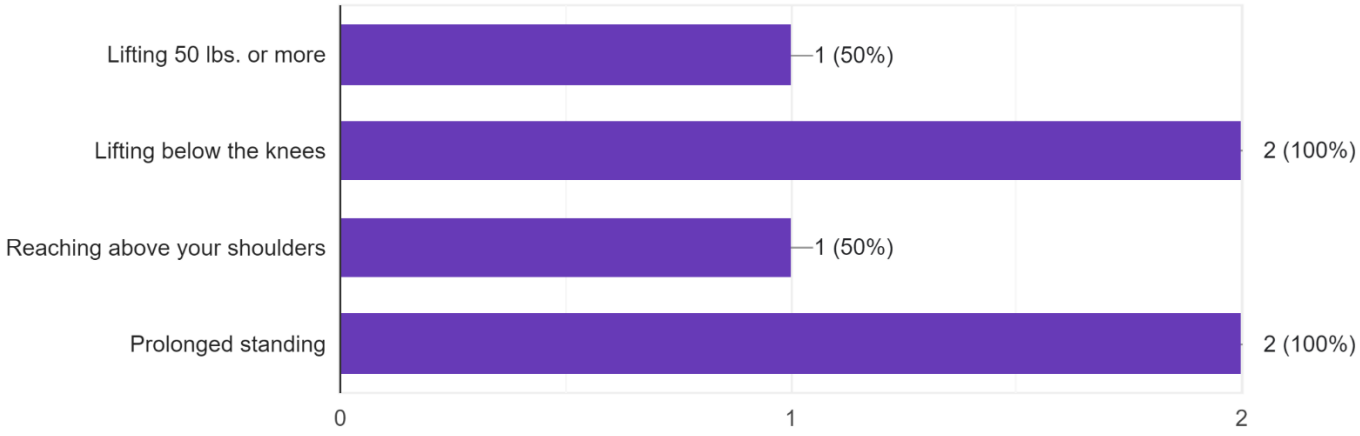
Has work-related pain or injuries ever impacted your engagement/participation in your work routine?

3 responses



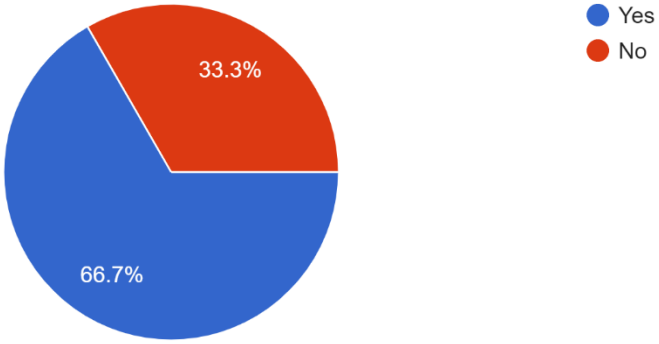
If you replied yes to the above question, what activities have been impacted due to work-related pain?

2 responses



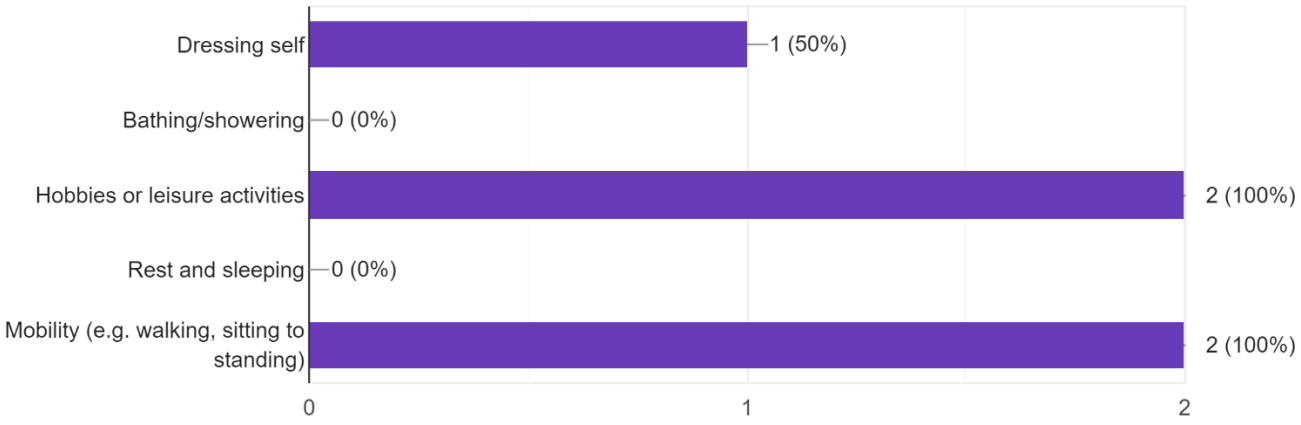
Has your work-related pain or injury ever impacted your engagement in activities outside of work?

