

What personal attributes influence the disability experience for adults living with HIV? A structural equation model analysis using data from the Ontario HIV Treatment Network Cohort Study

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HIV and Comorbidities
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HIV PREVENTION, ENGAGEMENT AND
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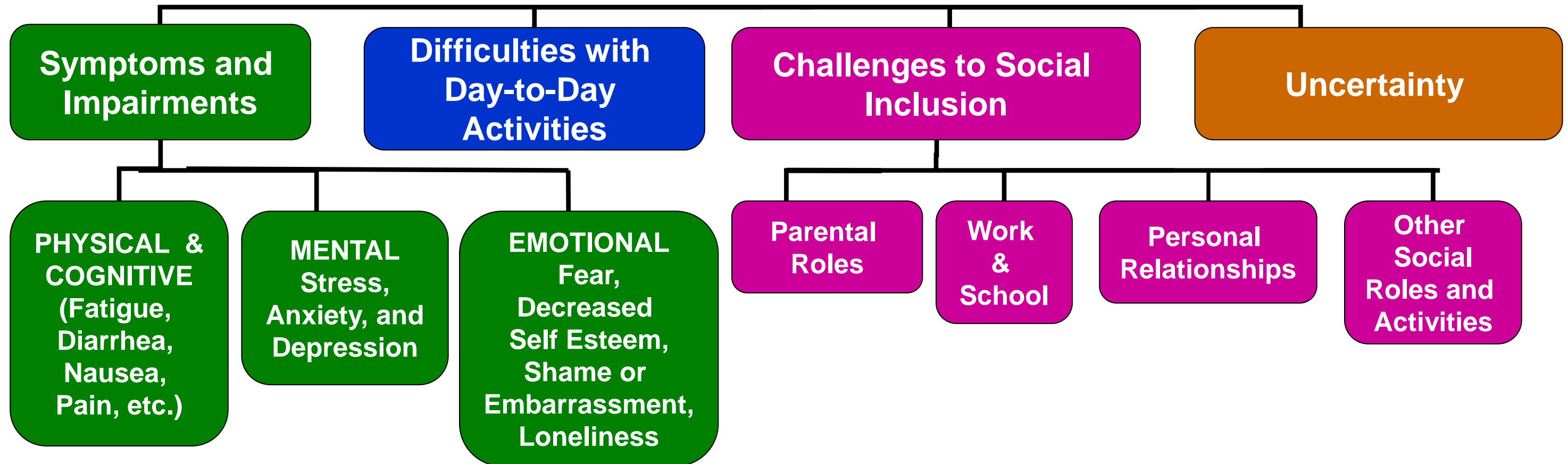
AIDS Bureau, Ontario Ministry of Health and Long Term Care
CIHR New Investigator salary award to Ann Burchell, Kelly O'Brien

Data Linkage

Public Health Ontario Laboratories

What is Disability? Episodic Disability Framework

Dimensions of Disability



Research Question

Do relationships between dimensions of disability vary based on personal attributes among adults living with HIV?

- Age
- Gender
- Antiretroviral Use
- Length of Time since HIV diagnosis

Methods

- Ontario HIV Treatment Network Cohort Study (OCS)
<http://www.ohtncohortstudy.ca/>
- Structural Equation Modeling (SEM)
 - Statistical technique used to test theoretical models that indicate relationships between latent variables and observed variables.
 - **Latent variables** = dimensions of disability in the Episodic Disability Framework
 - **Observed variables** = OCS measures

The Sample (n=913)

Adults living with HIV who completed an OCS Extended Questionnaire between ~October 2007-March 2009.

Gender:

83% men, 17% women, <1% other

Median Age:

47 years (IQR: 12 years) Range: 18-85 years

Median Length of Time Since Diagnosis:

11.2 years Range: ~2 months-26 years

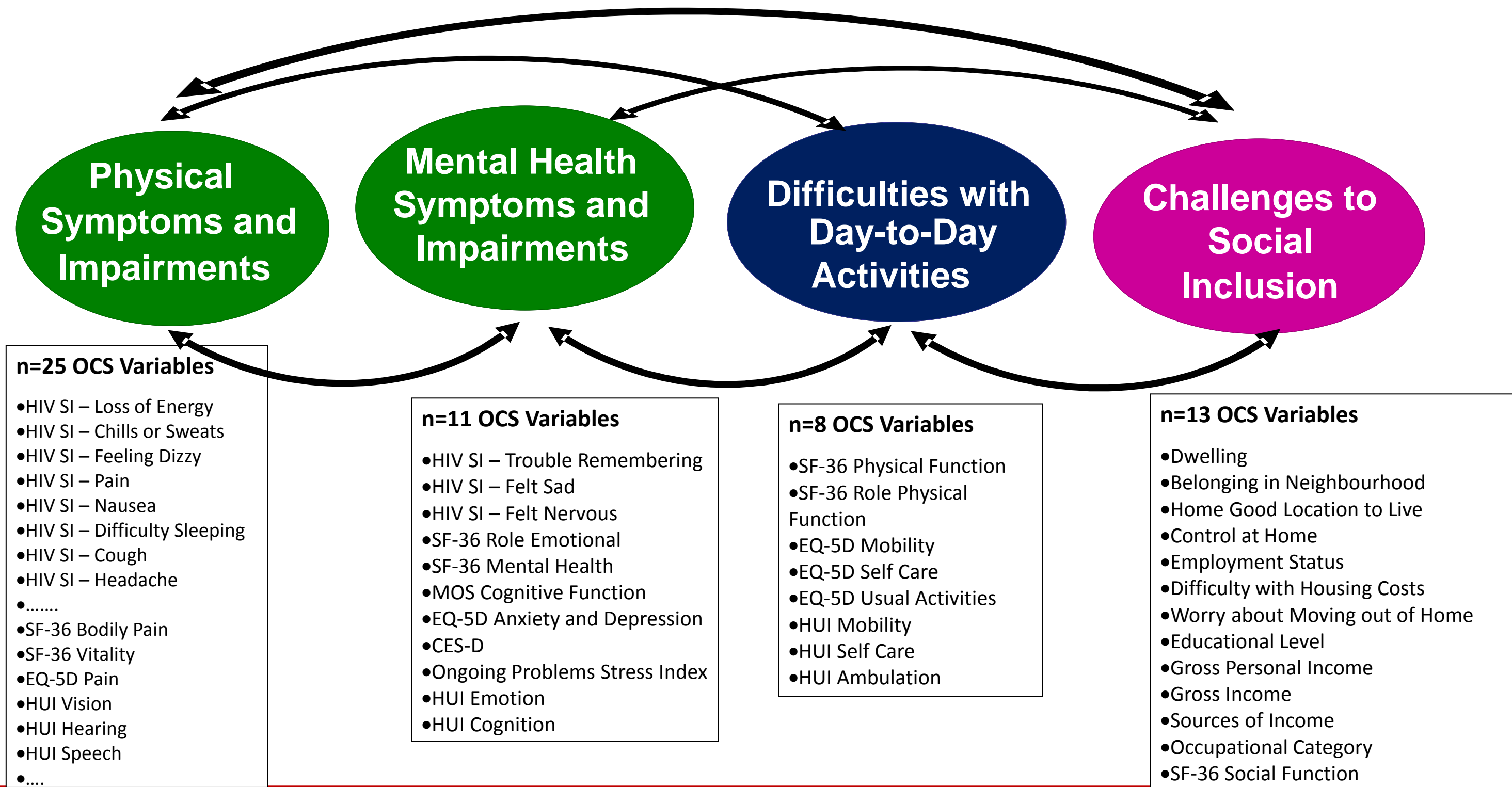
Ethnocultural Background:

White (68%), Black African (18%), Asian/Latin American/Arab (12%), Aboriginal (2%)

Employment:

Currently employed (45%), student/retired (12%), volunteering (25%), income support (32%), unemployed (9%)

Phase 1: A Priori Measurement Model



Results: Measurement Model

Dimensions of Disability represented by 43 OCS variables

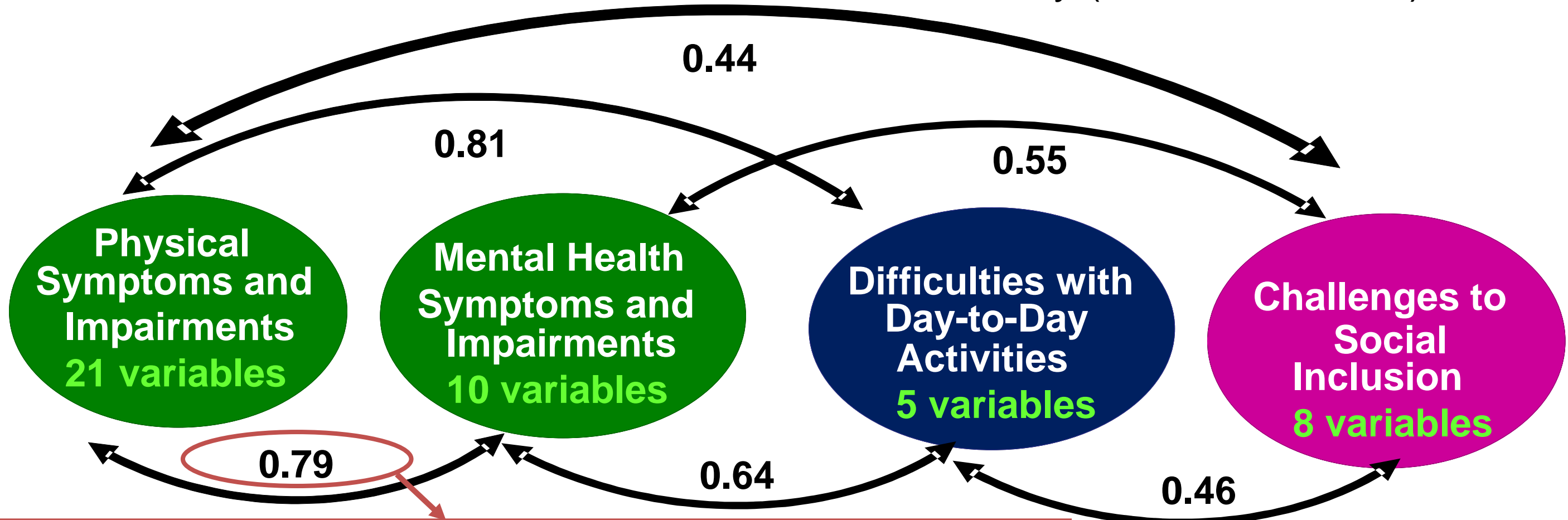
Overall Goodness of Fit Indices

Comparative Fit Indices (CFI): 0.912 (ideal is >0.90)

Tucker Lewis Index (TLI): 0.907 (acceptable is ≥ 0.90)

