

Private and Public Costs of Chronic Pain in Adults

Economic Analysis within The STOPPAIN Project

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Utilization of Health Care Resources for Chronic Pain

- associated with ↑ consumption of resources
- myriad of conventional + alternative & complementary treatments
- ↑ demands on care recipients + families
 - money & time



Utilizing Health Care Resources for Chronic Pain

- Time consuming
 - explore management options
 - waiting for & receiving care
- Lost productivity in labour-market
- Lost time from leisure & household work
- A limited understanding of:
 - economic outcomes
 - determinants of costs

Primary Purpose

- To comprehensively measure the societal costs of privately & publicly financed care associated with chronic pain



Secondary Study Purpose

- To assess the clinical & socio-demographic determinants of costs of care

Methods

- Participants recruited from multidisciplinary pain treatment centers
- Completed costing instrument:
 - Ambulatory and home Care Record (AHCR)
 - on a daily basis
- X 3 months
- AHCR returned by mail monthly



Data Collection

- AHCR (© Coyte & Guerriere, 1998)
 - Private & public expenditures
 - Self-administered
 - Measures costs from a societal perspective



AHCR Cost Categories

Publicly Financed Care

- Government funded care
- Includes:
ambulatory appointments,
laboratory & diagnostic tests,
medications

Privately Financed Care

- Out-of-pocket:
medications, supplies,
travel costs,
appointments,
household help
- Payment by insurance companies
- Time costs (care recipients & family caregivers)



Time Costs

- Time devoted by care recipients & family caregivers considered an opportunity cost
- Time taken from other activities
 - labour-market work, household work & leisure
- Time is valued in \$



Resource Valuation

- Public expenditure:
 - Ontario fee-for-service rate schedule to value physician + laboratory services
 - hospital/clinic accounting systems to value clinic appointments
 - Ontario government-sponsored drug benefit formulary rate to value medications
- Private expenditure:
 - self-reported out-of-pocket costs
 - time costs: monetary value assigned to each unit of time – human capital approach



Data Analysis

- Cost data log-transformed
- Distributions of costs
- multivariate regression analysis
- Pain variables: pain duration, pain history, pain catastrophizing scale, brief pain inventory; pain composite scale
- Age, gender, income, education level, marital status, employment status, Beck Inventory Depression Scale score, SF-36 score



Participant Characteristics

- N = 370 (random sub-sample)
- Age: mean=50; min./max.: 20 - 87
- Married: 63%
- Employment status:
 - On disability leave from work: 36%
 - Employed in labour-market: 30%
 - Retired: 15%
 - Unemployed: 10%
 - Student: 9%



Participant Characteristics

Educational Attainment:

- Elementary School: 5%
- High School: 41%
- College/Technical School: 35%
- University: 19%

Results

- What are the monthly societal costs associated with chronic pain?