3 responses



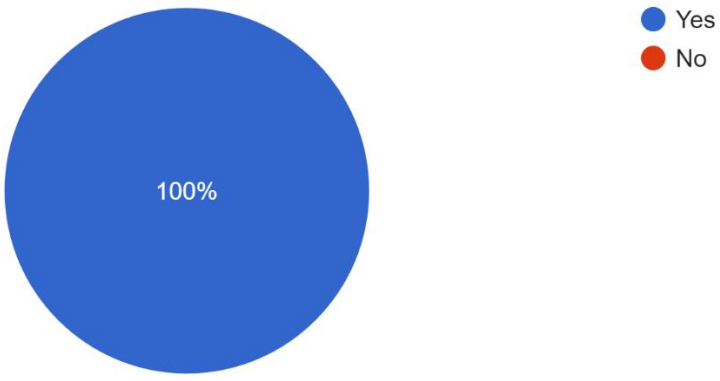
If you replied yes to the above question, what activities have been impacted due to work-related pain?

2 responses



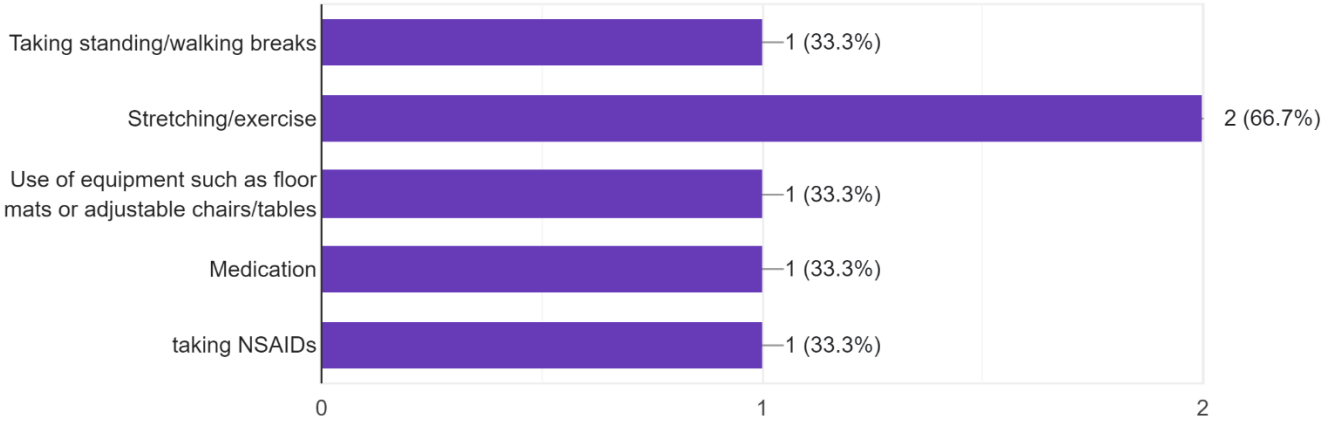
Are there any strategies or techniques you have used to decrease your pain during work?

3 responses



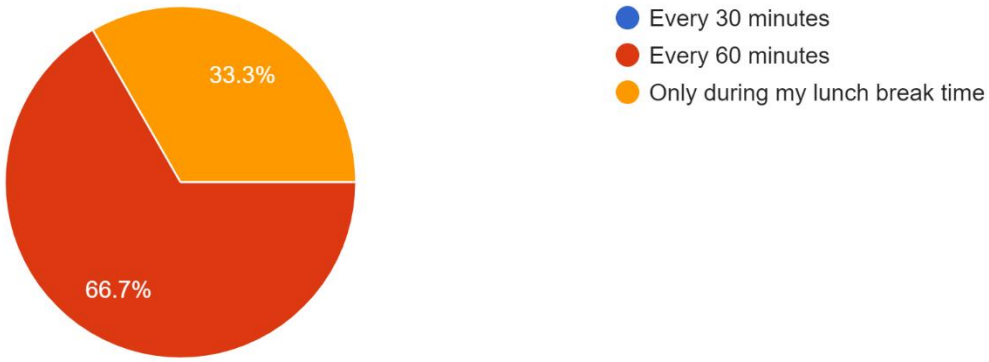
If you do use strategies to decrease pain, what strategies/techniques have you used?

