Telemedicine Counseling Intervention for Rural HIV Patients with Comorbid Depression, Anxiety and Substance Use Issues

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Disclosure: The authors have no financial or other conflicts of interest to declare
OBJECTIVES

• BACKGROUND STATISTICS ON AND SCREENING FOR MENTAL HEALTH AND SUBSTANCE USE ISSUES IN PLWH.

• DEVELOPMENT AND TESTING OF A MULTI-LEVEL PROGRAM FOR PLWH WITH MENTAL HEALTH AND/OR SUBSTANCE USE ISSUES TO SUPPORT AND IMPROVE MEDICATION ADHERENCE AND RETENTION IN HIV CARE AMONG PLWH, USING:
  • (1) PEER EDUCATION AND SUPPORT AND
  • (2) MENTAL HEALTH AND SUBSTANCE ABUSE GROUP COUNSELING VIA TELEMEDICINE VIDEOCONFERENCING

• HOW TELEMEDICINE CAN ALSO BE USED IN HIV PREVENTION COUNSELING, INCLUDING COUNSELING FOR PRE-EXPOSURE PROPHYLAXIS (PREP).
At the end of 2015, an estimated 1.2 million persons aged ≥13 years were living with HIV infection in the US, including an estimated 161,200 (13%) persons whose infections had not been diagnosed.

Southern states account for 44% of all people living with HIV in the US, despite the south only having 37% of the US population.
BACKGROUND: HIV IN ALABAMA

- In 2013, 12,025 (diagnosed) PLWH in Alabama
  - HIV diagnosis rate was 297 (per 100,000)
  - 72% men and 28% women
  - 65% Black, 28% White, and 3% Latino
  - Number of deaths was 288
  - Rate of deaths was 7 (per 100,000)
BACKGROUND: DEPRESSION & SUBSTANCE ABUSE IN PLWH

- PEOPLE LIVING WITH HIV (PLWH) MORE LIKELY THAN THOSE IN THE GENERAL POPULATION TO
  - EXPERIENCE DEPRESSION AND ANXIETY
  - HAVE A HISTORY OF SUBSTANCE ABUSE,

- PEOPLE LIVING WITH HIV (PLWH) LESS LIKELY TO
  - ACCESS TREATMENT, ESPECIALLY IN THE RURAL SOUTH.
BACKGROUND: TELEMEDICINE IN PLWH

- Few Studies Have Used Telemedicine Interventions In PLWH

- One Study Examined The Use Of Telemedicine In PLWH And Showed
  - 85% Satisfaction Rates,
  - Improved Care
  - Improved Health Outcomes: HIV Viral Load, CD4 Cell Counts And ART Adherence Rates.
WHAT IS TELEMEDICINE?
RATIONALE FOR STUDY

• SUBSTANCE ABUSE AND MENTAL ILLNESS ARE MAJOR RISK FACTORS FOR HIV TRANSMISSION AND MAY CHALLENGE PLWH’S ENGAGEMENT IN THE HIV CARE CONTINUUM
  • WHICH IS CRITICALLY NEEDED TO DECREASE HIV VIRAL LOAD (VL) AND TRANSMISSION.

• THUS, INTERVENTIONS WHICH BETTER ADDRESS CO-EXISTING HIV/AIDS AND SUBSTANCE ABUSE AND/OR MENTAL ILLNESS ARE NEEDED,
  • PARTICULARLY IN RURAL SETTINGS, SUCH AS IN THE DEEP SOUTH.
STUDY PURPOSE

- To develop and evaluate a multilevel approach, using
  - Professional group counseling
  - Via telemedicine and
  - Peer support
PROJECT GOALS

• THIS PROJECT WILL HELP ADDRESS THE NATIONAL HIV/AIDS STRATEGY (NHAS), GOAL 2C
  • TO “INCREASE ACCESS TO CARE AND IMPROVING HEALTH OUTCOMES FOR PLWH BY SUPPORTING COMPREHENSIVE, COORDINATED, PATIENT-CENTERED CARE FOR PLWH, INCLUDING ADDRESSING HIV-OCCURRING CONDITIONS AND CHALLENGES MEETING BASIC NEEDS.”

