Promoting the use of a self-management strategy among novice chiropractors treating individuals with spine pain: A mixed methods pilot quasi cluster-clinical trial

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Introduction
– Self-Management Support (SMS)

▶ Clinical guidelines recommend clinicians provide Self-Management Support (SMS) to patients with spine pain (Bryans et al., 2014; Bussieres, Stewart, et al., 2016; Chou et al., 2007; Pierre Côté et al., 2015)

▶ SMS strategies encourage patients to change unhealthy behaviours and commit to healthy ones (Dennis C. Turk, Meichenbaum D, & M, 1983; Hanson R & Gerber K, 1990)

▶ SMS effectiveness (Stanton Newman, et al., 2004; Oliveira et al., 2012)

  ▶ Reduces pain

  ▶ Reduces psychological distress

  ▶ Improves functional abilities

SMS Uptake is Suboptimal – Barriers
(Owis Eilayyan et al., 2018a&b)

Clinicians/Interns Barriers

- Lack Knowledge
- Lack of Skills & Confidence
- Lack of time
- Lack of supportive documents
- Anxiety

Patients Barriers

- Lack of time
- Lack of supportive documents
- Anxiety

Theory-based Tailored KT Interventions

Clinicians/Interns

▶ Supportive handouts

▶ Online training

▶ Workshop training

▶ Opinion leaders

Patients

▶ Supportive handouts

▶ SMS based on motivational interviewing

▶ Short videos for patient to share stories on successful SMS strategies

Study Objectives

▶ To evaluate the feasibility of conducting a full trial of a KT intervention promoting the use of SMS among chiropractors/interns and individuals with spine pain compared to control

▶ To estimate the potential effectiveness of a KT intervention on SMS skills and confidence among chiropractors/interns and self-care activation among individuals with spine pain compared to control

Method – Design & Context

- ▶ Pilot Cluster Quasi Clinical Trial
  - ▶ Cluster: working day
- ▶ Place: 4 Canadian Memorial Chiropractic College (CMCC) Clinics
- ▶ Participants
  - ❑ Clinicians: supervisory CMCC clinicians in outpatient teaching clinics
  - ❑ Interns: students in their final year at CMCC providing chiropractic treatment to a least two adults (age 18-65) with spine pain / week
  - ❑ Patients: people with spine pain, between 18-65 years, treated by a consenting chiropractic intern; able to read and hold a conversation in English