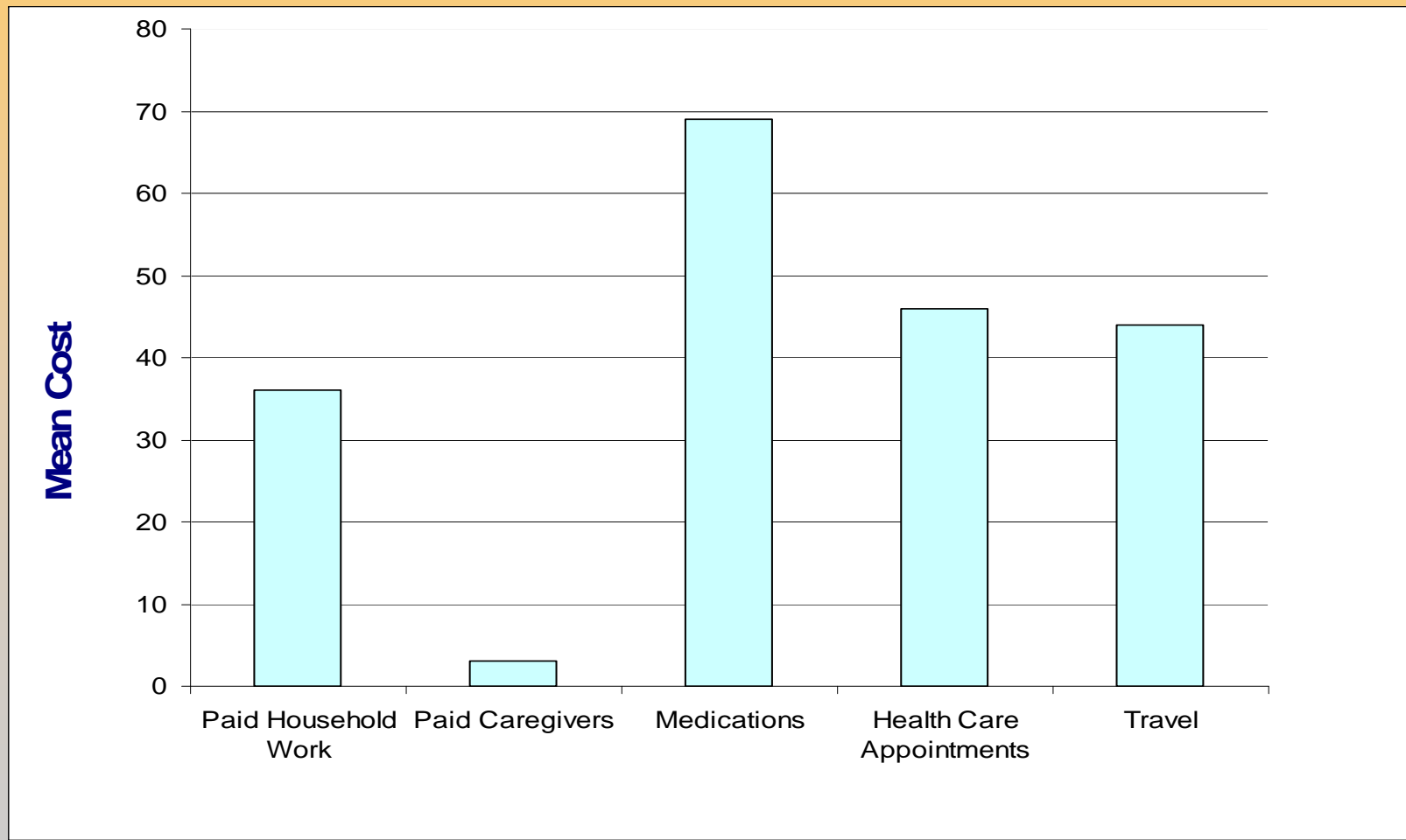
Mean monthly cost:

Approximately \$3,000 per care recipient

Mean Monthly Expenditures Per Patient

Cost Category	Mean (for those reporting)	Mean (for total sample)
Public Expenditures	\$207 n=277	\$155
Out-Of-Pocket Expenditures	\$205 n=359	\$199
Private 3 rd Party Insurance	\$208 n=220	\$124
Time Costs	\$2,745 n=368	\$2,523

