Associations between frequent mental distress, perceived HIV stigma, and food insecurity among low-income HIV/AIDS patients: Implications for HIV care programs

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Presenter Disclosures

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(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

Consultant

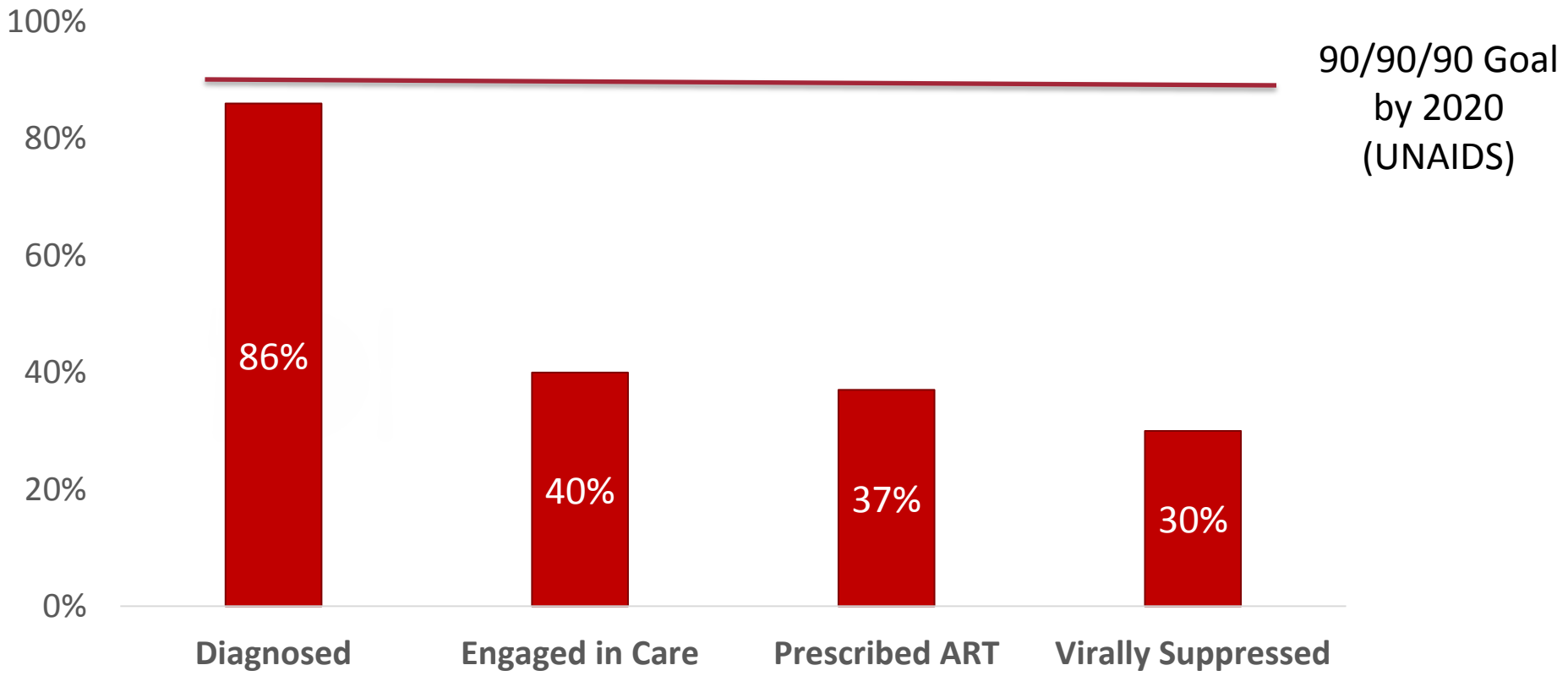
- Tulsa CARES, a social services organization delivering food and other forms of assistance to people with HIV/AIDS

Background

- Poor mental health, HIV stigma, and food insecurity are associated with HIV/AIDS risk behaviors and negative health outcomes, such as medication non-adherence.
- These conditions may cluster to produce patterns of social risk.
- No published studies have simultaneously explored the co-occurrence of frequent mental distress, perceived stigma, and food insecurity in resource-rich settings.

HIV Treatment Cascade, United States

In the U.S., 1.2 million people are living with HIV.
Of those:



Source: CDC National HIV Surveillance System and Medical Monitoring Project, 2011

