Effects of a brief web-based intervention on motivation, attitude, and physical activity in adults

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Master of Public Health Defense
April 6, 2018
Presentation Overview

• Thesis
  – Background
  – Purpose/Hypothesis
  – Methods
  – Results
  – Discussion/Conclusion

• Field Experience
  – Activities completed
  – Public Health Core Competencies
The Problem

• 80% of Americans are insufficiently active
• 25% engage in no leisure time physical activity
• Consequences:
  – Increased chronic disease
  – Lower quality of life
  – Over-burdened healthcare system

CDC, 2016; CDC, 2014
Solution: Increase physical activity

BUT

that is much easier said than done....
Why we *still* have this problem?

• Knowledge does not always translate to behavior
  – Graduates aware of health behaviors still did not engage in a ‘healthy’ lifestyle

• Blocked by barriers at multiple levels
  – Individual, social, & environmental

• Motivation is necessary to translate knowledge to action
  – Concept of motivation is broken down by the Self-Determination Theory (SDT)
Self-Determination Theory (SDT)

- **Autonomy**
  - Desire to feel in control of one’s life; actions are self-endorsed

- **Competence**
  - Feeling confident and effective in one’s actions

- **Relatedness**
  - Need to feel connected to others/sense of belonging

Optimal human well-being & vitality

Deci & Ryan, 2000; Ryan & Deci, 2008
SDT – Motivation Spectrum

Amotivation
• Complete absence of motivation

External
• To achieve External reward/avoid external punishment

Introjected
• To achieve Internal reward or avoid internal punishment

Identified
• Of personal value or importance

Integrated
• Part of one’s sense of self

Intrinsic
• Done for inherent enjoyment or personal satisfaction

Long-Term Behavior Maintenance/Sustainability

Controlled

Autonomous/Self-Determined

Deci & Ryan, 2000; Ryan & Deci, 2008
The inactivity problem explained by SDT

- Undermines Autonomy
  - Feel ‘should’ be active
  - Focus on external motives

- Undermine Competence
  - What ‘counts’

- Undermines Relatedness
  - Minimal focus on social benefits of being active with others

Ekkekakis, 2013; Segar, et. al., 2017; Segar et. al., 2016; Teixeira et. al, 2012
Autonomy

Relatedness

Competence

Long-Term Physical Activity = Behavior
Supporting physical activity via SDT

• Re-define physical activity to be any movement
  – Emphasize enjoyable activities

• Promote identification of personally valuable outcomes that one CHOOSES to pursue
  – Internal motivation = more sustainable

• Focus on immediate benefits

Deci & Ryan, 2000; Ryan & Deci, 2008; Ekkekakis, 2013; Segar, et. al., 2017
Previous SDT Interventions

• Some success at promoting a sustained behavior change w/ 2 year follow-up

• Typically include:
  – In-person meetings
    • One-on-one counseling
    • Group sessions
  – 6+ week interventions

• Resource-intensive intervention strategies

Teixeira et. al, 2012; Segar, et. al., 2002; Silva et. al, 2010
Internet-Based Interventions

• Greater effects on physical activity with:
  – More behavior change techniques
  – More interaction
  – Theoretical basis

• Intervention period: from 6 weeks - 12+ months

• Remaining Questions:
  – Can SDT-based strategies be implemented online?
  – What is the minimum time-frame (or dose) necessary for a sustainable change?

