BUILDING TEACHER HABITS AIMED AT REDUCING STUDENTS’ SITTING IN CLASSROOM: EVALUATION OF OUTCOMES AND PROCESSES IN THE LET’S MOVE IT TEACHER INTERVENTION

Dr Nelli Hankonen
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ACKNOWLEDGMENTS

• Katariina Köykkä
• Dr Keegan Knittle
• Dr Pilvikki Absetz
• Dr Vera Araújo-Soares
• Prof Falko Sniehotta

& the Let’s Move It study team
& all participants!
BACKGROUND

• Creating more active classrooms may reduce excessive sedentary behavior (SB) in youth

• Little evidence of strategies to reduce SB in schools, especially among older adolescents (Hynynen et al., 2016; Morton et al., 2016)

• Training of teachers within school-based PA interventions is an under-reported & understudied area (Lander et al., 2017)
  • Behaviour change theories rarely tested in teacher interventions

→ We designed a theory-based teacher behaviour change intervention, now evaluated in a pragmatic ‘within-trial’ study
INTERVENTION DEVELOPMENT BASED ON

- Evidence
- Original studies in target population
- Research evidence

- Theory, e.g.
  - Self-determination theory (Deci & Ryan 2000)
  - Reasoned Action Approach (Fishbein & Ajzen 2011)
  - Self-regulation and **habit formation** approaches

- Co-design & existing good practices

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**Acceptability of Strategies to Reduce Student Sitting: A Mixed-Methods Study With College Teachers**

Laine et al 2016 *Health Promotion Practice*

*Background.* As school days among adolescents include long periods of prolonged sitting, teachers are key agents to deliver interventions to reduce youth sedentary behavior. To develop an intervention, acceptability and feasibility of alternative strategies should be tested. We aimed to examine teachers’ current use and willingness to use various strategies to decrease student sitting.

**A systematic review of school-based interventions targeting physical activity and sedentary behaviour among older adolescents**

S-T. Hynynen$^{a}$, M. M. van Stralen$^{b}$, F. F. Sniehotta$^{c}$, V. Araújo-Soares$^{c}$, W. Hardeman$^{d}$, M. J. M. Chinapaw$^{d}$, T. Vasankari$^{d}$ and N. Hankonen$^{**}$
Randomised controlled feasibility study of a school-based multi-level intervention to increase physical activity and decrease sedentary behaviour among vocational school students

Nelli Hankonen¹²*, Matti T. J. Heino², Sini-Tuuli Hynynen², Hanna Laine², Vera Araújo-Soares³, Falko F. Sniehotta³, Tommi Vasankari⁴, Reijo Sund²⁵ and Ari Haukkala²

Abstract
Background: No school-based physical activity (PA) interventions among older adolescents have demonstrated long-term effectiveness, and few of them so far have addressed sedentary behaviour (SB). Based on behavioural theories and evidence, we designed a multi-level intervention to increase PA and decrease SB among vocational school students.
FEASIBILITY STUDY: RESULTS

Figure 1. Student evaluations of teachers activities to reduce students sitting. Mean of 7 questions. Error bars represent 95% confidence intervals.

Teachers’ self-reported activities to reduce sitting. Mean of 8 questions. Error bars represent 95% confidence intervals.

Hankonen et al. (2017) IJBNPA
'Let’s Move It’ – a school-based multilevel intervention to increase physical activity and reduce sedentary behaviour among older adolescents in vocational secondary schools: a study protocol for a cluster-randomised trial

Nelli Hankonen1, Matti T. J. Heino2, Vera Araujo-Soares3, Falko F. Sniehotta3, Reijo Sund2, Tommi Vasankari4, Pilvikki Absetz5, Katja Borodulin6, Antti Uutela6, Taru Lintunen7 and Ari Haukkala2

Abstract

Background: Physical activity (PA) has been shown to decline during adolescence, and those with lower education have lower levels of activity already at this age, calling for targeted efforts for them. No previous study has demonstrated
AIMS

Exploratory evaluation of outcomes and processes of the LMI teacher intervention

1) Changes in **teachers’ use of student sitting reduction strategies?**
2) **How were habit formation techniques used** by teachers?