• TO IMPROVE MENTAL HEALTH, SUBSTANCE ABUSE AND HIV OUTCOMES, INCLUDING HIV TREATMENT ADHERENCE, IN PLWH IN FOUR WEST ALABAMA COUNTIES: TUSCALOOSA, WALKER, SUMTER, PICKENS AND HALE.
Figure 1. Study Schema

Phase I (0-6 months)
Develop Multilevel HIV program (based on preliminary studies)

Feedback from experts/clinicians (Evaluation form)
Focus Group & evaluation form (n=10)

Evaluation of Phase I Outcomes
Qualitative analysis of Key themes and ideas
Recruitment, eligibility, satisfaction rates & feedback/responses

Revise Multilevel HIV Program & Manual

Screening for mental health/substance abuse issues

Phase II (6-20 months)
Enroll n=50 PLWH & Pilot Test Multilevel HIV Program & Manual

Multilevel HIV Program Telemedicine Group n=50
12 bi-weekly sessions: HIV treatment adherence, mental health, coping, substance use

Examples of Outcome Measures
Depression & Anxiety (self-report PHQ), substance use (AUDIT, DAST)
Antiretroviral Therapy Adherence (self-report)
HIV care ‘Retention’, HIV-RNA PCR, CD4 count (record review)
Feasibility/Acceptance/Satisfaction (End of study evaluation form)
Moderators: session attendance
Mediators: Self-efficacy for ART Adherence
Self-efficacy for depressive or anxious symptom self-management
PHASE 1, INCLUDED DEVELOPMENT OF (1) A PEER LEADERSHIP DEVELOPMENT PROGRAM; AND (2) SUBSTANCE ABUSE AND MENTAL HEALTH SUPPORT GROUPS, VIA TELEMEDICINE, BASED ON:

- PREVIOUS STUDIES
- GUIDELINES FROM THE SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION (SAMHSA),
- THE NATIONAL INSTITUTE FOR DRUG ABUSE
- AMERICAN ASSOCIATION OF TELEMEDICINE (ATA)

- EACH GROUP SESSION CO-LED BY AN IN-PERSON PEER LEADER (PL) AND A LICENSED PROFESSIONAL COUNSELOR (LPC) VIA TELEMEDICINE.

- A PEER LEADER AND STUDY TEAM MEMBER PRESENT AT EACH SITE’S GROUP SESSION AND WILL CONNECT THE LPC TO THE SESSION VIA VIDEOCONFERENCE.
STUDY DESIGN/PROCEDURES

• **Phase 1**, Also Included 3 **Focus Group Sessions**

• To Assess Initial Reactions To The Proposed Program, We Sought Input From PLWH Via Focus Groups (FG), After Receiving Input From Experts Via Informal Review And Feedback.
  - Subjects Screened In-person Or Via Telephone Using A Screening Form (Described Below) And Asked To Provide Written Informed Consent.
  - They Were Compensated $25 For Their Time.
  - We Enrolled 15 PLWH (With Depression/Anxiety and/or Substance Abuse) On ART And Asked Them To Attend A 2-hour Focus Group, With Mock Sessions.
  - The FG Audio Taped And Transcribed.
  - They Were Asked To Rate The Program And Provide Suggestions For Improvement.
  - The Program Updated As Necessary
PEER LEADER TRAINING

- HIV PEER LEADER AND ADVOCACY MANUAL DEVELOPED BY DR. FOSTER, WITH HELP FROM STUDENT RESEARCH ASSISTANTS

- 4 HIV+ PEER LEADERS SELECTED AND TRAINED

- THE PIS, CO-INVESTIGATORS, 3 STUDENT RESEARCH ASSISTANTS AND THE LPC ATTENDED THE TRAINING
STUDY PROCEDURES: PHASE 2

• SCREEN ABOUT 150 PLWH TO IDENTIFY MENTAL HEALTH AND SUBSTANCE USE ISSUES AND INVITE 50 WHO MEET CRITERIA TO PARTICIPATE IN PHASE 2 OF THE PROGRAM.
SETTING & SAMPLE RECRUITMENT

- PLWH RECRUITED FROM AN AIDS SERVICE ORGANIZATION AND AN HIV CLINIC

- PLWH RECRUITED USING:
  - 1) A STUDY FLYER POSTED/DISSEMINATED AT EACH SITE;
  - 2) DIRECT RECRUITMENT/REFERRAL OF CLIENTS BY ASO AND HIV CLINIC STAFF THROUGH THEIR CLINICAL AND OUTREACH PROGRAMS
ELIGIBILITY: INCLUSION