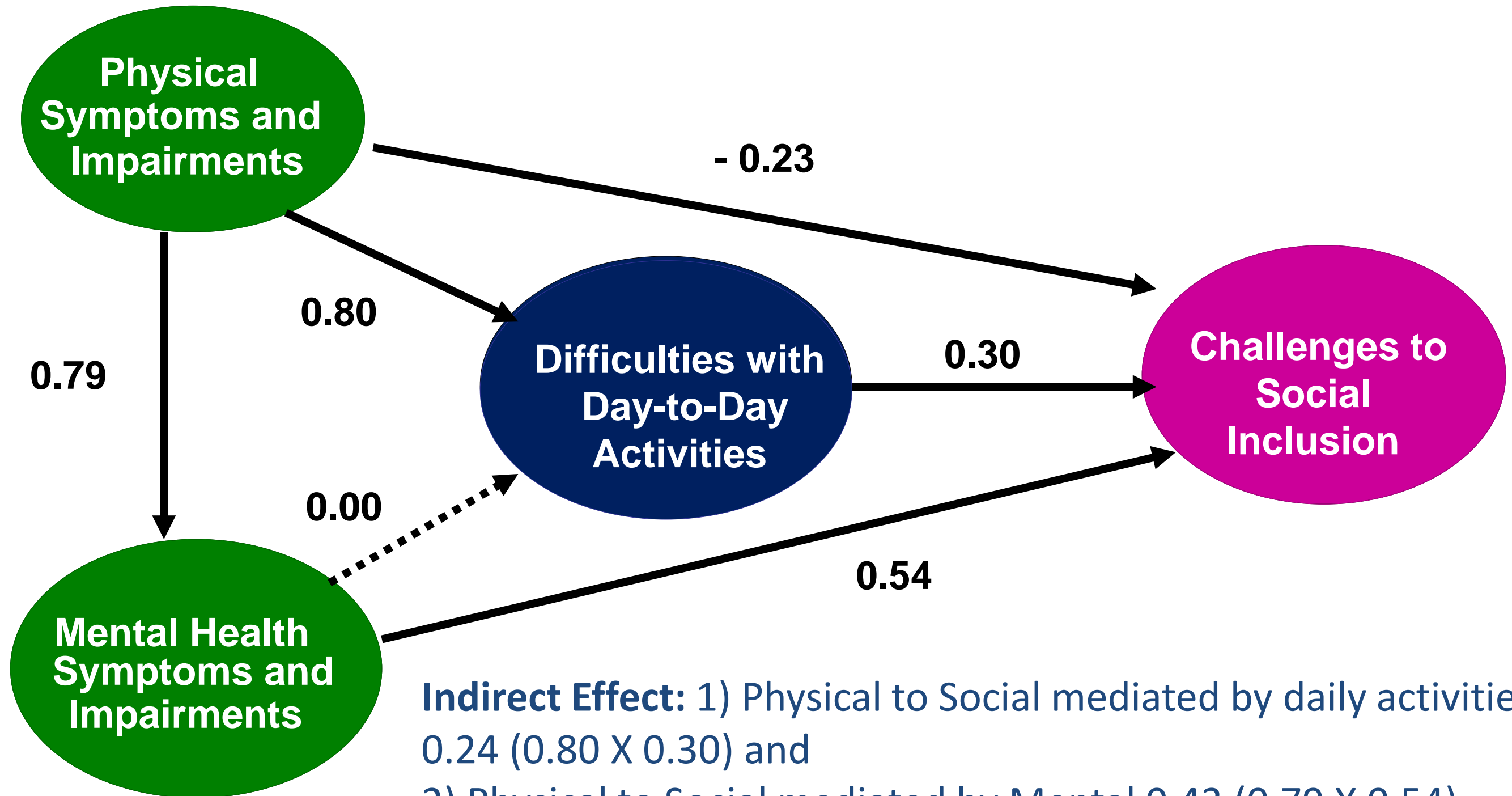
Root Mean Square Error of Approximation (RMSEA): 0.048 (ideal is ≤ 0.05)

Correlations between Dimensions of Disability (Latent Variables)