BACKGROUND

Select Psychosocial Factors Affecting Engagement in Care

- **Mental Health[1-4]**
- **Stigma Compounded[5,6]**
- **Food Insecurity[7,8]**

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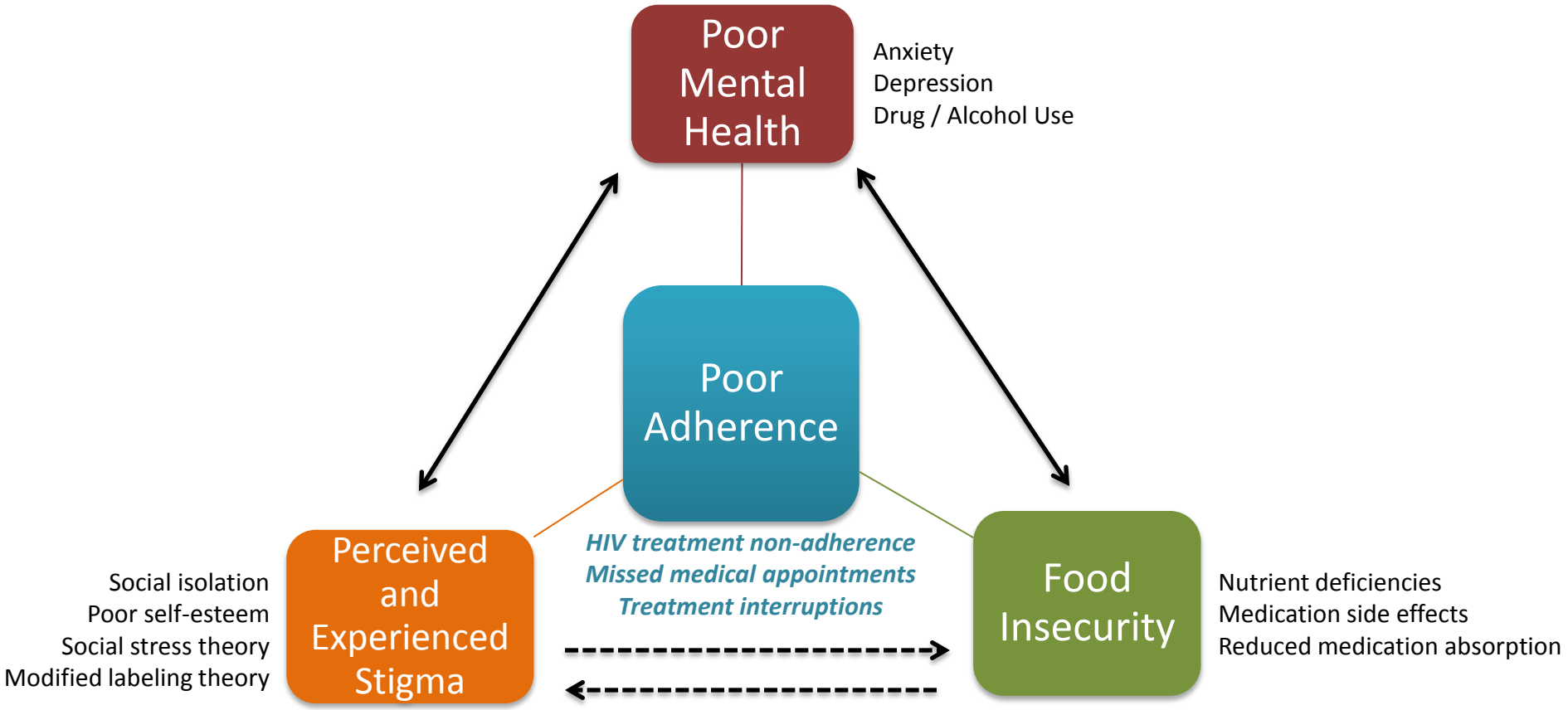
[1] Cook, J., et al. (2002), [2] Skalski, L. et al. (2015), [3] E Susser, E Valencia, and S Conover. (1993), [4] Richey, L. et al. (2014), [5]Peitzmeier, S., Grosso, A., Bowes, A., Ceesay, N., & Baral, S. (2015), [6]Tsai, A.C. (2015), [7]Wang, et al., (2011); [8]Weiser (2009)

