

# Prevalence and reporting of sexual harassment and sexual assault at live music events in the USA

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## ABSTRACT

**Background** Sexual misconduct (SM), which encompasses sexual harassment and assault, is a significant public health issue with myriad short- and longer-term adverse impacts. Data from Europe, Australia and Africa suggest that SM is endemic to live music events. However, few have examined the prevalence of SM at live music events in the USA.

**Methods** We surveyed US adults who attended at least one live music event in the previous year using an online questionnaire to examine the prevalence and reporting of SM at live music events. Respondents (n=1091) were recruited through digital channels of non-profit and industry partners who regularly engage with US concertgoers.

**Results** About half (51%) of respondents identified as women; most were aged 30–49 years (66%) and attended live music often/very often (67%). Most respondents (61%) reported experiencing SM at a live music event during their lifetime. A greater proportion of women (82%) than men (39%) reported experiencing sexual harassment and/or sexual assault. Most respondents (88%) did not report their SM incidents to the music venue where the incident occurred. Common barriers to reporting were identified, many of which were related to music venue environments in which the incidents occurred.

**Conclusions** SM is prevalent at live music events in the USA, with women disproportionately affected. Reporting of SM incidents at music venues is limited, but barriers can be overcome. Comprehensive interventions are necessary to raise awareness of SM, reduce its occurrence and support reporting at live music events. Future research should investigate the policies and procedures of US music venues regarding SM prevention, communication, training and response.

## INTRODUCTION

Sexual misconduct (SM), which encompasses sexual harassment and assault, exists on a continuum and includes both physical and verbal incidents that strip away an individual's sense of control over their sexual choices and interactions.<sup>1 2</sup> SM incidents can have substantial impacts on those violated, including damage to mental and social health, physical injuries, sexually transmitted infections, unwanted pregnancies, substance abuse as a coping mechanism, and even death.<sup>3</sup>

### Live music events

Live music events (LMEs) bring value to the communities where they occur, including personal,<sup>4</sup> economic,<sup>5</sup> social<sup>6</sup> and cultural benefits.<sup>6 7</sup> They

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Data from Europe, Australia and Africa indicate that sexual misconduct (SM) is prevalent at music festivals. Little was known, however, about SM at live music events (LMEs) in the USA prior to this study.

## WHAT THIS STUDY ADDS

⇒ This study provides the first population-based estimate of SM at LMEs in the USA, with 61% of respondents indicating they have experienced SM at an LME during their lifetime. Gender disparities exist. A greater proportion of women (82%) than men (39%) have experienced SM incidents at an LME ( $p<0.001$ ). More women (24%) than men (2%) also experience SM at LMEs frequently ( $p<0.001$ ). Most respondents (88%) did not report their most recent SM incident to the music venue staff or security due to various reporting barriers.

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Music venues should develop or expand on existing SM prevention, training and response efforts. Future research might examine existing policies and procedures related to SM prevention, communication reporting and response.

contribute to job creation, tourism and consumer spending,<sup>5</sup> support public engagement, build social capital and foster cultural vibrancy and creativity.<sup>6</sup> LME attendees have reported an enhanced sense of belonging, identity<sup>8</sup> and even transcendence.<sup>4</sup> Approximately 52% of Americans attend at least one LME per year.<sup>9</sup>

### Sexual misconduct at live music events

Data from Australia,<sup>1 10</sup> the UK,<sup>11–15</sup> Sweden,<sup>16</sup> Finland<sup>17</sup> and Nigeria<sup>18</sup> indicate that SM is prevalent at LMEs. For example, Bråvalla, one of Sweden's largest music festivals, was cancelled after four rape and 23 sexual assault reports in 2017.<sup>16</sup> Studies show that just under 10% of men and 34–43% of women have experienced sexual harassment or assault at an LME.<sup>9 14</sup> However, most prior studies have taken place outside the USA and have focused on music festivals,<sup>1 10 11 14 16 18 19</sup> rather than a broad range of live music venues (eg, festivals and large arenas, theatres and clubs).<sup>8 13 17</sup>

Live music environments might contribute to a culture of SM at LMEs.<sup>20</sup> The live music industry as



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a whole has a long history of misogyny and sexism that sustain gender inequality and sexual violence.<sup>21</sup> Women who have experienced SM at an LME have cited music festival marketing (as hedonistic and escapist) as problematic,<sup>15</sup> as well as large dense crowds and dark lighting which can provide cover and a sense of anonymity to perpetrators. Opportunistic perpetrators also exploit persons consuming alcohol and showing signs of intoxication.<sup>22</sup> Limited surveillance and regulations<sup>21</sup> and difficulties in obtaining assistance from venue staff at music festivals are also problematic.<sup>1</sup> For similar reasons, bars and clubs have been identified as hot spots for SM.<sup>22</sup>