*Note.* Key exploratory substantive hypotheses (derived from the program theory) & other assumptions of the TEACHER INTERVENTION have been specified and registered in the Open Science Framework ([osf.io/v94fw](osf.io/v94fw))
Intervention

Outcome expectations e.g., “If I reduced students’ sitting during my lessons, as a result, their ability to learn would be enhanced”

Descriptive norm e.g., “Most teachers use sitting reductions strategies during their lessons”

Self-efficacy e.g., “I am certain I can overcome obstacles that hinder reducing students sitting”

Intention

Habit formation

Enactment of Behavior Change Techniques

Automaticity

PROBLEM

Sedentary Teaching

SOLUTION

Active Teaching

Diagram showing the transition from sedentary teaching to active teaching through intervention.
METHODS

• A **pragmatic randomized substudy** with one intervention arm compared with a control arm (no treatment)
  
  • In the context of a cluster-RCT evaluating the Let’s Move It intervention (Hankonen et al 2016)

• Six vocational school units, different educational tracks: business and administration, information technology, nursing, and hotel, restaurant, and catering studies

• **TEACHERS** \((n=233)\):
  
  – core subject (e. g., mathematics, languages) or vocational subject (e. g. nursing) teacher
  – teaches at least one of the included classes in the first study period
  – teaching involves a large amount of sitting and/or burdening work positions for students
1. GROUP PROGRAM FOR STUDENTS
   6 weekly sessions
   & boosters (social media, group counseling)
   (LMI Facilitator)

2. SITTING REDUCTION
   AND ACTIVITY BREAKS
   IN CLASSROOMS
   (Teachers)

3. ENHANCED PA AVAILABILITY
   Access to school PA facilities,
   Community partnerships
   (School Team)

   Home workout videos

Internet-resources
Poster campaign

MORE PA, LESS SEDENTARY TIME

WORKSHOP I
• Why should I reduce students’ sedentary time?
• Trying out sitting reduction strategies

Teachers try out strategies to reduce sitting during lectures
Light PA equipment provided for classrooms

2 weeks

WORKSHOP II
• Sharing experiences
• Problem solving
• Habit formation

Teachers continue students’ sitting reduction and use habit formation techniques

6 weeks

WORKSHOP III
• Sharing experiences of habit formation
• Maintenance of sitting reduction practices
Active teaching strategies
Learning café (exercise check points around the classroom)
Opinion poll queue
Voting with your body (e.g. squat means yes, standing up means no)
Utilising drama in teaching (e.g. role play)

Equipment for light physical activity (e.g. gym sticks, pilates cushions on chairs)
Use during group assignments
Use while listening to presentations
Replacing chairs with gymnastic balls

Active ways of working in class
• Using standing desks
• Standing while listening to presentations
• Students stand up and pick materials from the teachers’ desk
• Forming groups in a physically active way
• Creative use of space (e.g. having a lesson outside the building, in the nature)
• Allowing students to stand up and walk around during lessons

Activity breaks
• Let’s Move It activity break videos and other online videos
• Let’s Move It activity break posters
# Intervention Description

<table>
<thead>
<tr>
<th>Intervention session</th>
<th>Aims</th>
<th>Activity description</th>
<th>Behavior Change Techniques, e.g.</th>
<th>Materials</th>
<th>Determinants</th>
</tr>
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</table>
| Workshop I           | - Teachers understand how sitting affects learning, physical health, and well-being.  
- make a personal plan for the use of habit formation techniques  
- feel that the workshops have an open, safe and dialogical atmosphere - are aware of different strategies to reduce students’ sitting | - Teachers reflect on why student’s sitting reduction is important to them personally, and these reasons are shared with the whole group (Identifying Personal Motives - Identifying the Necessities and Benefits of Changing Their Behavior).  
- Facilitator gives a short presentation about habit formation, including recommendations of how to effectively plan for habit formation  
- Teachers make a personal habit formation plan (i.e., link cues to sitting reduction strategies) to the teaching weeks before workshop III and are asked to self-monitor  
- Facilitator encourages teachers to form small groups to share their experiences and (e.g. activity breaks, use of light PA equipment, see Supplementary file 2 for a list of sitting reduction strategies) and learn practical pedagogical tips to motivate students to participate in sitting breaks.  
- Teachers are asked to set a plan for sitting reduction: which strategies they are going to try and when. They are also asked to | 5.1. Information about health consequences  
5.2. Salience of consequences  
5.3. Information about emotional consequences  
1.2. Problem-solving  
8.3. Habit formation  
1.5 Review behavior goals  
1.2 Problem solving  
7.1 Prompts/cues  
1.4 Action planning  
11.3 Conserving mental resources | PowerPoint slides  
Cards with consequences of habit formation  
Tasks for self-monitoring  
Activities for habit formation | Knowledge  
Autonomous motivation  
Outcome expectations  
Social norms  
Self-efficacy  
Skills  
Positive group climate  
Behavioral self-regulation |
Suboptimal values for characteristics of habit formation plans analysed (Gardner et al. 2014).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Suboptimal value(s)</th>
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<tbody>
<tr>
<td>Number of target behaviours specified</td>
<td>More than one, no target behaviour specified</td>
</tr>
<tr>
<td>Target performance frequency</td>
<td>Unspecified</td>
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<tr>
<td>Target behaviour described in absolute or relative terms</td>
<td>Relative terms</td>
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<tr>
<td>Increase or decrease in target behaviour</td>
<td>Decrease</td>
</tr>
<tr>
<td>Type of cue</td>
<td>Time-based cues</td>
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EXAMPLE INTERVENTION ACTIVITY (WORKBOOK) TO FORM HABITS:

