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Mental Health Screening Practices Among Primary Care Providers in High HIV Burden Areas of the South: Does Having Patients with HIV Matter?

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Abstract

Mental health (MH) disorders are associated with HIV-related risk and health outcomes. Primary care providers (PCPs) conducting MH screenings can link persons living with HIV (PWH) to appropriate services, particularly in HIV burden areas of Southeastern States (the South). Little data exist on PCPs' MH screening practices. Depression, MH history, and substance use screenings among PCPs were examined in the South. Rao-Scott chi-square (χ^2 [df]) statistics (p 0.05) analyzed MH screening between PCPs with and without PWH patients. Compared with PCPs without PWH patients, PCPs with PWH patients routinely screened for substance use more frequently (50.6% vs. 43.2%; χ^2 [1] = 20.3; p G 0.0001). Compared with PCPs without PWH patients, PCPs with PWH patients routinely screened for depression less frequently (36.2% vs. 50.9%; χ^2 [1] = 32.0; p G 0.0001). Providers increasing MH screenings will improve HIV-related outcomes in the South.

Introduction

Persons living with HIV (PWH) or at elevated risk for acquisition of HIV may report co-existing mental health (MH) comorbidities that are associated with their transmission or acquisition risk, respectively.¹ For example, PWH who report MH comorbidities are more likely to report non-adherence to antiretroviral therapy (ART).² Such circumstances may increase the likelihood of having unsuppressed viral load among PWH and subsequently increase their risk of transmitting HIV to sexual partners.^{2, 3} Studies also show that

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condomless sex acts or sharing needles are more likely reported among persons with MH disorders such as depression or substance use.^{4, 5} Co-occurring MH problems are more pronounced in the Southeastern United States (here thereafter referred as “the South”), where HIV incidence and prevalence rates are disproportionately higher than other regions in the United States.⁶⁻⁹ In the South, specific populations such as African Americans, who represent the largest proportion of HIV diagnoses among all racial and ethnic groups,⁹ may also experience unique social and structural circumstances that negatively affect their MH. These combined factors consequently worsen the HIV-related risk and health outcomes of the vulnerable populations in the region.²

Routine MH screenings are effective clinical tools used to identify persons in need of mental health services regardless of their HIV status.¹⁰ Primary care providers (PCPs) are in advantageous positions to screen for multiple comorbidities, including MH disorders, which are associated with being at elevated risk or living with HIV, particularly among residents in the South.^{10, 11} For example, African Americans in the South are more likely to seek HIV-related services from PCPs rather than infectious disease specialists.¹² Furthermore, studies reveal little differences in the quality of care delivered between HIV specialists and PCPs who routinely care for PWH.¹³ PCPs also may be poised to increase screening coverage for MH comorbidities for vulnerable populations in the region to improve overall access to appropriate intervention services.¹⁰⁻¹² The occurrences and quality of MH screening practices are likely enhanced by related training experiences of providers.¹⁴ However, little data currently exist on their MH screening practices. Furthermore, there is unclarity if MH screening practices differ among PCPs who knowingly have patients who are PWH.

The focus of this paper is to identify current levels of routine MH screening practices among PCPs in high HIV burden locations in the South. Patterns will be identified of MH screening practices between PCPs who provide care for PWH and those who do not. This analysis can inform gaps in screening practices and provider training needs to improve the ability to identify co-existing MH needs for PWH and persons at increased risk for HIV.

Methods

Data source and study population

The Knowledge, Behaviors, Attitudes, and Practices (K-BAP) Study was an online survey of PCPs practicing in locations of the South with a high burden of HIV and a high proportion of African American residents. Between April and August 2017, the K-BAP survey was administered in six metropolitan statistical areas (MSAs) including Washington D.C., Baltimore, Miami, Atlanta, Baton Rouge, and New Orleans. The study surveyed three types of providers: physicians, nurse practitioners (NPs), and physician assistants (PAs).

The sampling frame of the study was derived from the IQVIA provider database,¹⁵ which includes a census of all currently active health care providers in the United States. The database includes extensive background information about providers including age, gender, practice location, and contact information. A multi-mode invitation system was used to field survey respondents.

