Acceptable Approaches for Addressing Missing Data Under What Works Clearinghouse Group Design Standards 5.0

Method	Study design	Can be used to address participants with missing...		Additional Requirements (See below)
		Baseline data	**Outcome data**	
Complete case analysis	All	✔	✔	
Regression imputation	All	✔	✔	The imputation model must: 1. be conducted separately by condition or include an indicator variable for condition; 2. include all covariates used for adjustment in the impact model; and 3. include the outcome when imputing missing baseline data.
Dummy imputation	Uncompromised RCTs only*	✔		
Maximum likelihood	All	✔	✔	Use standard statistical package or include relevant citations
Non-response weights	All		✔ †	The model to predict missingness must: 1. estimate probabilities of missingness separately by condition or include an indicator variable for condition; and 2. include all baseline measures specified in the Handbook as required for baseline equivalence.

Table notes

* However, for Quasi-experimental designs and compromised Randomized Control Trials, dummy imputation can still be applied to baseline measures not specified in the Handbook as required to adjust for baseline differences. A compromised RCT occurs when different analytic choices such as changing a subject's group membership after random assignment compromise the validity of an otherwise well-executed random assignment process.

† With non-response weights, participants without observed outcome data will not be included in impact estimation models, but participants with observed outcome data will be weighted so that they resemble the full sample with and without outcome data.

Additional requirements

Regression imputation: The imputation regression model must (a) be conducted separately by condition or include an indicator variable for condition, (b) include all covariates used for adjustment in the impact model, and (c) include the outcome when imputing missing baseline data.

Non-response weights: The missing outcome data model must (a) estimate probabilities of missingness separately by condition or include an indicator variable for condition and (b) include all baseline measures specified by the Handbook as required for baseline equivalence.

WWC Standards Handbook 5.0, pages 204-206.
https://ies.ed.gov/ncee/wwc/Docs/referenceresources/Final_WWC-HandbookVer5.0-0-508.pdf

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