Psychologically Informed Education Video Reduces Maladaptive Beliefs in Adolescents with Patellofemoral Pain.

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Prevalence of Patellofemoral Pain (PFP)
Not That Easy

80% completing rehab still report pain

91% report persistent or recurring pain that lasts for years.
Maladaptive Psychological Beliefs and PFP

- Pain-Related Fear and Pain Catastrophizing associated with greater pain and dysfunction

- Change in these maladaptive beliefs are associated with positive clinical outcomes
Study Objective

• *The purpose of this study* was to test the hypothesis that a brief psychologically-informed educational video can reduce maladaptive psychological beliefs in adolescents with patellofemoral joint dysfunction.
Methods

• Prospective case series of 20 adolescents
• Nationwide Children’s Hospital PT clinics
Inclusion Criteria

– Age 12-17 years
– reported pain around or behind the patella, which was aggravated by at least one activity that loads the patellofemoral joint during weight bearing on a flexed knee (e.g., squatting, stair ambulation, jogging/running, hopping/jumping)
Exclusion Criteria

1) prior patellar dislocation,
2) suspicion of other diagnosis of the knee
3) other concomitant injury of the lower quarter
4) previous surgery in the lower quarter,
5) neurologic or developmental disorder which alters lower extremity function.
Intervention

PAIN RELATED FEAR

PAIN CATASTROPHIZING
Primary Outcome Measures

Psychological Beliefs

Fear-Avoidance Beliefs Questionnaire-Physical Activity Subscale

Kinesiophobia-Tampa Kinesiophobia Scale-11

Pain Catastrophizing Scale-Child version
Secondary Outcome Measures

Highest Pain
Numeric Pain Rating Scale

Function
Anterior Knee Pain Scale
Sample Size

A priori calculations determined a sample size of 20 necessary

\[ \text{Alpha} = 0.05 \]
\[ \text{Beta} = 0.20 \]
\[ \text{MCID of FABQ-PA} = 25\% \]
\[ \text{Standard deviation} = 5.8 \]
Data Analysis

Repeated-Measures Analysis of Variance

Pre-educational intervention, Post-educational intervention, and 2 weeks later
Assessed for Eligibility (n=29)

Excluded (n=9)
- Patellar dislocation (n=5)
- Other lower quarter injury (n=3)
- Declined (n=1)

Enrolled (n=20)

2 week follow-up (n=17)
Lost to follow up (n=3)
## Baseline Characteristics

<table>
<thead>
<tr>
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<th>All Patients (n=20)</th>
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<tbody>
<tr>
<td>Age (years)</td>
<td>14.1 ± 2.4</td>
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<tr>
<td>Sex (% female)</td>
<td>10 (50%)</td>
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<tr>
<td>Body mass index (kg/m²)</td>
<td>22.4 ± 4.4</td>
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<td>Duration of symptoms (weeks)</td>
<td>12 (6-25)</td>
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<td>Bilateral knee pain (% yes)</td>
<td>6 (30%)</td>
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<td>Participates in organized sport (% yes)</td>
<td>19 (95%)</td>
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<td>Tegner Activity Level</td>
<td>7.5 ± 1.7</td>
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<tr>
<td>Highest pain in past 24 hours (0-10 NPRS)</td>
<td>4.0 ± 2.4</td>
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<tr>
<td>Anterior Knee Pain Scale</td>
<td>76.9 ± 13.3</td>
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Fear Avoidance (FABQ-PA)

- Pre: 12
- Post: 7.9
- 2 weeks: 5.5

Meaningful change observed immediately (p < 0.01)
Kinesiophobia (TSK-11)

Meaningful change observed at 2 weeks (p <0.01)

Pre: 22.1
Post: 17.4
2 weeks: 14.7

22% decrease
33% decrease
Pain Catastrophizing (PCS-Child)

Meaningful change observed immediately (p < 0.01)
Change in Function

Pre: 76.9

2 week: 88.4
Change in Highest Pain

Pre: 4
2 week: 1.8
Discussion

Psychologically-informed education, when presented appropriately can be effective and understood in young patients.
What does this mean?

It is unclear how this education effects pain and function

- Disagreement in literature
- Never assessed in PFP
Study Limitations

No control group
- immediate reassessment reduces potential confounders

Participated in PT after study session
- No specific pain science or psych education
- Changes in pain in function cannot be attributed to video with current design
Next Step-in progress

Randomized Controlled Trial

Psychologically-Informed Education v.s. Biomedical Education

Assessing Function, Pain, and Physical Performance
Clinical Relevance

Incorporating a brief one-time education video into standard physical therapy care can significantly reduce maladaptive psychological beliefs in adolescents with patellofemoral joint dysfunction.
References


References