Providers received a mail notification with a web link and unique survey password, followed by a postcard reminder approximately 2 weeks later. An email invitation was sent to arrive concurrently with the mail invitation, followed by three additional email reminders sent approximately one week apart. Providers who did not respond to the mail or email invitations received up to two reminder phone calls. Respondents who followed the survey link and provided informed consent were offered to complete the 56-item baseline survey.

Variables

Several measures were included in the analysis. The following provider characteristics were examined: gender (male/female); race (white/other); age (< 40, 40–49, 50–59, 60); provider type (physician/nurse practitioner/physician assistant); patient caseload of men who have sex with men (MSM) (≥ 10% MSM, < 10% MSM); and providing primary care for at least one PWH (yes/no). Measures of screening and clinical practices included the following: obtaining patient mental health history (yes/no); routine substance use screening (yes/no); routine depression screening (yes/ no); offering HIV testing (yes/no); and providing condoms (yes/no). Measures of uptake and self-report assessment of provider training included the following: received substance use training (yes/ no); received depression training (yes/no); self-assessing substance use training as excellent (yes/ no); and self-assessing depression training as excellent (yes/no).

Statistical analysis

Study data were weighted to account for selection probability, nonresponse, and sampling differences between MSAs. All analyses were performed using the SAS (SAS Institute Inc., Cary, NC) statistical package.¹⁶ Weighted frequencies were calculated for all variables to explore the provider and clinical characteristics of the sample. Weights were applied based on the total known population of providers within the selected MSAs and weighted on MSA and provider type. The population data were drawn from IQVIA's census data of providers. A four-stage weighting process was used, including base weights (inverse of the probability of selection), nonresponse weights, and post-stratification weights. These were then combined into the final weight, which was applied to all results. Rao-Scott chi-square statistics with associated degrees of freedom (df), *p* values, and 95% confidence limits were calculated to evaluate the differences between two distinct groups: (1) PCPs with PWH patients and (2) PCPs with no PWH patients. The differences between these two groups were considered statistically significant if there was no overlap between the confidence limits.

Results

A total of 820 PCPs were included in the study between April and August 2017. Table 1 provides a descriptive summary based on the weighted distribution of the selected measures of the study. In the weighted dataset, most PCPs were female (59.0%), white (70.2%), and aged 40 years or younger (34.8%). Also, most PCPs were physicians (75.3%), had less than 10% MSM patient caseload (74.7%), and provided primary care for at least one HIV patient (61.9%). For MH screening and other clinical practices, 47.0% routinely screened for substance use, 40.7% conducted routine depression screening, 33.6% routinely obtained

mental health history, 84.4% offered HIV screening at the practice, and 79.4% did not offer condoms at practice. For uptake and self-assessment of provider training, 96.9% of all PCPs reported substance use training with 29.6% of this specific sample perceiving their substance use training experience as excellent. For depression training, 97.3% of PCPs reported uptake with 27.8% of this specific sample perceiving their training experience as excellent.

Table 2 illustrates the differences in routine MH screening practices, provider characteristics, clinical practice characteristics, and training experiences between two groups of providers: PCPs who have PWH patients ($n = 465$) and PCPs with no PWH patients ($n = 262$).

Compared with PCPs without PWH patients, PCPs with PWH patients were more frequently male (49.6% vs. 26.6%, $\chi^2[1] = 40.7$; $p < 0.0001$); less frequently white (62.9% vs. 81.1%, $\chi^2[1] = 5.6$; $p = 0.02$); equally young (30.5% vs. 23.7%, $\chi^2[2] = 2.5$; $p = 0.4767$); with the same proportion of physicians (75.6% in both groups; $\chi^2[2] = 1.6$; $p = 0.4474$); and less frequently to have a $< 10\%$ MSM caseload (62.4% vs. 87.8%, $\chi^2[1] = 49.4$; $p < 0.0001$).