1. Choose a sitting reduction strategy
2. Link it to a cue
3. Use the SR strategy whenever you encounter the cue
4. Monitor the use for the next 3 weeks

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<th>1</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>If/Whenever… (CUE)</td>
<td>…then (SR STRATEGY)</td>
<td>How many times I used this SR strategy</td>
</tr>
<tr>
<td>□ I have print outs for the students</td>
<td>□ I ask the students to come pick them from my desk</td>
<td>I I I</td>
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</table>
MATERIALS, e.g.

- Posters
- Teacher workbook
- Student workbook
- Home workout videos
Data collection (Hankonen et al 2016)

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<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
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<tr>
<td><strong>Baseline</strong></td>
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<td>2 months</td>
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<td><strong>Students</strong></td>
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<tr>
<td>Questionnaire</td>
<td>sQ1</td>
<td>sQ2</td>
<td>sQ3</td>
<td>sQ4</td>
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<tr>
<td>Accelerometry</td>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A3</td>
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<tr>
<td>Bioimpedance</td>
<td>B1</td>
<td></td>
<td>B2</td>
<td></td>
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<td>Group sessions</td>
<td>G1</td>
<td>G2</td>
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<td>G6</td>
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<td>Interviews</td>
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<td>Questionnaire</td>
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<td>WS2</td>
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<td>Group interviews</td>
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RESULTS
INTERVENTION INCREASED BREAKING SITTING – NOT TOTAL SITTING TIME REDUCTION

How often reduced students’ sitting in your classes (à 45 min) during the last **two weeks**:

"On appr. every fourth lesson"

"A few times"

"On appr. every other lesson"
HABIT FORMATION RESULTS

• 37.8% (n = 17) of the intervention arm teachers reported *not* using habit formation techniques at all during the last month.

• 15.5% (n = 7) used habit formation techniques *regularly* (on about every fourth lecture or more often).

• Frequency of habit formation technique use was not related to sitting reduction automaticity in intervention arm (r = .05, p = .759).

• A positive correlation between automaticity and:
  • reducing students’ total sitting time (r = .44, p < .001)
  • introducing **breaks** to students’ sedentary time (r = .29, p < .001)
MOST COMMONLY REPORTED HABIT FORMATION PLANS

• “Whenever I have handouts for students, … I ask students to come pick them up from my desk.”

• “At the beginning of each lesson, … I encourage students to use the PA equipment available in the classroom.”

