HYBRIDIZING MUSCULOSKELETAL HEALTH EDUCATION FOR COMMUNITY HEALTH WORKERS AND AGRICULTURAL WORKERS

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A bit about me

• Physical Therapist for 20 years in the area of musculoskeletal health and prevention
• Lived and taught physical therapy in Bolivia from 2003-2005
• Educator in the Physical Therapy Department at Western Carolina University (WCU) for 8 years
• Collaborated with multiple farmworker and agricultural health agencies since 2012 and serve as a PT provider for Vecinos Farmworker Health Program
• Completing educational leadership doctorate from Western Carolina University in the area of hybridized public health education
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- National Institute for Occupational Safety and Health (NIOSH)
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Learning objective for today’s session

1. Discuss strategies to increase MSAW access to newly developed musculoskeletal health education resources in various hybrid delivery formats.
2. Identify primary means of accessing and distributing existing musculoskeletal health education resources for key stakeholders in agricultural worker health
3. Discuss potential utilization and application of the hybrid health educational delivery model to the participant-specific work settings
BACKGROUND: HIGH MUSCULOSKELETAL HEALTH RISKS ASSOCIATED WITH FARMWORK

- Farm work is consistently ranked among the most dangerous occupations in the U.S.
- Farmworkers are at increased risk for developing musculoskeletal (MSK) symptoms and injuries due to repetitive, physically demanding tasks.
LIMITED ACCESS TO HEALTH EDUCATION FOR MSAW

• High incidence of musculoskeletal conditions
• Limited access to healthcare and health education
• Commonly live/work in remote areas, have low health and general literacy, limited English, limited financial resources
AN INSTITUTIONAL PROBLEM OF SUBOPTIMAL HEALTHCARE VALUE

WHAT DOES A SOLUTION LOOK LIKE?

VALUE-BASED HEALTHCARE
CONTRIBUTING FACTORS TO LOW VALUE HEALTHCARE IN THE U.S.

Low healthcare value in the U.S. (poor outcomes/cost)

Downstream approach:
- Focus on disease management rather than prevention
- Limited insurance reimbursement for preventive services
- Incentivized overuse from fee-for-service model

High costs of healthcare:
- Overuse of expensive tests and treatments
- Increasing cost of developing a new drug
- Overuse of specialist care

Inefficient and ineffective health education model:
- Expensive in-person delivery w/ suboptimal outcomes
- Inefficient internet searching w/ uncertain quality
- Variable HCP skill as facilitators of learning

Disempowered patients:
- Limited patient choice and autonomy in decision-making
- Limited access to providers (e.g., rural environments)
- Low patient health literacy levels

Limited access to health care & health education:
- Variable availability of high quality evidence-informed education
- Limited access to insured population
- High un/under insured population

Traditional paternalistic care model:
- Low patient health literacy levels
LOW HEALTHCARE VALUE

• Downstream approach
• High cost of healthcare
• Inefficient/ineffective health education model
• Limited access to healthcare & health education
• Disempowered patients
EQUITY & JUSTICE CONSIDERATIONS

• Greater health disparities (health outcomes, access to care) in:
  • minority racial groups (Thomas et al., 2014)
  • lower socioeconomic levels (Thomas et al., 2014)
  • more rural areas (Artiga et al., 2016)

• With the link between better education and improved health, improving access to quality health education may help address disparities in the most vulnerable populations.
CURRENT MODEL OF HEALTH EDUCATION WITH COMMUNITY HEALTH WORKERS (CHW) AND MSAW

- Limited opportunities for CHW training specifically in the musculoskeletal health area
- Excellent paper-based resources intended for MSAW “Cuidate”. Some costs associated with printing and dissemination.
% OF FARMWORKERS WHO REPORTED RECEIVING SOME TYPE OF SAFETY TRAINING

71% No Safety Training

29%
CONTRIBUTING FACTORS TO MUSCULOSKELETAL HEALTH IN MSAW

High prevalence of musculoskeletal health conditions

- Limited access to health care
  - High uninsured MSAW
  - High costs of care, limited MSAW financial resources
  - Limited access to HCPs in rural areas
  - Limited transportation

- Limited availability of evidence-informed health education
  - Limited high quality evidence-informed educational resources
  - Limited options in Spanish
  - Limited employer provided training opportunities