Compared with PCPs without PWH patients, PCPs with PWH patients equally obtained mental health history (31.7% vs. 39.4%, $\chi^2[1] = 1.7$; $p = 0.1891$); more frequently screened for substance use routinely; less frequently screened for depression routinely (50.6% vs. 43.2% and 36.2% vs. 50.9%, $\chi^2[1] = 20.3$; $p < 0.0001$ and $\chi^2[1] = 32.0$; $p < 0.0001$, respectively); and equally offered HIV testing (84.1% vs. 83.3%, $\chi^2[1] = 0.0$; $p = 0.8882$). Compared with PCPs without PWH patients, PCPs with PWH patients equally provided condoms (22.2% vs. 18.0%, $\chi^2[1] = 2.0$; $p = 0.1538$).

Compared with PCPs without PWH patients, more frequently, PCPs with PWH patients received substance use and depression training (98.3% vs. 95.0% and 99.1% vs. 95.2%, $\chi^2[1] = 4.0$; $p = 0.0458$ and $\chi^2[1] = 9.9$; $p = 0.0016$, respectively). Compared with PCPs without PWH patients, more frequently, PCPs with PWH patients perceived their substance use training as excellent (37.2% vs. 20.0%; $\chi^2[1] = 24.0$; $p < 0.0001$). Compared with PCPs without PWH patients, PCPs with PWH patients equally viewed their depression training as excellent (29.2% vs. 26.8%; $\chi^2[1] = 0.1$; $p = 0.7379$, respectively). Compared with PCPs without PWH patients, more frequently, PCPs with PWH patients received substance use and depression training (98.3% vs. 95.0% and 99.1% vs. 95.2%, $\chi^2[1] = 4.0$; $p = 0.0458$ and $\chi^2[1] = 9.9$; $p = 0.0016$, respectively).

Discussion

This study examined MH screening practices, provider characteristics, clinical practices, and training experiences among PCPs in the South. Overall, it was found that most PCPs in the South did not conduct routine MH screening. These findings reflect other studies reporting low MH screening practices and related training uptake among PCPs for depression,^{1, 10, 17, 18} substance use,^{1, 7, 18} and obtaining MH history.^{1, 11} Although not examined in the current study, barriers such as lack of quality training, limited time, external resources, and lack of third-party reimbursement may contribute to these overall low MH screening practices.^{19, 20}

These analyses also revealed that PCPs with PWH patients routinely screened for depression less frequently compared with PCPs without PWH patients, similar to other study findings.^{1, 21} According to national estimates from the depression treatment cascade, half of all cases of depression are identified clinically.²¹ Moreover, African Americans are less likely to be diagnosed with depression.²¹ Due to the high proportion of African Americans in high HIV burden areas in the South, it is imperative that PCPs practicing in this region increase efforts to routinely screen for depression.²¹ Given that depression symptomology is associated with non-suppressed HIV infection, routine screening should be conducted by all PCPs, but especially those practicing in high HIV burden areas.^{18, 21}

Although most respondents reported having either substance use or depression training, these findings revealed that PCPs perceived their training to be less than excellent. Moreover, other studies indicated that, in many cases, PCPs assume that patients are concurrently receiving wraparound services specifically designated for PWH, including mental health.^{21, 22} In such cases, PCPs may forgo MH screening based on previous services rendered according to medical records or directly from patients themselves.²³ Although the prevalence rate of depression is 20–30% for PWH, it is often underdiagnosed when compared with that of their seronegative counterparts.²⁴ Further research is needed to explore these patterns.

Limitations

This study has limitations. Because of the cross-sectional study design, causality cannot be verified among the statistically significant associations identified in the analyses. Further, the data were self-reported and subject to social desirability issues and/or recall bias. Also, patient-level data were not accessible which resulted in specific practices not being analyzed with specific types of patients (i.e., PWH vs. HIV-negative persons). Inaccessibility to patient records also prevented independent verification of PCPs' self-reports for having PWH patients, thus increasing the possibility of self-reporting bias. Additionally, the survey included PCPs practicing in large urban areas in the South. Therefore, the results may not reflect the MH screening practices in rural areas. However, it is suspected that PCPs in these locations are likely to have similar or lower levels of MH screening practices.^{10, 11} Lastly, practice-level measures (e.g., size of medical practice) were not collected but these measures would better contextualize the provision of medical services offered (including MH care).