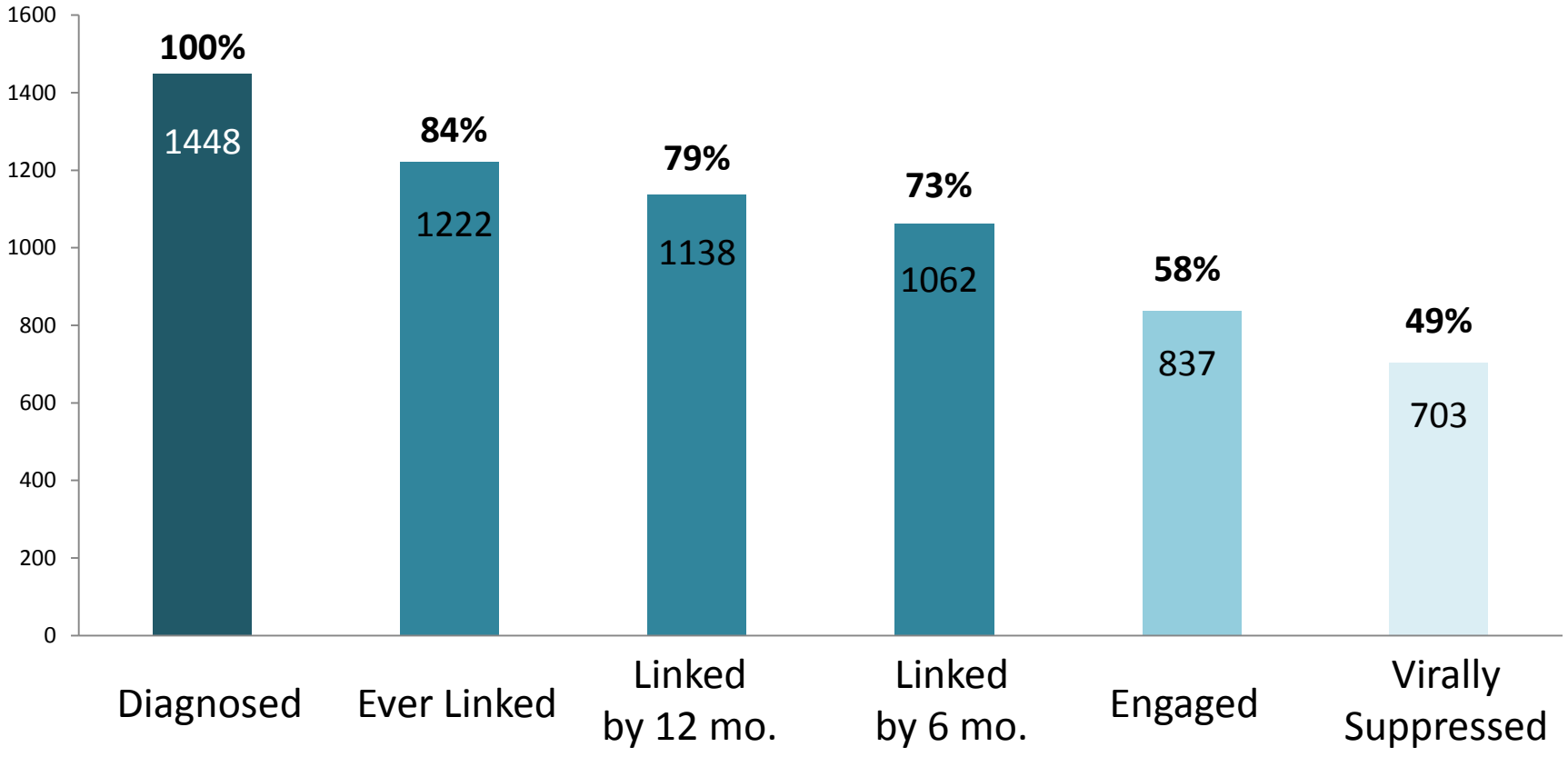
Conceptual Framework



HIV/AIDS in Oklahoma

Tulsa, Oklahoma

Oklahoma HIV Care Continuum, 2009-2013



Oklahoma State Department of Health, 2015

Research Questions

Among those receiving treatment for HIV/AIDS through Oklahoma's Ryan White system of care:

1. To estimate the proportion with self-reported food insecurity, frequent mental distress, and poor medication adherence,

2. To describe the distribution of perceived HIV stigma, and

3. To identify the associations between food insecurity, frequent mental distress, perceived HIV stigma, and medication adherence.

Study Design

- **Cross-sectional**
- **Participants (n = 164)**
  - Recruited at Ryan White service providers ("in-care")
  - Receiving both HIV/AIDS case management and medical care
- **$5 Wal-Mart gift card compensation**

Survey Instrument

- **Demographics**
  - age, gender, occupation, education, income, household size
- **Laboratory measures: CD4 and viral load; HIV/AIDS diagnosis date(s)** provided from patient chart
- **U.S. Adult Food Security Survey Module (10 item)**
- **Modified version of the Berger HIV Stigma Scale©[9]**
  - Enacted Stigma (formerly Personalized Stigma)
  - Disclosure Concerns
  - Negative Self–image
  - Concern With Public Attitudes
- **Medication Adherence (Self-Reported)[10]**
- **Physical and mental health (Self-Reported) – BRFSS**
- **Food assistance program use**

[9]Bunn, Solomon, Miller, Forehand (2007)
[10]Lu et al (2008)

Analyses

- **Descriptive statistics, bivariate correlations, Chi square, t-tests, and Mantel-Haenszel odds ratios**
- **Logistic regression**
  - Frequent mental distress and food insecurity (IVs) and adherence (DV)
- **Two-way ANOVA**
  - Frequent mental distress and food insecurity (IVs) and stigma (DV)
- **Conducted using SPSS 20.0**

Demographics

	Survey Participants (*N* = 164)	
	Number	Percent
Age	*M* = 45.8 (21-69), *SD* = 9.79	
13-24 years	2	1.2%
25-44 years	64	39.0%
45-64 years	95	58.0%
65+ years	3	1.8%
Gender		
Male	128	78.1%
Female	34	20.7%
Transgender	2	1.2%
Ethnicity		
Hispanic	11	6.7%
Non-Hispanic	153	93.3%
Race (Non-Hispanic)		
American Indian/Alaskan Native	16	9.8%
Asian	2	1.2%
Black / African American	33	20.1%
Native Hawaiian /Other P.I.	1	0.6%
White	86	52.4%
Other	1	0.6%
More than one race	14	8.5%

Slightly older than the Oklahoma Ryan White population

Representative of Oklahoma's Ryan White population according to gender, race, ethnicity

Demographics

	Survey Participants (*N* = 164)	
	Number	Percent
Ryan White Service Area		
Eastern Oklahoma	134	81.7%
Western Oklahoma	30	18.3%
Education		
≤ 8th grade	5	3.0%
Grade 9-11	17	10.4%
High school or GED	40	24.4%
Vo-Tech or skilled labor degree	18	11.0%
Some college	57	34.8%
Associate or bachelor degree	25	15.2%
Master or doctoral degree	2	1.2%
Income Level		
0-100% FPL	94	57.7%
>100% FPL	69	42.3%
HIV/AIDS Status		
Years since diagnosis	*M* = 11.6 (0.25-32.5), *SD* = 8.04	
HIV only	72	43.9%
HIV with AIDS	92	56.1%
Viral Load ≤ 199 copies/mL	129	78.7%
CD4 count cells/μL	*M* = 580.4, *SD* = 351.34	

