HIV Prevention for Men Who Have Sex with Men

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There are no conflicts to report.
Purpose of the presentation

- identify syndemic risk factors affecting MSM

- explore neighborhood and migration risk factors

- explain resilience in relation to syndemic risk

- present an intervention study for high risk men

- non-condom prevention strategies / limitations
The Study Sample

- Participants in a randomized risk reduction intervention trial
- Ages 18-55
- 3 + times drug / drunk in the last 30 days
- Sex risk in the last 90 days:
  - 2+ anal sex partners and 1+ times unprotected anal intercourse (UAI)
What are syndemic health disparities?

“Two or more afflictions, interacting synergistically, contributing to an excess burden of disease in a population” (CDC 2011)
Early life experiences in a homophobic environment:
- Family rejection
- Not fitting in
- Secrecy
- Victimization
- Shame

Migration considerations:
Costs
- Lost social capital
- Lost social norms
- Lost relationships
Benefits
- Freedom
- Mental health
- Attraction/desire
- Safety
- Friendships

Urban Gay Subcultures:
- Escapist
- Competitive
- Temporary
- Drugs
- Hypersexuality
- Limited social networks

Syndemic outcomes:
- Sexual violation
- Depression
- STI/HIV
- Substance use
- Sensation seeking

Conceptual Model of MSM Health Disparities
Migration Risk Factors
South Florida’s Gay Scene...
Residential destinations

MSM who moved to South Florida within 5 years of study enrollment (N=145)
Sexual risk by length of residence (past 90 days)

- **< 1 year**
  - High sensation seek: 15.4
  - Anal sex partners: 14.6
  - UAI times: 16.5
  - Receptive UAI times: 7.7

- **1 to 5 years**
  - High sensation seek: 29.1*
  - Anal sex partners: 14.7
  - UAI times: 21.0
  - Receptive UAI times: 10.3

- **> 5 years**
  - High sensation seek: 17.5*
  - Anal sex partners: 12.1
  - UAI times: 17.4
  - Receptive UAI times: 17.2*

* p<.01
* p<.05
Health status by length of residence

- **< 1 year**
  - STI past year: 15.2
  - HIV-positive: 25.8

- **1 to 5 years**
  - STI past year: 29.1*
  - HIV-positive: 50.6*

- **> 5 years**
  - STI past year: 14.6
  - HIV-positive: 49.2*

*p < .001

*< 1 year
*1 to 5 years
*> 5 years
# Resilience indices by length of residence

<table>
<thead>
<tr>
<th>Years of residence</th>
<th>&lt;1</th>
<th>1-5</th>
<th>&gt;5</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Coping strategies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional support</td>
<td>68.2</td>
<td>50.6</td>
<td>46.2</td>
<td>.004</td>
</tr>
<tr>
<td>Get help and advice</td>
<td>60.6</td>
<td>43.0</td>
<td>43.0</td>
<td>.027</td>
</tr>
<tr>
<td>High satisfaction w/ SS</td>
<td>65.2</td>
<td>50.6</td>
<td>51.1</td>
<td>.035</td>
</tr>
<tr>
<td>Socialize w/ drug users</td>
<td>20.3</td>
<td>38.4</td>
<td>38.1</td>
<td>.021</td>
</tr>
</tbody>
</table>
Discussion

- Recent migrants preferred moving to the gay enclave.

- Sexual risk behaviors were highest among men who migrated more than one year but less than five years ago.
Discussion

- HIV prevalence for men residing in South Florida for longer than one year was double the rate for the newest migrants.

- The most recent migrants (less than one year) scored highest on measures of resilience.
Limitations

- Non-probability, high risk sample
- Cross sectional design; no data on men’s pre-migration behaviors
- Is South Florida representative?
Conclusion

- Migration to a new city may present health risk environments to MSM, particularly for men who move into gay enclaves and connect with the drug/sex scenes there.

- Intervention approaches that assist migrant men with developing broad and deep bases of social connections may reduce their risk of attachment to health risk environments.
Qualitative Research Themes

- "Fast lane" drugs/sex scenes in large cities are often the first chance for MSM to explore freedom from oppression.

- A sizeable minority are unable to find meaningful relationships in the larger society.

- Extreme social isolation is common; the scene becomes the sole outlet for human interaction.