3 responses



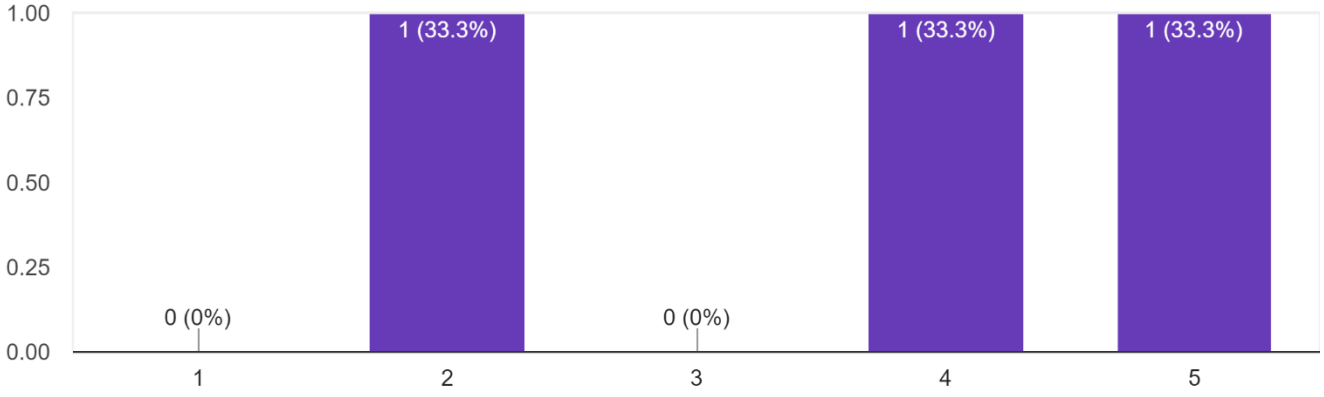
If you do use strategies to decrease pain, how often did you engage in those strategies?

3 responses



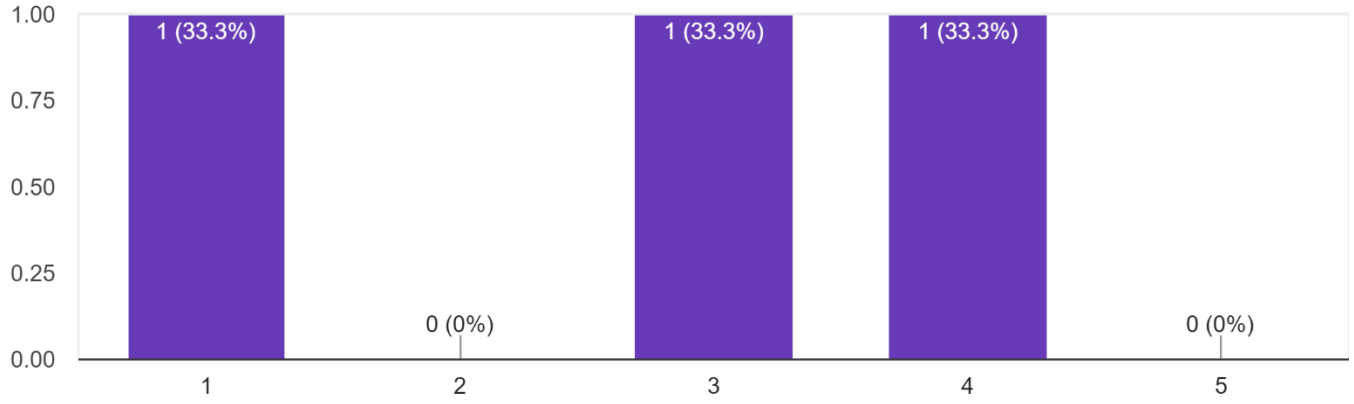
On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, what is your level of knowledge on the concept of using correct body me...alignment) while engaging in work-related tasks?

3 responses



On a scale of 1-5, with 1 being never and 5 being always, how frequently do you consider proper body mechanics when engaging in your everyday job routine?