- Inefficient and ineffective health education model
  - Expensive in-person FiF delivery w/ suboptimal learning outcomes
  - MSAW unaware of existing resources
  - MSAW unaware of existing resources
  - Variable knowledge/skill of content and as learning facilitators in HCPs & CHWs

Low MSAW literacy levels
- Low digital/eHealth literacy
- Low health literacy
- Low general (reading) literacy

High risk work environments
- Deficits in MSAW knowledge/skills in prevention and self-care strategies
- Physically demanding, repetitive work

Low MSAW literacy levels
- Deficits in MSAW knowledge/skills in work prevention strategies

High risk work environments
- Deficits in MSAW knowledge/skills in work prevention strategies

High risk work environments
Improve MSAW & other key stakeholder knowledge, skills, & confidence regarding musculoskeletal health

Increase access to prevention and self-care education

Access to healthcare
Moderation of strenuous work
Increase tolerance to strenuous work

Primary Drivers

Availability of existing evidence-based educational resources
Affordability of disseminating educational resources
Increasing awareness and of existing resources
Increasing utilization of existing resources

Ultimate Aim

Immediate Aim

Change Ideas

Create video-based & evidence-based educational materials
Disseminate educational materials using various combinations of synchronous & asynchronous strategies with the aid of ICT to all key stakeholders involved in farmworker health
Increase awareness of educational materials to primary stakeholders through various marketing strategies
Tailor educational materials to meet the literacy and language needs (video, Spanish, foundational)
Use learning analytics to inform future content and delivery iterations
Encourage CoP between MSAW and other key agricultural health stakeholders through various mediums
**PRIMARY DRIVERS**

Increase access to prevention and self-care education

**SECONDARY DRIVERS**

- Availability of existing evidence-based educational resources
- Affordability of disseminating educational resources
- Increasing awareness and of existing resources
- Increasing utilization of existing resources
This Theory of Improvement holds that hybridizing the health education component of healthcare by using various combinations of face-to-face (F2F) and synchronous and asynchronous video-based education using technology will ultimately improve health outcomes by:

(a) increasing access to evidence-informed health education
(b) enhancing patient/client learning outcomes
(c) demonstrating value with respect to health outcomes and patient perceptions of care per dollar spent
This ToI holds that hybridizing musculoskeletal health education for:

1. MSAW
2. CHWs, farm owners, agriculture crew leaders

will:

(a) increase access to evidence-informed health education
(b) enhance learning outcomes (knowledge, skills, and confidence)
(c) demonstrate value (health outcomes + perceptions / cost)
CONCEPT FRAMEWORK:
CURRENT LOWER VALUE HEALTHCARE AND HEALTH EDUCATION MODEL

Tier 1
Highly Generalizable/Foundational Education
May be more effective delivered asynchronously
$ - Lowest costs

Tier 2
Somewhat Individualized/Personalized
Can be delivered FtF or remotely
$$ - Moderate costs

Tier 3
Highly Individualized/Personalized Education
May be more effective delivered FtF
$$$ - Highest costs
CONCEPT FRAMEWORK:
PROPOSED HIGHER VALUE HEALTH EDUCATION MODEL

Tier 1: Highly Generalizable/Foundational Education
- May be more effective delivered asynchronously
- Lowest costs

Tier 2: Somewhat Individualized/Personalized Education
- Can be delivered FtF or remotely
- Moderate costs

Tier 3: Highly Individualized/Personalized Education
- May be more effective delivered FtF
- Highest costs
EVIDENCE FOR IMPROVEMENT INITIATIVE

• Strong evidence for the efficacy of eLearning in various educational environments (Nguyen, 2015; Stack, 2015)

• Limited but growing evidence for the use of eLearning in healthcare targeting consumers/patients (Rush et al., 2018), including historically underserved and minority populations (Anderson-Lewis et al., 2018)

• Minimal published studies evaluating the educational efficacy using more sophisticated educational delivery modes like Learning Management Systems (LMS)
Aims

1. To **improve access** to educational materials related to MSK injury risk reduction associated with agricultural work via electronic learning (eLearning) series

2. Assess the eLearning series on the following factors:
   - Learning outcomes
   - Perceptions of content and delivery mode
INTERVENTION PLAN