- Sensation seeking, drug use and sexual risks become habituated.
Neighborhood-Based Risk and Protective Factors
Distribution of Participants by ZIP Code

South Florida is one urban area with 2 distinct places:

- Gay enclave city of Wilton Manors
- More dispersed MSM population in Miami-Dade County
# Demographics by Neighborhood

<table>
<thead>
<tr>
<th></th>
<th>Non-Enclave (N=289)</th>
<th>Enclave (N=208)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (mean)</strong></td>
<td>37.44</td>
<td>41.02</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Race/Ethnicity:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>31.5%</td>
<td>16.8%</td>
<td>0.000</td>
</tr>
<tr>
<td>African American/Black</td>
<td>27.0%</td>
<td>9.6%</td>
<td>0.000</td>
</tr>
<tr>
<td>White</td>
<td>31.5%</td>
<td>69.2%</td>
<td>0.000</td>
</tr>
<tr>
<td>Other</td>
<td>4.8%</td>
<td>4.3%</td>
<td>0.690</td>
</tr>
<tr>
<td><strong>Education - 16 years</strong></td>
<td>29.4%</td>
<td>38.0%</td>
<td>0.029</td>
</tr>
<tr>
<td>HIV-positive</td>
<td>44.6%</td>
<td>49.5%</td>
<td>0.596</td>
</tr>
</tbody>
</table>
# Health Risks by Neighborhood

<table>
<thead>
<tr>
<th>Substance Use (past 90 days)</th>
<th>Non-Enclave (N=289)</th>
<th>Enclave (N=208)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>65.1%</td>
<td>62.0%</td>
<td>.131</td>
</tr>
<tr>
<td>Cocaine (powder)</td>
<td>51.6%</td>
<td>30.3%</td>
<td>.000</td>
</tr>
<tr>
<td>Crack cocaine</td>
<td>22.1%</td>
<td>15.9%</td>
<td>.042</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>21.8%</td>
<td>31.3%</td>
<td>.055</td>
</tr>
<tr>
<td>Poppers</td>
<td>46.4%</td>
<td>60.6%</td>
<td>.011</td>
</tr>
<tr>
<td>DSM-IV past year dependence</td>
<td>66.4%</td>
<td>52.4%</td>
<td>.000</td>
</tr>
</tbody>
</table>

### Sexual Behaviors (past 90 days)

<table>
<thead>
<tr>
<th></th>
<th>Non-Enclave (N=289)</th>
<th>Enclave (N=208)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprotected anal intercourse</td>
<td>21.86</td>
<td>23.06</td>
<td>.700</td>
</tr>
<tr>
<td>Receptive UAI</td>
<td>10.46</td>
<td>11.45</td>
<td>.626</td>
</tr>
<tr>
<td>Buy sex</td>
<td>28.0%</td>
<td>16.3%</td>
<td>.001</td>
</tr>
<tr>
<td>Trade or sell sex</td>
<td>26.6%</td>
<td>15.3%</td>
<td>.001</td>
</tr>
</tbody>
</table>
Discussion

Gay Enclave Risk Factors

– Higher rates of receptive UAI
– Higher rates of methamphetamine / nitrites use
– Lower odds of engaging in social activities

Possible reasons:

Widely available access to sex
Sexual enhancement-specific drug use
Discussion

Gay Enclave Protective Factors

- Lower rates of substance dependence
- Lower rates of arrest and homelessness
- Lower odds of buying or trading sex

Possible reasons:

Safe space to avoid discrimination / stigma

Accessibility of public health information
Risk Reduction Intervention
Randomized Controlled Trial
What is empowerment?

“A process through which individuals come to perceive a connection between their goals and the means to achieve them, and between their efforts and the desired results.” (Mechanic 1991).

- goal setting
- social engagement
- positive coping skills
- self-efficacy
What is resilience?

Empowerment, despite multiple personal and social losses

(Fergus & Zimmerman 2005)

resilience

syndemic factors
Early life experiences in a homophobic environment:
- Family rejection
- Not fitting in with peers
- Secrecy
- Verbal and physical abuse
- Shame

Migration considerations:
- Perceived Costs
  - Lost social capital
  - Lost social norms
  - Lost relationships
- Perceived Benefits
  - Freedom
  - Mental health
  - Attraction / desire
  - Safety
  - Friendships

Urban Gay Subcultures:
- Escapist / fantastic / spectacular
- Homophobic
- Competitive
- Temporary
- Normative drug use and hypersexuality
- Limited social networks and opportunities

Cultural alienation:
- Self-protective "attitude"
- Sense of sexual violation
- Depression/anxiety
- Reinforced homophobia
- STI / HIV infections
- Substance use
- Sensation seeking

