Psychosocial factors in younger versus older HIV-infected pregnant women initiating antiretroviral therapy in Cape Town, South Africa

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MCH-ART Study Group
Background

Depression, alcohol abuse, violence are prevalent among pregnant women in South Africa

- Depression 30-40%
- Risky alcohol use 20-30%
- Intimate partner violence 25-50%

In HIV-infected pregnant women, these factors have implications for ART adherence and PMTCT outcomes

Previous research indicates that younger pregnant women may be at higher risk for these factors

Limited data on the psychosocial profile of young HIV-infected pregnant women in South Africa
Objectives

Describe the psychosocial profile of HIV-infected pregnant women in Cape Town, South Africa

Describe the psychosocial profile of young HIV-infected pregnant women compared to older women

Identify other factors associated with depression
Study Context

Strategies to optimize antiretroviral therapy services for maternal and child health: the MCH-ART study

**Setting:** Large public sector primary care clinic in Cape Town, South Africa

- PMTCT is integrated into antenatal care services
- Well established with >95% antenatal care coverage, 4800 women annually, 33% HIV prevalence

**Phase 1:** HIV+ women in Antenatal Clinic (n=1554) 
April 2013 – June 2014

**Phase 2:** Initiating ART (n=628)

**Phase 3:** Breastfeeding women (n=471)
Study Design

Cross-sectional study during Phase 2

Pregnant women initiating ART

Questionnaires administered by trained interviewers

Used and validated in this population
### Methods: Study measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Edinburgh Postnatal Depression Scale</strong></td>
<td>• Depressive symptoms cut off: &gt;13</td>
</tr>
<tr>
<td>Reported symptoms in the last week</td>
<td>• Self-harming thoughts (yes vs. no)</td>
</tr>
<tr>
<td><strong>Alcohol Use Disorders Identification Test</strong></td>
<td>• Risky alcohol use cut off &gt;6</td>
</tr>
<tr>
<td>Reported use in the last 12 months</td>
<td>• Experience of alcohol related harm</td>
</tr>
<tr>
<td><strong>HIV Social Impact Scale</strong></td>
<td>• Higher scores indicate greater stigma</td>
</tr>
<tr>
<td>Measure of stigma</td>
<td>• Dichotomized to ≤20 and &gt;20</td>
</tr>
<tr>
<td><strong>Intimate Partner Violence</strong></td>
<td>• Psychological, physical or sexual abuse</td>
</tr>
<tr>
<td>Experienced during current pregnancy</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Availability of Social Support</strong></td>
<td>• Higher scores indicate greater support</td>
</tr>
<tr>
<td><strong>London Measure of Unplanned Pregnancy</strong></td>
<td>• Higher scores indicate planned pregnancy</td>
</tr>
</tbody>
</table>
Statistical Methods

Described demographics and psychosocial characteristics

Compared younger women (18-24) to older women (≥25)

Univariate analysis
- Outcomes: depressive symptoms and self-harming thoughts
- Chi-squared, Fisher’s exact, Wilcoxon rank-sum tests

Multivariable analysis
- Age and other significant predictors in univariate analysis included in the multivariable model
- Logistic Regression
## Demographic characteristics of younger vs. older HIV-infected pregnant women

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All (n=625)</th>
<th>18-24 years (n=160)</th>
<th>≥25 years (n=465)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Median (IQR)</td>
<td>28 (8)</td>
<td>22 (2)</td>
<td>30 (6)</td>
</tr>
<tr>
<td>CD4 (cells/mm³), Median *</td>
<td>341</td>
<td>372</td>
<td>327</td>
</tr>
<tr>
<td>Pre-ART Viral load, Median log copies/mL</td>
<td>4.0</td>
<td>4.02</td>
<td>3.99</td>
</tr>
<tr>
<td>HIV diagnosis during current pregnancy, % *</td>
<td>55</td>
<td>71</td>
<td>49</td>
</tr>
<tr>
<td>First pregnancy, % *</td>
<td>18</td>
<td>49</td>
<td>8</td>
</tr>
<tr>
<td>Second Trimester, %</td>
<td>95</td>
<td>93</td>
<td>96</td>
</tr>
<tr>
<td>Cohabitating, % *</td>
<td>39</td>
<td>26</td>
<td>44</td>
</tr>
<tr>
<td>Highest Level of Education, % *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary or Post-secondary</td>
<td>92</td>
<td>95</td>
<td>91</td>
</tr>
<tr>
<td>Employment, %</td>
<td>38</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Employment type *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full time/Part time</td>
<td>88</td>
<td>62</td>
<td>96</td>
</tr>
<tr>
<td>School</td>
<td>11</td>
<td>37</td>
<td>4</td>
</tr>
</tbody>
</table>

