

Implementing Mental Health and Substance Use Screening at a Sexual Health Clinic

NATALIE FENN, PhD; AMY NUNN, ScD; YELENA MALYUTA, MPH; PETER SALHANEY, MS; MAXIMILLIAN ERBE, MPH; MARY KATHRYN CANCELLIERE, PhD; DAVID G. ZELAYA, PhD; ETHAN MOITRA, PhD; PHILIP A. CHAN, MD

ABSTRACT

PURPOSE: Sexual and gender minority (SGM) individuals experience heightened mental health problems and substance misuse. Improved approaches to screening for behavioral health in this population are needed. We evaluated the implementation of a digital intake platform incorporating behavioral health screenings at a sexual health clinic serving SGM individuals.

METHODS: Patients presenting to a sexual health clinic March 2021 through April 2023 were screened for depression, hazardous drinking, and illicit substance use using a digital intake platform. To identify SGM subpopulations most in need of services, we evaluated relationships between demographic and sexual health factors and depression, hazardous drinking, and illicit substance use.

RESULTS: In total, $N=1,277$ people presented for care; 28% identified as gay/lesbian, 30% as bisexual+ (attracted to more than one gender), and 12% as transgender/gender diverse. Thirteen percent reported a sexually transmitted infection in the past 12 months, 11% screened positive for a depressive disorder, 50% for hazardous drinking, and 26% for illicit substance use. Individuals 18–39 years were more likely to be depressed than adults 40+, and transgender/gender diverse individuals had 1.93-fold greater odds of depression than cisgender men. Regarding substance use, cisgender men had 2.42-fold greater odds of use compared to cisgender women, and lesbian/gay individuals had 5.08-fold increased odds compared to heterosexual individuals.

CONCLUSION: A digital intake platform for behavioral health screening identified SGM at risk for depression and substance use challenges within a sexual health clinic. This protocol was able to identify subpopulations at higher risk for these disorders, increasing opportunities for recognition and response.

KEYWORDS: sexually transmitted infections; mental health; substance use; sexual and gender minorities

INTRODUCTION

Sexual and gender minority (SGM) groups experience a significant burden of mental health problems and substance misuse.^{1–4} Meta-analytic data demonstrate that sexual minority individuals are 2.5 times more likely to have a lifetime history of a mental health condition and twice as likely to report a current mental health condition than their heterosexual counterparts.⁵ These numbers are even higher among transgender adults, who have prevalence rates of depression between 28% and 64%.^{6–8} SGM individuals also report higher rates of substance use than cisgender heterosexual individuals.^{3,9,10} According to data from the 2021–2022 National Surveys on Drug Use and Health, about one-third of bisexual males, bisexual females, and gay males met criteria for a substance use disorder within the past year, and one-fourth of lesbian females met criteria.¹¹ Given the high disease burden of these conditions among SGM individuals, new approaches are needed to screen and implement behavioral health services for this population.

Screening, which results in early detection and treatment of behavioral health problems, can improve quality of life, help contain healthcare costs, and reduce complications from co-occurring behavioral health and medical comorbidities.¹² Major clinical organizations including the United States Preventive Services Task Force recommend screening in primary care settings specifically for mental health and substance use.^{13,14} However, national surveys of mental health screenings by physicians have been found to be significantly low (<5%),¹⁵ largely driven by a lack of adequate resources and infrastructure.¹² It is crucial to mitigate these gaps in screening, especially among SGM populations given the high burden of disease. In prior studies, SGM individuals reported greater difficulty accessing healthcare than heterosexual, cisgender individuals. In a study of $N=2,031$ SGM individuals, 18.8% reported healthcare denial or lower quality care within the past year for medical settings and 12.5% for mental health settings.¹⁶ Novel approaches to engaging SGM for the purposes of behavioral health screening and treatment are needed.