Correlation between physical and mental health symptoms

Phase 2: Overall Structural Equation Model

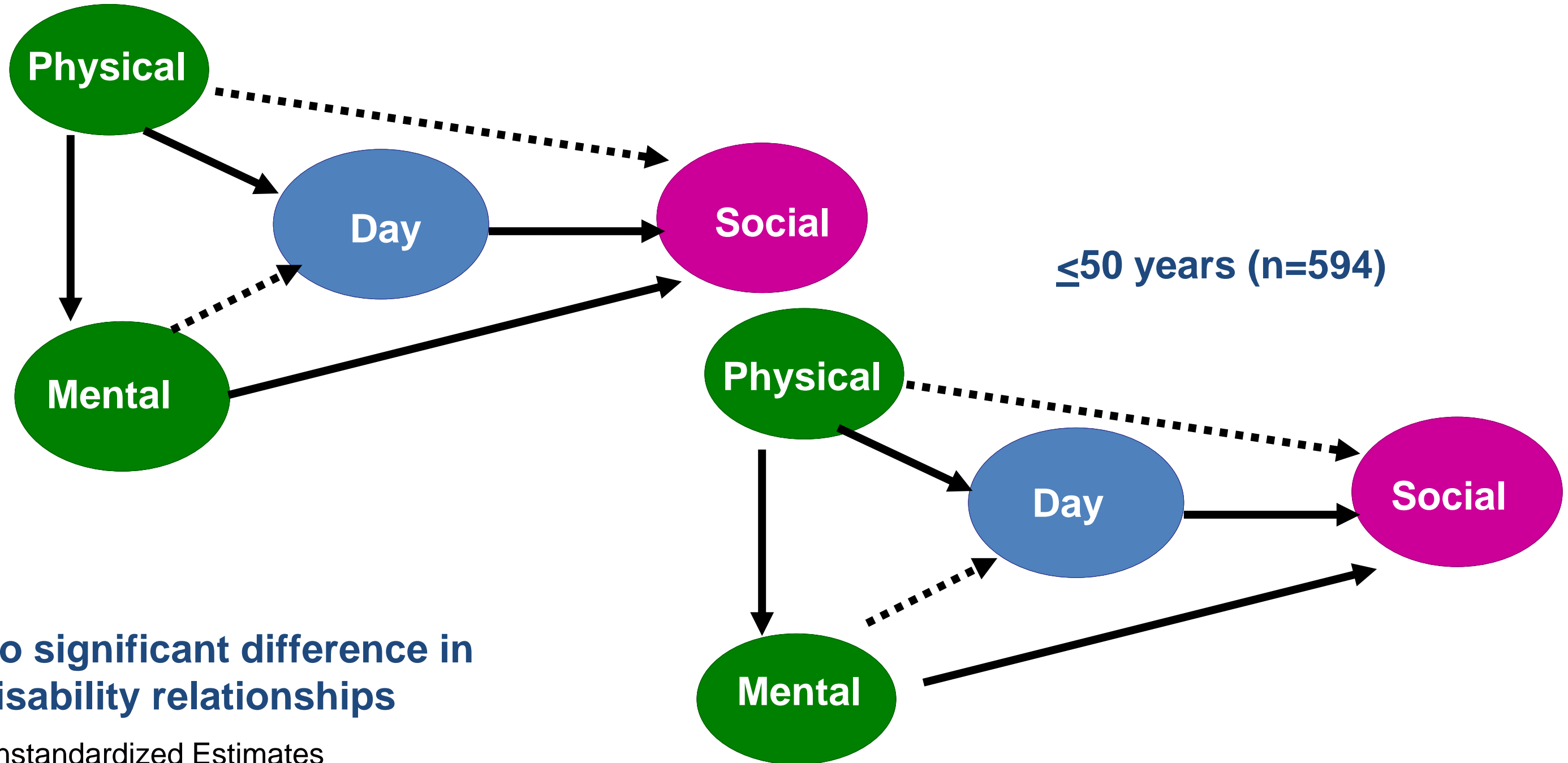


Indirect Effect: 1) Physical to Social mediated by daily activities 0.24 (0.80×0.30) and
2) Physical to Social mediated by Mental 0.43 (0.79×0.54)

Age Group

>50 years (n=319)

≤50 years (n=594)

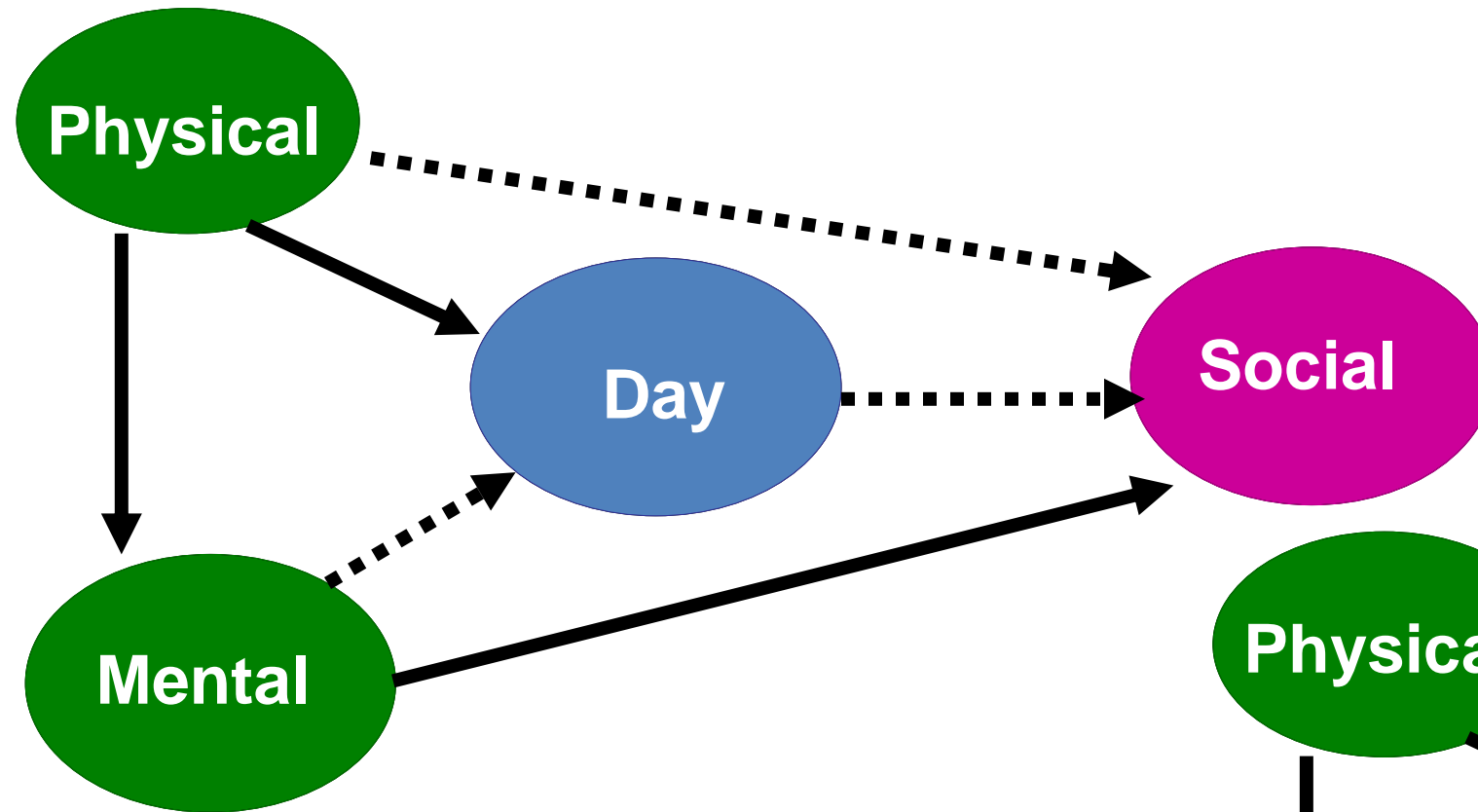


No significant difference in disability relationships

**Unstandardized Estimates

Gender

Women (n=153)



