Content-Analysis of Social Networks and Mobile Phone Text Messages Among HIV Patients in Tanzania

SoSon Jong, RN, PhD
Lisa Thompson, RN, PhD
University of California San Francisco
July 24 2016
Agenda

1. Phenomenon
2. Review of the study
3. Report of content analysis
4. Discussion & Conclusion
5. Acknowledgement
HIV/AIDS by numbers

AIDS by the numbers

40-fold
Increase in access to antiretroviral therapy since 2002.

More than 10% of people living with HIV in low- and middle-income countries are aged 50 years or above.

35.3 million people living with HIV in the world.

People accessing treatment

9,700,000
Every hour 50 young women are newly infected with HIV.
HIV prevalence in adults and key populations

HIV disproportionately affects sex workers, men who have sex with men and people who inject drugs across the world.

Source: UNAIDS 2013 Global Report

HIV prevalence in 2012

http://www.unaids.org/en/resources/infographics
Time for strategic HIV response

http://www.unaids.org/en/resources/infographics
Social Determinants of health

Definitions

“Circumstances where people are born, grow up, live and the system in place to deal with illness”

(WHO, 2007)
Social network
A structure where social capital flows and amplifies

The currency of social networks - Social capital

Easily accessible information and networking capability over mobile networks
Use of mobile technologies in health care

Communication and educational platform

Mobile text message reminders to improve medication adherence and follow-up appointment among PLWH

Have more potential to improve health service delivery
Social Capital

Definition

“Features and resources—social norm and trust, for example, embedded in a social structure which are accessed/mobilized in purposive action” (Lin, 1999; Putnam, 2001)
Theoretical framework

Theory of Social Capital (Nan Lin, 1999)

Collective assets (trust, norm, etc.)

Structural positional variations

Accessibility (Network locations and Resources)

Mobilization (Use of contact and Contact resources)

Returns
Instrumental (Wealth, power, reputation)

Returns
Expressive (Physical, mental health, life satisfaction)

Inequality

Capitalization

Effects
Research aim

The study aimed to explore and understand HIV patients’ social networks and support in relation to their use of mobile text messages (SMS). This study also presents HIV patients’ perspectives on use of SMS for HIV care and management.
# Overview of the Study

<table>
<thead>
<tr>
<th>Design</th>
<th>Cross-sectional design</th>
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<tbody>
<tr>
<td>Study period</td>
<td>August - September 2015</td>
</tr>
<tr>
<td>Study locations</td>
<td>6 HIV clinics in Dar es Salaam, Tanzania</td>
</tr>
<tr>
<td>Study participants</td>
<td>N=163</td>
</tr>
</tbody>
</table>
| Measurements          | ● Questionnaire: Demographics, Social capital, Multidimensional poverty index (MPI), Health related quality of life (SF12), social networks  
                        | ● Medical record review: HIV biomarkers and retention to care  
                        | ● Individual interviews and Social network analysis |

**IRB Number:** 14-15590
## Demographic characteristics (N=163)

<table>
<thead>
<tr>
<th>Age mean (SD, range)</th>
<th>40.6 years (9.9, 19-77)</th>
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<tbody>
<tr>
<td><strong>Sex, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39 (23.9)</td>
</tr>
<tr>
<td>Female</td>
<td>124 (76.1)</td>
</tr>
<tr>
<td><strong>Initial CD4 count (cells/mm3), mean (SD, range)</strong></td>
<td>277 (235, 3-1441)</td>
</tr>
<tr>
<td><strong>On ART, n (%)</strong></td>
<td>149 (91.4)</td>
</tr>
<tr>
<td><strong>WHO HIV stage, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>40 (25.5)</td>
</tr>
<tr>
<td>Stage 2</td>
<td>22 (14)</td>
</tr>
<tr>
<td>Stage 3</td>
<td>81 (51.6)</td>
</tr>
<tr>
<td>Stage 4</td>
<td>14 (8.9)</td>
</tr>
<tr>
<td><strong>Work for pay, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>49 (30.1)</td>
</tr>
<tr>
<td>No</td>
<td>114 (69.9)</td>
</tr>
<tr>
<td><strong>Income, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Totally inadequate</td>
<td>61 (37.4)</td>
</tr>
<tr>
<td>Barely adequate</td>
<td>77 (47.2)</td>
</tr>
<tr>
<td>Enough</td>
<td>25 (15.3)</td>
</tr>
<tr>
<td><strong>Education, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Primary school or less</td>
<td>130 (79.7)</td>
</tr>
<tr>
<td>Secondary school</td>
<td>24 (14.7)</td>
</tr>
<tr>
<td>High school</td>
<td>5 (3.1)</td>
</tr>
<tr>
<td>College or higher</td>
<td>4 (2.5)</td>
</tr>
</tbody>
</table>
Poverty among the participants