• “Whenever students get restless, … I hold a short activity break.”
<table>
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<tr>
<th>Characteristics</th>
<th>Observed values (* = prejudged to be suboptimal) (Gardner et al. 2014)</th>
<th>Verbatim examples</th>
<th>Observed frequency</th>
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<tr>
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<td></td>
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<tr>
<td>b. Two behaviours*</td>
<td>“Something active, like blowing balloons, clapping”</td>
<td>1 (2.5%)</td>
<td></td>
</tr>
<tr>
<td>a. No behaviour specified*</td>
<td>“When someone yawns or something like that”</td>
<td>2 (5%)</td>
<td></td>
</tr>
<tr>
<td><strong>2. Frequency of target behaviour</strong></td>
<td></td>
<td></td>
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<tr>
<td>a. During each lecture</td>
<td>“At the beginning of a lecture…”</td>
<td>8 (20%)</td>
<td></td>
</tr>
<tr>
<td>b. Unclear or unspecified*</td>
<td>“Tiredness – squats”</td>
<td>32 (80%)</td>
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<tr>
<td><strong>3. Behaviour specified in absolute or relative terms</strong></td>
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<tr>
<td>a. Absolute</td>
<td>“…I show the students an activity break video”</td>
<td>30 (75%)</td>
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<tr>
<td>b. Unclear</td>
<td>“…do something active together”</td>
<td>8 (20%)</td>
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<tr>
<td>c. No behaviour specified*</td>
<td>“When someone yawns or something like that”</td>
<td>2 (5%)</td>
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<tr>
<td><strong>4. Increase or decrease in target behaviour</strong></td>
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<tr>
<td>a. Increase in healthy behaviour</td>
<td>“Standing during presentations”</td>
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<td>“I won’t bring materials for the students”</td>
<td>1 (2.5%)</td>
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<tr>
<td>c. No behaviour specified*</td>
<td>“An alarm after 25 minutes”</td>
<td>2 (5%)</td>
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<tr>
<td><strong>5. Type of cue</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>a. Event-based</td>
<td>“At the beginning of a lecture”</td>
<td>34 (85%)</td>
<td></td>
</tr>
<tr>
<td>b. Time-based*</td>
<td>“After 2-3 hours”</td>
<td>4 (10%)</td>
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<tr>
<td>c. No cue specified*</td>
<td>“Written exercise using the blackboard”</td>
<td>2 (5%)</td>
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</table>
ADDITIONAL ANALYSES

• Use of other behaviour change techniques (BCTs) was significantly higher in intervention arm

• Mediation analyses indicated that teacher behaviour change was explained by
  • Descriptive norm
  • Intention
  • Use of BCTs
SUMMARY OF RESULTS

• Intervention teachers introduced breaks in students’ sitting more than controls did

• Descriptive norm, intention, and enactment of BCTs explained these changes
  • Positive outcome expectations were high already at baseline

• Habit formation plans were generally of high quality
  • but it was poorly taken up
DISCUSSION

• Habit formation elements were included in intervention design only after the feasibility study: the lack of iterative development to optimise may explain poor uptake

• Representativeness of the study sample?
  • Only half of intervention school teachers completed the workshops, despite several efforts to guarantee active participation
    → may influence results & show selection bias
  • Response rate consistently 20-25%-units lower in control arm – selection bias?

• Need for further research: A public health priority to change behaviour of those controlling environments influencing health behaviours of many others
THANK YOU!

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## PARTICIPATION TO INTERVENTION & QUESTIONNAIRES

<table>
<thead>
<tr>
<th></th>
<th>B1+2, IV</th>
<th>B1+2, C</th>
<th>B3+4, IV</th>
<th>B3+4, C</th>
<th>B5+6, IV</th>
<th>B5+6, C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible teachers</td>
<td>37</td>
<td>66</td>
<td>59</td>
<td>23</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td>Attended workshops % of eligible teachers</td>
<td>22</td>
<td>59,5%</td>
<td>NA</td>
<td>31</td>
<td>52,5%</td>
<td>NA</td>
</tr>
<tr>
<td>Responded to BL questionnaire % of eligible teachers</td>
<td>21</td>
<td>56,8%</td>
<td>26</td>
<td>39,4%</td>
<td>38</td>
<td>64,4%</td>
</tr>
<tr>
<td>Responded to FU1 questionnaire % of eligible teachers</td>
<td>17</td>
<td>45,9%</td>
<td>16</td>
<td>24,2%</td>
<td>24</td>
<td>40,7%</td>
</tr>
</tbody>
</table>
AGAIN, HIGH ACCEPTABILITY

In my opinion, strategies from the Let's Move It program should be included in teacher training.
**Intervention**

**PROBLEM**

Sedentary Teaching

**MECHANISM**

- **Outcome expectations** e.g., "If I reduced students’ sitting during my lessons, as a result, their ability to learn would be enhanced"
- **Descriptive norm** e.g., "Most teachers use sitting reductions strategies during their lessons"
- **Self-efficacy** e.g., "I am certain I can overcome obstacles that hinder reducing students sitting"