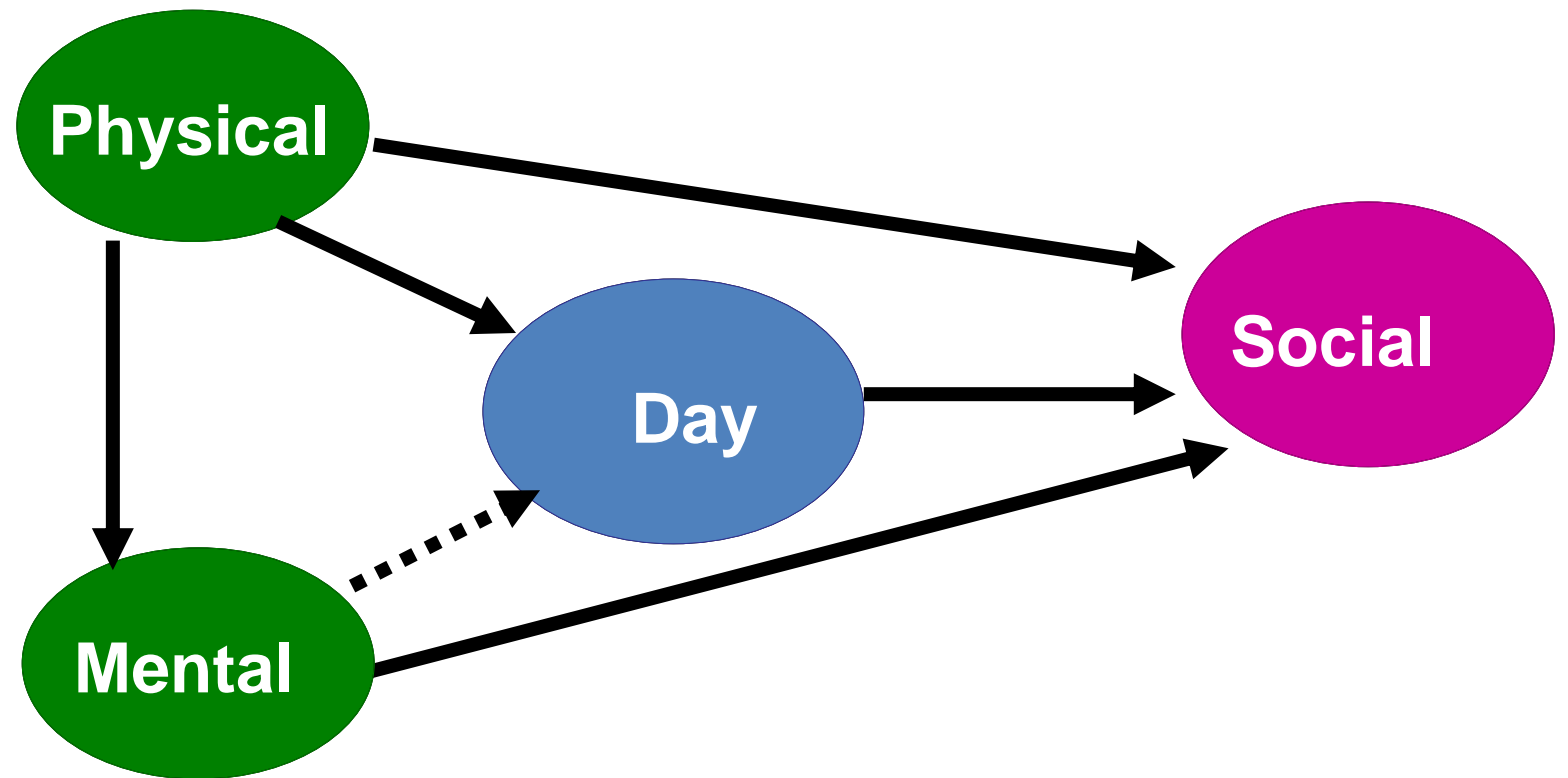
Women:

Relationship to social entirely driven by mental. Physical to social mediated by mental.

Men:

Mediated relationship from physical to social via day and mental.