• **Phase 1 Eligibility** Criteria Are:
  • HIV+;
  • 18-85 Years;
  • English Speaking;
  • Report Depressive Or Anxiety Symptoms and/Or Substance Abuse
  • Willing To Participate In Study Procedures

• **Phase 2 Eligibility** Criteria Are:
  • 1) Meets Criteria For Risk Of Depression, Anxiety And/Or Substance Abuse Or Dependence On Phq, Audit And Dast-10;
  • 2) Currently On ART And Self-report Less Than 100% Adherence.
  • Eligible PLWH Asked To Provide Written Informed Consent.
ELIGIBILITY: EXCLUSION

EXCLUSION CRITERIA ARE:

• SIGNIFICANT COGNITIVE IMPAIRMENT (MINI-MENTAL STATUS EXAM SCORE [MMSE] < 16);
• CURRENT MENTAL HEALTH/ADDICTION COUNSELING OR WITHIN PAST TWO MONTHS.
• CURRENT SUICIDAL IDEATIONS AND PSYCHOTIC BEHAVIOR, SINCE THESE MAY NEGATIVELY AFFECT THEIR ABILITY TO SAFELY PARTICIPATE IN GROUP THERAPY.

PATIENTS WITH SERIOUS PROBLEMS WILL BE REFERRED IMMEDIATELY TO A MENTAL HEALTH CLINICIAN ON SITE.
DATA COLLECTION & ANALYSIS

**PHASE I**
- Computerized surveys analyzed using SPSS statistical software version 23
- NVivo 11 software (QSR International) used to analyze qualitative data

**PHASE 2:**
- Data is collected at four time periods, during screening, pre-intervention, post-intervention, and 3 months post-intervention
- Data include computerized surveys on demographics, mental health, substance use, coping, HIV medication adherence, and self-efficacy
- Lab reports of data on CD4 count and HIV viral load are obtained and clinic appointment attendance from medical records
- Study outcomes will be examined using repeated measures analysis of covariance (ANOVA) in SPSS version 24 and mixed ANOVA models will examine the effect of the intervention
<table>
<thead>
<tr>
<th>Primary Outcomes</th>
<th># of items</th>
<th>Measure</th>
<th>Notes</th>
<th>Data Collection</th>
<th>Sample</th>
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<tbody>
<tr>
<td>Depression &amp; Anxiety</td>
<td>9</td>
<td>PHQ78, 79 and PHQ-980-83</td>
<td>Diagnostic instrument</td>
<td>T0, T1, T2</td>
<td>PLWH</td>
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<tr>
<td>Alcohol Use/Abuse</td>
<td>10</td>
<td>AUDIT84</td>
<td>Risk/actual; $\alpha = 0.85$</td>
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<td>PLWH</td>
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<tr>
<td>Drug use/Abuse</td>
<td>10</td>
<td>DAST-1085</td>
<td>Drug abuse; $\alpha = .94$</td>
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<tr>
<td>Acceptability, satisfaction, feasibility of procedures/program</td>
<td>TBD</td>
<td>End of study evaluation survey</td>
<td>Eval of procedures and each session</td>
<td>FG, T2</td>
<td>PLWH, PL</td>
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<tr>
<td>Secondary Outcomes</td>
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<tr>
<td>ART- Adherence (reasons missed)</td>
<td>30</td>
<td>ACTG99</td>
<td>$\alpha = 0.80 - 0.91$; past 30 days</td>
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<td>ART- Adherence (ease of taking)</td>
<td>5</td>
<td>AGAS86</td>
<td>ART in past 4 weeks; $\alpha = .86$</td>
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<td>CD4 T-cell counts</td>
<td>N/A</td>
<td>Record review</td>
<td>Good $&gt;200$</td>
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<td>HIV Viral load</td>
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<td>Suppression: $&lt;200$ copies/mL</td>
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<td>NHAS definition</td>
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<td>Sociodemographics &amp; HIV history</td>
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<td>i.e. race, years+</td>
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<td>HIV Knowledge</td>
<td>18</td>
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<td>Chronic disease self-management</td>
<td>13</td>
<td>PAM88</td>
<td>$\alpha=.81$; 0–100 scale</td>
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<td>PLWH</td>
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<tr>
<td>Coping</td>
<td>28</td>
<td>Brief COPE 89</td>
<td>1 (didn't) to 4 (did)</td>
<td>T1, T2</td>
<td>PLWH</td>
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<td>Self-efficacy for ART adherence</td>
<td>19</td>
<td>ASES90</td>
<td>$\alpha = .83$</td>
<td>T1, T2</td>
<td>PLWH</td>
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<tr>
<td>Self-efficacy for HIV Care</td>
<td>1</td>
<td>HCES</td>
<td>0-100 scale</td>
<td>T1, T2</td>
<td>PLWH</td>
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<tr>
<td>Self-efficacy for managing depression or anxiety</td>
<td>1</td>
<td>SSES</td>
<td>0 (none) to 100 (extremely)</td>
<td>T1, T2</td>
<td>PLWH</td>
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<tr>
<td>Self-efficacy for substance abuse</td>
<td>1</td>
<td>SAMS</td>
<td>0 to 100</td>
<td>T1, T2</td>
<td>PLWH</td>
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<tr>
<td>Self-efficacy for HIV advocacy</td>
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<td>HASE</td>
<td>0-100 scale</td>
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<td>Medications</td>
<td>N/A</td>
<td>Medication form</td>
<td>N/A</td>
<td>T1</td>
<td>PLWH</td>
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</table>
PHASE 1 RESULTS: SAMPLE (N=16)