Joseph et. al, 2014; Webb et. al, 2010; Lustria et. al, 2013
Study Purpose + Hypothesis

• **Purpose**: Compare the impact of brief online interactive modules with information-based controls

• **Hypothesis**: Participants completing the interactive modules will have greater increases in psychological variables and physical activity behavior compared to the control group
Participants

- **Target Population:**
  - Adults ages 22-45
  - Not currently in a physical activity routine
  - Not pregnant, spoke English, reliable internet access, no limiting health conditions

- **Recruitment Strategy:**
  - K-State Today
  - Social Media

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**TRANSTHEORETICAL MODEL**

- **Precontemplation**
  - Not aware, uninformed, no intention to change
- **Contemplation**
  - Aware problem exists, are thinking about changing
- **Preparation**
  - Intention to take action to change
- **Action**
  - Make modifications in their behavior
- **Maintenance**
  - Have made modifications, prevent relapse
- **Termination**
  - 100% Self-Efficacy, no temptation to relapse
Procedure

- Baseline Survey
- Randomization
- Modules emailed on Monday mornings
- 4 modules sent over 4-week intervention
- Post-Intervention Survey sent Monday after week 4

2 waves of data collection:
- October 2017
- January 2018
Autonomous Motivation

• BREQ-3 (24-items)
  – **Amotivation**: “I don’t see why I should have to exercise”
  – **External**: “I exercise because other people say I should”
  – **Introjected**: “I feel guilty when I don’t exercise”
  – **Identified**: “It is important for me to make the effort to exercise regularly”
  – **Integrated**: “I consider exercise consistent with my values”
  – **Intrinsic**: “I exercise because it’s fun”

• 4 items for each motivation sub-scale

Markland & Tobin, 2004; Wilson, Rodgers, Loitz, & Scime, 2006
Autonomous Motivation - cont’d

• Calculation of Relative Autonomy Index (RAI)
  – Averaged subscale scores
  – Weighted average scores
  – Summed weighted values

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>-3</td>
</tr>
<tr>
<td>External regulation</td>
<td>-2</td>
</tr>
<tr>
<td>Introjected regulation</td>
<td>-1</td>
</tr>
<tr>
<td>Identified regulation</td>
<td>+1</td>
</tr>
<tr>
<td>Integrated regulation</td>
<td>+2</td>
</tr>
<tr>
<td>Intrinsic regulation</td>
<td>+3</td>
</tr>
</tbody>
</table>

• Higher, more positive scores = greater autonomy

Markland & Tobin, 2004; Wilson, Rodgers, Loitz, & Scime, 2006
Attitude

• 10 items
  – Positive: “... it would improve my mood”
  – Negative: “...it would be painful”
  – Likert Scale: (1 = Strongly Disagree; 5 = Strongly Agree)

If I were to be physically active on most days...

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>... it would be painful</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would make me feel uncomfortable</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would help me complete my daily activities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would improve my mood</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would make me tired</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would give me more energy</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would make me sore</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would help improve my interactions with others</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would help me cope with stress</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>... it would take too much time</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Perceived Behavioral Control

- 5 items

Rate your agreement with the following statements:

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

I have control over my being physically active on most days

I believe I have all the things I need to be physically active on most days

If I want to be I can be physically active on most days

Please rate the ease or difficulty for the following tasks:

<table>
<thead>
<tr>
<th>Very Difficult</th>
<th>Neutral</th>
<th>Very Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

For me to be physically active on most days would be...

For me to adopt a more physically active lifestyle would be...

Motl, et. al, 2000
Exercise Identity

- 9 items

- Likert scale
  (1 = Strongly Disagree; 7 = Strongly Agree)

The following questions concern your personal beliefs about exercise. Please indicate the extent to which you agree or disagree with each statement when thinking about your exercise participation:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>I consider myself an exerciser</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I describe myself to others, I usually include my involvement in exercise</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I have numerous goals related to exercising</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Intentions

• 1 item

Please indicate the number of days you intend to take part in physical activity during the next week:

0 1 2 3 4 5 6 7

I plan to take part in regular physical activity on this many days:
Physical Activity (MAQ)