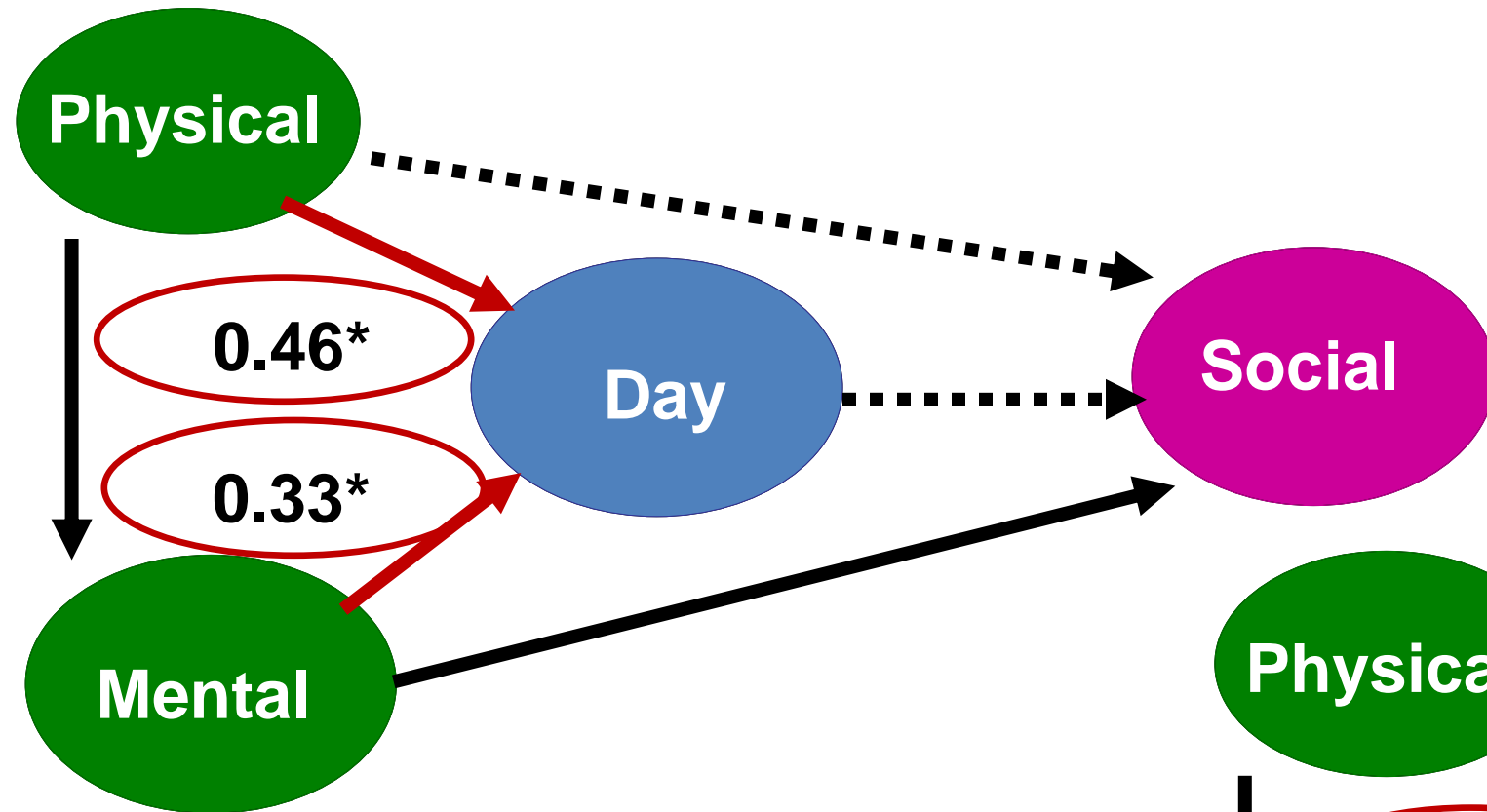
Men (n=757)



**Unstandardized Estimates

ARV Use

Not taking ARVs (n=130)



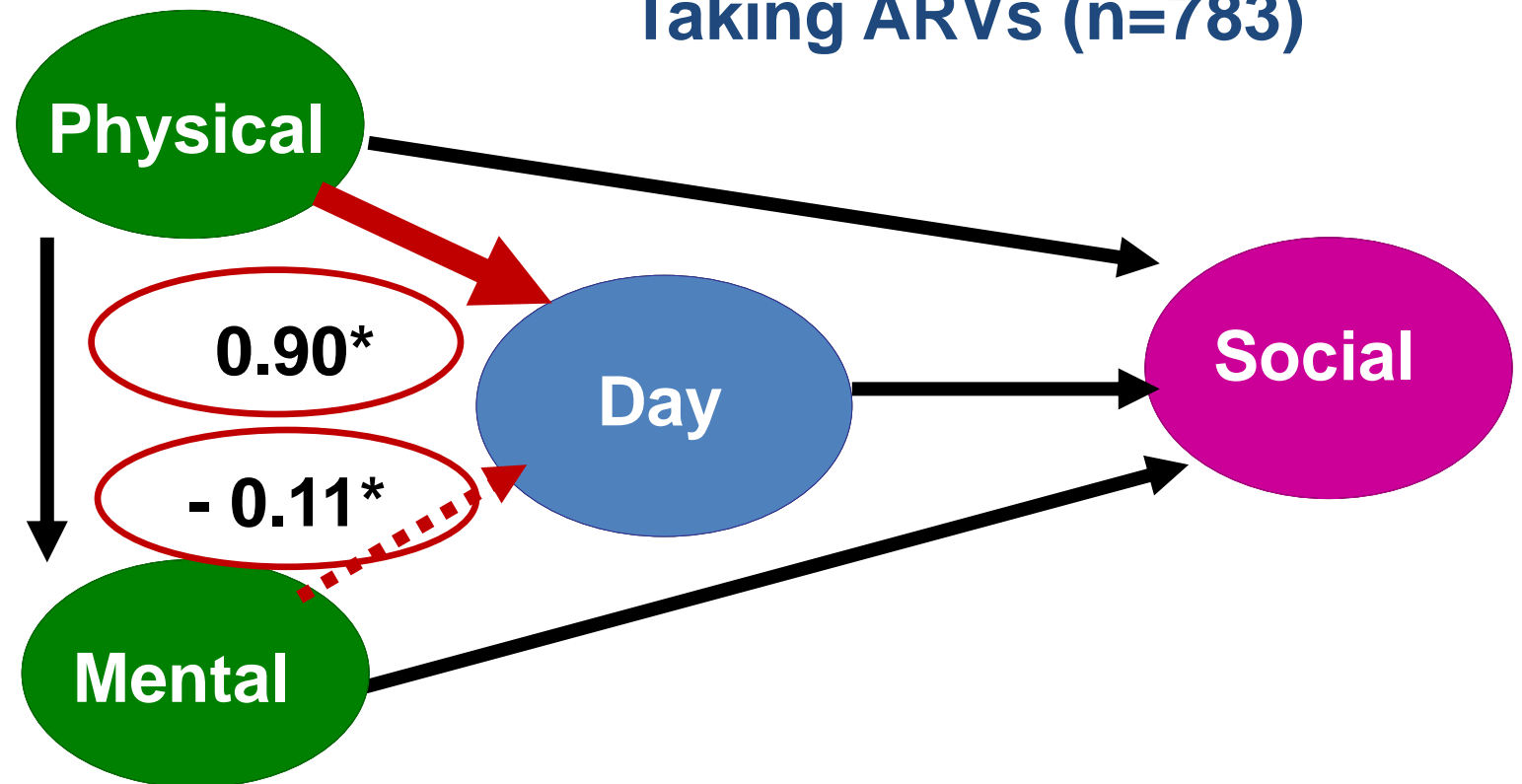
Not taking ARVs:

- Relationship to social entirely driven by mental.
- Significant relationship between mental and day

Taking ARVs:

- Mediated relationship from physical to social via day and mental.
- Significantly stronger relationship between physical and day

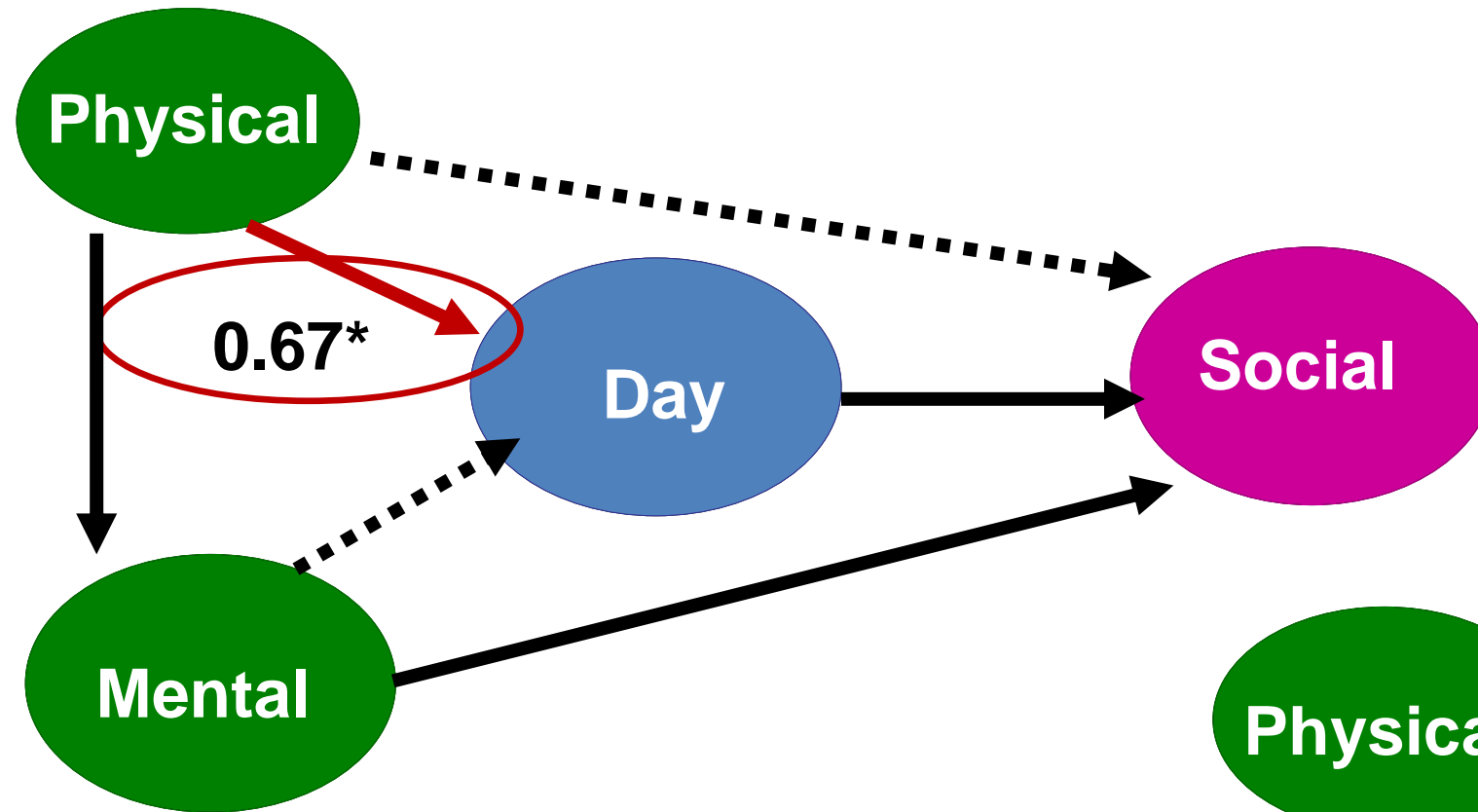
Taking ARVs (n=783)



**Unstandardized Estimates

Year of Diagnosis

Diagnosed after 1996 (n=267)