The current study includes strengths to note. A major strength is that the sample is representative of the providers in the selected high HIV burden cities of the South. The findings reflect patterns that can be extrapolated to the population of providers in these areas.

Implications for Behavioral Health

Results from the analyses identified patterns of MH screening practices stratified among PCPs who provide care for PWH patients and those who did not in the South. These results found that PCPs with PWH patients were less frequently to provide depression screening than PCPs who do not have PWH patients. These results call attention to the need for

comprehensive care provision (i.e., routine depression screening) for all patients. Accordingly, these findings can be used to help develop comprehensive care courses and training for medical students and continued education for existing PCPs, particularly for those practicing in the South. In particular, provider training should incorporate strategies for improving routine depression screening rates among PCPs in the region. These practices could help reduce regional HIV disparities by increasing earlier diagnoses of MH comorbidities to improve the dissemination of appropriate intervention services.

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Table 1

Demographic and clinical characteristics and practices of primary care providers in the Southeastern United States—Knowledge, Behaviors, Attitudes, and Practices (K-BAP) Study, 2017

Baseline characteristics	<i>n</i>	Weighted frequencies (%)
PCP gender		
Male	202	41.0
Female	542	59.0
PCP race		
White	539	70.2
Other	181	29.8
PCP age		
<40	332	34.8
40–49	207	21.2
50–59	159	22.8
60	122	21.2
Provider type		
Physician	363	75.3
Nurse practitioner	299	21.0
PA	158	3.7
MSM patient caseload		
10% MSM	227	25.3
< 10% MSM	593	74.7
Offer HIV testing		
Yes	637	84.4
No	139	15.6
Provide condoms		
Yes	152	20.6
No	601	79.4
Provide primary care for PWH		
Yes	465	61.9
No	262	38.1
Received substance abuse training		
Yes	758	96.9
No	22	3.1
Received depression training		
Yes	759	97.3
No	20	2.7
PCP perception of substance use training as excellent (<i>n</i> = 758) ^a		
Yes	213	29.6
No	545	70.4
PCP perception of depression training as excellent (<i>n</i> = 759) ^a		
Yes	203	27.8

Baseline characteristics	<i>n</i>	Weighted frequencies (%)
No	556	72.2
Obtain mental health history		
Yes	244	33.6
No	529	66.4
Routine substance use screening		
Yes	353	47.0
No	420	53.0
Routine depression screening		
Yes	299	40.7
No	478	59.3

PCPs, primary care providers; *MSM*, men who have sex with men; *PWH*, persons with HIV; *PA*, physician assistant

^aSample only includes providers who reported receiving substance abuse or depression training

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Table 2

Associations of mental health screening practices stratified by patient caseloads of person living with HIV among primary care providers in the Southeastern United States—Knowledge, Behaviors, Attitudes, and Practices (K-BAP) Study, 2017 ($n = 727$)