### Sexual misconduct reporting

A study of Australian women identified barriers to SM reporting such as shame, fear of being blamed and being perceived as 'asking for it' due to dress or intoxication. Among African women there are perceptions that it would be too difficult to track down the perpetrator or that venue security lacks the training and skills needed to respond to SM at LMEs.<sup>18</sup> Additionally, some African women felt that their SM incidents, since not classified as rape, were too minor to report.<sup>18</sup> Further studies are needed to understand barriers to SM reporting, particularly in the USA and among all genders.

This study contributes to the literature by examining the prevalence of SM and SM reporting at LMEs in the USA. It expands on previous research by exploring SM across various live music venues rather than focusing solely on music festivals. The findings can be used to raise awareness about SM at LMEs and to develop evidence-informed strategies for preventing and responding to SM at LMEs.

## METHODS

### Research partnerships

This study was carried out through a partnership between a university, non-profit organisation and industry partners in the USA. GrooveSafe, the non-profit partner, works to build a consent culture and stop unwanted touching, harassment and sexual assault in live entertainment spaces. Relix Media Group (hereafter, Relix) is a creative resource for the live music scene, supporting and fostering connections between music fans and live music performers. JamBase is an online platform for live music fans, offering a database of show listings, ticket information and editorial content. Please note that GrooveSafe preferred 'sexual misconduct' as the terminology used throughout the study because, in their experience, it is less triggering for those who have experienced sexual harassment and/or assault.

### Study sample and recruitment

Adults (aged  $\geq 18$  years) who attended at least one LME in the previous year were purposively sampled through project partners to complete the open survey in 2024. GrooveSafe announced the survey on their website and social media channels (Instagram, Facebook, X). Relix shared the announcement through their digital channels: website banner, email listserv and posts on their social media platforms. JamBase shared the survey announcement on their website. The announcement highlighted GrooveSafe's Fan Experience Survey as a questionnaire for understanding concert fans' experiences and a way to improve safety at LMEs. The survey announcement included a link that led to the online informed consent form landing page in Qualtrics<sup>23</sup> (see online supplemental appendix 1 for the survey announcement shared for use with all project partners).

### Data collection

When respondents reached the Qualtrics<sup>23</sup> landing page they were asked to review the informed consent form and, if interested, to consent to participate in the research study by clicking the 'Consent' button to proceed to the questionnaire. The questionnaire consisted of 24 questions and took approximately 7–8 min to complete. Anyone who indicated they had not attended a LME in the prior year (first question) was led to a survey termination screen, which thanked them for their time and indicated they were not eligible to complete the study. Anyone indicating an age  $< 18$  years would have also been terminated, but no one aged  $< 18$  years attempted to complete the study (based on self-reported age).

### Study questionnaire

Questionnaire items were based on the literature and adapted from the George Washington University Unwelcome Sexual Behaviours Questionnaire.<sup>24</sup> GrooveSafe provided insight for adaptations based on their experience working to address SM at LMEs in the USA. The questionnaire was pre-tested before survey implementation with 10 adults who met the inclusion criteria. Minor revisions were made based on the feedback obtained. For example, the terms 'sexual harassment', 'sexual assault' and 'sexual misconduct' may be understood differently by people, so these terms were defined within the questionnaire before questions were posed. The variables included in the analysis are described below.

### Live music attendance

Respondents were asked whether they had attended an LME, such as a concert or festival, in the previous year (yes/no) and the average frequency of their attendance at LMEs with response options of rarely (a few times a year or less), sometimes (about every other month), often (monthly) or very often (weekly). Respondents who indicated they did not attend an LME in the previous year were excluded from the study.

### Sexual misconduct incidents

Respondents were asked to indicate if they had experienced seven different types of SM while attending an LME (select all that apply); see [table 1](#) for a full list of SM incidents assessed. They were also asked to report the frequency of SM incidents at LMEs (rarely, frequently or at almost every event).

### Context for sexual misconduct incidents

Respondents who reported experiencing at least one SM incident were also asked about the context of their SM incident(s): who they attended the event(s) with (significant other, friends, family, co-worker, alone, or other) and what type of venue they were at when the incident(s) occurred (music festival, large event arena, mid-size music venue, small club or theatre, or restaurant/bar). They were asked to consider all SM incidents they had experienced and select all those that applied to the context questions.