Mediators:
- Increased social networks
- Increased perceived control
- Active vs. escape coping
- Increased social diagnostic skills
- Reduced anxiety and depression

Behavioral Health Outcomes:
- Reduced sensation seeking
- Reduced sexual risks
- Reduced substance use

CONCEPTUAL MODEL OF MSM HEALTH RISKS AND THEORIZED PSYCHOLOGICAL EMPOWERMENT INTERVENTION EFFECTS
Men Reaching Out to Other Men

A 5-year randomized clinical trial comparing the efficacy of a 4-session small group empowerment intervention to an enhanced single session risk reduction and resilience counseling condition.
Both conditions emphasized:

- A safe space to talk; building trust
- Increasing sexual and friendship intimacy
- New ways to cope with stress / challenges
- Accessing broader social networks
- Making life changes; goal setting
- Overcoming barriers to change
… within an environment in which high levels of substance use and sexual risk were treated as symptoms of larger underlying problems affecting the whole person…. 

….rather than as behaviors that should be the direct intervention targets.
### Demographics (N=515)

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median; range: 18 - 55)</td>
<td>39 years</td>
</tr>
<tr>
<td>Education (median)</td>
<td>14 years</td>
</tr>
<tr>
<td>Income (median)</td>
<td>$15,000</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>250</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>133</td>
</tr>
<tr>
<td>African American</td>
<td>108</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
</tr>
</tbody>
</table>
Baseline Substance Use, N=515
Lifetime and Past 90 Days
# Sexual health

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV- Positive</td>
<td>239</td>
<td>46.4</td>
</tr>
<tr>
<td>STI (past year)</td>
<td>70</td>
<td>13.6</td>
</tr>
</tbody>
</table>

# Syndemic factors

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe mental distress</td>
<td>298</td>
<td>57.9</td>
</tr>
<tr>
<td>DSM-IV dependence</td>
<td>320</td>
<td>62.1</td>
</tr>
<tr>
<td>Childhood victimization</td>
<td>282</td>
<td>54.8</td>
</tr>
</tbody>
</table>
## CORRELATES OF SEVERE SOCIAL ISOLATION (SI)

### UCLA Loneliness Scale

<table>
<thead>
<tr>
<th>MULTIVARIATE MODEL</th>
<th>Odds Ratio</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe mental distress</td>
<td>3.774</td>
<td>.000</td>
</tr>
<tr>
<td>DSM-IVR substance dependence</td>
<td>2.088</td>
<td>.005</td>
</tr>
<tr>
<td>Severe victimization history</td>
<td>2.126</td>
<td>.002</td>
</tr>
<tr>
<td>Extreme personal shame</td>
<td>2.375</td>
<td>.001</td>
</tr>
<tr>
<td>High sexual escapism</td>
<td>1.885</td>
<td>.010</td>
</tr>
<tr>
<td>Past 90 day behaviors w/ casual partners (means)</td>
<td>Severe SI (N=174)</td>
<td>Not SI (N=218)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Anal sex partners</td>
<td>15.2</td>
<td>12.5</td>
</tr>
<tr>
<td>Anal partners - receptive no condom</td>
<td>6.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Anal sex times</td>
<td>32.5</td>
<td>35.9</td>
</tr>
<tr>
<td>Anal sex times - no condom</td>
<td>20.6</td>
<td>25.0</td>
</tr>
<tr>
<td>Anal sex times - receptive no condom</td>
<td>11.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Anal sex times per partner</td>
<td>3.37</td>
<td>6.1</td>
</tr>
</tbody>
</table>
Outcome measures at 3, 6 and 12 months post-baseline
Anal sex partners (past 90 days)

Baseline  | 3 Month  | 6 Month  | 12 Month
---|---|---|---
14  | 12  | 10  | 8  
Control  | Experimental
Unprotected anal sex frequency (past 90 days)
HIV transmission risk frequency (past 90 days)

- **Control**
- **Experimental**

Baseline | 3 Month | 6 Month | 12 Month
Drugs used for sex frequency (past 90 days)
Substance dependence symptoms

Control

Experimental

Baseline 3 Month 6 Month 12 Month
Discussion

- Men with high levels of sexual risk are impacted by many other health issues, including depression, sexual escapism, and drug dependence.