Baseline characteristics	Frequency and weighted percentages for PCPs who provide primary care for PWH, 465 (61.9%) ^a	95% confidence limits (CL)	Frequency and weighted percentages for PCPs who do not provide primary care for PWH, 262 (38.1%) ^a	95% confidence limits (CL)	Rao-Scott χ^2 (df)	Rao-Scott χ^2 , p value
PCP gender						
Male	147 (49.6%)	37.6–61.6%	46 (26.6%)	13.3–39.9%	40.7 (1)	< 0.0001
Female	313 (50.4%)	38.4–62.4%	211 (73.4%)	60.1–86.7%		
PCP race						
White	256 (62.9%)	44.8–81.1%	208 (81.1%)	77.4–84.8%	5.6 (1)	0.02
Other	209 (37.1%)	18.9–55.2%	54 (18.9%)	15.2–22.6%		
PCP age						
<40	185 (30.5%)	24.7–36.3%	71 (23.7%)	10.1–37.2%	2.5 (2)	0.4767
40–49	117 (23.0%)	16.7–29.4%	82 (24.4%)	16.0–32.7%		
50–59	91 (24.3%)	20.0–28.6%	64 (25.9%)	18.6–33.2%		
60	72 (22.1%)	12.0–32.3%	45 (26.1%)	15.8–36.4%		
Provider type ^b						
Physician	199 (75.6%)	59.1–92.2%	123 (75.6%)	55.4–95.9%	1.6(2)	0.4474
Nurse practitioner	159 (19.8%)	4.6–35.0%	105 (22.0%)	2.8–41.3%		
PA	107 (4.6%)	0.0–9.3%	34 (2.3%) ^b	0.0–5.5%		
MSM patient caseload						
10% MSM	185 (37.6%)	31.7–43.5%	37 (12.2%)	8.5–15.8%	49.4 (1)	< 0.0001
< 10% MSM	280 (62.4%)	56.5–68.3%	225 (87.8%)	84.2–91.5%		
Offer HIV testing						
Yes	376 (84.1%)	77.0–91.2%	218 (83.3%)	76.8–89.8%	0.0 (1)	0.8882
No	89 (15.9%)	8.8–23.0%	44 (16.7%)	10.2–23.2%		
Provide condoms						
Yes	101 (22.2%)	15.5–28.9%	44 (18.0%)	10.4–25.6%	2.0 (1)	0.1538
No	361 (77.8%)	71.1–84.5%	216 (82.0%)	74.4–89.6%		
Received substance abuse training						
Yes	455 (98.3%)	96.9–99.8%	250 (95.0%)	92.5–97.6%	4.0 (1)	0.0458
No	8 (1.7%)	0.3–1.8%	10 (5.0%)	1.2–2.6%		
Received depression training						
Yes	455 (99.1%)	98.3–99.9%	252 (95.2%)	92.5–97.6%	9.9 (1)	0.0016
No	7 (0.9%)	0.1–1.0%	8 (4.8%)	2.4–7.5%		
PCP perception of substance use training as excellent ($N = 758$) ^c						
Yes	155 (37.2%)	32.3–42.2%	45 (20.0%)	13.8–26.3%	24.0 (1)	< 0.0001
No	300 (62.8%)	57.8–67.7%	205 (80.0%)	73.7–86.2%		

Baseline characteristics	Frequency and weighted percentages for PCPs who provide primary care for PWH, 465 (61.9%) ^a	95% confidence limits (CL)	Frequency and weighted percentages for PCPs who do not provide primary care for PWH, 262 (38.1%) ^a	95% confidence limits (CL)	Rao-Scott χ^2 (df)	Rao-Scott χ^2, p value
PCP perception of depression training as excellent ($N = 759$) ^c						
Yes	118 (29.2%)	17.9–40.4%	71 (26.8%)	20.6–33.0%	0.1 (1)	0.7379
No	337 (70.8%)	59.6–82.1%	181 (73.2%)	67.0–79.4%		
Obtain mental health history						
Yes	138 (31.7%)	28.2–35.3%	89 (39.4%)	27.9–50.8%	1.7(1)	0.1891
No	323 (68.3%)	64.7–71.8%	168 (60.6%)	49.2–72.1%		
Routine substance use screening						
Yes	218 (50.6%)	45.9–54.4%	113 (43.2%)	37.9–48.5%	20.3 (1)	< 0.0001
No	245 (49.4%)	44.6–54.1%	144 (56.8%)	51.5–62.1%		
Routine depression screening						
Yes	163 (36.2%)	30.6–41.8%	121 (50.9%)	46.6–55.2%	32.0 (1)	< 0.0001
No	300 (63.8%)	58.2–69.4%	137 (49.1%)	44.8–53.4%		

PCPs, primary care providers; PWH, persons with HIV; χ^2 , chi-square; *df*, degrees of freedom; MSM, men who have sex with men; PA, physician assistant

^aDiscrepancies with subtotals due to missing data

^bLow sample size; CL includes 0

^cSample only includes providers who reported receiving substance abuse or depression training