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Are Commonly Used Scales Measuring Intimate Partner Violence Victimization and Perpetration Valid Tools for Intervention Impact Assessment?

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Funding provided by the National Institute of Child Health and Human Development 1R01HD099224-01 (Clark PI/Yount MPI)

SVRI Forum 2024, Cape Town, South Africa

Study Rationale and Aims

Testing interventions to reduce / prevent IPV has accelerated considerably over the past few decades [1]

Cross-group, cross-trial, and cross-time measurement invariance is needed for valid inference and comparisons of effects across studies [2-5]

Psychometric analysis of IPV victimization and perpetration scales have not kept pace with the expansion in their use as primary or secondary outcomes in evaluations [4,5]

The most commonly used measure of IPV victimization and perpetration in IPV prevention trials is based on the Conflicts Tactics Scales (CTS) and its revised form (CTS2) [1,6,7]

The CTS was developed in the US in the 1970's and updated in the 1990's [8,9]

There is very limited measurement invariance testing of the CTS/CTS2 and never in the context of an intervention [5]

Aims: To assess the measurement equivalence of scales measuring physical and sexual IPV victimization and perpetration from intervention trials in low- and middle-income countries (LMICs) and test the impact of non-invariance on study inference.

Methods: Overview and Sample

Secondary measurement invariance analysis of data from WWI studies.

Study inclusion criteria

- 1) Panel design, 2) Repeated measurement of individual-level IPV victimization/perpetration, 3) Control arm

Women's victimization:

- 4 studies; N=3545; N range: 540 to 1616
- Rwanda, South Africa, Bangladesh, & Afghanistan

Men's perpetration:

- 3 studies; N=3502; N range: 505 to 1537
- Rwanda & South Africa (2)

Methods: Data

CTS2-derived measure of occurrence in past 12 months

- Victimization
  - 5 items physical IPV
  - 0-5 items sexual IPV
- Perpetration
  - 5 items physical IPV
  - 3-4 items sexual IPV
- Some wording changes made, in victimization study these were dropped, in perpetration study they were retained

Methods: Analysis

- Descriptive statistics
- Exploratory factor analysis (EFA)
- Confirmatory factor analysis (CFA)
- Multiple-group confirmatory factor analysis to assess invariance across arms, time, and studies
- Computed average treatment effects adjusting for covariate imbalance

Prevalence

Construct	Baseline Prevalence
Physical IPV Victimization	24% - 38%
Sexual IPV Victimization	31% - 42%
Physical IPV Perpetration	24% - 48%
Sexual IPV Perpetration	21% - 32%

Results: Women

Step	Result
Factor structure	Physical and sexual IPV items loaded on separate factors across all 4 studies.
Was **cross-arm** scalar invariance supported?	Yes; invariance was fully supported for both baseline and endline for all 4 studies.
Was **cross-time** scalar invariance supported?	Generally; invariance was fully supported for 1 study and partially supported in the remaining 3. "Hit" required free parameters in 2 studies, "slap" in 1 study.
Did accounting for lack of invariance change **treatment impact estimates**?	Very small differences in effect estimates; no changes in direction or significance; and lack of covariate balance had stronger impact on inference than MNI.

Results: Men

Step	Result
Factor structure	A two factor (Physical and Sexual) was supported. "Weapon" cross-loaded on Sexual in 2 studies; "Porn" cross-loaded on Physical in 1 study.
Was **cross-arm** scalar invariance supported?	Yes; invariance was fully supported for both baseline and endline for all 3 studies.
Was **cross-time** scalar invariance supported?	Only in control arm; 2 studies could not achieve scalar invariance in the treatment arm despite multiple modifications.
Did accounting for lack of invariance change **treatment impact estimates**?	Could not test in 2 studies (1 study fully invariant, 1 study could not identify invariant model). Treatment estimates replicated in remaining study.