Sexual health clinics may be ideal settings to screen and engage SGM populations for mental health conditions like depression, as well as alcohol and substance use disorders.^{17–19} Sexually transmitted infections (STIs) frequently co-occur with mental health and substance use disorders.^{20–23}

Compared to heterosexual and cisgender individuals, SGM individuals experience increased risk of these co-occurring conditions.²⁰ These intersectional epidemics of STIs, mental health and substance use disorders—or syndemics—occur at higher rates within SGM populations due to stressors associated with living beyond societal norms of heterosexuality and binary expressions of gender (e.g., man or woman). According to minority stress theory, SGM individuals experience unique and chronic stressors such as stigma and discrimination, which then require individuals to adapt to a hostile social environment in ways that negatively affect mental and physical health outcomes.^{5,24,25} Moreover, holding multiple marginalized social identities (e.g., identifying as African American/Black and experiencing racism; living in a low-income household and experiencing classism) confers additional risk for STIs, mental health conditions, and substance use disorders.²⁶

Screening for mental health conditions and substance use disorders at sexual health clinics presents a public health opportunity to identify and treat SGM populations experiencing a high burden of these conditions. However, little is understood about how to best identify, diagnose and connect SGM individuals to behavioral health services. In 2021, our sexual health clinic implemented a digital intake platform that systematically screens all individuals presenting for services. The current study explored this platform's ability to identify depression, hazardous drinking, and illicit substance use among those screened. To better understand SGM subgroups most in need of behavioral health services, we examined relationships between demographic and sexual health factors as independent variables, and depression, hazardous drinking, and illicit substance use as dependent variables.

METHODS

Participants and Procedures

We reviewed demographic and behavioral data of patients who presented to a sexual health clinic from March 2021 through April 2023. The community clinic is co-located with a primary care center serving predominantly SGM patients in an urban area of New England. The sexual health clinic offers screenings for all major STIs, including HIV, syphilis, gonorrhea, and chlamydia. Given the increased burden of mental health conditions and substance misuse in the SGM community, we developed a digital intake platform that leverages FileMaker (Developed by Claris International, a subsidiary of Apple, Inc.). Use of this HIPAA-compliant platform does not require additional consent from patients and is considered part of standard patient care within the sexual health clinic. All patients systematically complete a brief demographic and clinical survey during the intake process. This platform allows the clinic to create unique, adaptable, and integrated data systems and reporting tools, which includes the addition of validated clinical screening

measures for mental health conditions, STI history, and substance use. Patients complete measures either at a kiosk system in the lobby or through their individual cellphones. The FileMaker system allows for bi-directional Application Programming Interface (API) communication and can push self-reported data into a patient's electronic medical record (EMR) in real-time to support clinical decision-making based on patient responses. FileMaker can also pull data from the EMR and organize it into a clean, functional data report with population health metrics, including mental health and substance use screening. The system also integrates with the clinical laboratory reporting system. This approach has allowed the clinic to easily pull reports that detail a patient's demographics, sexual health behaviors, mental health screening, substance use screening, clinical visit and laboratory results. As part of the current study, we de-identified demographic and behavioral health data collected from this system prior to analysis. Procedures for retrospective data analyses were approved by our institution's IRB and all research was completed in accordance with the Declaration of Helsinki.

Data and Measures

The digital intake platform contains questions on the following variables:

Demographic Data: Patients completed items regarding their age, gender, race, ethnicity, sexual orientation, and household income [Table 1]. To preserve statistical power in bivariate and multivariate analyses, researchers created new categories of gender, race, ethnicity, and sexual orientation as follows: Those who self-identified as transgender, gender queer, gender non-binary, and other identities existing beyond cisgender, binary definitions of gender (man, woman) were classified as transgender/gender diverse. Those who identified as a racial minority or Hispanic/Latino/a/x were classified as a person of color. Those who identified their sexual orientation as bisexual, queer, pansexual, and other identities for those attracted to more than one gender were classified as bisexual+.

Sexual Health: Patients reported their current HIV status (living with HIV Yes/No), and past 12-month STI acquisition (Yes/No).