- Indoor vs. Outdoor

Look through the following list of **INDOOR** activities, and for each one you have done in the past 7 days mark the total **number of minutes** you spent in that activity on the respective day. If you did not participate in some of the activities then you can leave those spaces blank.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Dance/Step Aerobics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Badminton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basketball (indoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycling (indoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bowling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dancing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elliptical Trainer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jogging (indoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Look through the following list of **OUTDOOR** activities, and for each one you have done in the past 7 days mark the total **number of minutes** you spent in that activity on the respective day. If you did not participate in some of the activities then you can leave those spaces blank.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball (outdoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycling (outdoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canoeing/Rowing/Kayaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dancing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Football/Soccer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gardening/Yardwork</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jogging (outdoor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking for Exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking as a part of daily activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was not active outdoors during the past week (please enter 0 for each day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pettee, McClain, Schmid, Storti, & Ainsworth, 2011
# Module Topics Overview

<table>
<thead>
<tr>
<th>Module 1</th>
<th>Module 2</th>
<th>Module 3</th>
<th>Module 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reason WHY</td>
<td>Physical activity guidelines</td>
<td>Self-regulation + activity planning</td>
<td>External influences</td>
</tr>
<tr>
<td>Benefits of physical activity</td>
<td>Re-defining physical activity</td>
<td>Common barriers &amp; ways to overcome them</td>
<td>Social support</td>
</tr>
<tr>
<td></td>
<td>Tips to get more PA into the day</td>
<td></td>
<td>Ways to enhance environmental support</td>
</tr>
</tbody>
</table>
Intervention Modules

• Create autonomy-supportive environment
  – Pre-post module reflection questions
    • Ex. List 3 reasons why you want to increase your physical activity
  – Weekly ‘Bonus’ Activity
  – Within-module reflection questions

• Enhance perceived competence
  – Re-defined physical activity
  – Weekly activity planning sheet
  – If... Then... barrier planning
Control Modules

• Generic information and advice
  – Increasing PA throughout the day
  – Overcoming barriers
• No opportunity to type responses
• No planning sheets included
• Take-home activities assigned
Example: Intervention

Module 1

Note that many of the benefits described here, like better health, strengthening relationships, and weight control, are benefits that you can experience once you've been active for a little while.

However, there are also many benefits on this list that you could experience if you were to be active TODAY. Some of these include:

- Meeting new people
- Feeling more energetic
- Lower tension and anger
- Increased time spent with family and friends
- Sleeping better

What are some immediate, short-term benefits you have experienced (or believe you would experience) if you were active today?
Module 1 – The Benefits of Physical Activity

**Physical Health**

**Stronger Muscles**
- Physical Activity, particularly muscle-strengthening activities, can help you become stronger over time. Developing and maintaining this strength is particularly important as you age. There is an unavoidable decline in strength with age, but physical activity can help mitigate this decrease. Muscle strength is essential for completing daily activities, including getting up out of a chair and carrying groceries.

**Stronger Bones**
- Any weight-bearing exercise helps strengthen your bones. This can include walking, dancing, jogging, and weight training. These weight-bearing activities also help mitigate the decrease in bone density that comes with age, and can also deter the onset of diseases like Osteoporosis and even Arthritis.
Program Evaluation

• Quantitative
  – 5 items
  – (1 = Strongly Disagree; 5 = Strongly Agree)
Program Evaluation