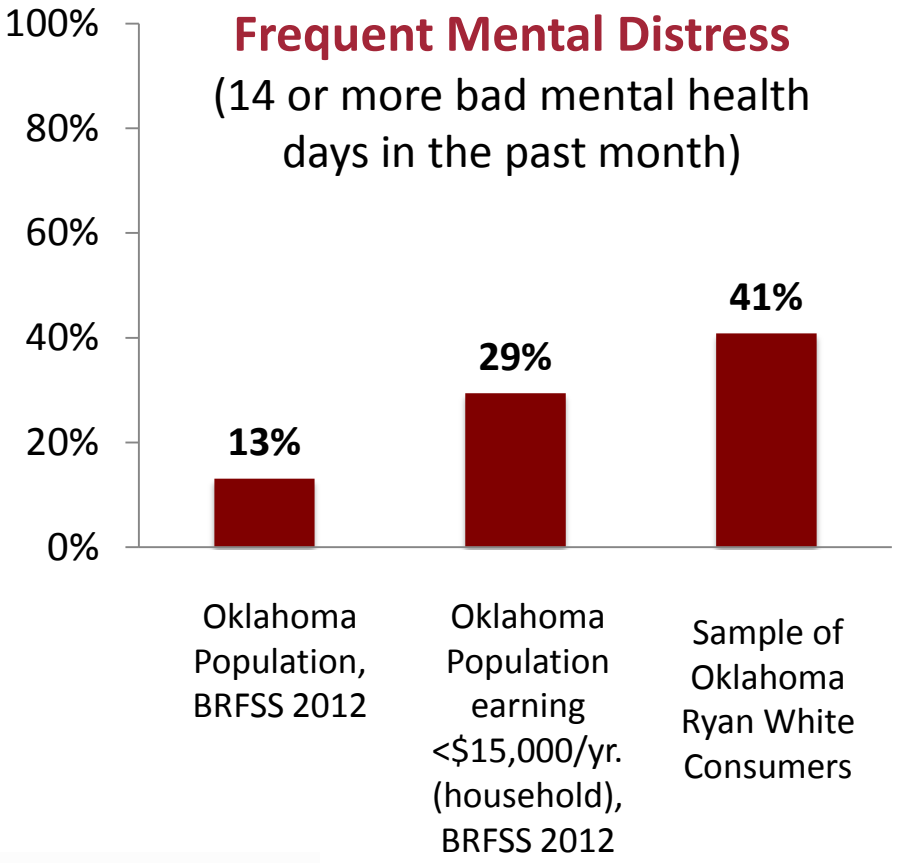
Greater representation of the Eastern Oklahoma Ryan White population