Methods – Intervention Allocation

▶ Allocation

    ▶ Group 1 (intervention): Work days = Tuesday, Thursday, Saturday

    ▶ Group 2 (control): Work days = Monday, Wednesday, Friday

Methods – Intervention Description - Clinicians/interns

- **Intervention**
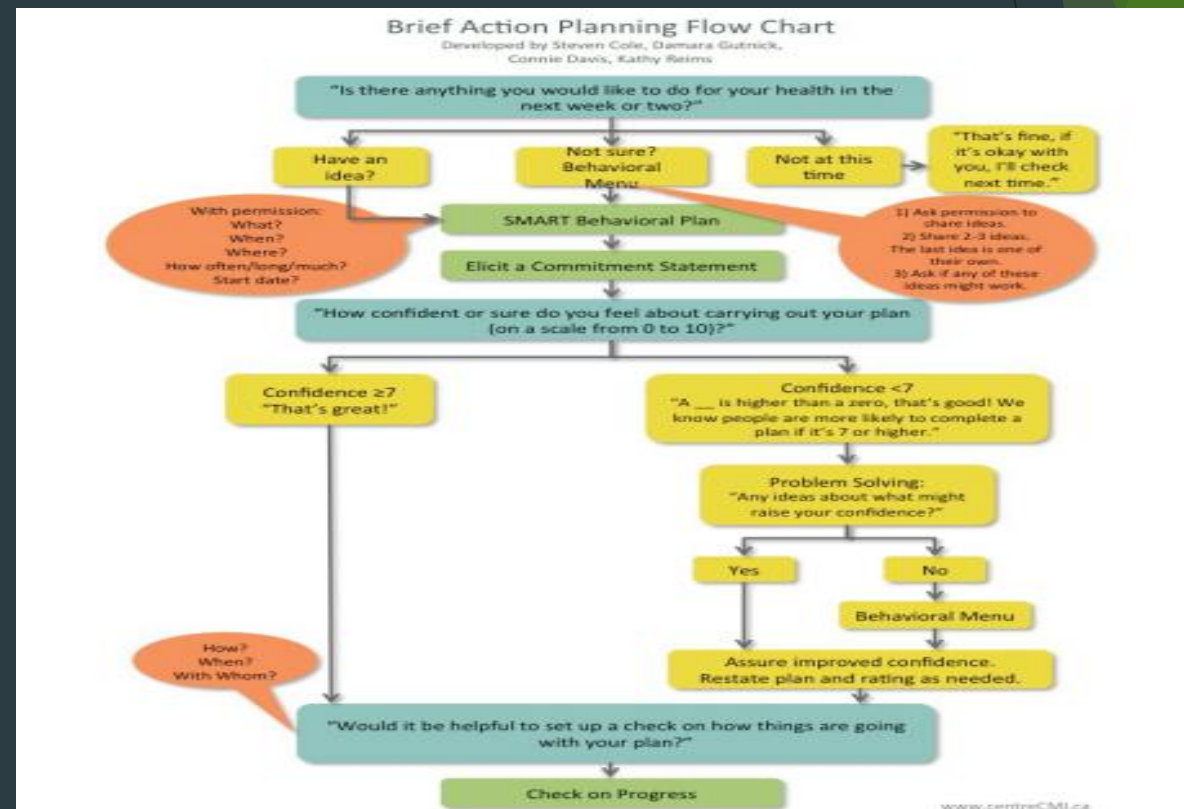 - Online training on Brief Action Planning (BAP)
  - Educational material (BAP flowchart and guideline)
  - Two opinion leaders
  - Full day training

- **Control**
  - BAP flowchart and guideline

Brief Action Planning Flow Chart
Developed by Steven Cole, Damara Gutnick, Connie Davis, Kathy Reims

Methods – Intervention Description – Patients

▶ **Intervention**

▶ **Control**

▶ Standard care

▶ Standard care

▶ BAP based on motivational interviewing

▶ BAP based on motivational interviewing

▶ Supportive handouts

Methods – Outcome Measures

Clinicians/Interns

► Feasibility

1. Recruitment rates
2. Retention rates
3. Adherence to the intervention

► BAP skills and tool experience surveys

► BAP Checklist

  ► Evaluate intern's treatment session

Patients

► Patient Activation Measure

► Confidence with SMS compliance

► Health outcomes

Data Analysis

▶ Descriptive analysis
▶ Mann-Whitney test

Results – Baseline Characteristics – Clinicians

Variable	Intervention (N = 7)	Control (N = 9)
Age (M,SD)	47.5 (10.5)	54.3 (10.3)
Gender (%Women)	3 (43%)	1 (11%)
SMS Knowledge (% Yes)	5 (71%)	9 (100%)
BAP Knowledge (% No)	7 (100%)	9 (100%)
SMS Skills (M,SD) /(1-4)	1.6 (0.38)	2.2 (0.79)
SMS Confidence (M,SD) / (0-10)	7.1 (1)	7.8 (0.73)
SMS Importance (M,SD)/ (0-10)	8.6 (0.79)	8.7 (0.74)

Results – Baseline Characteristics - Interns

Variable	Intervention (N = 15)	Control (N = 18)
Age (M,SD)	28.1 (3.6)	27.2 (2.8)
Gender (%Women)	9 (60%)	8 (44%)
SMS Skills (M,SD)/(1-4)	1.8 (0.65)	2 (0.63)
SMS Confidence (M,SD)/(0-10)	7 (1.3)	6.7 (0.87)
SMS Importance (M,SD)/(0-10)	9.1 (0.96)	9 (0.6)