• Qualitative: 4 open-ended questions
  – “Did participating in the study increase your motivation to be active on a daily basis? Why or why not?”
  – “What additional information would you have liked to see included?”
  – “Any suggestions on how the modules could be improved?”
  – “Do you have any final thoughts/comments on the DAMS study?”
## Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>All (n=132)</th>
<th>Intervention (n=66)</th>
<th>Control (n=66)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Stage of Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2 (Contemplation)</td>
<td>36 (27%)</td>
<td>21 (32%)</td>
<td>15 (23%)</td>
</tr>
<tr>
<td>Stage 3 (Preparation)</td>
<td>96 (73%)</td>
<td>45 (68%)</td>
<td>51 (77%)</td>
</tr>
<tr>
<td>Female</td>
<td>109 (83%)</td>
<td>53 (80%)</td>
<td>56 (85%)</td>
</tr>
<tr>
<td>White</td>
<td>116 (88%)</td>
<td>56 (85%)</td>
<td>60 (91%)</td>
</tr>
<tr>
<td>College-educated (above Bachelor's)</td>
<td>116 (87%)</td>
<td>55 (83%)</td>
<td>61 (92%)</td>
</tr>
<tr>
<td>Married</td>
<td>70 (53%)</td>
<td>30 (45%)</td>
<td>40 (61%)</td>
</tr>
<tr>
<td>Children (&gt;1)</td>
<td>64 (48%)</td>
<td>34 (52%)</td>
<td>30 (45%)</td>
</tr>
<tr>
<td>Income &gt;$50,000</td>
<td>69 (52%)</td>
<td>33 (50%)</td>
<td>36 (55%)</td>
</tr>
</tbody>
</table>
Participant Retention

Source:
University Newsletter/Distribution (n=74)
Facebook (n=33)
Worksites (n=9)
Other/Unknown (n=16)

Eligible Participants (n = 132)

Intervention Group (n = 66)
- Number who accessed at least one module (n=50)
  - Completed Post-Questionnaire (n=26)
- Number who never engaged (n=16)

Control Group (n = 66)
- Number who never engaged (n=11)
  - Number who accessed at least one module (n=55)
  - Completed Post-Questionnaire (n = 39)

Total lost to follow-up:
  Control (n = 27)
  Intervention (n = 40)
Participant Retention between groups

- Significant dropout over 4 weeks for both groups
  - Among those engaged with the intervention after randomization
<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Baseline Mean (SD)</th>
<th>Post-Intervention Mean (SD)</th>
<th>N</th>
<th>P-value (Time)</th>
<th>P-value (Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autonomous Motivation</strong></td>
<td>Control</td>
<td>6.781 (5.738)</td>
<td>8.57 (5.099)</td>
<td>n=40</td>
<td>&lt;.001*</td>
<td>.515</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>6.437 (5.868)</td>
<td>8.928 (5.341)</td>
<td>n=28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attitude (Combined)</strong></td>
<td>Control</td>
<td>5.05 (6.13)</td>
<td>6.07 (5.78)</td>
<td>n = 39</td>
<td>.033*</td>
<td>.881</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>3.82 (5.42)</td>
<td>5 (4.77)</td>
<td>n = 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PBC</strong></td>
<td>Control</td>
<td>15.65 (4.19)</td>
<td>17.67 (3.54)</td>
<td>n = 40</td>
<td>.002*</td>
<td>.206</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>17.75 (3.56)</td>
<td>18.6 (2.64)</td>
<td>n = 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exercise Identity</strong></td>
<td>Control</td>
<td>29.84 (9.466)</td>
<td>31.82 (11.53)</td>
<td>n = 39</td>
<td>.079</td>
<td>.835</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>30.67 (11.31)</td>
<td>33.036 (12.468)</td>
<td>n = 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intention (# days)</strong></td>
<td>Control</td>
<td>3.23 (1.24)</td>
<td>3.3 (1.3)</td>
<td>n = 39</td>
<td>.448</td>
<td>.763</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>3.28 (1.18)</td>
<td>3.46 (.83)</td>
<td>n = 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Physical Activity</strong></td>
<td>Control</td>
<td>13.44 (12.57)</td>
<td>17.91 (15.99)</td>
<td>n = 37</td>
<td>.154</td>
<td>.514</td>
</tr>
<tr>
<td>(MET-hours)</td>
<td>Intervention</td>
<td>18.59 (16.25)</td>
<td>20.25 (13.78)</td>
<td>n = 24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Program Evaluation Results