Representative by income

More likely to have an AIDS diagnosis compared to Oklahoma Ryan White population

RESULTS

Frequent Mental Distress



Average Bad Mental Health Days, State Average: **4.3 days**

Average Bad Mental Health Days, Study Sample: **14.4 days**

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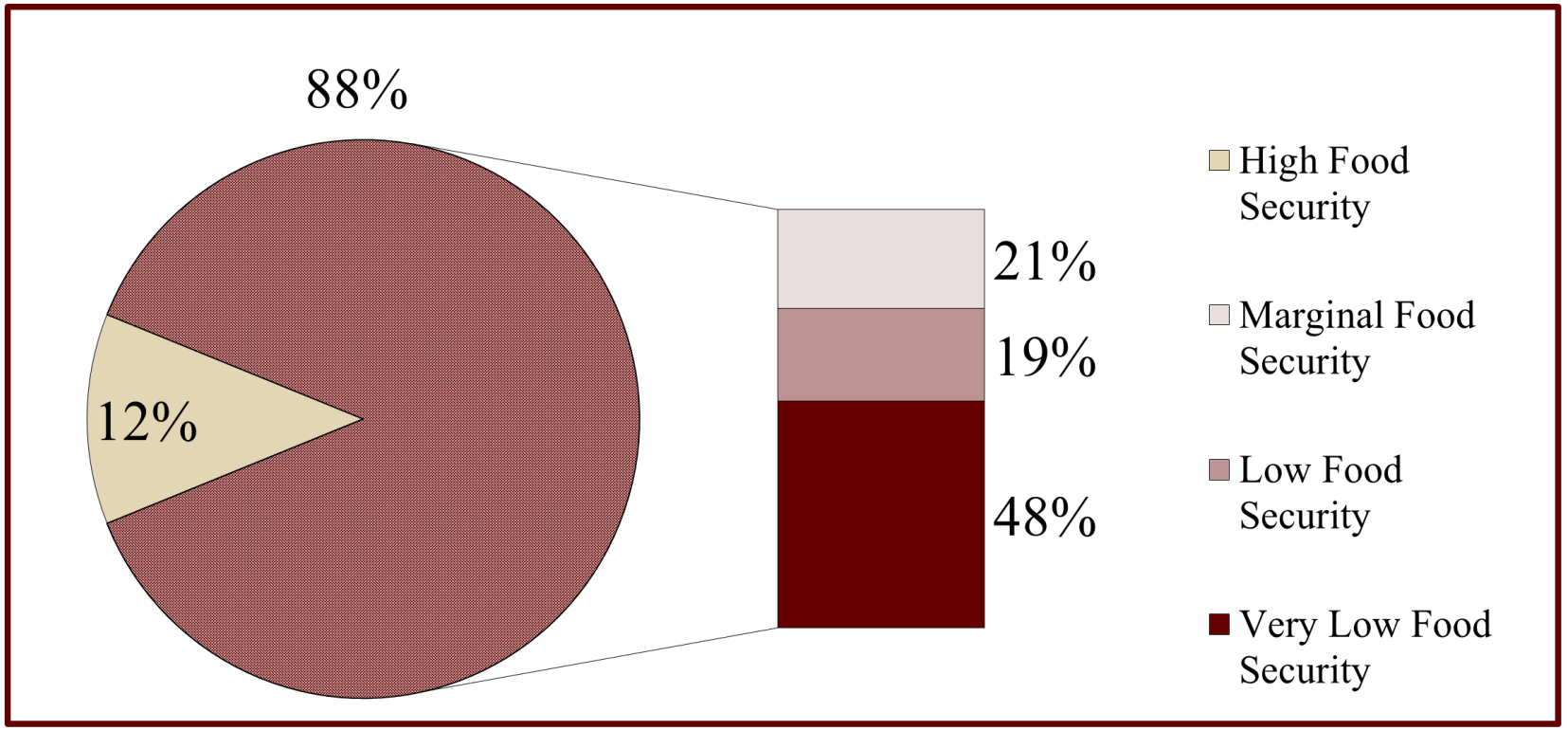
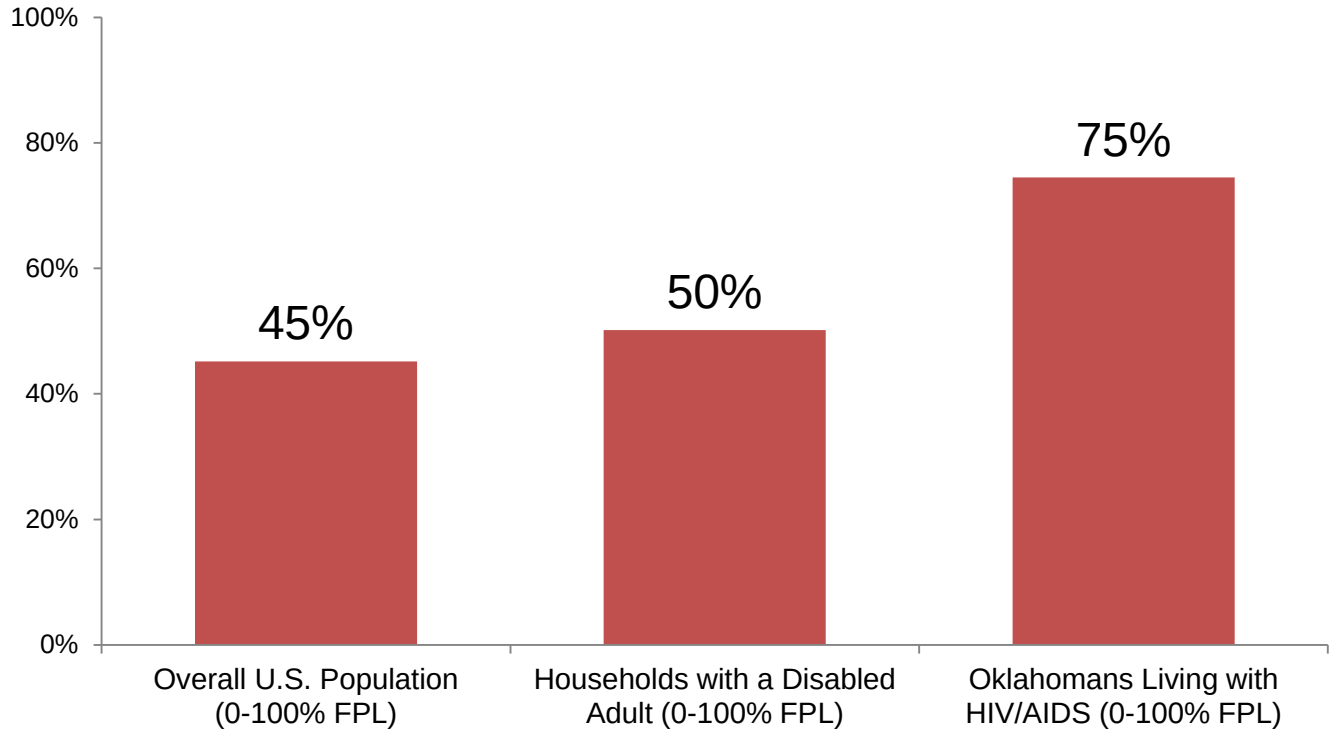
Food Security Status