3 responses



Appendix N

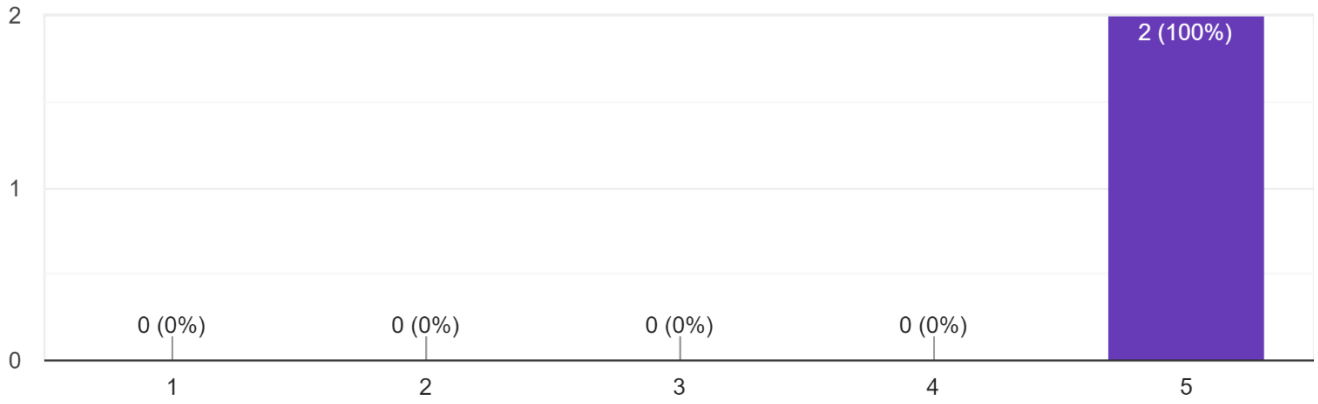
Post-Test Questionnaire

Which module did you take?

1 response

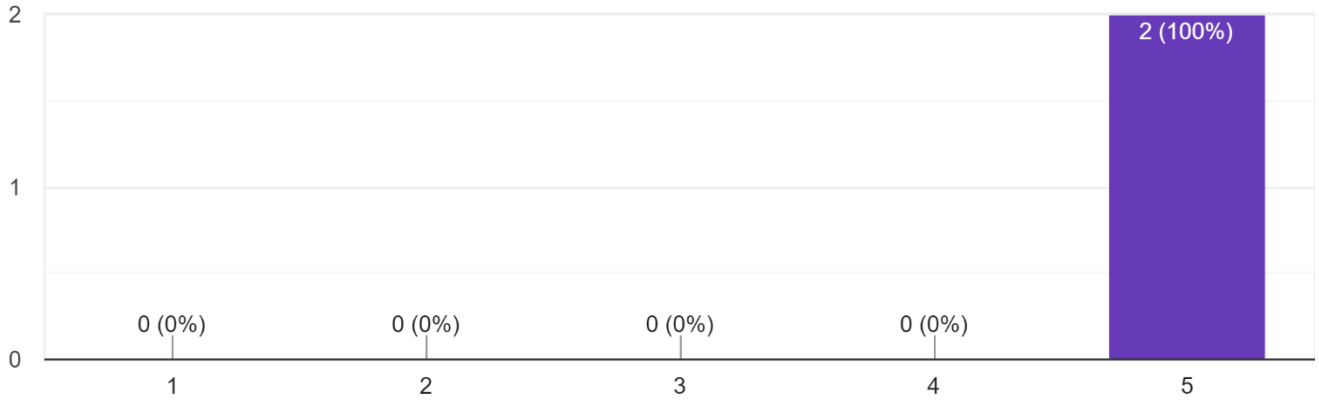
On a scale of 1-5, with 1 being no knowledge and 5 being very knowledgeable, after completing the educational program, what is your level of knowled...d alignment) while engaging in work-related tasks?

2 responses



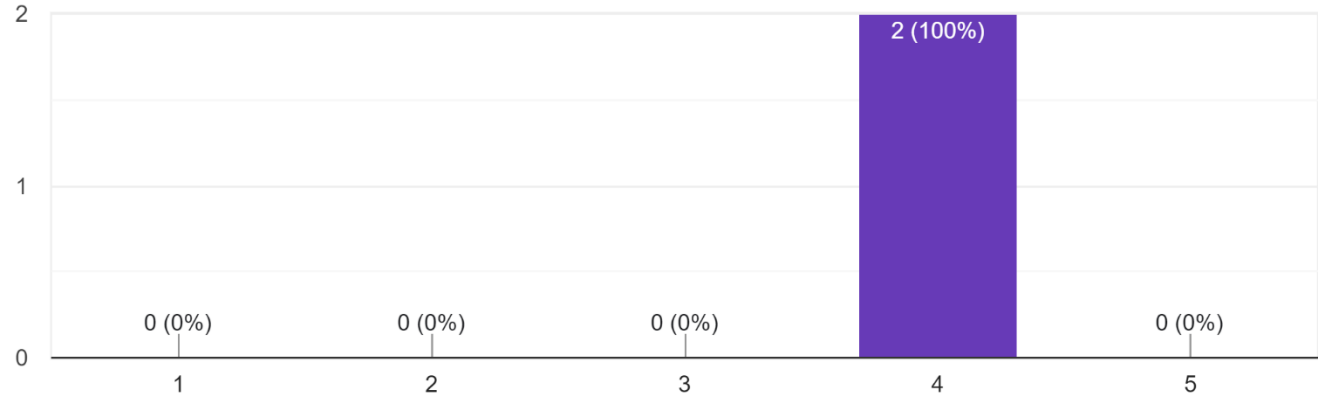
On a scale of 1-5, with 1 being not significant at all and 5 being very significant, how applicable do you feel the information provided in the educational modules relates to your everyday job routine?