Depression: Patients completed the Patient Health Questionnaire-2, a two-item measure that captures low mood and anhedonia within the past two weeks (e.g., Over the last 2 weeks, how often have you been bothered by the following problems? Little interest or pleasure in doing things. Not at all =0; Several days =1; More than half the days =2; Nearly every day =3).²⁷ Scores range from 0–6, and those scoring 3 or higher were coded as living with a depressive disorder.

Hazardous Drinking: Patients completed the Alcohol Use Disorder Identification Test–Consumption (AUDIT-C) to screen for hazardous drinking.²⁸ Participants responded to a set of three questions regarding alcohol use with responses summed to produce a total score (e.g., How often did you

have a drink containing alcohol in the past year? Never =0; Monthly or less =1; 2 to 4 times a month =2; 2 to 3 times per week =3; 4 or more times per week =4). The AUDIT-C uses sex-based cut-off values of 3 or higher for females and 4 or higher for males. For transgender adults, research has suggested using a universal cut-off score of 3 or higher.²⁹ For the purposes of this study, we used a universal cut-off score of 3 or greater to determine hazardous drinking given our focus on SGM individuals.

Illicit Substance Use: Patients completed an adapted version of the ASSIST to screen for past three-month illicit substance use.³⁰ Patients were asked to select if and how often they used the following drugs in the past three months: poppers, cocaine, prescription stimulants (not used as prescribed), methamphetamine, inhalants, sedatives or sleeping pills, hallucinogens, street opioids, prescription opioids, and other drugs. Individuals scoring 1 or greater (they endorsed using one or more substances) were coded as 'Yes' to having engaged in illicit substance use and those scoring 0 (they endorsed using zero substances) were coded as 'No'. Patients were also asked about cannabis use, which was evaluated as a separate category. Cannabis use was not incorporated into the illicit substance use scoring code, as cannabis had been legalized in the state at the time of analysis.

DATA ANALYSIS

Descriptive statistics including frequencies were calculated for demographic, sexual health, mental health, hazardous drinking, and substance use variables. We conducted initial chi-square and Fisher's exact tests to determine bivariable associations between each of our independent variables (age, gender, race, ethnicity, sexual orientation, household income, living with HIV, past 12-month STI) and our three dependent variables (depression, hazardous drinking, illicit substance use). We then conducted three logistic regressions to examine associations between demographics and sexual behaviors as independent variables and depression, hazardous drinking, and illicit substance use as dependent variables. Associations significant from our bivariable analyses were included into our regression models for multivariable analyses. For all regressions, we first examined whether an independent variable as a category was significantly associated with each dependent variable (e.g., is age associated with depression?). We next reviewed sub-levels for each independent variable to determine which groups significantly differed (e.g., do 18–29 year olds differ in depression levels from adults 50+?). For the depression model, we entered age, gender, and income as independent variables. For the hazardous drinking model, we utilized gender, sexual orientation, race, and income. For the illicit substance use model, we used gender, sexual orientation, race, income, and HIV status. Statistical significance was determined at $p < .05$ and analyses were performed using SPSS version 29.0.

RESULTS

A total of $N=1277$ individuals presented to the sexual health clinic during the study period. Of these, 37% identified as straight/heterosexual (30% bisexual+, 28% gay/lesbian); 63% cisgender man (24% cisgender woman, 12% transgender/gender diverse); 50% White (21% Black/African American); and 24% Hispanic/Latino/a/x. Approximately 2% reported living with HIV and 13% past 12-month STI acquisition. Regarding mental health and substance use, 11% met criteria for a depressive disorder, 50% met criteria for hazardous drinking, and 26% engaged in past three-month illicit substance use [Table 1]. Most commonly reported illicit drug use included poppers (16%), hallucinogens (9%), prescription stimulants (6%), and cocaine (5%), followed by

Table 1. Characteristics of Patients Presenting to a Sexual Health Clinic ($N=1277$)