USDA Classifications for Food Security

RESULTS

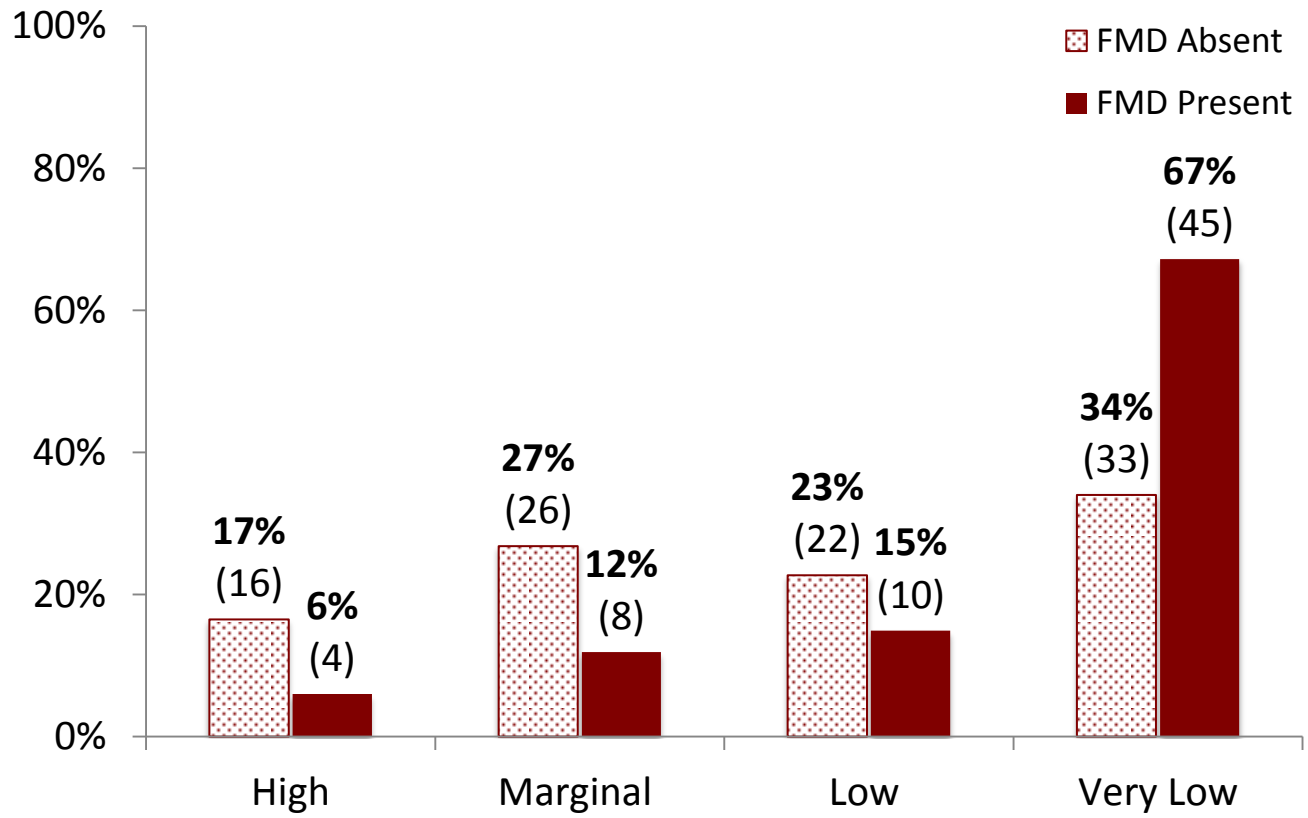
Food Insecurity among Very Low Income Participants



Prevalence of food insecurity among different low-income populations.
From: Coleman-Jensen, A., & Nord, M. (2013). *Food insecurity among households with working-age adults with disabilities* and Coleman-Jensen, A., Nord, M., Andrews, M., & Carlson, S. (2012). *Household food insecurity in the United States 2011.* Washington, D.C.: United States Department of Agriculture, Economic Research Service.

RESULTS

Frequent Mental Distress & Food Security



Patients with FMD had 3.5 times the odds of being food insecure, OR = 3.5, 95% CI [1.7, 7.4]