- Social isolation is common among MSM in the “fast lane” scene.
Discussion

Participants in the resilience-based interventions reported lower levels of health risks, and also improved scores on mental health and substance dependence measures over time.
Qualitative Research Themes

Expanding/changing social networks

“It made me search things out more... try to change things more in my life instead of just being stagnant. And... seek out more social connections.

“So there’s been more dating, more getting to know people on a different level. I’ve always said that sex is very easy. I want that but that’s not all I want, you know? I want them to fall in love with other things.”
Qualitative Research Themes

Motivating positive change

“[The study] just gave me the opportunity to evaluate where I was and, to decide that .... you know, you are not going to get different results from doing the same things. So it gave me the opportunity to say, ‘okay, these are the things that I’m currently dealing with, now how do I want to change these things to get a different result.’”
Conclusion

Broad social networks, increased intimacy, better ways of coping, self-efficacy, and setting achievable life goals: RESILIENCE

Interventions that emphasize resilience - rather than focus predominately on substance use and sexual behaviors directly – appear to be highly effective in reducing risk among even very vulnerable, high risk men.
MSM Safer Sex Strategies
and Some Limitations
Non-condom Strategies

Withdrawal before ejaculation

Disclosure / Serosorting

Strategic positioning

Self / Partner testing

Treatment as prevention / undetectable viral load

Pre-exposure prophylaxis
Disclosure / Serosorting

Differences between HIV-negative and HIV-positive men
### Sexual behaviors (past 90 days)

<table>
<thead>
<tr>
<th></th>
<th>HIV+</th>
<th>HIV-</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anal sex partners (mean)</td>
<td>16.4</td>
<td>10.1</td>
<td>.000</td>
</tr>
<tr>
<td>Anal sex times</td>
<td>34.1</td>
<td>31.4</td>
<td>ns</td>
</tr>
<tr>
<td>UAI times</td>
<td>26.1</td>
<td>18.8</td>
<td>.020</td>
</tr>
<tr>
<td>HIV transmission risk times</td>
<td>12.9</td>
<td>18.8</td>
<td>.028</td>
</tr>
<tr>
<td>100% serosorter</td>
<td>29.7</td>
<td>47.9</td>
<td>.000</td>
</tr>
</tbody>
</table>
Discussion

HIV-positive men reported fewer transmission risk events than HIV-negative men.

HIV-negative serosorters believed that serosorting is effective: 83.5% said their chance testing HIV+ in the future was less than 50%, vs. just 56.5% of non-serosorters.
Discussion

The HIV-negative men in our sample reported rates of partner change and UAI that render serosorting an ineffective risk reduction strategy.

Intervention approaches for HIV-negative men should focus on partner reduction, condom use, partner testing, and perhaps PrEP.
Treatment as Prevention

Pre-exposure Prophylaxis
Diversion of ARVs

The widespread diversion of antiretroviral (ARV) medications to street markets has been documented in the US.

Emtricitabine/tenofovir (Truvada) is among the most frequently diverted ARV.

The non-prescribed use of Truvada for prevention has been documented among high risk MSM since at least 2009.
Diversion of ARVs

Non-adherence among diverters and unsupervised use of ARVs for PrEP increase risks of treatment failure, drug resistance, and disease transmission.

Of the HIV-positive men in our intervention study, 91.6% were receiving medical care; 79.1% were prescribed ARVs.

Of these, 27.5% reported ever selling/trading ARVs; 19.0% in the past year.
Diversion of ARVs among MSM

MSM who would most benefit from PrEP suffer high rates of substance use and have limited access to health care. These vulnerabilities render them less likely to have access to prescribed PrEP and medical supervision.
Diversion of ARVs among MSM

Reasons for diversion
- sharing/trading with friends (n=32, 62.7%)
- sale/trade for money/drugs (n=19, 37.3%)
- donated leftover medications (n=10, 19.6%)
- sale/trade of leftover medications (n=5, 9.8%)

ARV diverters, vs. non-diverters, were more likely to be substance dependent and have recently traded sex; and had lower ARV adherence.
Conclusion

- MSM are rapid adopters of new prevention technologies.

- MSM often adopt new technologies inconsistently, without a complete understanding of them, and/or without needed ongoing behavioral support.
Conclusion

- Prevention technologies for HIV-negative men also require continuous and frequent testing.

- Men who are unknowingly infected are the main drivers of the expanding epidemic among MSM in the US.
Conclusion

Effective strategies to reduce HIV incidence require both successful engagement with prevention technologies among HIV-negative men AND successful test, treat and retain strategies for HIV-positive men.
Thank you

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