Modeling Dynamics of Intimate Partner Violence in South Africa

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in South Africa, three women are killed by an intimate partner every day
Intimate Partner Violence (IPV)

“any behavior within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship”

-WHO, 2012
Intimate Partner Violence (IPV)

- Physical violence
- Sexual violence
- Emotional (psychological) abuse
- Controlling behaviors

(WHO, 2012)
IPV is a GLOBAL PHENOMENON

• All nationalities
• All cultures
• All religions
• All socioeconomic statuses
Worldwide 30%
South Africa
45%
IPV in South Africa | Consequences

- **Serious health outcomes**
  - Mental health outcomes
  - Physical health outcomes
  - Linked to South Africa’s HIV / AIDS epidemic

- **Persistence despite legislative efforts**
  - Despite Domestic Violence Act, rates of IPV have remained stable and high

(Jewkes et. al., 2010)
(Morei, 2014)
Theoretical Frameworks of IPV in South Africa

Historical theoretical divide

**FEMINIST THEORIES**
- Broad structural factors
  - Apartheid; gender inequalities

**FAMILY VIOLENCE THEORIES**
- Immediate surrounding environment
  - Learned social behaviors; scarcity of resources

Contemporary emphasis on intersectionality

- education
- class
- race
- gender
- income
Social Ecological Model of IPV in South Africa

**SOCIETY**
- Educational policies
- Acceptance of violence
- Gender norms

**COMMUNITY**
- Limited economic opportunities
- Neighborhood income level
- Low social status of women

**RELATIONSHIP**
- Male dominance in family
- Economic stress
- Conflict / tension between partners

**INDIVIDUAL**
- Exposure to IPV
- Low level of income
- Low level of education

SEM offers combinatorial complexity without dynamic complexity → systems approaches are well suited for systemic problem!
Systems Approaches to IPV | Simple CLD

Exposure to IPV in Childhood

Normalization of IPV in Community

Relationships with IPV in Community

Likelihood of IPV
Have Not Experienced IPV

Have Experienced IPV

Systems Approaches | Modeling Exposure to IPV

Aging Chain Model of South African Population

Detail of Single Age Cohort
Assumptions of Model | Population

- Sample population based on demographics of South African population (female)
  - Disaggregated age groups:
    - 0-9
    - 10-14
    - 15-19
    - 20-24
    - 25-29
    - 30-49
    - 50+

South African Population Pyramid

CIA World Factbook, 2016
## Assumptions of Model | Age Specific Death Rates

<table>
<thead>
<tr>
<th>Age group</th>
<th>Deaths per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>6.3333</td>
</tr>
<tr>
<td>10-15</td>
<td>1</td>
</tr>
<tr>
<td>15-20</td>
<td>1</td>
</tr>
<tr>
<td>20-25</td>
<td>3</td>
</tr>
<tr>
<td>25-30</td>
<td>5</td>
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<tr>
<td>30-50</td>
<td>9.5</td>
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<tr>
<td>50+</td>
<td>41.14</td>
</tr>
</tbody>
</table>

Assumptions of model | 1st Experience IPV

**45%**: 
ESTIMATE OF TOTAL POPULATION HAVING EXPERIENCED IPV

Age of **first experience of IPV** is important:

- most women experience IPV by age 25
- **42%** of South African females 13-23 reported experiencing dating violence (WHO, 2012)
- by age 16, 70% of South African girls view violence in relationships as acceptable (Grassroot Soccer, n.d.)
Steady State Results | Birth rate = 0.1458
(Total Fertility Rate of 2.187 children per woman over 15 years)
Growing Population | Steady State vs. Birth rate = 0.25

Number of Women Experienced IPV - Steady State

Number of Women Experienced IPV – Birth rate = .25
South Africa’s True Growth | Birth rate = 0.1606

South Africa’s true growth rate yields constant 43% of total population having experienced IPV
Declining Birth Rates: Step Test: decrease of 0.05 in 2050

Number of Women Experienced IPV:
Step test decrease of 0.05 in 2050

Percent of Women Experienced IPV:
Step test decrease of 0.05 in 2050
Declining Birth Rates| Step Test: decrease of 0.02 in 2020 & 2050

- **Number of Women Experienced IPV:**
  - Step test decrease of 0.02 in 2020 & 2050

- **Percent of Women Experienced IPV:**
  - Step test decrease of 0.02 in 2020 & 2050
Systems as a Framework for Understanding IPV

Preliminary model explores first loop of dynamic hypothesis

Insight suggests importance of adopting dynamic approach to a pervasive, sustained public health issue
Systems as a Framework for Understanding IPV

WHAT

HOW

- girl's self esteem
- likelihood of IPV
- number of relationships with IPV in community
- exposure to IPV in childhood
- normalization of IPV within community
thank you

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REFERENCES