2 responses



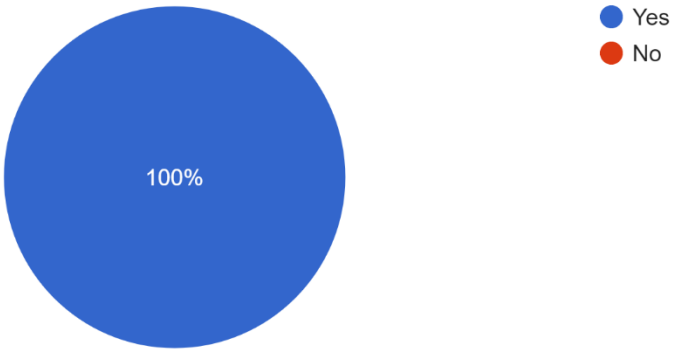
On a scale of 1-5, with 1 being never and 5 being always, how likely do you think you will apply the ergonomic strategies/modifications to your everyday job routine?

2 responses



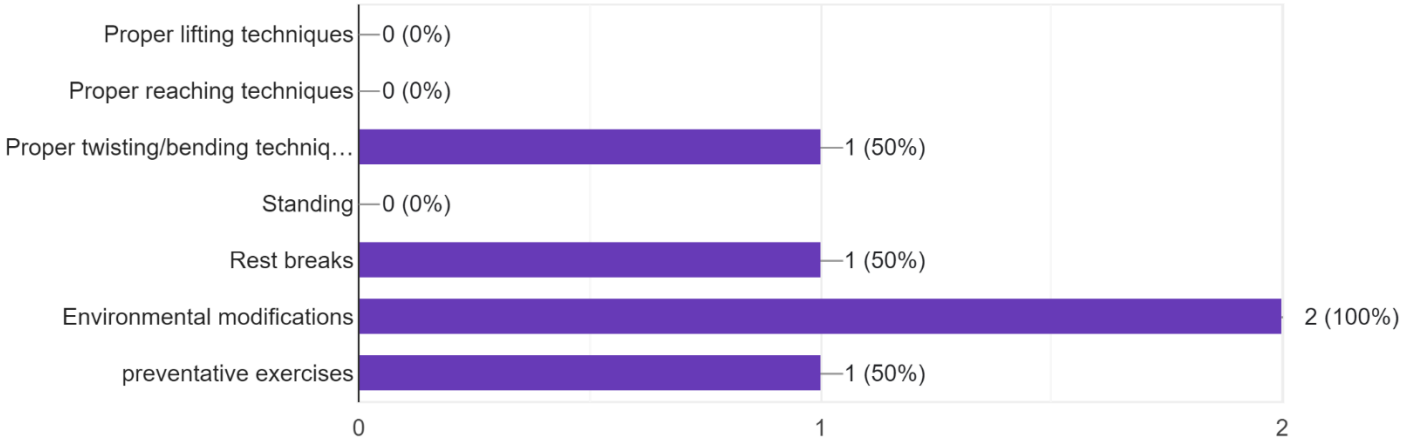
After completing the educational program, were there any strategies/techniques and/or ergonomic topics that were new information to you?

