Bangladesh Application

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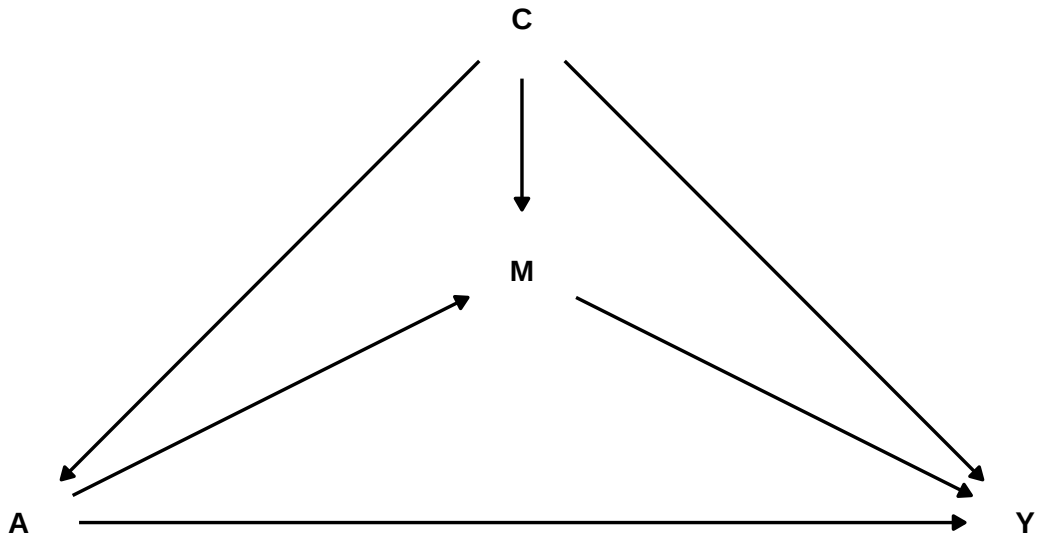
1 Variables Used

Table 1: Variables Used

	Name	Variable Name	Type
Outcome Y	cognitive score	cognitive_raw	continuous
Exposure A	manganese	ln_blood_mn_conc_ugdl0	continuous
Mediator M	birth length,birth weight, head circumference	length0,weight0, head_circumference0	continuous,continuous, continuous
Pre-exposure Confounder C	Arsenic, Lead, protein intake, smoking, education,mother age, home score,study site	ln_blood_as_conc_ugdl0, ln_blood_pb_conc_ugdl0, allfood, smokenv, education,approxage, homescore,clinic	continuous, continuous, continuous,binary, categorical, continuous, continuous, binary
Post-exposure Confounder L	gestational age, child's haematocrit level	birthgestationalage, hematocrit2	continuous continuous

2 Singular Mediator Case

2.1 Variables and DAG



A:ln_blood_mn_conc_ugdl0

M:length0

Y:cognitive_raw

C:Pre−exposure confounders

2.2 Methods Can Be Used

2.2.1 Regression-based approach

2.2.2 Weighting-based approach

2.2.3 Inverse odds ratio weighting approach

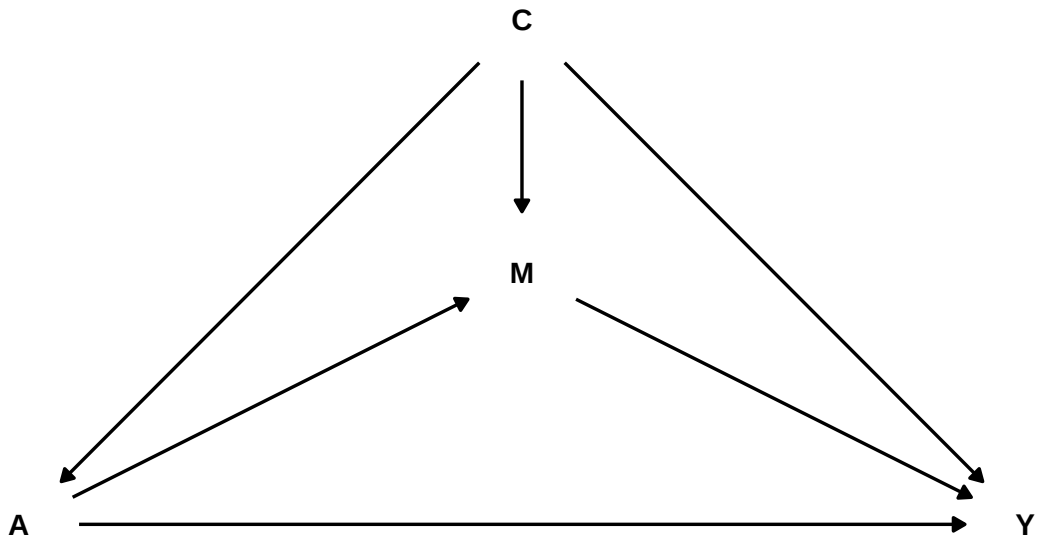
2.2.4 Marginal structural model

2.2.5 G-formula approach

2.2.6 Natural effect model

3 Multiple Mediator Case

3.1 Variables and DAG



A:ln_blood_mn_conc_ugdl0

M:length0,weight0,head_circumference0

Y:cognitive_raw

C:Pre−exposure confounders

3.2 Methods Can Be Used

3.2.1 Regression-based approach

3.2.2 Weighting-based approach

3.2.3 Inverse odds ratio weighting approach

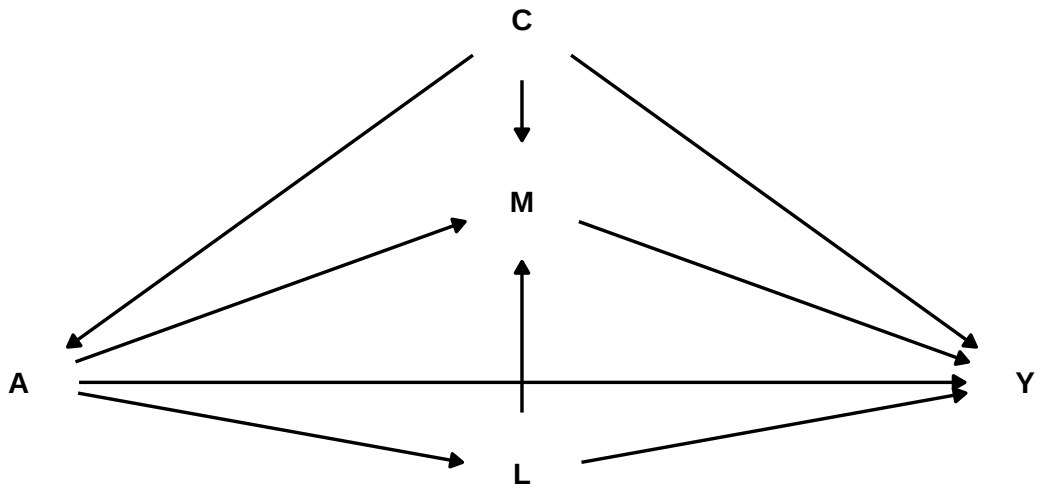
3.2.4 Marginal structural model

3.2.5 G-formula approach

3.2.6 Natural effect model

4 Multiple Mediator with Time-dependent Confounding Case

4.1 Variables and DAG



A:ln_blood_mn_conc_ugdl0

M:length0,weight0,head_circumference0

Y:cognitive_raw

C:Pre−exposure confounders

L:birthgestationalage,hematocrit2

4.2 Methods Can Be Used

4.2.1 Marginal structural model

4.2.2 G-formula approach