

J. Alton Croker, III
PhD Candidate
University of Iowa

Assessing Outcomes of Medical Cannabis Use among Older Persons: Findings from Colorado and Illinois

Acknowledgements:

Cannabis and Older Persons Study (COPS) Team:

Brian Kaskie, PhD

Julie Bobitt, PhD

Gary Milavetz, PharmD

Kanika Arora, PhD

Sara Qualls, PhD

Hillary Lum, PhD

Emma Cole, MPH

Melissa Schuchman, MA

Retirement Research Foundation

The Proximal/Distal Model:

Four Categories of Health Outcomes:

- 1) Clinical Measures
- 2) General Wellbeing Reports
- 3) General Functioning Reports
- 4) Disease or Treatment Specific Functioning Reports

Outcomes fall on a continuum from **positive** to **negative** in directionality and being framed in terms of **proximity** to the individual.

Proximal and Distal Structure of Cannabis Use Outcomes

Proximal Positive	Proximal Negative
Decreased MH&SUD service utilization	Increased MH&SUD service utilization
Decreased doctor visits	Increased doctor visits
Decreased ED utilization	Increased ED utilization
Decreased overnight stays	Increased overnight stays
Reduced pain symptoms	Increased pain symptoms
Reduced sleep disturbances	Increased sleep disturbances
Distal Positive	Distal Negative
Improved HRQL	Decline in HRQL
Improved health and wellbeing	Worsening sense of health and wellbeing
Increased day-to-day functioning	Reduced day to day functioning
Increased productivity	Reduced productivity
No falls and balance issues	Increased falls and balance issues
No memory and thinking issues	Increased memory and thinking issues
No driving problems	Increased driving problems
No accidents or injuries	Increased accidents and injuries

Four Factor Model of Medical Cannabis Use Outcomes:



1) **Health Related QOL (HRQL):** *health and wellbeing, QOL, functioning, and productivity*



2) **Health Care Utilization (HCU):** *mental health and SUD service utilization, doctor visits, ED utilization, and overnight stays*



3) **Symptom Effects:** *pain and sleep issues*



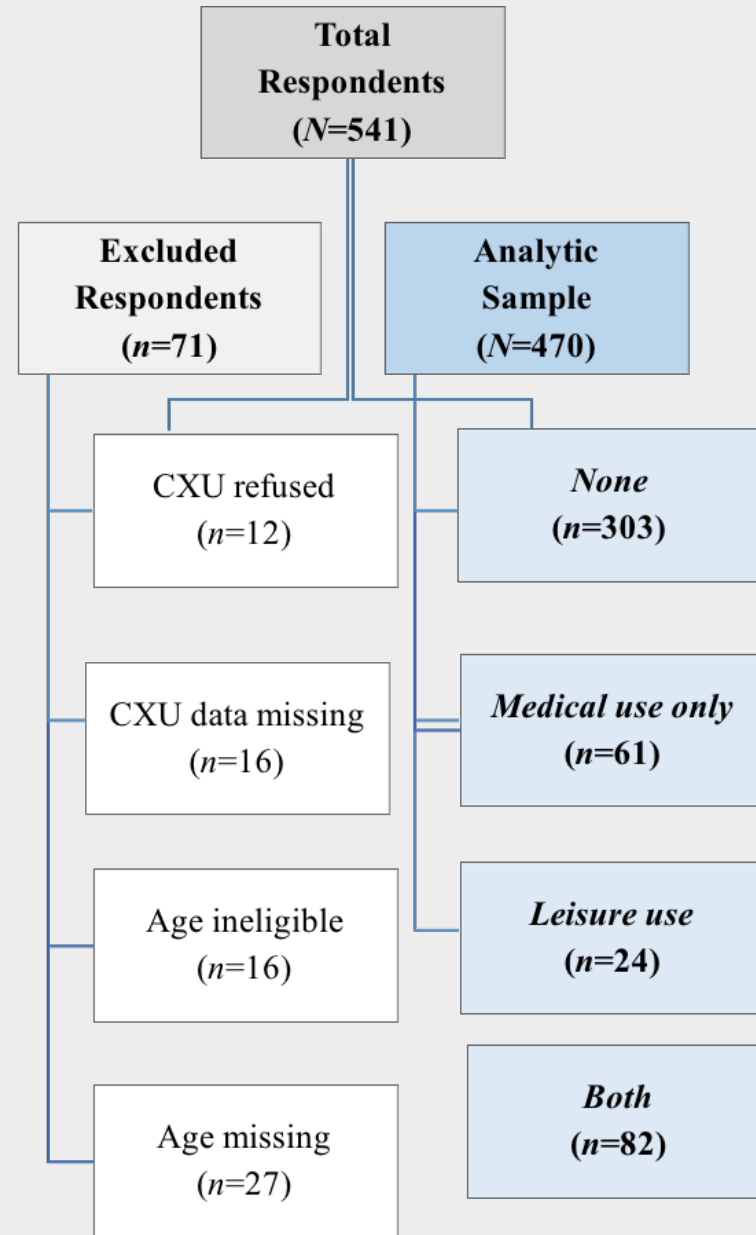
4) **Adverse Effects:** *memory, falls and balance, driving, and accidents*

Study Aims:

- 1) Confirm the factorial dimensions of the medical cannabis use outcomes scale.
 - Item Response Theory Analysis
- 2) Assess the fit of the four factor structure relative to reduced structures.
 - Confirmatory Factor Analysis – Structural Equation Modeling
- 3) Test for meaningful associations on the outcomes with frequency of use.
 - OLS Modeling

Sample Structure:

- Over the age of 60
- Residing in one of two states permitting the use of cannabis products for medical use.
- Total analytic sample: ***N=470***



Hypotheses:

The study will test three hypotheses relative to cannabis use frequency, and one hypothesis relative to medical cannabis program participation.