- Incidence of poverty \( (H) = 23.5\% \)
- Average intensity of poverty \( (A) = 39.9\% \)
- Multidimensional poverty index \( (MPI) = H \times A = 0.09 \)
- Tanzania
  - National level: 0.33
  - Urban average: 0.15

United nations development plan (UNDP)
# Gender differences in social capital and QoL

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total (n=163)</th>
<th>Female (n=124)</th>
<th>Male (n=39)</th>
<th>t¹ (df²)</th>
<th>Significance (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Capital (mean, SD)</td>
<td>2.61 (0.45)</td>
<td>2.56 (0.07)</td>
<td>2.75 (0.04)</td>
<td>-2.46 (69.37)</td>
<td>0.02</td>
</tr>
<tr>
<td>Quality of Life (mean, SD)</td>
<td>42.91 (5.56)</td>
<td>42.3 (5.8)</td>
<td>44.7 (4.2)</td>
<td>-2.87 (88.09)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

¹ T-test: unequal variance assumed  
² Satterthwaite’s degrees of freedom
Methods- Conventional content analysis

Questions developed by inductive category development

Systematic text analysis

Descriptive statistics and graphs
Assessing Social Networks:
Looking back over the past 6 months, who are the people/organizations with whom you discussed matters important to you (list the relationships eg. Mother, friend 1, 2, partner, etc.)?

(Multiple choices allowed for participants, N=163)
Assessing Social Networks:
Looking back over the past 6 months, who are the people/organizations with whom you discussed matters important to you (list the relationships eg. Mother, friend 1, 2, partner, etc.)?

N=203 (multiple choices allowed for 163 participants)
Why uses mobile text messages (SMS)?
Uses of mobile text messages

Number of text messages sent/week

- None to 10 messages: 105
- 11-30 messages: 33
- 31-50 messages: 12
- More than 50 messages: 4

Number of text messages received/week

- None to 10 messages: 93
- 11-30 messages: 50
- 31-50 messages: 10
- More than 50 messages: 7
What kind of message would you like to see?
Conclusions and Suggestions for road forward: Mobile technologies and health

Mobile text messages are affordable and well-accepted

Mobile text messages are as effective as mobile phone calls

Bi-directional and personalized mobile text messages over automated, one way reminders

Know recipients’ characteristics

Go beyond reminders: information, support, voucher, fund, network

http://www.medicine-on-time.com/img/cell.png
Every minute, a young woman is newly infected with HIV.

As a result of their lower economic, socio-cultural status in many countries, women and girls are disadvantaged when it comes to negotiating safe sex, accessing HIV prevention information and services.

**11-45%**
Between 11% and 45% of adolescent girls report that their first sexual experience was forced.

**2x**
Globally, young women aged 15-24 are more vulnerable to HIV with infection rates twice as high as in young men, accounting for 25% of new HIV infections.

**40%**
Approximately 40 percent of pregnant women are untreated, putting the lives of women, infants and mothers at risk.

**32/94**
Women who lived with HIV are nonregularly tested for partner presence in low and middle-income countries.

**Only one female condom is available for every 58 women in Sub-Saharan Africa.**

**HIV is the leading cause of death of women of reproductive age.**

**20%**
Women living with HIV are more likely to experience violations of their sexual and reproductive rights, for example, female genital mutilation.

**In many countries women do not have the same rights to property and inheritance as men, leaving women vulnerable to HIV and reducing their ability to cope with the disease and its impact.**

**Two-thirds of the world’s 7.6 million newly infected are women.**

http://www.unaids.org/en/resources/infographics
Suggestions for road forward: Social capital and Global health

People with high social capital,

More access to resources and opportunity

Leading to better health status, reputation, and wealth

Limited resources available in a given community,

Mobilizing flow of information, education, links to resources, and communication to improve opportunity to better health and QoL

Benefiting more for people in resource-limited settings and vulnerable situations

Mobile technologies: effective platform at low cost
Acknowledgement

Dissertation committee: Lisa Thompson, Adam Carrico, Carmen Portillo

MUHAS mentors: David Urassa, Helen Siril

Dr. Bruce Cooper

Dr. Yvette Cuca

Research participants

Research assistants at MDH
Questions and Comments

This presentation was based on author’s research and synthesis of literatures. List of references is available upon request.