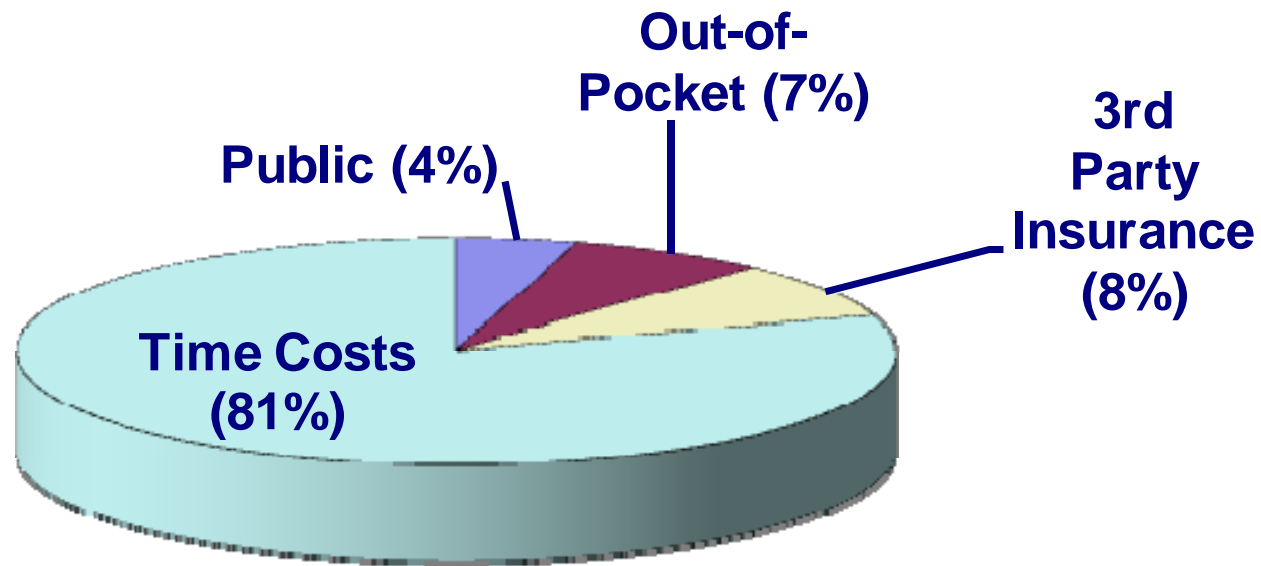
Distribution of Out-of-Pocket Expenditures