* p<0.05  18-24 vs. ≥25
Psychosocial characteristics in HIV-infected pregnant women

One in five pregnancies was planned

High levels of social support

Social Impact Scale (stigma)
  Median score of 16: “neutral” response
  16% scored >20, indicating at least some stigma

Intimate Partner Violence**
  1 in 5 women reported abuse
  15% psychological abuse
  15% physical abuse
  2% sexual abuse

** Bernstein & Myer
Poster #74

Similar in younger and older women
Depressive symptoms and alcohol use by age

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>≥25</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive symptoms</td>
<td>n=19</td>
<td>n=34</td>
<td>0.07</td>
</tr>
<tr>
<td>Self harming thoughts</td>
<td>n=17</td>
<td>n=19</td>
<td>0.002</td>
</tr>
<tr>
<td>Risky Alcohol Use</td>
<td>n=32</td>
<td>n=70</td>
<td>0.1</td>
</tr>
<tr>
<td>Alcohol-related harm</td>
<td>n=42</td>
<td>n=92</td>
<td>0.09</td>
</tr>
</tbody>
</table>

All, n(%) n=625

- Depressive symptoms: 53 (9%)
- Self harming thoughts: 36 (6%)
- Risky Alcohol Use: 102 (16%)
- Alcohol-related harm: 134 (21%)
### Depressive symptoms and associated psychosocial factors: univariate analysis

<table>
<thead>
<tr>
<th>Characteristic, n(%)</th>
<th>EPDS &gt;13 (n=53)</th>
<th>EPDS ≤13 (n=572)</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>19 (36)</td>
<td>141 (25)</td>
<td>1.7 (0.9-3.1)</td>
</tr>
<tr>
<td>≥25</td>
<td>34 (64)</td>
<td>431 (75)</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Risky Alcohol Use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 (23)</td>
<td>90 (16)</td>
<td>1.6 (0.8-3.1)</td>
</tr>
<tr>
<td><strong>Experienced alcohol-related harm</strong> *</td>
<td>18 (34)</td>
<td>116 (20)</td>
<td>2.0 (1.1-3.7)</td>
</tr>
<tr>
<td><strong>Social Support (Median, IQR)</strong> *</td>
<td>51 (13)</td>
<td>56 (16)</td>
<td>0.97 (0.95-0.99)</td>
</tr>
<tr>
<td><strong>Intimate Partner Violence</strong> *</td>
<td>19 (36)</td>
<td>113 (20)</td>
<td>2.3 (1.2-4.1)</td>
</tr>
<tr>
<td><strong>Social Impact Scale (stigma)</strong> *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score&gt;20</td>
<td>22 (42)</td>
<td>80 (14)</td>
<td>4.4 (2.4-7.9)</td>
</tr>
</tbody>
</table>

* p<0.05 with vs. without depressive symptoms
### Self-harming thoughts and associated psychosocial factors: univariate analysis