2 responses



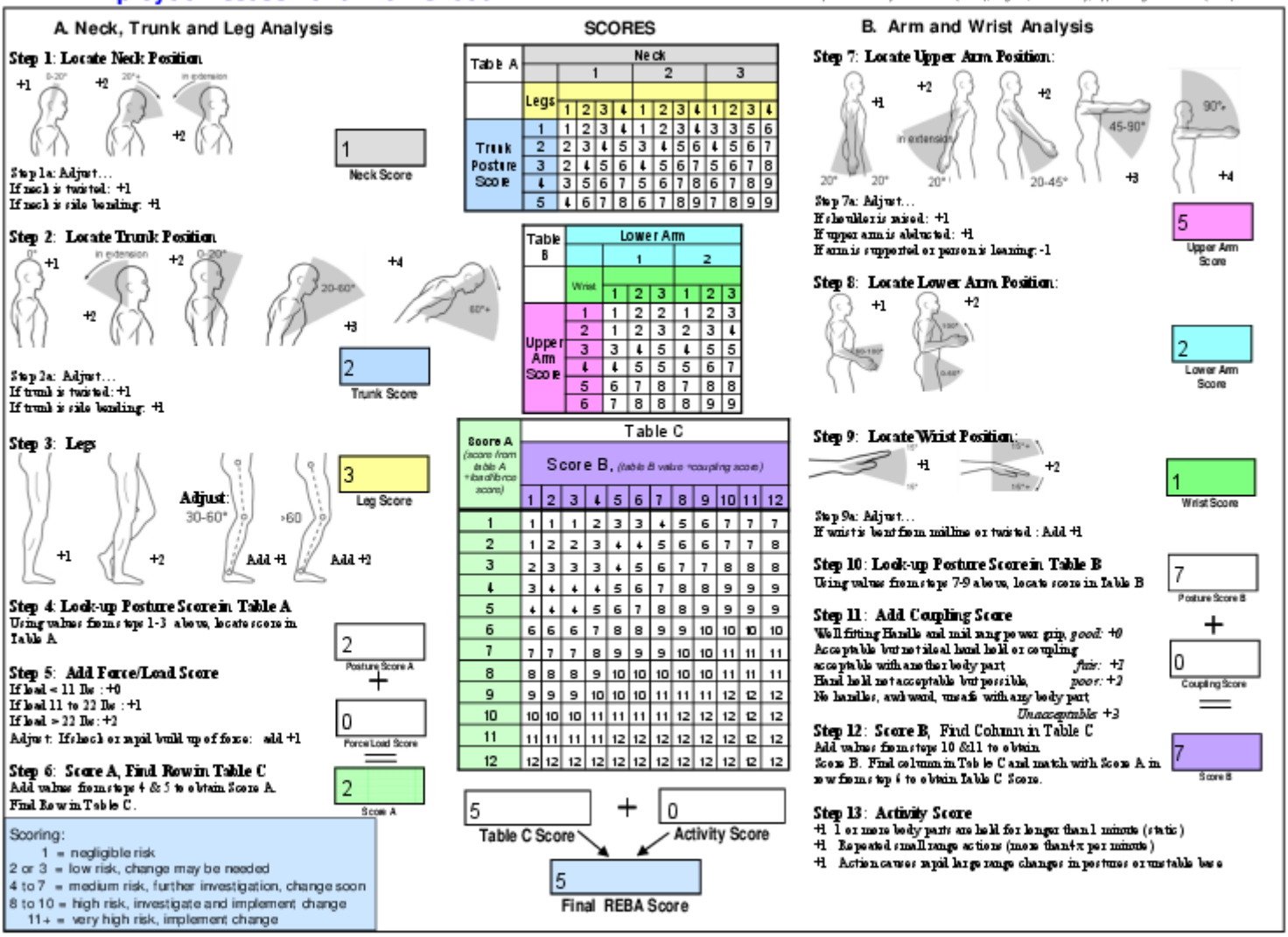
If you replied yes to the above question, what new strategies and/or areas did you learn (select all that apply)?

2 responses



Appendix O

The Rapid Entire Body Assessment (REBA)



Task name: Managing cash register Reviewer: Makayla Descault, OT/s Date: 5 / 8 / 24

provided by Practical Ergonomics

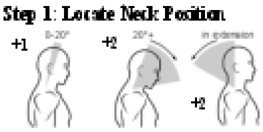
kbaker@ergosmart.com (816) 444-1667

REBA Employee Assessment Worksheet

based on Technical note: Rapid Entire Body Assessment (REBA), Hignett, McAtamney, Applied Ergonomics 31 (2000) 201-205

A. Neck, Trunk and Leg Analysis

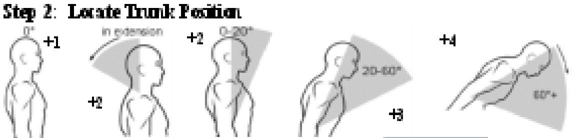
Step 1: Locate Neck Position



Neck Score: 2

Step 1a: Adjust…
If neck is twisted: +1
If neck is side bending: +1

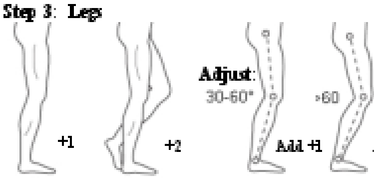
Step 2: Locate Trunk Position



Trunk Score: 4

Step 2a: Adjust…
If trunk is twisted: +1
If trunk is side bending: +1

Step 3: Legs



Leg Score: 1

Step 4: Look-up Posture Score in Table A
Using values from steps 1-3 above, locate score in Table A

Posture Score A: 5

Step 5: Add Force/Load Score
If load < 11 lbs : +0
If load 11 to 22 lbs : +1
If load > 22 lbs: +2
Adjust: If shock or rapid build up of force: add +1

\+ Force/Load Score: 0

Step 6: Score A, Find Row in Table C
Add values from steps 4 & 5 to obtain Score A.
Find Row in Table C.

