Self-management education programs for osteoarthritis: A Cochrane systematic review

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Disclosures
• Joint first authors are medical students and have received no fees
• Two authors (Buchbinder and Osborne) were investigators for one of the included trials but had no part in deciding on inclusion, assessment of risk of bias, data extraction or interpretation of the results

Background
• Osteoarthritis is a prevalent degenerative joint condition with a high impact on activities of daily living and quality of life
• Self-management education programs are complex behavioral interventions
  • Targeted at patient education and behavior modification
  • Designed to encourage people to take an active role in the management of their condition
  • Substantial variation in mode of delivery, audience, duration, frequency and personnel

Aim
• To determine the effectiveness of self-management education programs for people with osteoarthritis

Methods: PICO

| Participants | People (all ages) diagnosed with osteoarthritis
|             | If mixed population: >90% with osteoarthritis or separate data
| Intervention | Structured programs, all modes of delivery
|             | Exclusions: participants passive recipients, exercise only
| Comparators | Information only, no treatment, usual care, waiting list control, alternative interventions
|             | Excluded if comparison of one program vs another
| Main outcomes | Self-management of OA (includes self-efficacy)
|             | Positive and active engagement in life
|             | Pain
|             | Global OA scores
|             | Function
|             | Quality of life
|             | Withdrawals

Methods: Search and data-extraction

• Search strategy
  • Cochrane methods for identifying RCTs and quasi-RCTs
  • Electronic databases including Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE (up to January 2013)
  • Detailed description of the programs; components described using the Health Education Impact Questionnaire (heiQ)
• Considered health equity using the PROGRESS-Plus framework and Health Literacy Questionnaire (HLQ)
• Main comparisons
  • Self management education programs versus attention control
  • Self management education programs versus usual care
**Results: Flow diagram**

2248 records identified through database searching

No additional records identified from other sources

2248 records screened

122 full text articles excluded; 99 irrelevant; 23 relevant but excluded for various reasons

8 studies awaiting classification

29 studies included in qualitative synthesis

29 studies included in meta-analysis

**Characteristics of included studies**

- 29 trials (N = 6753): 26 RCTs and 3 cluster-RCTs, 1-36 months duration
  - 5 trials SMP vs attention control (N = 937)
  - 17 trials SMP vs usual care (N = 3738)
  - 4 trials SMP vs information alone (N = 1251)
  - 7 trials SMP vs other interventions (N = 919)

**Characteristics of the trial participants**

- PROGRESS-Plus framework
  - Place of residence: 58.6% in USA
  - Race (n=15): mean 70.2% Caucasian
  - Gender: 68% female
  - Age: mean 64.8 years
  - Least described: occupation (n=9), socio-economic status (n=6)
  - Mean disease duration (n=15): few months - more than 20 years

**Characteristics of the interventions**

- 34 self-management education programs were reported

<table>
<thead>
<tr>
<th>Mode</th>
<th>Group sessions (n=22), individual sessions (n=8), combination (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>Face-to-face (n=25), telephone (n=2), internet (n=1), combination (n=6)</td>
</tr>
<tr>
<td>Duration</td>
<td>Mostly 6 weeks (range 4 weeks - 12 months)*</td>
</tr>
<tr>
<td>Frequency</td>
<td>Most weekly basis (range 4 per week - 1 per month)</td>
</tr>
</tbody>
</table>

*Follow-up: Short term (≤6 wk), intermediate term (6 wk - 1 yr), long term (> 1 yr)

**Characteristics of the interventions**

- HeiQ-components
  - Mean number included: 4.4 out of possible 8

<table>
<thead>
<tr>
<th>HeiQ-component</th>
<th>Utilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill and technique acquisition</td>
<td>32/34 (94%)</td>
</tr>
<tr>
<td>Health directed activity</td>
<td>29/34 (85%)</td>
</tr>
<tr>
<td>Self-monitoring and insight</td>
<td>27/34 (79%)</td>
</tr>
<tr>
<td>Constructive attitudes and approaches</td>
<td>15/34 (44%)</td>
</tr>
<tr>
<td>Emotional distress</td>
<td>13/34 (38%)</td>
</tr>
<tr>
<td>Health service navigation</td>
<td>13/34 (32%)</td>
</tr>
<tr>
<td>Positive and active engagement in life</td>
<td>9/34 (26%)</td>
</tr>
<tr>
<td>Social integration and support</td>
<td>4/34 (12%)</td>
</tr>
</tbody>
</table>

**Risk of Bias of included studies**

- All studies (n=29) were at high risk of performance and detection bias for self-reported outcomes

![Risk of Bias Chart](chart.png)
SMP vs attention control

- SMPs may not result in significant benefits at 12 months
  - Low to moderate quality evidence from 5 trials (n=937)
  - No between-group differences in self-management skills, global OA symptoms, self-reported function, quality of life, withdrawals
  - Small improvement in pain favouring SMPs (3 trials, n=575)

SMP vs usual care

- Small benefits of unlikely clinical importance favouring SMPs up to 21 months
  - Moderate quality evidence from 11 trials (n=1706)
  - No between-group differences in positive and active engagement in life, quality of life, withdrawals
  - Small improvements favouring SMPs in:
    - Pain
    - Function
    - Global OA symptoms
    - Self-management skills

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**Pain**

- Small benefits of unlikely clinical importance favouring SMPs up to 21 months
  - Moderate quality evidence from 11 trials (n=1706)
  - No between-group differences in positive and active engagement in life, quality of life, withdrawals
  - Small improvements favouring SMPs in:
    - Pain
    - Function
    - Global OA symptoms
    - Self-management skills
Other comparisons

- SMP vs information alone
  - No important differences in any of the reported main outcomes (low quality evidence from single studies)

- SMP vs other interventions
  - No important differences in any of the reported main outcomes (low quality evidence from single studies)

Conclusions

- Based upon low to moderate quality evidence from 29 trials, we found some small effects in a few outcomes favouring SMPs over attention control or usual care but these are of unlikely clinical importance

- More research needed?
  - Further studies investigating the effects of similar SMPs are unlikely to change the conclusions of this review
  - Assessing other delivery models of SMP may be warranted
  - Better description of delivered interventions in future trials
  - Consider PROGRESS-Plus and health literacy to explore issues of health equity for program recipients

HeiQ: 8 domains

- Health-directed activity
- Positive and active engagement in life
- Emotional distress
- Self-monitoring and insight
- Constructive attitudes and approaches
- Skill and technique acquisition
- Social integration and support
- Health service navigation

Each of these domains have been identified as independent outcome indicators of effective self-management interventions

PROGRESS-Plus framework

- Place of residence
- Race, ethnicity and culture
- Occupation
- Gender
- Religion
- Education
- Socioeconomic status
- Social capital
- Age
- Disability
- Sexual orientation

HLQ: 9 domains

- Healthcare provider support
- Having sufficient information to manage my health
- Actively managing my health
- Social support for health
- Appraisal of health information
- Ability to actively engage with healthcare providers
- Navigating the healthcare system
- Ability to find good health information
- Understanding health information well enough to know what to do