

Construction of indicators and implications for measurement of intimate partner violence: a case study of longitudinal data from Tanzania

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BACKGROUND

- Research on measures of IPV and validity across contexts
- More limited analysis on operationalization of IPV variables
 - Recent research has focused on how different operationalization of variables impacts interpretation of intervention impacts in RCTs
- Binary measurement of IPV
 - Equates each forms of IPV as equal
 - Frequency is often measured but not assessed
- IPV exposure variables that include more information (severity and frequency) are likely to show stronger associations with adverse health outcomes as they more accurately capture the true prevalence of IPV (Kan et al., 2010)

OBJECTIVES

- Leverage the MAISHA longitudinal study to explore:
 - i) if associations are similarly significant between different forms of operationalization of IPV exposure, and
 - ii) if strength of association varies between different forms of operationalization of IPV exposure.
- Explore associations with mental health – strong evidence on IPV exposure and poor mental health outcomes

METHODS: MAISHA LONGITUDINAL STUDY OF ADULT WOMEN

Overall aim: Understanding the predictors and consequences of intimate partner violence among adult women in Tanzania

Study design:

- Cohort Study of adult women
- 4 waves of data collection using a standardized questionnaire

IPV Measurement:

- Using the WHO Multi-country Study tool to measure physical, sexual, emotional and economic IPV and controlling behaviors
- Mental health outcomes measured using Self-Reporting Questionnaire-20, cut-off of 8



VARIABLES

- *Binary measures (all types of IPV):* ‘Case’ of exposure to physical IPV, for example, as a woman who has experienced one or more of the items constituting physical IPV in the instrument.
- *Continuous measures (intensity) (all types of IPV):* Continuous indicators, constructed by summing the number of items within each type of IPV that a woman reports, i.e. a woman would score a 5 on physical violence if she reports 5 out of the 7 physical IPV items. All continuous items were then standardized by dividing the total sum by the number of items, such that the indicators could be compared across types of IPV that are measured using a different number of items
 - i.e. $2/3$ sexual IPV items = $2/3 * 10 = 6.67$

VARIABLES

- *Frequency measures* (physical, sexual and psychological IPV): Frequency responses were score as 0 for never, 1 for once, 2 for a few times and 3 for many times. Scores were then summed for each IPV type and standardization as per continuous variable
- *Severity* (physical IPV only): Physical IPV only, coding no act of physical IPV as 0, moderate physical IPV as reporting a single push or slap, and severe physical IPV as two or more pushes or slaps, and/or a single report of any of the five more severe forms of physical IPV.

RESULTS

CROSS SECTIONAL ANALYSES – WAVE 1

	Binary OR (95% CI) p-value	Intensity OR (95% CI) p-value	Frequency OR (95% CI) p-value	Severity OR (95% CI) p-value
Physical	2.44 (1.82, 3.26) p=.000	1.21 (1.14, 1.29) p=.000	1.27 (1.14, 1.4) p=.000	1.73 (1.46, 2.05) p=.000
Sexual	3.37 (2.46, 4.6) p=.000	1.2 (1.14, 1.26) p=.000	1.28 (1.19, 1.38) p=.000	N/A
Psychological	2.5 (1.95, 3.2) p=.000	1.17 (1.13, 1.22) p=.000	1.21 (1.15, 1.28) p=.000	N/A
Economic	2.51 (1.95, 3.24) p=.000	1.17 (1.13, 1.22) p=.000	N/A	N/A
Controlling behaviors	1.27 (.98, 1.63) p=.068	1.14 (1.09, 1.3) p=.000	N/A	N/A

RESULTS

CROSS SECTIONAL ANALYSES – WAVE 3

	Binary OR (95% CI) p-value	Intensity OR (95% CI) p-value	Frequency OR (95% CI) p-value	Severity OR (95% CI) p-value
Physical	1.89 (1.24, 2.87) p=.003	1.15 (1.06, 1.24) p=.000	1.22 (.99, 1.49) p=.052	1.49 (1.16, 1.91) p=.002
Sexual	2.83 (1.86, 4.31) p=.000	1.16 (1.1, 1.23) p=.000	1.34 (1.14, 1.59) p=.001	N/A
Psychological	1.97 (1.4, 2.77) p=.000	1.17 (1.12, 1.23) p=.000	1.3 (1.18, 1.44) p=.000	N/A
Economic	2.3 (1.63, 3.23) p=.000	1.17 (1.12, 1.23) p=.000	N/A	N/A
Controlling behaviors	1.12 (.79, 1.58) p=.521	1.09 (1.02, 1.16) p=.012	N/A	N/A

RESULTS

- Operationalization of IPV exposure did not impact significance across sexual, psychological and economic IPV in all waves
- Physical IPV was not consistently significant across indicators at Waves 3 and 4
- For all waves, controlling behaviors was not consistently significant across the two indicators.
- For many types of IPV at different waves, even when significance was consistent, the odds ratio was higher for the binary IPV exposure variable.
 - i.e. Sexual IPV at Wave 1, the odds ratio for the binary sexual IPV variable was 3.37 compared to 1.2 for the intensity of sexual IPV variable and 1.28 for the frequency of sexual IPV variable.
- The continuous IPV variable, of any type of IPV, was consistently associated with poorer mental health at all waves, apart from controlling behaviors at Wave 4. Confidence intervals for the intensity and frequency variables were consistently smaller

RESULTS



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LONGITUDINAL STRUCTURAL EQUATION MODEL



	Binary OR (95% CI) p-value	Intensity OR (95% CI) p-value	Frequency OR (95% CI) p-value	Severity OR (95% CI) p-value
Physical	1.35 (1.03, 1.77) p=.027	1.08 (1.03, 1.13) p=.003	1.13 (1.02, 1.24) p=.015	1.21 (1.05, 1.40) p=.010
Sexual	1.49 (1.16, 1.93) p=.002	1.07 (1.03, 1.11) p=.000	1.07 (.97, 1.14) p=.062	N/A
Psychological	1.31 (1.06, 1.64) p=.014	1.05 (1.02, 1.09) p=.001	1.09 (1.04, 1.15) p=.001	N/A
Economic	1.30 (1.05, 1.60) p=.014	1.06 (1.02, 1.09) p=.000	N/A	N/A
Controlling behaviors	1.18 (.81, 1.23) p=.878	1.03 (.99, 1.07) p=.157	N/A	N/A

RESULTS

- Physical, psychological and economic IPV are all significantly and consistently associated with poorer mental health across all operationalizations of IPV exposure
- Controlling behaviors is consistently non-significant for both the binary and continuous variables.
- For sexual IPV, the longitudinal association between sexual IPV exposure and poor mental health is significant in the case of both the binary and continuous variables, but not the frequency variable.
- Differences between strength of association were narrower than in the case of the cross-sectional analyses. For example, for physical IPV, the odds ratio for the binary variable is 1.35, compared to 1.08 for continuous, 1.13 for frequency and 1.21 for severe physical IPV.

INTERPRETATION AND IMPLICATIONS

- Cross-sectional analyses:
 - Associations were consistent for sexual, psychological and economic IPV, while operationalization did impact significance for physical IPV and controlling behaviours.
 - Odds ratios for binary IPV exposure were consistently higher, and confidence intervals for the intensity and frequency variables were smaller.
- Confidence intervals for continuous and frequency operationalizations narrower than binary measure
- Inconsistency across operationalization of controlling behaviors
- Lack of research and clarity on implications of coding choices in studies on health consequences



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