Results – Feasibility

1) Recruitment

Clinicians	
Target	**55%**
Contacted	19
Accepted	16 (84%)

Interns	
Target	**55%**
Contacted	136
Accepted	39 (29%)

2) Adherence to Intervention
Intervention group

	Clinicians	Interns
Target	90%	90%
BAP Online Training	7/7	16/17
Practice & Feedback	7/7	15/17
Workshop Training	7/7	7/10
Certification	7/7	N/A

3) Retention

Clinicians

	Intervention	Control
Target	80%	80%
Allocation	7	9
Drop-out	0	1
Completed T0	7	9
Completed T1	7	8
Completed T2	5	4

Interns

	Intervention	Control
Target	80%	80%
Allocation	17	22
Drop-out	7	8
Completed T0	16	15
Completed T1	10	6

Results – SMS Skills and Confidence
Average Score Change – Clinicians

SMS Variable	Intervention	Control
Skills pre-post (1-4)	1.1 (0.88)	0.38 (0.62)
Skills pre-mid point* (1-4)	1.65 (0.71)	0.22 (0.68)
Confidence pre-post (0-10)	0.5 (0.82)	0.07 (0.52)
Confidence pre-mid point* (0-10)	1.2 (0.76)	0.22 (0.39)
Importance pre-post (0-10)	0.24 (0.77)	0.05 (0.77)
Importance pre-mid point (0-10)	0.4 (1)	0.23 (0.37)

* Significant at < 0.05

Results – SMS Skills and Confidence
Average Score Change - Interns

SMS Variable	Intervention	Control
Skills pre-post (1-4)	0.72 (0.29)	0.83 (0.39)
Confidence pre-post (0-10)	0.9 (0.81)	1.5 (0.62)
Importance pre-post (0-10)	0.17 (0.56)	0.31 (0.35)

Conclusions

▶ Preliminary results of this ongoing trial suggest that conducting a larger implementation trial in this setting is feasible

▶ Preliminary results suggest that the KT interventions improved the SMS skills and confidence among clinicians

Expected Contributions

- Providing new knowledge on the impact of a tailored KT intervention and factors influencing guideline implementation in teaching clinical settings

- Sustained use of SMS strategies in future clinicians and guide allocation of appropriate resources

- Optimizing the quality of care services for patients

Next Steps

1. Ongoing recruitment of interns and patients
2. Estimate the potential effectiveness of KT intervention
3. Conduct Nominal Group Techniques
   - Patients with spine pain
   - Decision makers, clinicians, and interns

- Conduct the full Stepped-Wedge Cluster Randomised Trial
  - 5 clinics in Quebec and Ontario
  - Cluster Level: Clinic

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Introduction

– Self-Management Support (SMS) Definition

▶ SMS: "individual's ability to manage the symptoms, treatments, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition" Mayo, 2015

SMS Uptake is Suboptimal – Barriers (Owis Eilayyan et al., 2018a&b)

Clinicians/Interns Barriers

- Knowledge
- Skills
- Environmental context and resources
- Emotion
- Beliefs about Capabilities
- Memory, attention & decision making
- Social Influence

Patients Barriers

- Environmental context and resources
- Emotion
- Memory, attention & decision making
- Behavioural regulation

Methods – Data Collection

▶ Feasibility (end of study)

▶ BAP skills and tool experience surveys

   ▶ Baseline; after intervention; middle and end of study

▶ Interns Evaluation Checklist:

   ▶ middle and end of the study

▶ Patient outcome

   ▶ Baseline; 2 weeks; 8 weeks or last treatment session

Methods: Nominal Group Technique

▶ Nominal Group Techniques:

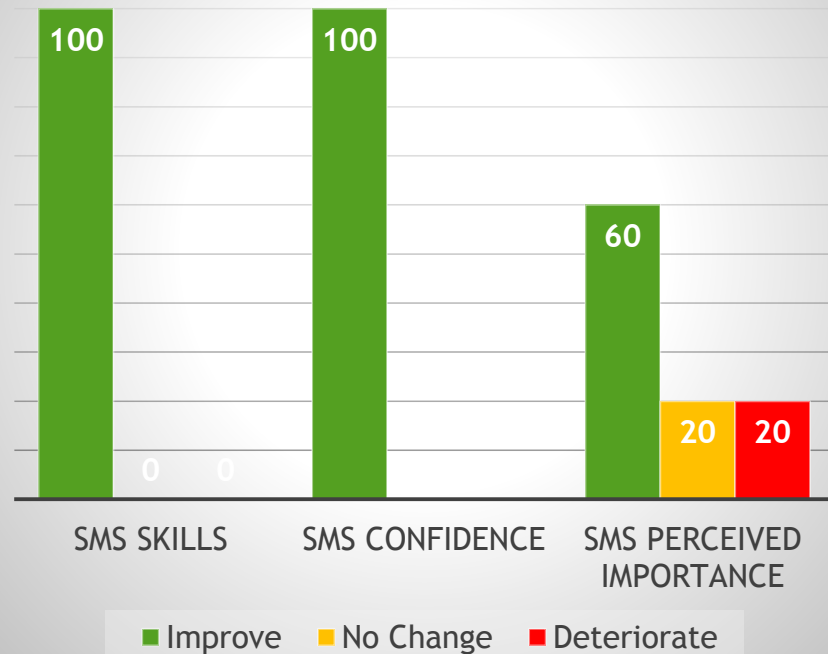1. Patients with spine pain
2. Decision makers, clinicians, and Interns

Goals:

▶ To ascertain the views from decision makers, clinicians, interns and patients about the challenges encountered in the implementation of SMS

▶ To generate possible solutions for a larger trial

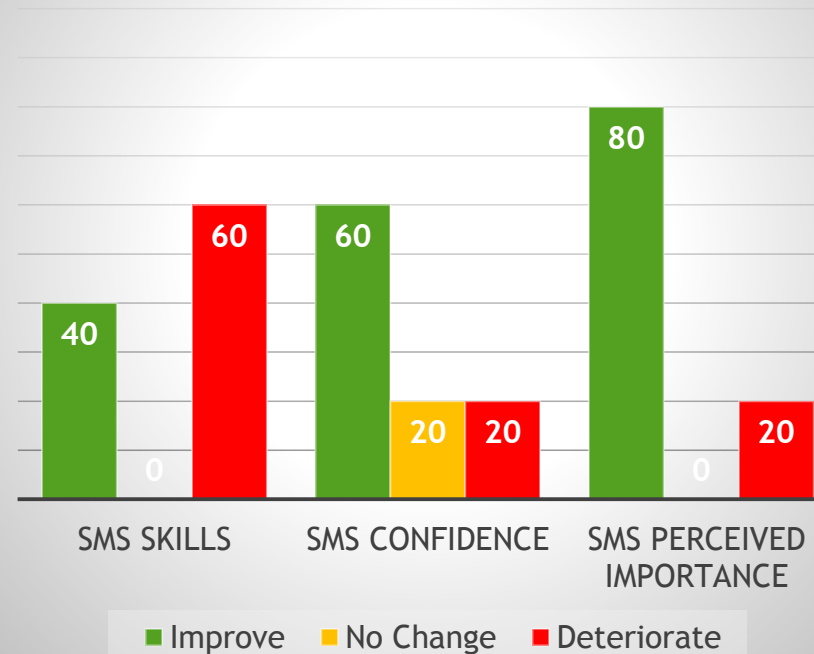# Results – Change in SMS Skill and Confidence – Clinicians