Variable	Results (n, %)
Age	
18–29	681, 53%
30–39	393, 31%
40–49	117, 9%
50+	86, 7%
Household Income	
<\$10,000	147, 12%
\$10,001–20,000	127, 10%
\$20,001–35,000	174, 14%
\$35,001–50,000	155, 12%
\$50,001–75,000	153, 12%
\$75,001–100,000	99, 8%
\$100,001+	111, 9%
Gender	
Cisgender Man	800, 63%
Cisgender Woman	301, 24%
Transgender/Gender Diverse	151, 12%
Race-Ethnicity	
White	634, 50%
Hispanic/Latino/a/x	300, 24%
Black/AA	271, 21%
Not listed	63, 5%
Multiracial	59, 5%
Asian	51, 4%
American Indian/Native Alaskan	17, 1%
Native Hawaiian/Pacific Islander	4, 0.3%
Sexual Orientation	
Gay/Lesbian	361, 28%
*Bisexual+	383, 30%
Straight	472, 37%
Sexual Health	
Living with HIV	28, 2%
Past 12-month STI	168, 13%
Behavioral Health	
Depression	142, 11%
Hazardous drinking	635, 50%
Illicit substance use	326, 26%

*Bisexual+ encompasses individuals identifying as bisexual, pansexual, queer, and other sexual identities for those attracted to more than one gender.

Table 2. Bivariable Relationships Between Characteristics and Behavioral Health Conditions

Characteristic	Depression			Hazardous Drinking			Illicit Substance Use		
	No (%)	Yes (%)	p	No (%)	Yes (%)	p	No (%)	Yes (%)	p
Age			<.001*			.075			.126
18–29	551 (85)	100 (15)	b	302 (47)	339 (53)	a	493 (76)	160 (25)	b
30–39	337 (93)	27 (7)	b	156 (43)	207 (57)	a	251 (69)	115 (31)	b
40–49	98 (92)	9 (8)	a	48 (45)	58 (55)	a	79 (73)	30 (28)	a
50+	70 (92)	6 (8)	a	45 (59)	31 (41)	b	55 (72)	21 (28)	a
Gender			<.001*			.026*			<.001*
Cisgender Man	684 (91)	70 (9)	b	323 (43)	421 (57)	b	541 (72)	216 (29)	a
Cisgender Woman	252 (87)	39 (13)	a	149 (52)	138 (48)	b	251 (86)	42 (14)	b
Transgender/Gender Diverse	115 (78)	32 (22)	b	75 (51)	73 (49)	a	83 (56)	65 (44)	b
Race-Ethnicity			.779			.001*			<.001*
Person of Color	517 (89)	65 (11)	a	289 (51)	283 (50)	b	470 (81)	114 (20)	b
White non-Hispanic/Latino/a/x	476 (88)	64 (12)	a	220 (41)	320 (59)	b	344 (63)	200 (37)	b
Sexual Orientation			.133			<.001*			<.001*
Lesbian/Gay	308 (90)	33 (10)	a	121 (36)	214 (64)	b	203 (60)	138 (41)	b
Heterosexual/Straight	402 (90)	47 (10)	a	223 (51)	216 (49)	b	407 (90)	46 (10)	b
Bisexual+	317 (86)	52 (14)	b	175 (47)	199 (53)	a	232 (63)	138 (37)	b
Income			.003*			<.001*			.049
\$10,000 or less	117 (85)	21 (15)	a	81 (61)	52 (39)	b	104 (75)	35 (25)	a
\$10,0001–20,000	103 (83)	21 (17)	a	62 (51)	60 (49)	a	98 (78)	27 (22)	b
\$20,001–35,000	143 (85)	25 (15)	a	74 (45)	92 (55)	a	123 (73)	45 (27)	a
\$35,001–50,000	129 (84)	24 (16)	a	73 (48)	79 (52)	a	111 (73)	42 (28)	a
\$50,001–75,000	138 (92)	12 (8)	a	57 (38)	92 (62)	b	94 (63)	55 (37)	b
\$75,001–100,000	84 (90)	9 (10)	a	41 (43)	54 (57)	a	60 (64)	34 (36)	a
\$100,001+	103 (98)	2 (2)	b	36 (34)	71 (66)	b	70 (67)	35 (33)	a
Living with HIV			.968			.711			.021*
No	732 (89)	88 (11)	a	360 (44)	453 (56)	a	572 (70)	250 (30)	a
Yes	24 (88)	3 (12)	a	12 (43)	16 (57)	a	12 (44)	15 (56)	b
Choose not to disclose/Unknown	29 (91)	3 (9)	a	16 (52)	15 (48)	a	23 (70)	10 (30)	a
Past 12-month STI			1			.769			1
No	279 (89)	35 (11)	a	128 (41)	181 (59)	a	205 (65)	109 (35)	a
Yes	147 (89)	18 (11)	a	70 (43)	93 (57)	a	108 (66)	57 (35)	a

