

BEHAVIORAL ECONOMICS INFLUENCES TREATMENT PREFERENCES FOR KNEE OSTEOARTHRITIS:
THE ROLE OF DELAY DISCOUNTING

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BACKGROUND & RATIONALE

Delay discounting describes a preference for smaller, immediate rewards over larger, delayed rewards. Physical therapy often involves repeated visits and active participation, whereas injections may be perceived as offering more immediate symptom relief.

RESEARCH QUESTION

Do individuals with greater delay discounting prefer faster medical treatments over physical therapy?

METHODS

Design: Cross-sectional online survey recruited through ResearchMatch.

Sample: 284 complete responses.

Measures: Demographics, 21-item Monetary Choice Questionnaire, hypothetical knee pain scenario, treatment beliefs, and prior PT experience.

Scenario: Three months of knee pain; choices included injection today, medication for two weeks, surgery in three weeks, or PT for four to six weeks.

Analysis: One-way ANOVA, independent-samples t tests, and chi-square tests (SPSS v25).

PARTICIPANT CHARACTERISTICS

Mean age: 55.98 years
Female: 74.3%
Bachelor’s degree or higher: 79.6%
Insured: 98.6%
Household income >\$94,000: 47%

TREATMENT PREFERENCE

Preferred treatment for hypothetical knee pain (n = 284)

PREFERRED TREATMENT	PARTICIPANT SELECTION %
Injection	40.5%
Physical therapy	29.2%
Medication	20.1%
Surgery	5.6%
Other / decline	4.6%

DELAY DISCOUNTING BY TREATMENT

TREATMENT	Mean log ₁₀ (k) *
Injection	-2.140
Physical therapy	-2.366
Medication	-2.171
Surgery	-1.994
Other / decline	-2.273

*Mean log₁₀(k) — higher values indicate stronger discounting

Injection vs PT
Greater delay discounting among injection choosers: p = 0.036; Cohen’s d = 0.41. Overall ANOVA: F(5,278) = 2.42.

PERCEIVED SPEED OF RELIEF

Perceived injection speed advantage (injection minus PT):

Injection choosers: 3.17 (SD 1.72)
PT choosers: 1.82 (SD 1.68)

Difference: 1.35; p < 0.001; Cohen’s d = 0.82.

KEY FINDINGS

- Injection was the most frequently selected treatment (40.5%), followed by PT (29.2%).
- Participants choosing injections discounted delayed rewards more strongly than those choosing PT.
- Injection choosers perceived a greater speed-of-relief advantage for injections.
- Prior PT experience was associated with treatment choice ($\chi^2 = 58.79$; p = 0.028).

CLINICAL IMPLICATIONS

- Discuss realistic expectations for the timing of symptom relief.
- Communicate that meaningful improvements may occur early in a course of PT.
- Address beliefs about injections versus PT without implying that patient preferences are irrational.
- Consider previous PT experiences when discussing treatment options.

LIMITATIONS

- Hypothetical, self-reported treatment choices;
- Cross-sectional design;
- Highly educated sample.
- Associations cannot establish causation or predict actual care utilization.

CONCLUSION

Time preferences and perceived treatment speed are associated with knee pain treatment preferences. Clear communication about PT’s expected benefits may help patients make informed choices.