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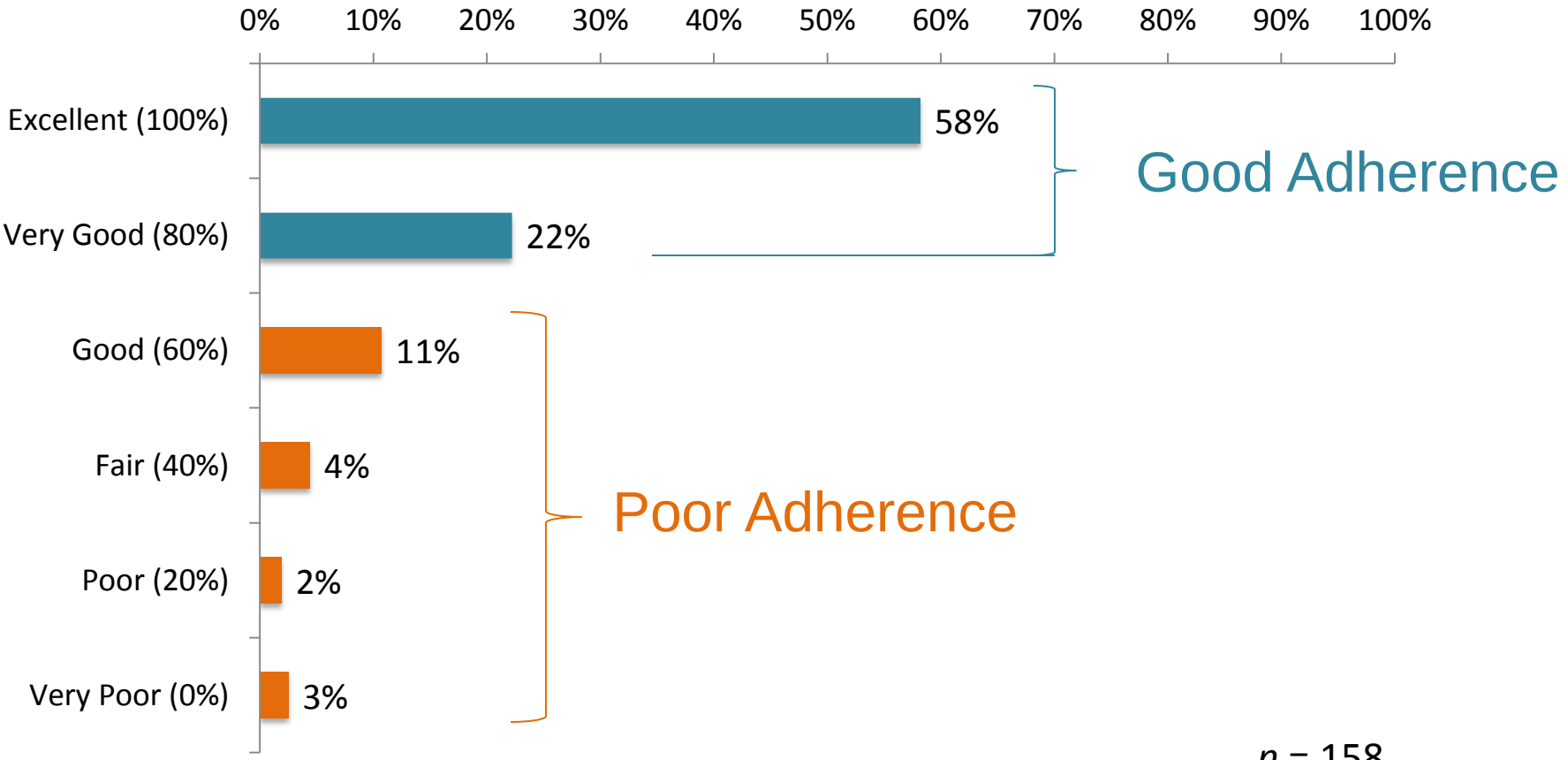
Medication Adherence



n = 158

RESULTS

Factors Associated with Poor Adherence

- **Participants with poor adherence were disproportionately affected by:**
  - Food insecurity, X^2 (1, *n*=158) = 6.99, p = .008
  - Frequent mental distress, X^2 (1, *n*=158) = 10.33, p = .001
  - These conditions were not independently related:
    - People with frequent mental distress were also more likely to experience food insecurity, OR = 3.5, 95% CI = 1.7, 7.4

Factors Associated with Poor Adherence

- **When the influence of food insecurity and frequent mental distress (FMD) on adherence was explored simultaneously,**
  - FMD remained a significant predictor of poor adherence, $p = .013$, while the effect of food insecurity dropped just out of significance, $p = .059$.
  - This suggests that part of the adherence relationship for food insecurity and FMD is shared.

RESULTS

Adherence, Food Security, and FMD: Stigma Differences

Stigma (Theoretical Low-High)	Adherent (n=126)	Non-Adherent (n=31)	Food Secure (n=54)	Food Insecure (n=109)	FMD Absent (n=96)	FMD Present (n=67)
Total Stigma (32-128)	82.0	89.0	76.5	**87.2****	80.2	**88.6***
Disclosure Stigma (8-32)	23.3	23.8	22.1	**24.1***	22.9	24.2
Self-Image Stigma (7-28)	15.9	**18.0***	14.8	**16.9****	15.1	**17.7****
Public Attitudes Stigma (6-24)	16.7	18.2	15.8	**17.7****	16.5	**17.9***
Enacted Stigma (11-44)	26.2	28.9	23.9	**28.5****	25.7	**28.8***