• Use a Learning Management System to improve the delivery of 2 developed courses related to musculoskeletal health issues in agriculture for two key agricultural stakeholder groups:

  1. CHWs, Healthcare Providers, Farm owners, and Crew leaders
  2. MSAW

• Collect data to inform changes in the educational delivery and dissemination, including consideration of hybridizing with F2F or synchronous online sessions (eg. webinars)
Creating an Engaging, Evidence-informed Educational Videos

What does it mean to be engaging?
- Research suggests that humor can lead to higher learner retention and participation
- Storytelling
- Content in Spanish by native speakers

Evidence-informed
- Evidence-informed literature and stakeholder feedback informed educational content and delivery (e.g., risk factors, movement strategies, and prevention)
Why Video-Based?

- Employed principles of **popular education**
  - The relationship between learner and teacher is circular
  - Learning occurs between peers, not from experts to passive learners
- Video for farmworkers was designed to be informal, fun, and culturally relevant
eLearning

- eLearning is the integration of electronic technology, including media and devices, in the delivery of education
  - May include both synchronous (FtF or remote) and asynchronous strategies
- May be an effective method for wide dissemination of education to individuals involved in agricultural work
- Easily accessible
  - High value (outcomes/cost of delivery)
Educational Materials

- English video for CHW
  - Piloted evidence-based video series with 30 CHWs
  - **Results:** positive knowledge retention and perceptions of learning with video-based format
- Spanish video for MSAW
  - Development of evidence-based video (per NCFHP request) using hybrid delivery method among 28 participants
  - **Results:** positive knowledge retention and perceptions of learning and mode of delivery
Literature Review

- Limited research available regarding efficacy of health education via eLearning in lay populations
  - Video-based vs pamphlet-based delivery resulted in:
    - Higher improvements in knowledge retention
    - Greater adherence to positive health habits
  - eLearning used with in both average and lower literacy populations resulted in positive perceptions of learning and mode of delivery
Targeted Populations

para Trabajadores Agrícolas

for Community Health Workers, Healthcare Providers, Farm Owners, and Crew Leaders
Series for MSAW in Spanish

- Topics
  - Physical risk factors for musculoskeletal conditions
  - Optimal movement and work task performance
  - Personal preventative measures and self-care
- Culturally and linguistically appropriate and relevant
  - Narrated by native Spanish speaker
  - Emphasis on importance of peer-to-peer learning
  - Addition of humor to enhance learner engagement
Series for CHW Topics

1. Introduction to Musculoskeletal Health in Agricultural Workers
2. Physical Risk Factors in Agricultural Work
3. Protective Factors: Strategies to Reduce Risk
4. Screening and Basic First Aid
5. Review
Learning Management System (LMS)

• Medium for delivering our resources while simultaneously tracking access, usage, and other learning analytics
• Extensive process for choosing an LMS for dissemination and sustainability
• Receipt of grant → Moodle (an open-source LMS)
• Ability to track participant usage and learning analytics
Physical Health Promotion in Agriculture

Complete an online learning series below aimed at better prevention and care of musculoskeletal health conditions associated with agricultural work.
How will we know if this improvement effort is effective?

• Primary analyses:
  • Learning Outcomes
    • Knowledge retention
    • Changes in confidence & self-efficacy
  • Access
    • # of course participants
    • Completion rate
  • Participant Perceptions
    • Course content
    • Mode of delivery
What’s next? We need your feedback!

• Optimal combinations of synchronous and asynchronous delivery for learning and participation outcomes
• Iterations after improvements to content/delivery based on outcome data & stakeholder feedback
Questions for you....(provide responses in chat)

1. What do you see as potential benefits the asynchronous online educational courses in meeting the needs of your organization?
2. What barriers/challenges associated with the asynchronous online educational courses in meeting the needs of your organization?
3. Describe your perceptions of how the potential addition of a synchronous F2F and or webinar educational session could enhance or hinder the asynchronous online courses?
4. What have you found to be most/least helpful in working to increase access and to quality education for community health workers and farmworkers?
5. What are your thoughts on how to enhance the use of technology to improve access to quality, evidence-based education for CHW and MSAW?
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References


¿Preguntas?