• Overall: moderate-high & positive
  – Highest rating for module length

- Overall: moderate-high & positive
  – Highest rating for module length

<table>
<thead>
<tr>
<th>Question</th>
<th>Control Mean (SD)</th>
<th>Intervention Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The DAMS Study increased my motivation to be physically active</td>
<td>3.62 (0.711)</td>
<td>3.58 (0.703)</td>
</tr>
<tr>
<td>The content of the DAMS Study was relevant to me</td>
<td>4.13 (0.732)</td>
<td>4.12 (0.653)</td>
</tr>
<tr>
<td>The online modules were an effective way to deliver the content</td>
<td>4.05 (0.826)</td>
<td>4.15 (0.675)</td>
</tr>
<tr>
<td>The length of the modules was appropriate</td>
<td>4.33 (0.701)</td>
<td>4.35 (0.562)</td>
</tr>
<tr>
<td>I would recommend participating in the DAMS Study to others</td>
<td>3.77 (0.872)</td>
<td>3.96 (0.916)</td>
</tr>
</tbody>
</table>
Results – Qualitative Evaluation

Key Themes

- Information already known
- Tailored content
- Additional social opportunities
- More specifics and example workouts
- More accountability
Discussion

• Purpose of DAMS Study was to see if interactive modules would have greater impact on psychological variables & physical activity compared to information-based

• Hypothesis was not supported – no differences between groups
  – But were significant increases in autonomous motivation, overall attitude, & perceived behavioral control over time

• No significant change in physical activity
Lack of Differences between Groups

• Unexpected improvements in control group
  – Education-based interventions typically not as effective

• Possible explanations:
  – Some re-framed content was presented to control group
    • Reflected what was available on CDC website

Sherwood & Jeffrey, 2000; Silva et. al, 2010
Online intervention strategy

• Feasible strategy to deliver autonomy-supportive content and shift attitudes
• Encountered challenges with recruitment and retention
• Future research should investigate how to recruit more diverse participants and increase engagement to promote program adherence
Minimum Intervention Duration

• Saw changes in key psychological factors after 4-week intervention
• Likely not enough time to be translated to physical activity behavior
• Future studies should incorporate longer post-intervention follow-ups to assess if psychological changes are translated into physical activity
Strengths

• Developed an online SDT-based autonomy supportive intervention
• Few previous 4-week interventions
• Re-defined physical activity
  – Focus on internal motives
  – Immediate rewards
  – ‘Everything counts’
Limitations

• Small, non-representative sample
• Self-reported data
• 4-week intervention may not be enough for a sustainable change
• Inadequate time to test & refine modules before implementation
Future Directions

• Identify strategies to recruit a more diverse sample, particularly males
• Increase interaction between weekly module delivery
• Longer-term follow-up
  – Sustainability of psychological changes
  – Translation to PA behavior
Overall Conclusions

• Changing the conversation regarding physical activity to support key psychological needs can be an effective strategy for physical activity behavior change

• Online modules a promising strategy

• Psychological needs must be met for a sustained change in physical activity
  – Sustainable changes are essential in order to address the inactivity crisis
References


References


MPH FIELD EXPERIENCE REPORT

Kansas Department of Health and Environment
Bureau of Health Promotion
Topeka, Kansas
Summer 2017
Overview

• Preceptors:
  • Jennifer Church – Community Health Promotion Director
  • Warren Hays – Physical Activity & Nutrition (PAN) Manager

• Completed tasks related to:
  • Farmers Markets
  • Grant Management
  • Internal Communication
  • Evaluation/External Communication

• Fulfillment of MPH Core Competencies
Theme 1: Farmers Markets

• Capitol Midweek Farmers Market
  • Set up, supervised, and cleaned up manager’s table and signs
  • Interacted with market customers and farmers
  • Created & distributed weekly promotional materials
Farmer’s Market Flyer & Radio Spot

**Featured Produce of the Week:**

**Watermelon**

**Watermelon Recipes:**

Step 1: Slice the watermelon
Step 2: Enjoy!