**SOLUTION**

- **Intention**
- **Enactment of Behavior Change Techniques**
- **Habit formation**
- **Automaticity**

Active Teaching
Fidelity beyond delivery

For some BCTs, the effectiveness depends on active participant *enactment* of the learned skill— not only on fidelity of *delivery*
  – And for some BCTs, on repeated enactment

~engagement / adoption

HABIT FORMATION

• Habit is a process by which environmental cues automatically activate an impulse towards action that has, through repetition, become associated with those cues (Gardner, 2015)

• Habit formation: Creating habit goals
  • by choosing a target behaviour and defining its performance context (cue)
  • Proposed criteria of the quality of habit goals (Gardner et al., 2014):
    – number of target behaviours (one)
    – a specified frequency of target behaviour
    – behaviour specified in absolute terms (not relative)
    – goal defined as increase in target behaviour (as opposed to a decrease)
    – type of cue (salient, event-based cues)
CLASSROOM SITTING REDUCTION STRATEGIES

- **Active teaching strategies**
  - Learning café (exercise check points around the classroom)
  - Opinion poll queue
  - Voting with your body (e.g. squat means yes, standing up means no)
  - Utilising drama in teaching (e.g. role play)

- **Equipment for light physical activity**
  (e.g. gym sticks, pilates cushions on chairs)
  - Use during group assignments
  - Use while listening to presentations
  - Replacing chairs with gymnastic balls

- **Active ways of working in class**
  - Using standing desks
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  - Students stand up and pick materials from the teachers’ desk
  - Forming groups in a physically active way
  - Creative use of space (e.g. having a lesson outside the building, in the nature)
  - Allowing students to stand up and walk around during lessons

- **Activity breaks**
  - Let’s Move It activity break videos and other online video
  - Let’s Move It activity break posters
What did you like the most about the workshops?

• **Learning new** classroom sitting reduction and teaching strategies, new ideas \( (n=16) \)

• **Discussions** with colleagues, sharing thoughts and experiences \( (n=11) \)

• **High quality of the workshops** (clear structure, well organized, understanding of the school environment) \( (n=11) \)

What could be improved?

• Information about consequences of prolonged sitting provided no new information for me \( (n=2) \) (health care teachers)

• **More time** for workshops \( (n=2) \)

• **More focus on SR strategies and ideas** \( (n=2) \)

• Sharing experiences from other schools/classes \( (n=1) \)

• More discussion of **ways to motivate students** \( (n=1) \)
FEEDBACK FROM THE WORKSHOPS

Have you noticed any changes in teachers’ work practices after Let's Move It program started? If you have, what kind of changes?

• No (n=11)
• I don’t know (n=6)
  • I don’t know what others do in their lessons
  • We haven’t discussed this
• Some (little) changes (n=7)
  • Some teachers are using classroom sitting reduction strategies
  • We have discussed topics related to LMI
  • People are talking about reducing sedentary time
• Yes (n=16)
  • Teachers are using different sitting reduction strategies
  • Teachers consider physical activity and classroom sitting reduction when planning teaching
  • Teachers have been talking about the workshops and sharing their experiences
• No answer (n=10)
### CHARACTERISTICS OF HABIT FORMATION PLANS

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<td></td>
<td>“After 2-3 hours”</td>
<td>4 (10%)</td>
</tr>
<tr>
<td>c. No cue specified*</td>
<td></td>
<td>“Written exercise using the blackboard”</td>
<td>2 (5%)</td>
</tr>
</tbody>
</table>
"During the past month, have you done the following?" (1 = not at all true, 7 = completely true)
EXPLORING BCT USE AMONG TEACHERS

• **Similar rates** of BCT enactment in control and intervention arms:
  • Monitoring students’ sitting time in class
  • Thinking about personal motives for reducing students’ sitting

• Largest discrepancies between control and intervention arm – **intervention arm teachers did more…**:
  • Goal setting (for reducing students’ sitting)
  • Self-monitoring
  • Discussing problems & solutions with colleagues
  • Reviewing behavioural goals
Acceptability of Strategies to Reduce Student Sitting: A Mixed-Methods Study With College Teachers

