IDENTIFYING AND DEVELOPING STRATEGIES FOR IMPROVING HIV MEDICATION ADHERENCE

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Please feel welcome to ask questions and give comments throughout 😊
Medication Adherence

- Taking medications according to the prescribed dosage, time, frequency, and direction

- Related to disease management outcome:
  - *Poor HIV medication adherence* → *high HIV viral loads*

- High HIV viral loads:
  - *Ongoing immune activation and inflammation*
  - *Opportunistic infections*
  - *Medication resistance*
  - *Higher infectivity (transmission)*
Factors **Negatively Influencing HIV Medication Adherence**

- Social – perceived poor social support, stigma
- Mental health – depression, psychological distress, psychopathology, non-adherence to psychiatric medications, HIV-associated neurocognitive disorder (HAND)
- Drug and alcohol abuse
- Pill burden - having too many medications to take
- Busy, away from home, changes in work routine
- Simply forgetting, poor prospective memory
- Feeling sick
Factors **Positively** Influencing HIV Medication Adherence

- Perceived improved health
- High social support, partner support (equitable power distribution in couples)
- Simpler medication regimens (e.g. without dietary instructions)
- High asset index (i.e. higher socioeconomic status)
Interventions with **Successful Outcomes**

- Patient information leaflet – HIV and ARV knowledge, self-efficacy
- Theory-based, computer administered ARV adherence support
- Education and counseling – most effective prior to virological failure
- Pharmacist – reduce pill quantity and dosing frequency
- Medication managers – individualized, structured, long-term support
- Treatment supporter, treatment partner
- Community-based treatment (vs. hospital-based treatment)
- Home-based treatment
- Directly delivered therapy by an outreach worker
- Mindfulness meditation – less reduction in CD4+ T cell counts
The HIV Patient Population in San Mateo County Health System

■ Categorization of patient viral loads between May 2015 and June 2016:
  - 470 patients with at least one viral load measured
  - “Controlled HIV” = all viral loads <200: 376 patients (80%)
  - “Uncontrolled HIV” = at least one viral load >200: 94 patients (20%)

■ Review of demographics and other factors
Age

- Controlled HIV:
  - Mean age: 46.8 years
  - Median age: 47 years

- Uncontrolled HIV:
  - Mean age: 44.1 years
  - Median age: 47 years

- Not significantly different
## Race & Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>29.8%</td>
<td>33.0%</td>
</tr>
<tr>
<td>African American</td>
<td>16.0%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Latino/a</td>
<td>42.6%</td>
<td>38.3%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Multi-Race/Other/Unknown</td>
<td>4.3%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Not significantly different
Preferred Language

<table>
<thead>
<tr>
<th>Preferred Language</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>72.3%</td>
<td>75.5%</td>
</tr>
<tr>
<td>Spanish</td>
<td>24.5%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Other</td>
<td>3.2%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Not significantly different
# Self-Identified Gender

<table>
<thead>
<tr>
<th>Self-Identified Gender</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>22.3%</td>
<td>18.1%</td>
</tr>
<tr>
<td>Male</td>
<td>75.5%</td>
<td>80.9%</td>
</tr>
<tr>
<td>Transgender (male to female)</td>
<td>2.1%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Not significantly different
## Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divorced</td>
<td>4.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Married</td>
<td>14.9%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Separated</td>
<td>3.2%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Single</td>
<td>75.5%</td>
<td>84.0%</td>
</tr>
<tr>
<td>Widowed</td>
<td>2.1%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Not significantly different
## Living Situation

<table>
<thead>
<tr>
<th>Living Situation</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeless</td>
<td>1.1%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Marginally Housed</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Permanently Housed</td>
<td>31.9%</td>
<td>30.9%</td>
</tr>
<tr>
<td>Missing Information</td>
<td>66.0%</td>
<td>61.7%</td>
</tr>
</tbody>
</table>

Not significantly different
## Substance Abuse

<table>
<thead>
<tr>
<th>Substance Abuse</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>36.2%</td>
<td>42.6%</td>
</tr>
<tr>
<td>No</td>
<td>22.3%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Missing Information</td>
<td>41.5%</td>
<td>40.4%</td>
</tr>
</tbody>
</table>

Not significantly different
## Most Recent Social Work Visit

<table>
<thead>
<tr>
<th>Most Recent Social Work Visit</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6 months ago</td>
<td>54.3%</td>
<td>52.1%</td>
</tr>
<tr>
<td>Greater than 6 months ago</td>
<td>42.6%</td>
<td>42.6%</td>
</tr>
<tr>
<td>No social work visit</td>
<td>3.2%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Not significantly different
## Most Recent Medical Visit

<table>
<thead>
<tr>
<th>Most Recent Medical Visit</th>
<th>Controlled HIV</th>
<th>Uncontrolled HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6 months ago</td>
<td>87.2%</td>
<td>79.8%</td>
</tr>
<tr>
<td>Greater than 6 months ago</td>
<td>12.8%</td>
<td>14.9%</td>
</tr>
<tr>
<td>No medical visit</td>
<td>0.0%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Not significantly different
Total Number of Tablet/Capsule Prescriptions

- Controlled HIV
  - Mean: 7.2 prescriptions
  - Median: 6.5 prescriptions

- Uncontrolled HIV
  - Mean: 7.3 prescriptions
  - Median: 6 prescriptions

- Not significantly different
Total Number of Tablet/Capsule Prescriptions by Age

- Controlled HIV, 50 years and younger
  - Mean: 6.1 prescriptions
  - Median: 5 prescriptions

- Controlled HIV, 50 years and older
  - Mean: 8.7 prescriptions
  - Median: 8 prescriptions

- Uncontrolled HIV, 50 years and younger
  - Mean: 5.9 prescriptions
  - Median: 5 prescriptions

- Uncontrolled HIV, 50 years and older
  - Mean: 10.2 prescriptions
  - Median: 10 prescriptions

- Significant difference between age groups for both controlled and uncontrolled HIV, but no significant difference between controlled HIV and uncontrolled HIV for either age group
Most Recent Absolute CD4 Count

- Controlled HIV
  - Mean: 642.5
  - Median: 594

- Uncontrolled HIV
  - Mean: 426.0
  - Median: 369

- Significantly different
Number of Years with an HIV/AIDS Diagnosis

- Controlled HIV
  - Mean: 11.8
  - Median: 8

- Uncontrolled HIV
  - Mean: 9.8
  - Median: 8

- Not significantly different
Adherence Questionnaire Development Based on:

- Literature review
- Data
- Interviews with healthcare providers and staff
- Interviews with patients
Adherence Questionnaire Sections

- Comorbidities
- Strategies for remembering to take medications
- Social support
- Culture/language
- Logistics (pharmacy, transportation, etc.)
- Interest in possible interventions
Thank you!

We would love to hear your thoughts on this work!