- Watermelon Berry Popsicles
- Watermelon Smoothie
- Watermelon-infused water
- Minty Lime
- Watermelon Slices
- Watermelon Peach Spritzer
- Agua Fresca

You could also serve the drinks in a watermelon keg! [Click here](http://www.kdohks.gov/blog/farmers_market/index.htm) to learn how.

**Watermelon Facts:**

**Key Nutrients:**

- Vitamins A & C

**A good watermelon:**

- Is firm, and symmetrical
- Feels heavy for its size
- Should sound hollow when knocked on
- Has a smooth and slightly dull rind

**Storage:**

- Uncut watermelon — best if stored between 50°-60°
  - Keep away from ethylene-producing foods (ex. Apples, peaches, pears)
- Cut watermelon — keep refrigerated in an airtight container, typically good for 3-5 days

For more information about the health benefits of watermelon, [Click Here](http://www.kdohks.gov/blog/farmers_market/index.htm)
Theme 1: Farmers Markets cont’d

• Kansas Senior Farmers Market Nutrition Program (KSFMNP)
  • Check distribution tracking
  • Postcards for farmer renewal reminders
Theme 2: Grant Management

• Chronic Disease Risk Reduction (CDRR) – FY18 spreadsheet
  • Number of communities working on each strategy
  • Tactics to complete each selected strategy

KDHE FY18 Grant Flowchart
Theme 3: Internal Communication

• The Community Guide GoTo Presentation
  • Delivered to 5 KDHE employees on August 10, 2017

Family-Based Interventions

• Aim to increase children’s PA level by building family support through the use of:
  • Goal-setting skills and tools to monitor progress
  • Reinforcement of positive health behaviors
  • Organized PA sessions
  • Some studies also provided information about other behaviors (ex. Food choices)

• Sufficient evidence suggests family-based interventions increase physical activity in children
  • Note that interventions should be tailored towards family’s ethnicity, culture, time constraints, and family psychosocial environment
  • Findings applicable to families with children ages 5-12

*Recommended
Theme 4: Evaluation + External Communication

- Farmers Market Workshops
  - Synthesized feedback from 4 workshops
- Healthy Kansas School Key Informant Interviews
  - Analyzed results of phone interviews with 8 school districts
- Provided written summary of findings for annual CDC report
CONNECTION TO MPH CORE COMPETENCIES
Competency 1 -

*Interpret results of data analysis for public health research, policy or practice*

Evidence of Completion:

- Farmers market workshop evaluations
- Key informant interview evaluations
Competency 2 -

Select Communication strategies for different audiences/sectors

Evidence of Completion:

• Promotional materials for Capitol Midweek Farmers Market
  • Flyers & radio spots
• GoTo Meeting for KDHE employees
Competency 3 - 

Communicate audience-appropriate public health content, both in writing and through oral presentation

Evidence of Completion:

• Written
  • Grant evaluation summaries
  • CDRR strategies spreadsheet
• Verbal
  • Community Guide presentation
Competency 4 -

Perform effectively on interprofessional teams

Evidence of Completion:

• Worked with 2 preceptors on various projects
• Completed tasks assigned by the Epidemiologist for data tracking and reporting
• Assisted with other areas around BHP
Competency 5 -

*Apply systems thinking tools to a public health issue*

Evidence of Completion:

- KSFMNP distribution through local senior organizations
- KSFMNP farmer reminder postcard distribution
Field Experience Takeaways

• Experience at KDHE enhanced understanding of public health as a whole
  • Worked with program implementation
  • Interacted with community members
  • Completed program evaluations and identified areas for future improvement

• Overall gained quality skills and experience that can be translated to future public health career
Acknowledgements

• Dr. Emily Mailey
• Committee: Dr. Katie Heinrich & Dr. Sara Rosenkranz
• MPH Program: Dr. Ellyn Mulcahy & Barta Stevenson
• Jennifer Church & Warren Hays
• Shalin Hai-Jew
• My family
• Grad Students
• Kinesiology Department
THANK YOU!

QUESTIONS?