Post-hoc analyses: In the p value column, each letter denotes a subset of categories whose column proportions do not differ significantly from each other at the .05 level.

sedatives (4%), methamphetamine (2%), opioids (2%), and inhalants (1%). More than half the sample (55%) reported past three-month cannabis use. Chi Square and Fisher's exact test results are presented in **Table 2**. Logistic regression results are presented in **Table 3**.

The logistic regression model for depression found that age was significantly associated with depression ($p=.022$). While no sub-category levels of age differed significantly in regression results, chi-square analyses suggested that those 18–29 years old were more likely to exhibit depression than those 40+. Gender as a category was not significantly associated with depression in the regression model.

However, sub-category results showed that identifying as transgender/gender diverse was associated with 1.93 times (95% confidence interval [CI] 1.13–3.32) greater odds of depression compared to cisgender men ($p=.017$). Income as a category was not significantly associated with depression in the regression model. However, sub-category results and chi square analyses revealed that those earning more than \$100,000 had reduced odds of depression compared to those earning less than \$10,000 (odds ratio [OR] = 0.17, 95% CI 0.04–0.77).

The logistic regression model for hazardous drinking found that compared to those earning less than \$10,000,

Table 3. Logistic Regression Results of Factors Associated with Behavioral Health Conditions

Characteristics	Depression			Hazardous Drinking			Illicit Substance Use		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Age									
18–29	ref	ref	.022*						
30–39	2.91	.87–9.73	0.082						
40–49	1.4	.40–4.91	0.604						
50+	2.13	.54–8.37	0.28						
Gender									
Cisgender Man	ref	ref	0.057	ref	ref	0.576	ref	ref	.004*
Cisgender Woman	1.23	.77–1.99	0.389	0.87	.61–1.24	0.426	0.41	.23–.75	.004*
Transgender/Gender Diverse	1.93	1.13–3.32	0.017*	0.8	.50–1.29	0.366	1.19	.69–2.06	0.54
Race-Ethnicity									
White non-Hispanic/Latino/a/x				ref	ref		ref	ref	
Person of Color				0.86	.64–1.15	0.306	0.61	.42–.89	0.01*
Sexual Orientation									
Lesbian/Gay				ref	ref	0.409	ref	ref	<.001*
Heterosexual/Straight				0.82	.56–1.18	0.281	0.2	.11–.36	<.001*
Bisexual+				1.01	.68–1.51	0.953	1.3	.82–2.06	0.261
Income									
\$10,000 or less	ref	ref	0.081	ref	ref	.049*	ref	ref	0.359
\$10,001–\$20,000	1.23	.63–2.43	0.548	1.36	.81–2.30	0.245	0.57	.27–1.24	0.156
\$20,001–\$35,000	0.99	.52–1.89	0.982	1.83	1.12–2.99	.016*	0.89	.44–1.79	0.747
\$35,001–\$50,000	1.3	.67–2.53	0.432	1.67	1.01–2.77	.045*	0.91	.45–1.81	0.78
\$50,001–\$75,000	0.6	.28–1.30	0.198	2.02	1.22–3.35	.006*	1.11	.57–2.16	0.755
\$75,001–\$100,000	0.79	.34–1.87	0.596	1.49	.84–2.63	0.172	0.81	.39–1.71	0.585
\$100,001+	0.17	.04–.77	0.021*	2.39	1.34–4.24	.003*	0.58	.28–1.20	0.143
Living with HIV									
No							ref	ref	0.141
Yes							2.44	.98–6.11	0.057
Choose not to disclose/Unknown							0.77	.25–2.38	0.654