= Score A: 5

Scoring:
1 = negligible risk
2 or 3 = low risk, change may be needed
4 to 7 = medium risk, further investigation, change soon
8 to 10 = high risk, investigate and implement change
11+ = very high risk, implement change

SCORES

Table A

Table A	Neck	1				2				3			
	Legs	1	2	3	4	1	2	3	4	1	2	3	4
Trunk Posture Score	1	1	2	3	4	1	2	3	4	3	3	5	6
	2	2	3	4	5	3	4	5	6	4	5	6	7
	3	2	4	5	6	4	5	6	7	5	6	7	8
	4	3	5	6	7	5	6	7	8	6	7	8	9
	5	4	6	7	8	6	7	8	9	7	8	9	9

Table B

Table B	Lower Arm	1			2		
	Wrist	1	2	3	1	2	3
Upper Arm Score	1	1	2	2	1	2	3
	2	1	2	3	2	3	4
	3	3	4	5	4	5	5
	4	4	5	5	5	6	7
	5	6	7	8	7	8	8
	6	7	8	8	8	9	9

Table C

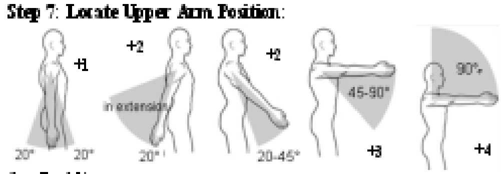
Score A (score from table A +load/force score)	Score B, (table B value +coupling score) 1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	2	3	3	4	5	6	7	7	7
2	1	2	2	3	4	4	5	6	6	7	7	8
3	2	3	3	3	4	5	6	7	7	8	8	8
4	3	4	4	4	5	6	7	8	8	9	9	9
5	4	4	4	5	6	7	8	8	9	9	9	9
6	6	6	6	7	8	8	9	9	10	10	10	10
7	7	7	7	8	9	9	9	10	10	11	11	11
8	8	8	8	9	10	10	10	10	10	11	11	11
9	9	9	9	10	10	10	11	11	11	12	12	12
10	10	10	10	11	11	11	11	12	12	12	12	12
11	11	11	11	11	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12	12	12	12

Table C Score: 4 + Activity Score: 0

Final REBA Score: 4

B. Arm and Wrist Analysis

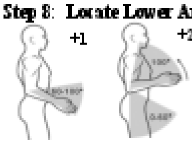
Step 7: Locate Upper Arm Position:



Step 7a: Adjust…
If shoulder is raised: +1
If upper arm is abducted: +1
If arm is supported or person is leaning: -1

Upper Arm Score: 2

Step 8: Locate Lower Arm Position:



Lower Arm Score: 2

Step 9: Locate Wrist Position:

Step 9a: Adjust…
If wrist is bent from midline or twisted : Add +1

Wrist Score: 2

Step 10: Look-up Posture Score in Table B
Using values from steps 7-9 above, locate score in Table B

Posture Score B: 3

Step 11: Add Coupling Score
Well fitting Handle and mid rang power grip, *good:* +0
Acceptable but not ideal hand hold or coupling acceptable with another body part, *fair:* +1
Hand hold not acceptable but possible, *poor:* +2
No handles, awkward, unsafe with any body part, *Unacceptable* +3

\+ Coupling Score: 0

Step 12: Score B, Find Column in Table C
Add values from steps 10 &11 to obtain Score B. Find column in Table C and match with Score A in row from step 6 to obtain Table C Score.

= Score B: 3

Step 13: Activity Score
+1 1 or more body parts are held for longer than 1 minute (static)
+1 Repeated small range actions (more than 4x per minute)
+1 Action causes rapid large range changes in postures or unstable base

Task name: Pouring beer using tap handle Reviewer: Makayla Descault, OT/s Date: 5 / 8 / 24

Appendix P

Presentation to Rehabilitation Department at Gaylord Hospital

Ergonomics in the Workplace

A guide to a safe & healthy work environment

Survey

https://www.surveymonkey.com/r/LBLPCV8

Doctoral Project

The Efficacy of Ergonomic Intervention on Individuals Employed at Micro-Breweries