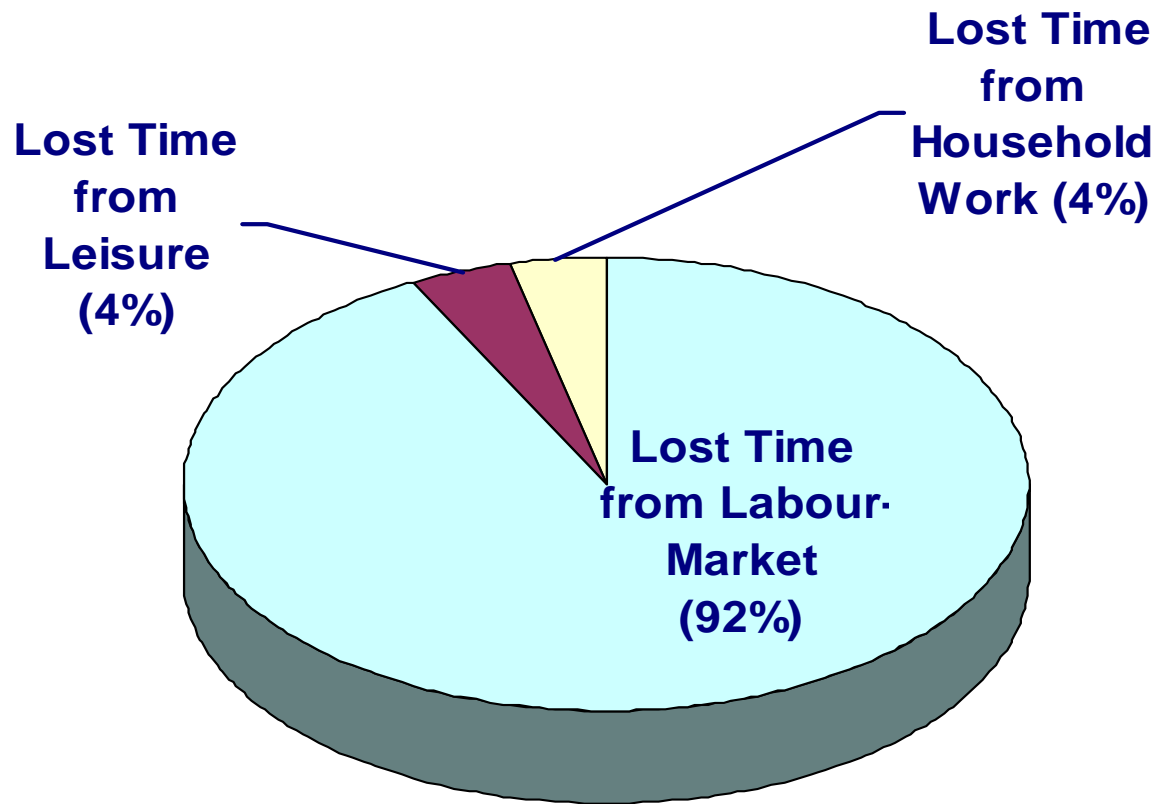
Privately-Financed Appointments

Appointment Category	Number of Patients	Mean Cost Per Month
Physiotherapist	66	148.85
Massage Therapist	53	117.07
Family Physician	32	66.63
Counselor/Psychologist	29	149.67
Chiropractor	29	97.66
Physician Specialist	26	76.91
Acupuncturist	21	146.77

Distribution of Costs by Expenditure Category



Distribution of Time Costs



Determinants of Costs

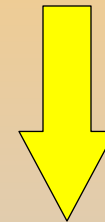
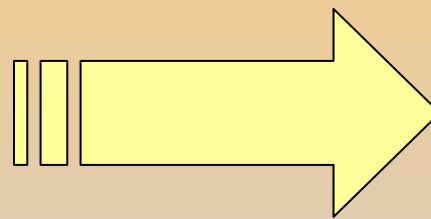
- How do costs vary with pain, when controlling for sociodemographic & clinical characteristics?

Multivariate Regression

Determinants	Multiplier of Outcome	p-value	95% Confidence Interval
Pain Duration	0.85	0.05	(0.72, 1.00)
University Education	1.59	0.02	(1.07, 2.36)
On Disability Leave	3.58	<.0001	(2.47, 5.19)
Student	1.98	0.02	(1.13, 3.45)
SF-36 Physical	0.83	0.00	(0.75, 0.92)
Depression	1.18	0.05	(1.00, 1.40)

Determinants of Costs

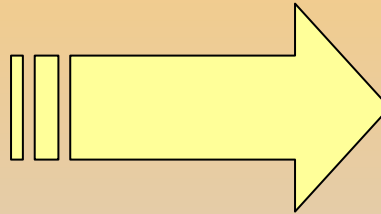
- Pain Duration
(10 yr increase)



Total
expenditures

Determinants Continued

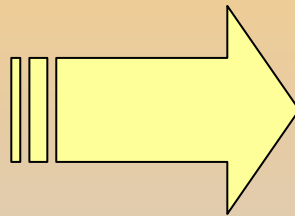
- University Education
- On Disability
- Student



Total
expenditures

Determinants

- Low Quality of Life
- High Depression



Total
expenditures

Limitations

- Results cannot be generalized to those not on wait list
- Quality of the cost data depends on participants' reports
- Possible bias in assigning monetary values to time

Implications & Conclusions

- Economic consequences of chronic pain are considerable
- Burden of chronic pain is not experienced only by the public sector
- Economic burden is experienced by care recipients & family caregivers
- Increased attention to individuals who have:
 - depression
 - poor quality of life



Implications & Conclusions

- Care recipients' and caregivers' time costs are substantial, but often not recognized
- Time costs have received little attention
- Valuing lost time from labour-market & other activities in dollars is essential
 - can be compared or combined with other costs
 - characterize costs of pain
 - evaluate pain interventions / programs