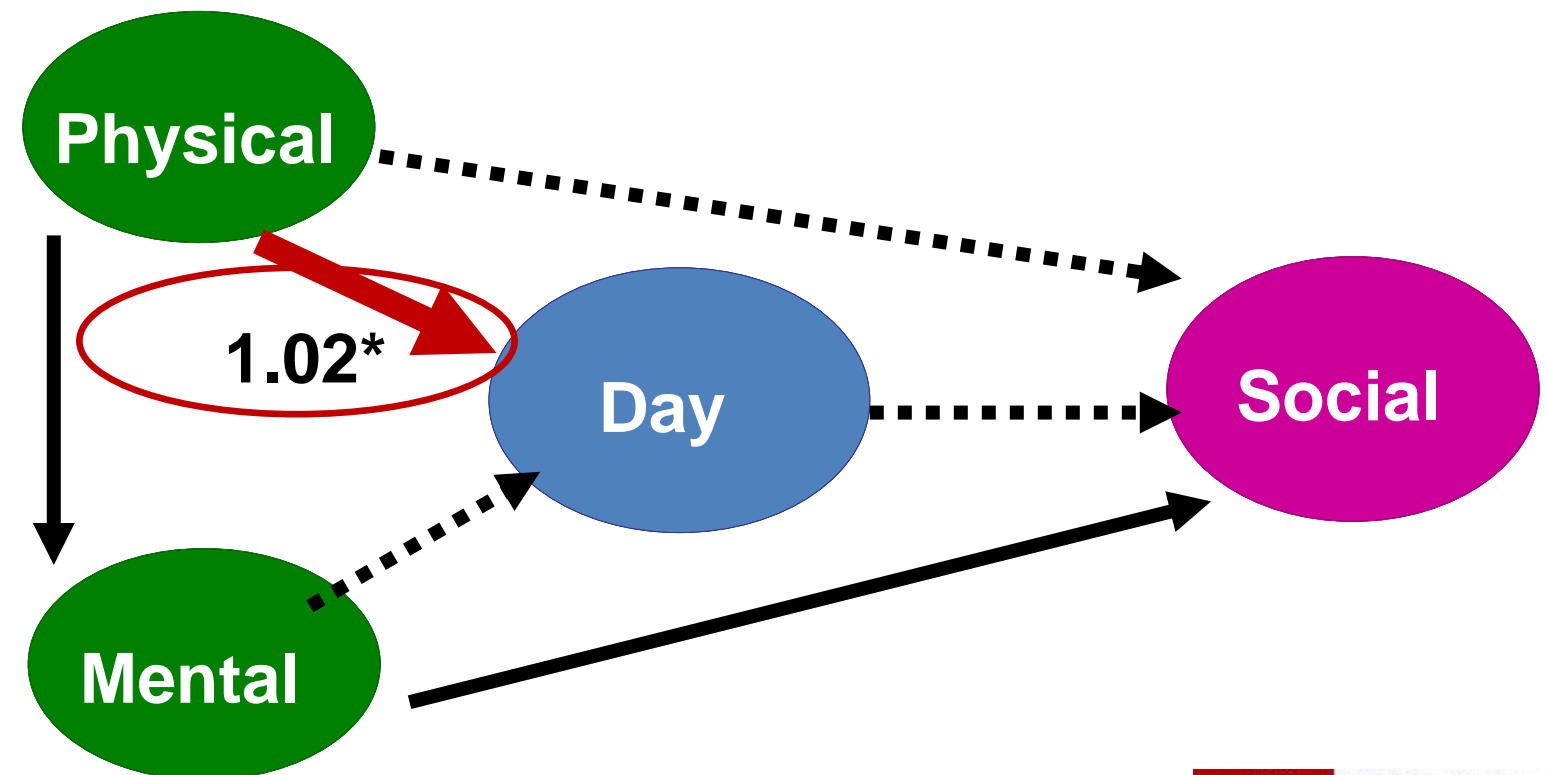


Diagnosed after 1996

-Mediated relationship from physical to social via day and mental.

Diagnosed 1996 or prior:
-Relationship to social entirely driven by mental.
-Significantly stronger relationship between physical and day

Diagnosed 1996 or prior (n=444)



**Unstandardized Estimates

Conclusions

Overall SEM Model of Disability

- Relationship between physical to social mediated by difficulties with day-to-day activities and mental health challenges with mental health having ++effect on social inclusion.

Personal Attributes - Contextual Factors

- Results suggest the relationship between physical symptoms and difficulties with day-to-day activities is strengthened for people taking ARVs and those with a longer time since diagnosis (moderating effect).

Implications for Practice

- Combination of physical and mental health interventions should be considered to help enhance social inclusion for adults living with HIV.
- Considering personal attributes such as ARV use and length of time since diagnosis are important in understanding the disability experience.

Strengths and Limitations

Strengths

Rich data source of measures that captures three of four dimensions of disability in the episodic disability framework

- Physical, mental and cognitive symptoms
- Difficulties with day-to-day activities
- Challenges to social inclusion

Limitations

- Looked at attributes in isolation
- Not captured in model (or OCS)
 - Uncertainty
- Primarily 'healthy' cohort living with HIV
- Limited to data collected from Toronto

Current and Next Steps

- 1) How do contextual factors (stigma, social support, living strategies) influence the dimensions of disability?
 - moderating or mediating factors?
- 2) Examine the potential episodic nature of disability
 - longitudinal SEM analysis
 - What dimensions of disability are episodic?
 - How are episodes of disability experienced?
- 3) How is disability experienced across among adults with HIV across different classifications of HAND?

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