*$p < .05$ **$p < .01$

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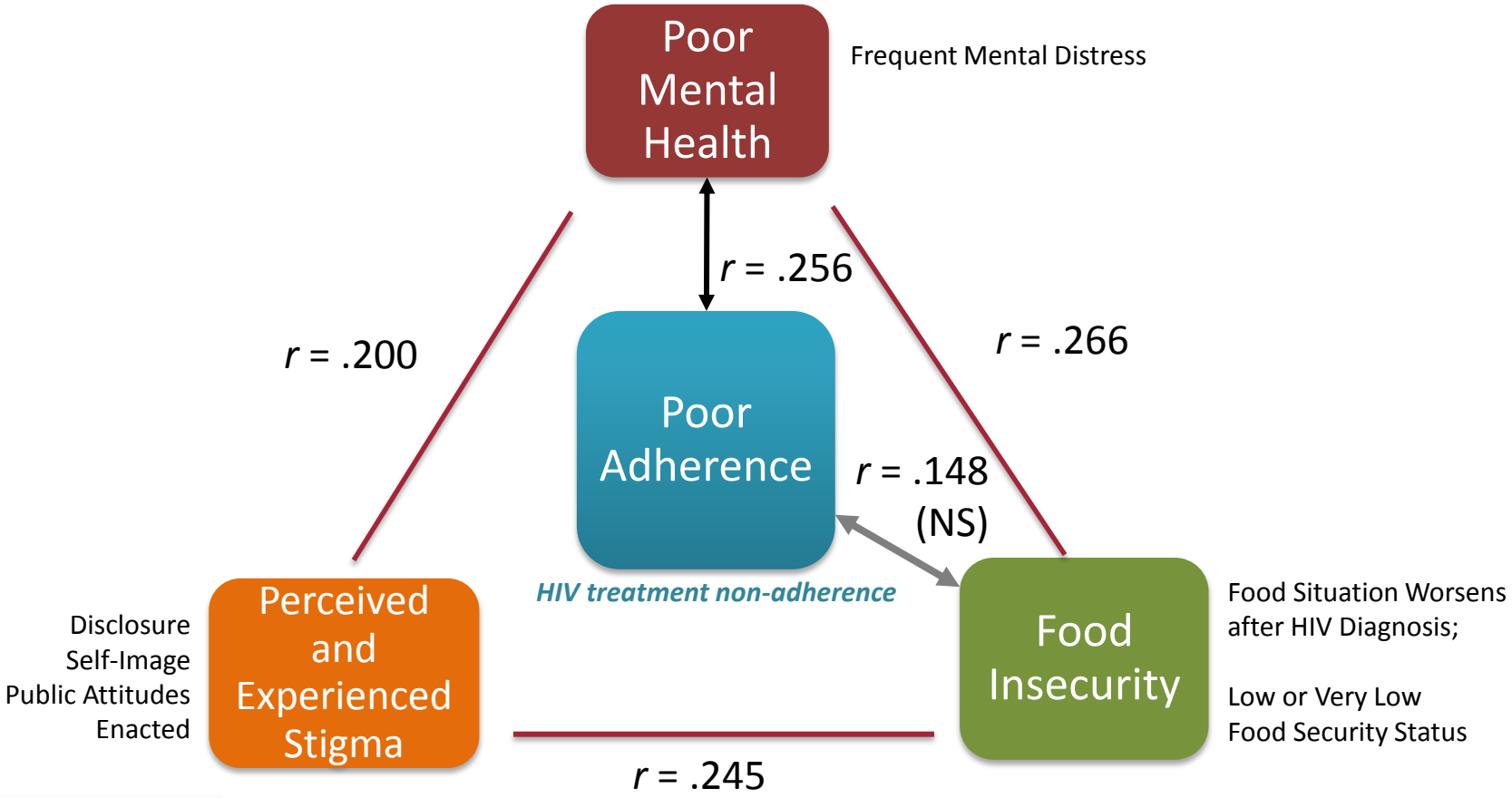
Stigma Analyses

- When testing for an interaction effect of frequent mental distress and food insecurity on perceived HIV stigma, only the main effect of food security remained significant, $F(1,159) = 10.332$, $p = .002$.
- Total stigma scores were greater for food insecure persons (M = 87.2) than for those who are food secure (M = 76.5).
- Additional analyses using MANOVA identified disclosure, public attitudes, and enacted stigma as being influenced by food security status.

Theoretical Framework: Clustered Patterns of Social Risk



Considerations

- For any chronic illness that requires medication adherence, food insecurity and frequent mental distress are possible risk factors for poor adherence.
- Specific to HIV, the element of perceived stigma may worsen food insecurity, and possibly mental distress, for reasons such as limited perceived social support or fear of HIV discovery by others when seeking food assistance.

DISCUSSION

Implications for Food & Nutrition Care Providers

- Providers working with food insecure populations should screen for frequent mental distress and link clients to mental health professionals.
- Improving food security through structural interventions (housing, employment) rather than giving food episodically may help reduce frequent mental distress and improve adherence over the long-term.

DISCUSSION

Implications for Medical and Social Service Providers

- Often identified as a barrier to linkage, FMD was also common for patients currently linked and engaged in care.
- FMD was associated with higher levels of perceived HIV stigma, poor adherence, and food insecurity.
- Therefore, HIV medical and social service providers should implement routine mental health and food security screening strategies consistent with IOM recommendations, which may improve treatment cascade outcomes.

DISCUSSION

Implications for Medical and Social Service Providers

- **Our findings reinforce the benefit and necessity of treating the whole person.**

- **Integrating mental health and nutrition services into primary care delivery may improve engagement and retention in care.**

- **Ryan White utilization**[11]
  - 60% outpatient ambulatory medical care
  - 14% mental health services
  - 11% food bank assistance

[11] *2010-2012 Ryan White Services Data Report*, HRSA HIV/AIDS Bureau

Future Research

- **Social support is an important potential facilitator for engagement in care by improving:**
  - Mental health
  - Food security (food access)
  - Social isolation/stigma[12]
    - Disclosure is a coping mechanism
    - Relationships as motivators to facilitate and remain engaged
  - Appointment attendance
- **The irony is that HIV disclosure is often a prerequisite for social support, thus those who stand to benefit from social support the most are the least likely to disclose.**
- **The role of social support and social integration on patient engagement should be explored further.**
  - Social support results in decreased perceived stigma and depression.[13,14]

[13]S.M. Asch, A.M. Kilbourne, A.L. Gifford, M.A. Burnam, B. Turner, M.F. Shapiro, et al. (2003); [14]Vyavaharker, M., et al. (2009); [12]McDoom et al, 2015

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Thank You

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