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Background. As school days among adolescents include long periods of prolonged sitting, teachers are key agents to deliver interventions to reduce youth sedentary behavior. To develop an intervention, acceptability and feasibility of alternative strategies should be tested. We aimed to examine teachers’ current use and willingness to use various strategies to decrease student sitting and potential barriers and facilitators of use. Method. Mixed-methods design with college teachers using an online cross-sectional survey (n = 192) and focus group interviews (n = 13). Findings. Although a vast majority (87%) of the teachers found reducing prolonged sitting an important goal, only 47% were actually including practices to reduce sitting in their classroom. 89% of the teachers reported willingness to use at least one of

INTRODUCTION

Prolonged sitting is associated with an increased risk of adverse health consequences (Hamilton, Hamilton, & Zderic, 2007; Owen, Healy, Matthews, & Dunstan, 2010), even after accounting for levels of physical activity (PA; Hamilton et al., 2007; Katzmarzyk, 2010). School days include long periods of uninterrupted sitting, but even small breaks can have positive effects on metabolic markers and cognition (Ekelund et al., 2012; Owen et al., 2010). School-based interventions have been shown to increase PA (Whitt-Glover, Porter, & Yancey, 2013) and fitness (Kriemler et al., 2011). Multicomponent interventions combining educational, curricular, and environmental elements have been most effective in increasing PA (Kriemler et al., 2011).
FIGURE 1  Teachers’ Self-Reported Use of Sitting Reduction Strategies

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<table>
<thead>
<tr>
<th>COM-B Domain</th>
<th>TDF Domain and Summary of Findings (Teacher Views)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability</td>
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</tbody>
</table>
| Skills       | (+) Technical skills are not of concern: The most important thing is that something is done to reduce student's sitting, one cannot do it wrong  
|              | (−) Uncertainty about how to use light PA equipment and to guide student use of them  
|              | (−) Lack ideas how to activate theoretical classes  
| Knowledge    | (+) Sitting reduction should be made easier, using “baby steps” and common sense in implementation  
|              | (−) Teachers feel the need to better understand the benefits of sitting reduction and why it is being done  
| Behavioral regulation | (+) A need for a system for coordinating and timing activity breaks and equipment use  
|              | (−) Sitting breaks are difficult to plan ahead as situations and groups differ  
| Opportunity  |                                                  |
| Environmental context | (+) Light PA equipment should be easily available in classrooms  
|              | (−) Classrooms are small, and full of desks; there is only little space for moving about or using equipment  
|              | (−) A group may consist of more than 20 students, which make moving around in a small classroom difficult  
| Social influences | (+) The best strategies to reduce sitting are those that are not noticed as sitting reduction by students  
|              | (+) Management of the school could model sitting reduction  
|              | (−) Students might resist participating in activity breaks guided by teachers or video  
|              | (−) Light PA equipment might get stolen or broken  
|              | (−) Sitting is bound to the school environment and school system; theoretical content of the class forces students to sit and some teachers think learning is most effective when students sit  

Laine, Araujo-Soares et al. (2017) *Health Promotion Practice*
Motivation

Emotions

(-) Teacher-guided breaks feel unpleasant for some teachers
Beliefs about consequences
(+) Teacher-guided breaks may be a good way to manage the group and teaching time
(+) Light PA equipment is good for the spine/back (e.g., gymnastic balls, sitting pillows) and muscles
(+/-) Equipment might help restless students to concentrate, allowing some movement during the class
(+/-) Student-guided breaks might work with groups with well-established, positive group climate and dynamics, using volunteers to guide breaks; students would consider these to be more fun and to work better than teacher-guided breaks, on the other hand there might be problems if there are no volunteers and it might not work with this particular age-group
(+/-) Free walking might distract teachers' concentration and hinder group management; others think it comes naturally and calms students
(-) Student with poor motor coordination and physical fitness may hurt themselves while using equipment; some might fool around or engage inappropriately with them
(+) Sitting reduction in general: Sitting breaks might be used to organize classes and calm down restless students; some students have a need to move and activating students every now and then is necessary to all classes
(-) Teacher job is easier if students sit still during the classes; teachers are afraid that teaching gets out of hand or they get confused what they were doing

NOTE: COM-B = “capability,” “opportunity,” “motivation,” and “behavior”; TDF = Theoretical Domains Framework; PA = physical activity.

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