Intervention
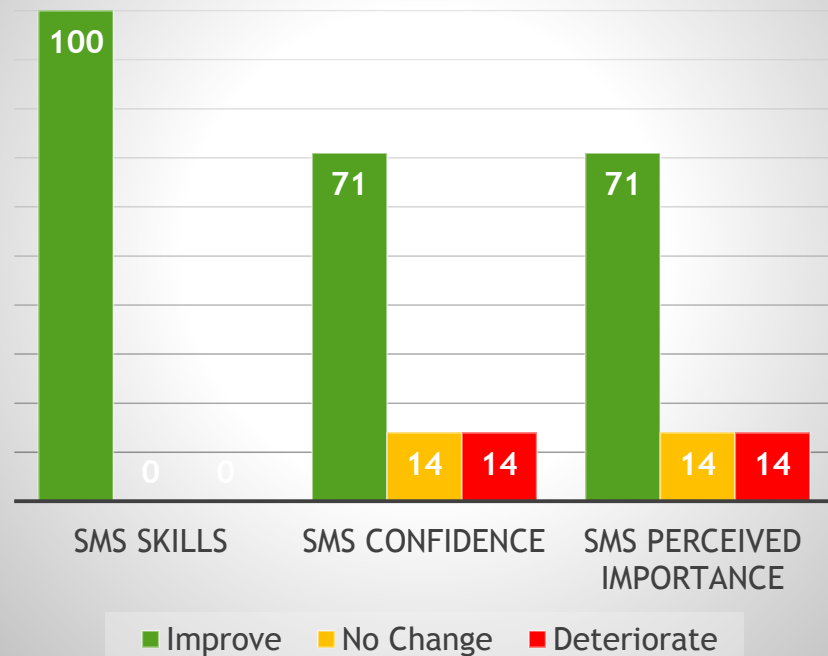
Change at the mid of the study