*statistically significant at the .05 level

earning \$20,001–75,000 or more than \$100,000 was associated with 1.67–2.39 increased odds of hazardous drinking ($p=.049$). The logistic regression model for illicit substance use found that identifying as lesbian/gay was associated with 5.08 times greater odds of illicit substance use (95% CI 2.78–9.26) compared to straight individuals ($p<.001$). Cisgender men had 2.42 greater odds of use (95% CI 1.33–4.39) compared to cisgender women ($p=.004$). Identifying as a person of color was associated with reduced odds of illicit substance use compared to those identifying as white non-Hispanic/Latino/a/x (OR = 0.61, 95% CI .42–.89).

DISCUSSION

The current study evaluated the impacts of using a digital intake platform to screen individuals for depression, hazardous drinking, and substance misuse at an urban sexual health clinic. The platform enabled the clinic to successfully screen individuals who might not have been identified otherwise and found high rates of people screening positive for a depressive disorder (11%), hazardous drinking (50%), and illicit substance use (26%). In the year prior to implementing this digital intake platform, screening was conducted only if provider requested. Out of 368 sexual health visits conducted between March 2020 through February 2021, the PHQ-2 was completed three times while the AUDIT-C was completed once. Thus, the clinic recognized the need for a more systematic approach, especially given the clinic opened in March 2020 at the height of the COVID-19 pandemic.

This also mirrors the experience of several New York City sexual health clinics that saw an increase from 17% to 51% of those screening positive for a substance use disorder after they implemented an evidence-based early intervention model.³¹ In the current study, younger adults 18–29 were more likely to report depression compared to older adults 40+ ($p < .001$), and transgender individuals had 1.93 increased odds of depression compared to cisgender men. Rates of hazardous drinking were high across all populations with half of the sample reporting problematic drinking. Finally, lesbian and gay individuals had 5x increased odds of illicit substance use compared to straight individuals, and cisgender men had approximately 2x increased odds of illicit substance use compared to cisgender women.

Our findings regarding depression are consistent with prior research demonstrating that younger adults are struggling to a greater extent with their mental health compared to older adults.³² Given 90% of the sample was 18–29 years old, this finding highlights the importance of ongoing mental health screening within STI clinics to readily identify young adults in need of mental health services. These findings also corroborate prior studies documenting higher rates of depression among transgender/gender diverse populations compared to cisgender individuals.^{6,8} The medical literature has documented associations between socio-political stress, anti-transgender legislation, and depression.³³ A 2023 survey study investigating the effects of anti-trans policies on transgender mental health showed that those who were scared about their rights being taken away had 1.66 higher odds of experiencing depression, while those with knowledge of local state-level protections had 0.44 reduced odds.³³ Data for the current study were collected from 2021–2023 at the cusp of over 533 national anti-transgender legislative proposals, which may have contributed to higher levels of depression experienced among transgender/gender diverse patients in this sample.³⁴ In the midst of ongoing political turmoil, sexual health clinics are poised to identify depression and other mental health problems to serve this diverse population.