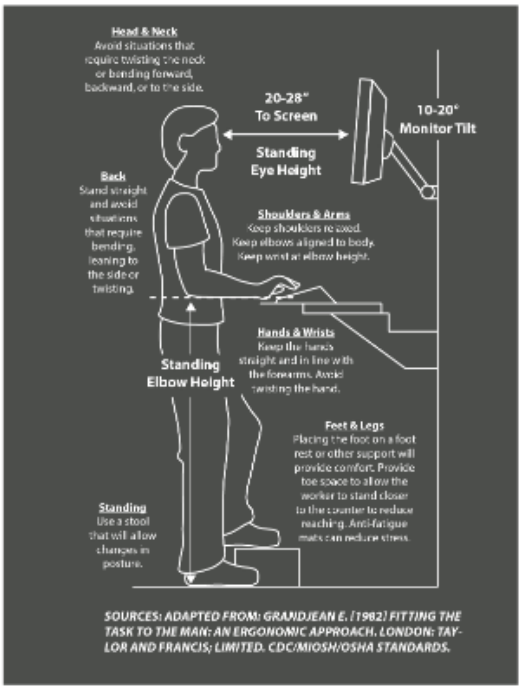
Project Outline

Task Analysis

Survey

Ergonomic Intervention

Survey



Musculoskeletal Disorders

Caused by....

01 Awkward lifting & bending

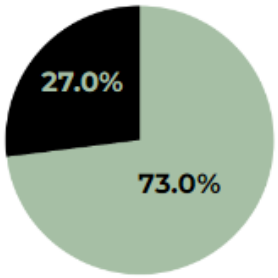
02 Repetitive motions

03 Prolonged standing

What the research says...

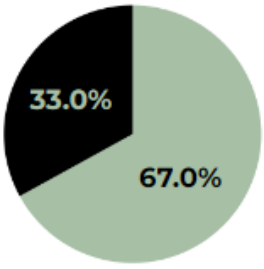
Zenker et al., 2020

- OT vs general population
- Examine impact of OT work
- 800 participants



Passier & McPhail, 2011

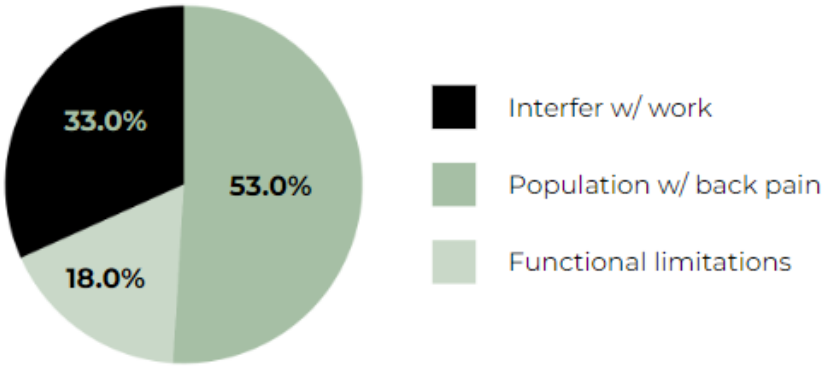
- WRMD in demanding roles
- 141 OTs



OTs w/o back pain OTs with back pain

What the research says...

Dennerlein et al., 2012



1,572 participants**

Efficacy of Ergonomic Programs

Rostami et al., 2022

#1 Participants

- 2,348 healthcare workers

#2 Ergonomic Intervention

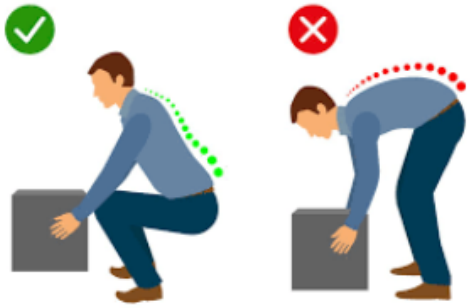
- 12 month span
- Redesigned workstations (high-low table), exercise routine, education

How do MSDs impact the work environment?

Work Productivity 01

Absenteeism 02

Increased healthcare, disability, & worker's compensation costs 03



Results of MSDs

Body Region	Before (%)	After (%)
Lower back	203	58
Upper back	137	27
Neck	170	46
Wrist/hands	107	27
Ankle/foot	138	41
Knees	142	46
Shoulders	134	45

Strategies to reducing MSDs

Stretching & Strengthening	Rest Breaks	Lifting Education
Environmental Changes	Exercise Classes	Avoid prolonged positioning

UPRIGHT GO 2

Resources

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Appendix Q

Manuscript Receipt

Receipt of manuscript submission will be inserted upon completion.

References

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