- SMS SKILLS: 100, 0, 0
- SMS CONFIDENCE: 100, 0, 0
- SMS PERCEIVED IMPORTANCE: 60, 20, 20

Legend: ■ Improve ■ No Change ■ Deteriorate

Control

Change at the mid of the study

- SMS SKILLS: 40, 0, 60
- SMS CONFIDENCE: 60, 20, 20
- SMS PERCEIVED IMPORTANCE: 80, 0, 20

Legend: ■ Improve ■ No Change ■ Deteriorate

Results – Change in SMS Skill and Confidence – Clinicians
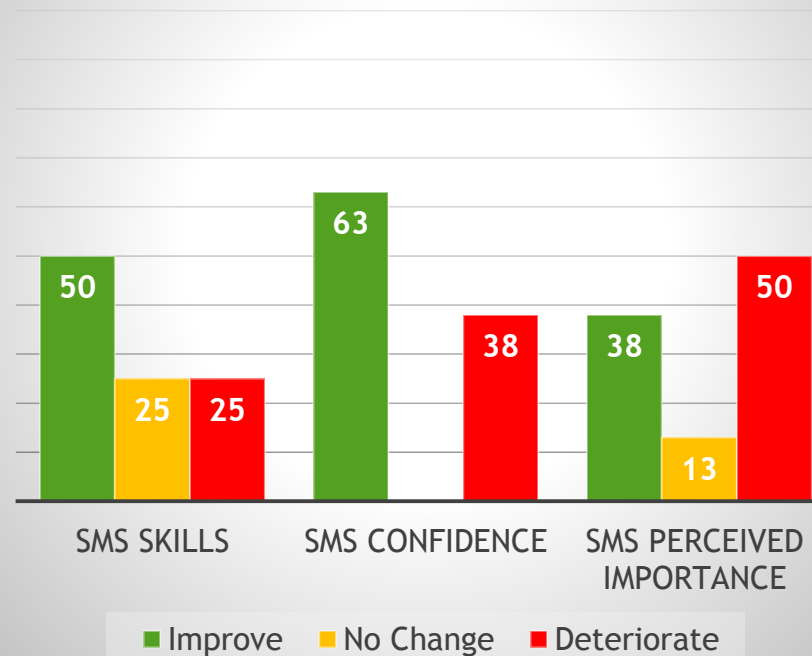
Results – Change in SMS Skill and Confidence – Interns
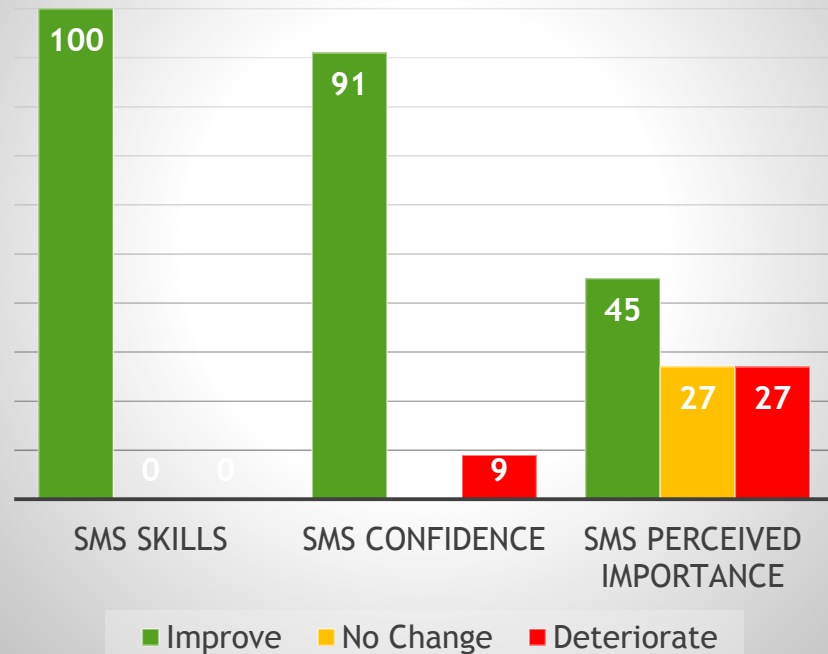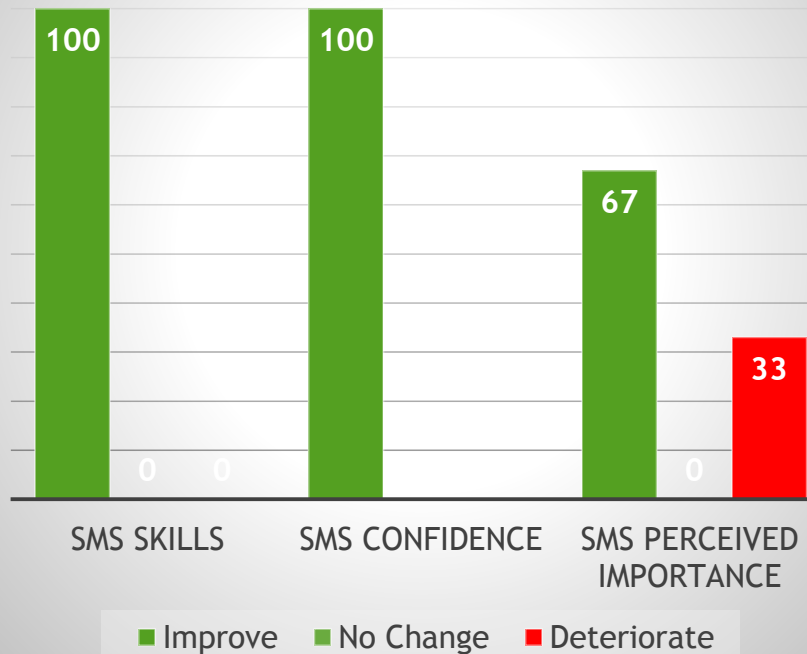
Feasibility Comparing to another study

	Our Study – 2017/2018	Another Study – 2016
Contacted	19	400
Accepted	16 (84%)	47 (38%)
Drop-out	1 (6%)	15 (32%)
Retention rate	15/16 (94%) 9/16 (56%)	18 (38%)
Adherence rate	7/7 (100)	11/16 (69%)

Brief Action Planning Flow Chart
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