- 16 PLWH PARTICIPATED IN 1 OF 2 FOCUS GROUPS
- 1 IN TUSCALOOSA AND 1 IN SUMTER
- ALL PARTICIPANTS WERE HIV+ AND BLACK
PHASE 1 RESULTS: SAMPLE CHARACTERISTICS

- 93.8% (N=15) OF PLWH WERE ON DISABILITY OR UNEMPLOYED
- 75% (N=12) REPORTED PUBLIC SUPPORT AS THEIR MAIN SOURCE OF INCOME
- 75% (N=12) REPORTED INCOME <$20,000/YEAR;
- 75% (N=12) REPORTED HEALTH INSURANCE THROUGH MEDICARE/MEDICAID.
PHASE 1 FINDINGS

- Common Themes Included:
  - Barriers To Medication Adherence;
  - Benefits Of Peer Leadership, Benefits Of Telemedicine, Benefits Of Group Therapy
  - Protective and Resilience Factors (Social Support, Health Behaviors, Religion/Spirituality)
  - Poly-stigma Of Being Black, Gay, HIV+, & Living In The Rural South
- (37.5% Of Participants (N=6) Were Gay/Lesbian Or Bisexual)
PHASE 1 FINDINGS

MOST COMMON MENTAL HEALTH THEMES:
- DEPRESSION
- ANXIETY

SUBSTANCE USE THEMES:
- THE MOST COMMON SUBSTANCES USED INCLUDE
  - ALCOHOL
  - MARIJUANA
  - NICOTINE
- MOST PARTICIPANTS DISCUSSED SUBSTANCE ABUSE AND MENTAL ISSUES AS BARRIERS TO HIV TREATMENT ADHERENCE
  - SOME ADHERED TO MEDICINES DESPITE SUBSTANCE USE.
**PHASE 1 FINDINGS**

- **TELEMEDICINE THEMES:**
  - The majority of PLWH were not familiar with telemedicine.
  - Seeing a live demonstration improved PLWH’s understanding of telemedicine.
  - Participants believed that telemedicine could be a major benefit in rural settings.
  - FG participants discussed the importance of privacy and data security during telemedicine.

- Many FG participants identified transportation as a barrier to HIV care.
PHASE 1 FINDINGS

GROUP TYPE & GROUP THERAPY PREFERENCES:

- Participants felt that co-ed group would be the most beneficial
- Smaller group
- All participants were receptive to peer leaders as co-facilitators of group therapy
<table>
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<tr>
<th>VARIABLE</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
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<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
<td>7</td>
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<tr>
<td>Male</td>
<td>15</td>
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<td><strong>Race/Ethnicity</strong></td>
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<td>Black/African American</td>
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<td>95.5</td>
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<td>Separated/Divorced/Widowed</td>
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<td>Never Been Married</td>
<td>12</td>
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<td>Committed Relationship</td>
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<td><strong>Sexual Orientation</strong></td>
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<td>Heterosexual/straight</td>
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<tr>
<td>Gay/Lesbian</td>
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<td>45.5</td>
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<tr>
<td>Bisexual</td>
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<td><strong>Highest Education Level</strong></td>
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<td>Junior High or Middle School</td>
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<tr>
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<td>Missing/Didn’t Respond</td>
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<td>Other</td>
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<td><strong>Main Source of Income</strong></td>
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<td>Family/Other</td>
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<tr>
<td>Public Support (SSI, SSDI, TANF etc)</td>
<td>16</td>
<td>72.7</td>
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</table>
PHASE 2 FINDINGS: SUBSTANCE USE