H1: Positive relationship with (a)HRQL and (b)HCU scores.



H2: Positive relationship with self-reported changes in pain symptoms.



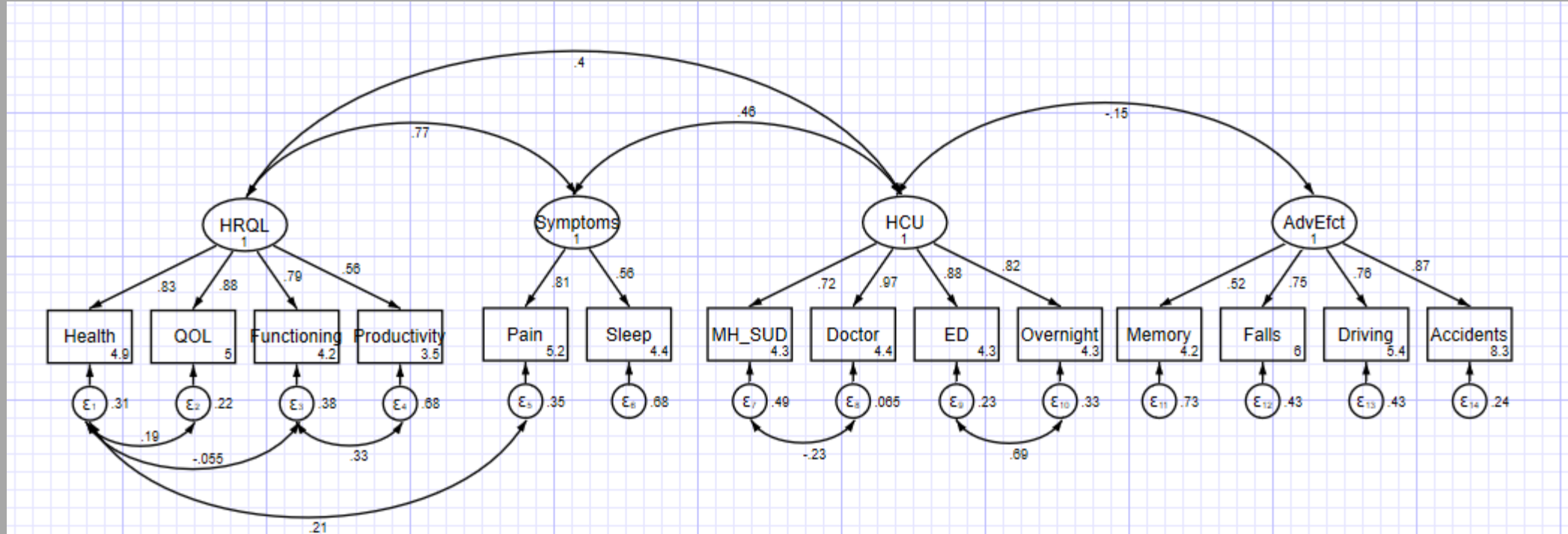
H3: Negative relationship with estimates for memory and thinking.



H4: Positive relationship of MCP to Healthcare Utilization Scores.

Results:

Scale Reliability: alpha= 0.8378



Structure:	$X^2(DF)$	$p > X^2$	RMSEA	CFI	LFI	CD
4 Factor	71.254 (67)	0.338	0.020	0.996	0.995	1.0
Proximal/Distal	88.283 (80)	0.246	0.025	0.994	0.990	0.958

Outcomes Analysis:



H1a: Increasing *frequency of cannabis use* corresponds to a significant increase on the 20-point *HRQL* score



H1b: **Reject**, no significant effects observed between increasing *frequency of cannabis use* and *HCU* score.



H2: Increasing *frequency of cannabis use* corresponds to a significant increase on the 5-point pain improvement indicator



H3: **Reject**, no meaningful relationship observed between *frequency of cannabis use* and declines in *memory and thinking*



H4: **Inconclusive**, no significant effects were found between the *HCU* scores and *medical cannabis program participation**

Discussion:

Validates outcomes on continuum that reflects both *proximal* and *distal* dimensions

Identifies and affirms independent outcome factors of cannabis use for older persons

Demonstrates value of patient perspective when assessing the *alternative* treatment approaches

Provides meaningful context to frame hypotheses for further clinical exploration

Meaningful insight for clinicians who are actively certifying or considering suggesting cannabis treatment for older patients

Practice Implications:

Clinicians need to better understand how older patients perceive four key factors of cannabis use outcomes:



HRQL



Healthcare
utilization



Symptom
related effects



Adverse
impacts

Next Steps:



Medical cannabis established as means of effective pain management

High levels of acceptability of cannabis treatment for patients approaching EOL?

*Do we see medical cannabis operating as a **substitute** or a **supplement** for EOL patients entering hospice care?*

- Adapt COPS Instrument for medical cannabis patients exclusively
- Incorporate question line relative to End-of-Life decision making including hospice enrollment
- Sample population of medical cannabis patients approaching EOL.

Questions?



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