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Self-harm (n=36)</th>
<th>No self-harm (n=589)</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>17 (47)</td>
<td>143 (24)</td>
<td>2.7 (1.4-5.5)</td>
</tr>
<tr>
<td>≥25</td>
<td>19 (53)</td>
<td>446 (76)</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Risky Alcohol Use</strong></td>
<td>4 (11)</td>
<td>98 (17)</td>
<td>0.6 (0.2-1.8)</td>
</tr>
<tr>
<td><strong>Experienced alcohol-related harm</strong></td>
<td>9 (25)</td>
<td>125 (21)</td>
<td>1.2 (0.6-2.7)</td>
</tr>
<tr>
<td><strong>Social Support (Median, IQR)</strong></td>
<td>52 (12)</td>
<td>56 (17)</td>
<td>0.99 (0.96-1.0)</td>
</tr>
<tr>
<td><strong>Intimate Partner Violence</strong></td>
<td>14 (39)</td>
<td>118 (20)</td>
<td>2.5 (1.3-5.1)</td>
</tr>
<tr>
<td><strong>Social Impact Scale (stigma)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score&gt;20</td>
<td>19 (53)</td>
<td>83 (14)</td>
<td>6.8 (3.4-13.6)</td>
</tr>
</tbody>
</table>

* p<0.05 with vs. without self-harming thoughts
Age is associated with self-harming thoughts on multivariable analysis

Association of Age and Depressive symptoms

– Association of age and depressive symptoms did not change after adjusting for other psychosocial factors
– Age may be a risk factor for depressive symptoms, independent of other factors

Association of Age and Self-harming thoughts

– Age remained significantly associated with self-harming thoughts when adjusting for intimate partner violence
– Stigma was a significant confounder
Stronger association between age and depressive symptoms with stigma

Social Impact Scale ≤20 (n=523)

Prevalence

Depressive symptoms: n=9, p=0.69
Self harming Thoughts: n=7, p=0.08

Social Impact Scale >20 (n=102)

Prevalence

Depressive symptoms: n=10, p=0.006
Self harming Thoughts: n=12, p=0.001
Strengths and Limitations

Limitations

Cross-sectional
Women are engaged in care
Prevalence may be underestimated

Strengths

Large sample size
Wide breadth of questionnaires utilized
Hypothesis generating for future studies
Conclusions

Among HIV-infected pregnant women

– Moderate rates of depressive symptoms
– Moderately high rates of alcohol abuse and intimate partner violence

Young HIV-infected pregnant women

– May be at higher risk of depressive symptoms and self-harming thoughts

Stigma is associated with greater depressive symptoms and self-harming thoughts in younger women
Implications

Routine screening and interventions needed targeting stigma, depression, and alcohol use
   Especially in young women

Important for adherence and successful PMTCT outcomes
   Depression and alcohol use are major risk factors for poor health outcomes
Acknowledgements

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Tamsin Phillips, School of Public Health & Family Medicine

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Thank you!

Questions?
<table>
<thead>
<tr>
<th>Measure</th>
<th>Reference(s)</th>
<th>Scoring/Analysis Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Action Theory Constructs</strong></td>
<td></td>
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</tr>
</tbody>
</table>
| Perceived Availability of Social Support     | Cohen, S. Psychosocial models of the role of social support in the etiology of physical diseases. *Health Psychology, 7*(3), 269-297. | • Can be analysed as Instrumental (items 3, 4, 5, 8, 9, 10, 11, and 12) and Emotional (items 1, 2, 6, and 7) support.  
• Mean response score calculated across items, such that higher scores indicate greater perceived availability of support. |
• Mean response score calculated across items, such that higher scores indicate greater social impact. |
| **Mental Health Constructs**                 |                                                                              |                                              |
• Total score calculated by summing individual item responses across all 10 items.  
• Can be analysed as a continuous score (with higher scores indicating greater frequency of depressive symptoms);  
• or as a binary categorization, where a threshold of ≥13 is generally used to indicate probable depression, as described in the original development of the scale (Cox et al., 1987). |
Alcohol Use Disorders Identification Test (AUDIT)


- Items 9 and 10 must be re-scored such that “No”=0, “Yes, but not in the past year”=2, and “Yes, during the past year”=4.
- Total score calculated by summing individual item responses across all 10 items, such that higher scores indicate more problematic alcohol use.
- Total score can be categorized such that scores above 6 indicate risky drinking and scores above 20 indicate alcohol dependence (Vythilingum et al., 2012);
- or AUDIT-C scoring can be used, where a total score is calculated by summing individual item responses across the first 3 AUDIT items, and a score of 3 or above indicates hazardous drinking.