❖ SUBSTANCE USE
  • ALCOHOL (68.2%, N=15)
  • MARIJUANA (54.5%, N=12)
  • “COCAINE OR CRACK” (13.6%, N=3)
  • CIGARETTES (45.5%, N=10)

❖ DESPITE REPORTS OF SUBSTANCE USE, MOST PARTICIPANTS SCORED LOW RISK FOR ALCOHOLISM AS ASSESSED BY THE AUDIT (N=16, 72.7%)
PHASE 2: MEAN SCORES

❖ MOST INDICATED MINIMAL OR MILD LEVELS OF DEPRESSION (N=11, 68.9%) ON THE PHQ

❖ OVERALL, RELATIVELY HIGH DEGREE OF HIV KNOWLEDGE, PER THE 18-ITEM HIV KNOWLEDGE QUESTIONNAIRE (M=15.1, SD=2.3)
  ❖ MOST PARTICIPANTS ANSWERING AT LEAST 75% OF QUESTIONS CORRECTLY (N=18, 81.8%)
  ❖ MANY ANSWERING AROUND 95% OR HIGHER CORRECTLY (N=9, 41%).
# Phase 2: Mean Scores

## HIV Knowledge, Drug Abuse, Alcohol Use and Depressive Symptoms

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Range (Min-Max)</th>
<th>N</th>
<th>%</th>
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<tr>
<td><strong>HIV- Knowledge</strong></td>
<td>15.1 (2.3)</td>
<td>10 (8-18)</td>
<td>22</td>
<td>-</td>
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<tr>
<td><strong>Drug use (DAST)</strong></td>
<td>0.50 (0.91)</td>
<td>3 (0-3)</td>
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<tr>
<td>None (Score 0)</td>
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<td>15</td>
<td>68.2</td>
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<tr>
<td>Low (Scores 1 to 2)</td>
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<td></td>
<td>5</td>
<td>22.7</td>
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<tr>
<td>Moderate to High (Scores 3 to 6)</td>
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<td></td>
<td>2</td>
<td>9.1</td>
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<tr>
<td><strong>Alcohol Use (AUDIT)</strong></td>
<td>3.9 (5.9)</td>
<td>21 (0-21)</td>
<td>22</td>
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<tr>
<td>Low Risk (Scores 0 to 7)</td>
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<td>16</td>
<td>72.7</td>
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<tr>
<td>Risky (Scores 8 to 21)</td>
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<td>27.3</td>
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<tr>
<td><strong>Depressive Symptoms (PHQ-With Missing)</strong></td>
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<td></td>
<td>16</td>
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<td>Minimal (Scores 1 to 4)</td>
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<td>5</td>
<td>31.1</td>
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<td>Mild (Score 5 to 9)</td>
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<td>6</td>
<td>37.8</td>
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<tr>
<td>Moderate to High (Scores 10 to 23)</td>
<td></td>
<td></td>
<td>5</td>
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IMPLICATIONS & POTENTIAL IMPACT

❖ NEED TO INCREASE AWARENESS ABOUT MENTAL HEALTH & SUBSTANCE USE ISSUES AND RESOURCES

❖ IMPORTANT TO STRENGTHEN PARTNERSHIPS FOR COMMUNITY ENGAGEMENT, CBPR AND IMPROVEMENTS IN HIV CARE AND CASE MANAGEMENT FOR PLWH

❖ NEED INTERVENTIONS FOR PLWH WITH MENTAL HEALTH/SUBSTANCE USE ISSUES

❖ TELEMEDICINE CAN ALSO BE USED IN HIV PREVENTION COUNSELING, INCLUDING COUNSELING FOR PRE-EXPOSURE PROPHYLAXIS (PREP).
IMPLICATIONS & POTENTIAL IMPACT

- CONTRIBUTE TO GAPS IN THE LITERATURE
- FACILITATE FUTURE RESEARCH
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THANK YOU!

ANY QUESTIONS?

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