Limitations

English translations of the items used in the studies and quality of translations is unknown

Small number of items and limited geographic scope

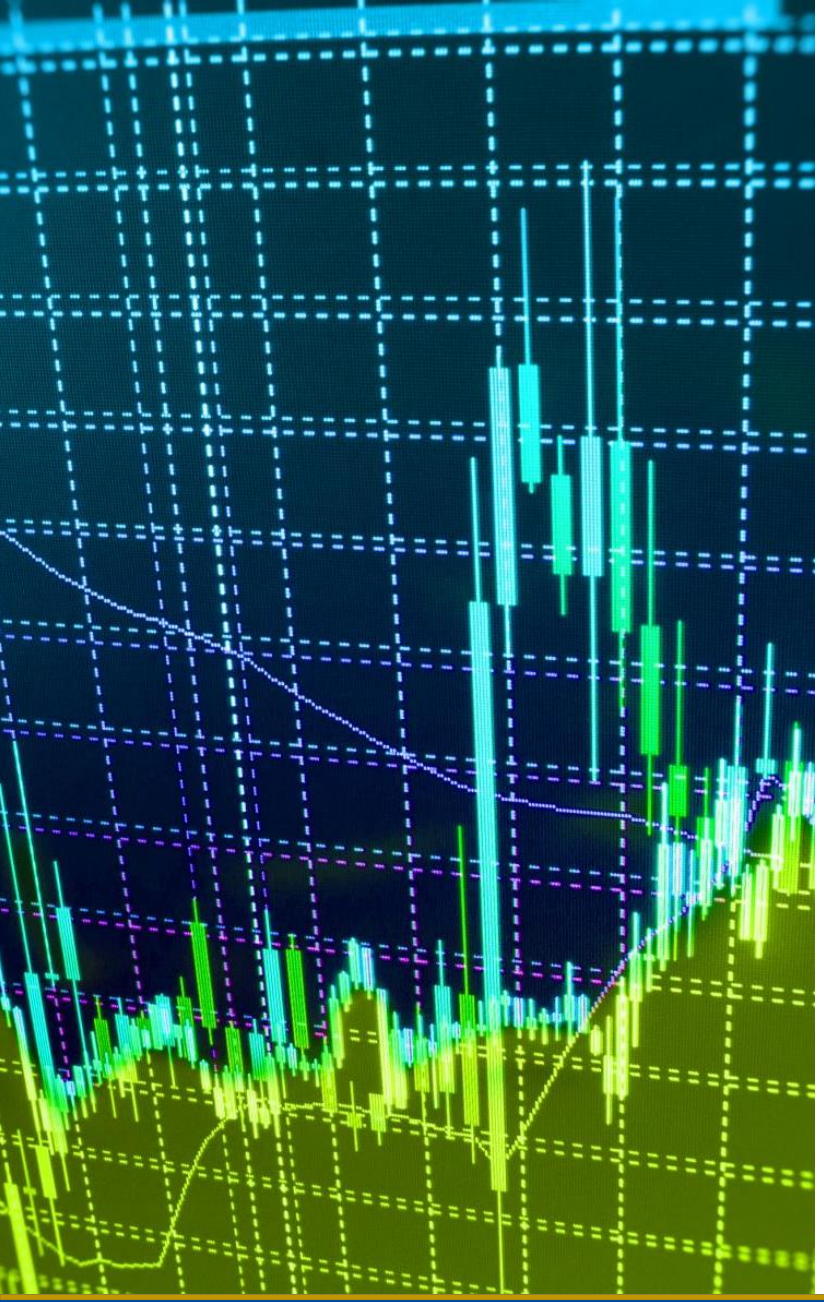
Differential treatment of items with ad hoc wording changes across studies

Strengths

First of its kind to examine these issues within evaluations

Studies represent diverse prevention programming

Study examined the most commonly used measure of IPV surveillance and intervention testing



Conclusions

Common measures of women's physical and sexual IPV victimization were valid for measuring intervention impact in these samples. Items measuring men's perpetration were not valid across contexts.

Ad hoc changes to items / item sets occurred, which limited comparability of findings and assessments of the degree to which findings are generalizable beyond individual studies.

Item sets are very small, which limited the team's ability to drop items (although not an optimal strategy) especially among the men's perpetration sample.

Replication of study findings is needed, especially across a wider range of contexts and with different measures of IPV.

Recommendations

Avoid making ad hoc changes to scales

New measurement research is needed to:

- Identify an item set, especially for men's perpetration, that is measurement invariant across contexts
- Enhance content validity and enable assessment of severity
- Broaden examination of IPV victimization and perpetration beyond its current heteronormative framing and expand it to other IPV forms

More routine use of measurement invariance testing would:

- Strengthen trial inference
- Identify the situations in which measurement non-invariance is potentially meaningful and therefore worth the additional effort
- Greatly enhance our collective understanding about the nature and extent of IPV globally

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