

Multiple Methods for Multiple Reporters of Child Maltreatment

Lehigh Measurement and Causal Inference Analyses Team

Table of contents

1 Basic Conceptual Model	1
2 Methods	1
2.1 OLS (or Logistic) Regression	1
2.1.a Diagram	1
2.1.b Equation	2
2.1.c Syntax	2
2.2 Summing Across Reporters	2
2.3 Confirmatory Factor Analysis (Latent Construct(s))	3
2.4 Cross-Lagged Regression	3
2.5 Person Centered Approach (Latent Profile Analysis)	3
2.6 Network Analysis	3
2.7 Multilevel Modeling	3
2.8 Classification and Regression Tree (CART) (Machine Learning)	4
2.9 Random Forest (Machine Learning)	4

1 Basic Conceptual Model

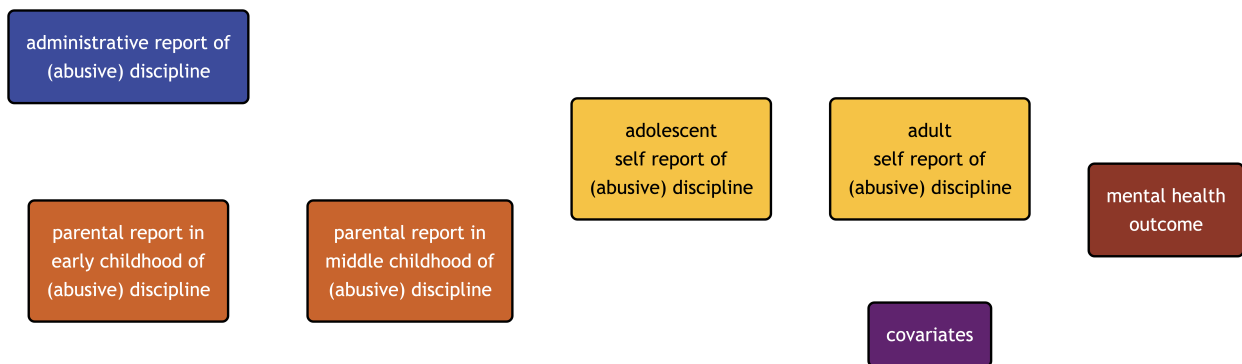


Figure 1: Basic Conceptual Model Indicating Timing of Measures and Reporters Without Causal Links

2 Methods

2.1 OLS (or Logistic) Regression

2.1.a Diagram

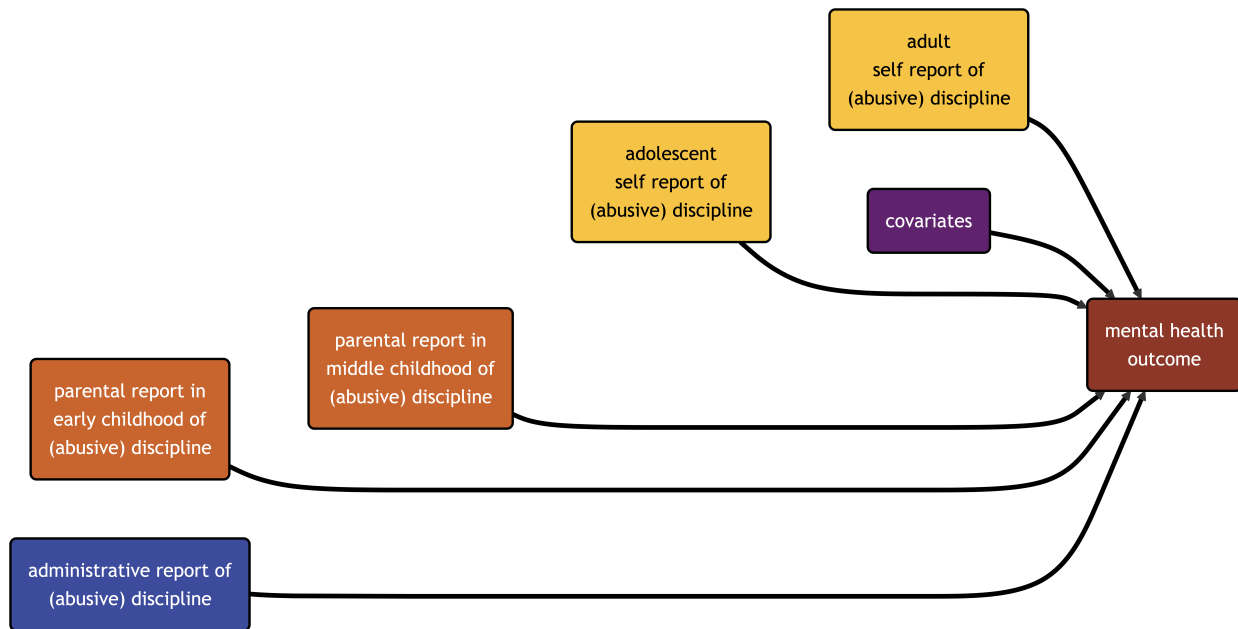


Figure 2: Ordinary Least Squares

2.1.b Equation

$$\text{outcome} = \beta_0 + \beta \text{ P1} + \beta \text{ P2} + \beta \text{ SR1} + \beta \text{ SR2} + \beta \text{ administrative} + \Sigma \beta \text{ covariates} + e_i$$