Rates of hazardous drinking were high across multiple demographic groups, with 50% of the sample meeting criteria for hazardous drinking. This is consistent with data showing increased rates of alcohol use following peak COVID-19 transmission in the United States from 2020–2021.¹ Incomes above \$20,000 were associated with 1.67–2.39 greater odds of hazardous drinking compared to those earning less than \$10,000. However, it is important to note that hazardous drinking is not synonymous with alcohol use disorder. We chose to utilize a more conservative cut-score of 3 on the AUDIT-C to determine hazardous drinking, so it is possible that those screening positive would not meet criteria for alcohol use disorder. It is important for clinicians to further assess the role of alcohol use in a patient's life and whether an individual desires to change their use.

Approximately a quarter of patients (26%) reported past three-month illicit substance use. Consistent with prior research, identifying as lesbian or gay was associated with increased odds of illicit substance use, as was identifying as a cisgender man. There are many stressors that contribute to substance use behavior, including mood-related challenges, interpersonal stressors, and trauma histories.³⁵ SGM populations may experience additional unique, chronic stressors related to experiences of marginalization such as discrimination that contribute to substance use.^{5,25} Given the rise of fentanyl and other synthetic opioids contaminating the drug supply contributing to over 70% of overdose deaths, it is essential to educate patients using substances about safe drug use practices.³⁶ Given the high prevalence of substance use in the sample, sexual health clinics may be an ideal setting for medication-based treatment as well as harm reduction education programs.

This study has several limitations. First, it should be noted that this study employed a cross-sectional survey design, and thus we cannot determine causal relationships between demographics, sexual behaviors, and behavioral health conditions. We also utilized demographics as proxies for marginalization (e.g., race as a proxy for racism). Future studies might consider using measures that capture discrimination as independent variables, and then link experiences of discrimination (e.g., heterosexism, racism) as risk factors to health outcomes rather than demographics.³⁷ Additionally, this study focuses on depression as one dimension of mental health, which is known to disproportionately impact SGM individuals. Clinics might also consider implementing the GAD-2, given current medical recommendations to screen for anxiety. As with most screening tools, healthcare professionals trained in culturally competent care with SGM individuals should assess patients further to determine the appropriate level of care. And while screening is an important first step, future studies should evaluate treatment uptake after referrals are made in order to assess care coordination across the full healthcare delivery spectrum.

CONCLUSION

Implementing a digital intake platform can enhance screening for mental health conditions and substance misuse among SGM presenting for sexual health services. This screening protocol was able to identify specific subpopulations at higher risk for these disorders and facilitate opportunities for care.

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Authors

Natalie Fenn, PhD, Department of Medicine, Department of Psychiatry & Human Behavior, Warren Alpert Medical School of Brown University; The Miriam Hospital, Providence, Rhode Island.

Amy Nunn, ScD, Department of Behavioral and Social Sciences, Brown University School of Public Health; Rhode Island Public Health Institute, Providence, Rhode Island.

Yelena Malyuta, MPH, Rhode Island Public Health Institute, Providence, Rhode Island.

Peter Salhaney, MS, Rhode Island Public Health Institute, Providence, Rhode Island.

Maximillian Erbe, MPH, Rhode Island Public Health Institute, Providence, Rhode Island.

Mary Kathryn Cancilliere, PhD, Department of Psychiatry & Human Behavior, Warren Alpert Medical School of Brown University, Providence, Rhode Island.

David G. Zelaya, PhD, Department of Behavioral and Social Sciences, Brown University School of Public Health, Providence, Rhode Island.

Ethan Moitra, PhD, Department of Psychiatry & Human Behavior, Warren Alpert Medical School of Brown University, Providence, Rhode Island.

Philip A. Chan, MD, Department of Medicine, Warren Alpert Medical School of Brown University; The Miriam Hospital; Rhode Island Public Health Institute; Department of Behavioral and Social Sciences, Brown University School of Public Health, Providence, Rhode Island.

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Correspondence

Natalie Fenn, PhD
The Miriam Hospital
11 Fourth Street, Rm. 130
Providence, RI 02906
natalie_fenn@brown.edu