Evaluation of CDMSP in the workplace: Implications for increasing intervention dose to improve employee health

Heather S. Zuercher, MPH
Mark G. Wilson, HSD
David M. DeJoy, PhD
Heather Padilla
Marcia G. Ory, PhD, MPH
Matthew Lee Smith, PhD, MPH, CHES

American Public Health Association Annual Meeting
Atlanta, GA
November 2017
Overview

• Background on chronic disease in the workplace

• Compare CDSMP participant characteristics for those who attended workshops in workplace vs. non-workplace settings

• Discuss factors associated with increased intervention dose

• Identify barriers to CDSMP adoption in the workplace

• Discuss strategies to increase participant reach
Chronic disease in the workplace

• Chronic diseases and conditions are among the most common, costly, and preventable of all health problems
  • Heart disease, stroke, cancer, diabetes, obesity, and arthritis

• About half of all adults (117 million people) have one or more chronic health conditions
  • 25% of all adults have two or more chronic health conditions
Chronic disease in the workplace

• 86% of all health care spending in 2010 was for people with 1+ chronic condition

• Diabetes alone costs $245 billion annually ($176 billion in direct costs)
  • $69 billion in decreased productivity – being absent form work, less productive at work, or not able to work at all because of diabetes

• Arthritis costs $128 billion annually
Chronic disease in the workplace

• Disease management is an increasingly important component of workplace health promotion

• Chronic diseases are multi-dimensional and affect all aspects of people’s lives, especially work:
  • 22% - 49% of employees experience difficulties meeting physical work demands
  • 27% - 58% have problems meeting psychosocial work requirements

• Can lead to job loss or premature departure from the workforce
The Chronic Disease Self-Management Program (CDSMP)

• Designed to help participants develop self-management skills to cope with chronic disease

• Topics include physical activity and healthier eating, pain and fatigue management, improving communication, medication management, and improving sleep

• Effective evidence-based program for improving health status and reducing healthcare costs
CDSMP in the U.S.

- Data from participants enrolled in CDSMP workshops delivered from 2009 to 2016
  - Initially supported by American Recovery and Reinvestment Act (ARRA)
  - National data repository: 83 grantees spanning 47 states

- Over 300,600 participants reached
  - Only 0.7% attended workshops in workplace settings

- Data analyzed from 51,967 participants with complete sociodemographic data
What is different about worksite participants?

• Compared characteristic of participants who attended workshops in workplace settings relative to other settings (senior centers, healthcare organizations, etc.)

• Of the 51,967 participants, ~1% (n=514) attended a workshop at a worksite

• Compared to non-worksite participants, worksite participants:
  • Younger (64.4 years vs. 54.8 years)
  • Hispanic (7.3% vs. 13.8%)
  • American Indian/Alaska Native (2.2% vs. 15.8%)
  • African American (20.7% vs. 8.0%)
  • Live with others (54.5% vs. 76.1%)
  • High school education or less (41.4% vs. 32.9%)
  • Attended 4+ of 6 workshop sessions (75.7% vs. 79.8%)
Factors associated with increased intervention dose (ordinal regression)

- Among the 514 workplace participants, increased attendance was observed among:
  - Older
  - Male
  - A/PI
  - AI/AN
  - Other/Multiple Races
  - Higher Education

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>P</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>0.01</td>
<td>0.029</td>
<td>0.00</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>-0.45</td>
<td>0.026</td>
<td>-0.84</td>
<td>-0.05</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>-0.33</td>
<td>0.211</td>
<td>-0.85</td>
<td>0.19</td>
</tr>
<tr>
<td><strong>Non-Hispanic</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Other/Multiple Races</strong></td>
<td>0.56</td>
<td>0.033</td>
<td>0.04</td>
<td>1.08</td>
</tr>
<tr>
<td><strong>Native Hawaiian</strong></td>
<td>0.08</td>
<td>0.886</td>
<td>-1.06</td>
<td>1.22</td>
</tr>
<tr>
<td><strong>American Indian/Alaska Native</strong></td>
<td>0.72</td>
<td>0.011</td>
<td>0.16</td>
<td>1.29</td>
</tr>
<tr>
<td><strong>Asian/Pacific Islander</strong></td>
<td>0.79</td>
<td>0.009</td>
<td>0.20</td>
<td>1.38</td>
</tr>
<tr>
<td><strong>African American</strong></td>
<td>0.30</td>
<td>0.355</td>
<td>-0.34</td>
<td>0.94</td>
</tr>
<tr>
<td><strong>White</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>0.25</td>
<td>0.009</td>
<td>0.06</td>
<td>0.43</td>
</tr>
<tr>
<td><strong>Rural Residence</strong></td>
<td>0.07</td>
<td>0.796</td>
<td>-0.43</td>
<td>0.56</td>
</tr>
<tr>
<td><strong>Lives with Others</strong></td>
<td>-0.15</td>
<td>0.437</td>
<td>-0.54</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>Number of Chronic Conditions</strong></td>
<td>-0.08</td>
<td>0.118</td>
<td>-0.19</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Number of Participants Enrolled in Workshop</strong></td>
<td>-0.03</td>
<td>0.147</td>
<td>-0.08</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Discussion

• Need for workplace chronic disease management programs

• CDSMP has been effective in community settings, but little is known about its effectiveness in workplace settings
  • Despite widespread availability, adoption is low in worksite settings
  • Higher attendance in workplaces vs. community settings, thus opportunity to serve younger working adults with adequate intervention dose

• Findings indicate a need to tailor CDSMP to worksites to increase adoption and diversify reach (e.g., males)
## Overcoming barriers to CDSMP adoption

<table>
<thead>
<tr>
<th>BARRIERS</th>
<th>Solutions through Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Relevant to the needs of younger, working adults</td>
</tr>
<tr>
<td></td>
<td>Adding and subtracting activities, swapping examples</td>
</tr>
<tr>
<td>Time/Scheduling</td>
<td>Divide 2.5-hour sessions into more shorter sessions</td>
</tr>
<tr>
<td></td>
<td>Offer on or off work time</td>
</tr>
<tr>
<td></td>
<td>Not entire departments go at a time</td>
</tr>
<tr>
<td></td>
<td>For shift workers, share time on and off the clock</td>
</tr>
<tr>
<td>Incentives</td>
<td></td>
</tr>
<tr>
<td>Organizational Readiness</td>
<td></td>
</tr>
</tbody>
</table>