2.1.c Syntax

regress outcome P1 P2 SR1 SR2 administrative covariates

2.2 Summing Across Reporters

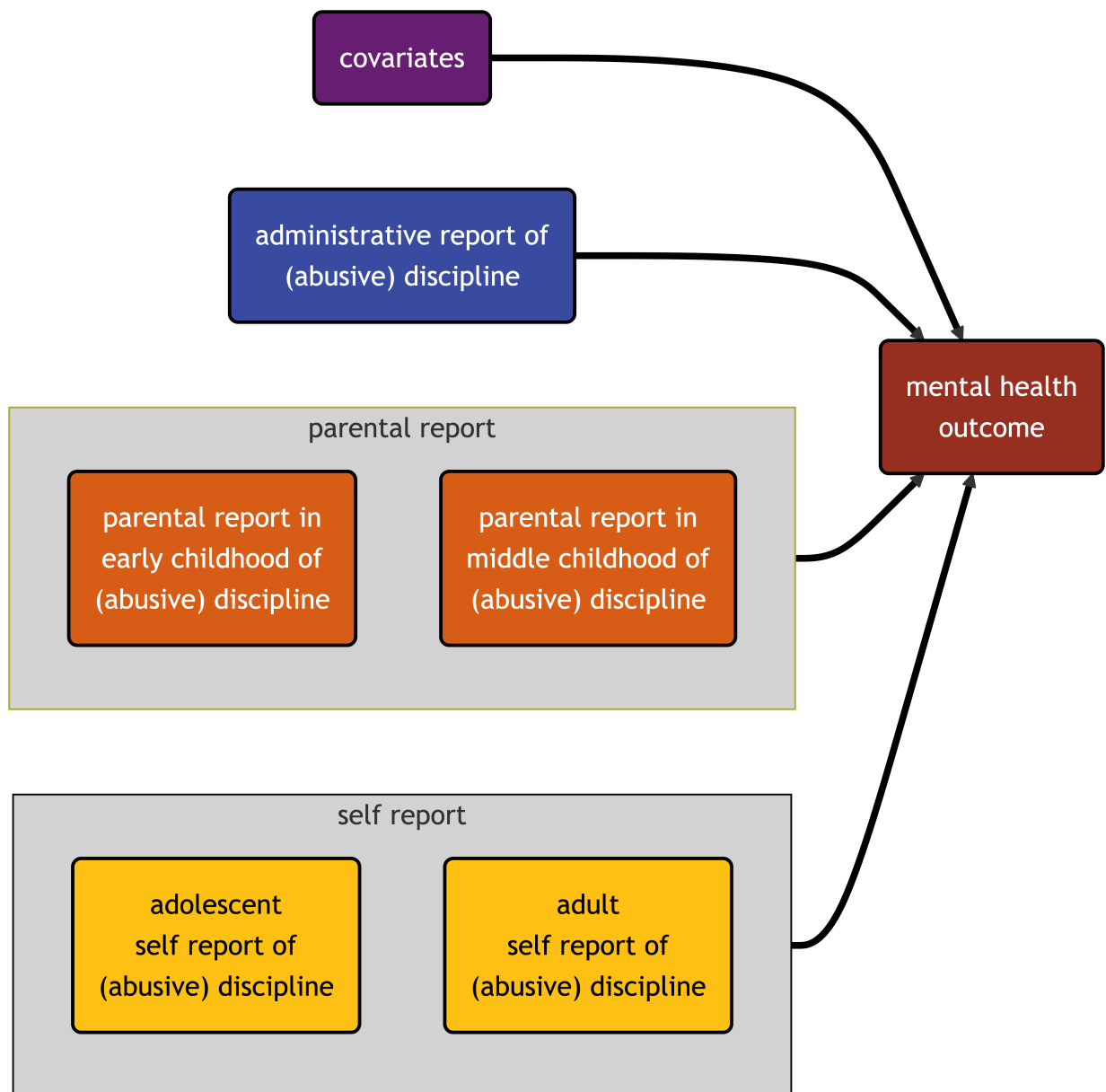


Figure 3: Summing Across Reporters

2.3 Confirmatory Factor Analysis (Latent Construct(s))

2.4 Cross-Lagged Regression

2.5 Person Centered Approach (Latent Profile Analysis)

2.6 Network Analysis

2.7 Multilevel Modeling

2.8 Classification and Regression Tree (CART) (Machine Learning)

2.9 Random Forest (Machine Learning)