### Sexual misconduct reporting

Respondents who reported experiencing at least one SM incident were also asked to indicate if they felt they could report their most recent SM experience to staff or security working at the music venue. The response options were: "Yes, but I chose not to report it", "I did report it and the

**Table 1** Type(s) and frequency of sexual misconduct experienced at live music events and context for respondents' sexual misconduct incident(s) overall and by gender (n=649)

Sexual misconduct experience	Total (n=649) f (%)	Gender		$\chi^2$ test	df	P value
		Women (n=454) f (%)	Men (n=195) f (%)			
Sexual misconduct frequency				62.988	2	<0.001**
Rarely	472 (72.7)	289 (63.7)	182 (93.3)			
Frequently	164 (25.3)	152 (33.5)	12 (6.2)			
At almost every show	13 (2.0)	13 (2.9)	0 (0)			
Sexual harassment type						
Sexual comments or jokes	424 (65.3)	346 (76.2)	78 (40.0)	78.689	1	<0.001**
Block, corner or follow me	211 (32.5)	190 (41.9)	21 (10.8)	60.327	1	<0.001**
Sexual assault type						
Brushed up against my body	550 (84.7)	420 (92.6)	130 (66.7)	72.059	1	<0.001**
Touched, grabbed or pinched	515 (79.4)	386 (85.0)	129 (66.2)	28.601	1	<0.001**
Forced kiss	133 (20.5)	101 (22.2)	32 (16.4)	2.842	1	0.092
Clothing pulled down or off	96 (14.8)	83 (18.3)	13 (6.7)	14.602	1	<0.001**
Forced sexual activity other than kiss	37 (5.7)	35 (7.7)	2 (1.0)	11.252	1	<0.001**
Context: Who were you with?						
Friends	520 (80.1)	382 (84.1)	138 (70.8)	15.315	1	<0.001**
Significant other	315 (48.5)	250 (55.1)	65 (33.3)	25.793	1	<0.001**
Went alone	196 (30.2)	144 (31.7)	52 (26.7)	1.651	1	0.199
Co-worker	27 (4.2)	20 (4.4)	7 (3.6)	0.228	1	0.633
Family	81 (12.5)	63 (13.9)	18 (9.2)	2.695	1	0.101
Context: Venue type						
Festival	174 (26.8)	129 (28.4)	45 (23.1)	1.980	1	0.159
Large arena	215 (33.1)	163 (35.9)	52 (26.7)	5.252	1	0.022*
Mid-size music venue	218 (33.6)	160 (35.2)	58 (29.7)	1.849	1	0.174
Small club or theatre	196 (30.2)	140 (30.8)	56 (28.7)	0.291	1	0.590
Restaurant or bar	118 (18.2)	87 (19.2)	31 (15.9)	0.978	1	0.323
Negative impact on music experience (yes)	495 (76.3)	380 (83.7)	115 (59.0)	44.286	1	<0.001**

\*p&lt;0.05; \*\*p&lt;0.001.

staff took action to address the incident”, “I did report it and the staff did not take action to address the incident” and “No, I did not feel like I could report it, so I didn’t”. Respondents who did not report their most recent SM

incident were asked to ‘select all that apply’ from a list of reporting barriers. The list of reporting barriers is shown in [table 2](#). The order for the list of reporting barriers was randomised within Qualtrics.<sup>23</sup>

**Table 2** Reasons for not reporting sexual misconduct at a live music event, overall and by gender (n=574)

Reporting barriers	Total (n=574) f (%)	Gender		$\chi^2$	df	P value
		Women (n=396) f (%)	Men (n=178) f (%)			
Nothing would be done anyway	142 (24.7)	101 (25.5)	41 (23.0)	0.403	1	0.526
Addressed it myself	100 (17.4)	68 (17.2)	32 (18.0)	0.055	1	0.814
I didn't know who to report the incident to	92 (16.0)	63 (15.9)	29 (16.3)	0.013	1	0.908
Did not want to disrupt others	73 (12.7)	55 (13.9)	18 (10.1)	1.578	1	0.209
I felt uncomfortable reporting the incident because I was in an altered state (eg, drunk, high, tripping) from using drugs and/or alcohol	71 (12.4)	57 (14.4)	14 (7.9)	4.829	1	0.028*
There was no signage directing me where to go for help	66 (11.5)	44 (11.1)	22 (12.4)	0.188	1	0.665
I was embarrassed	47 (8.2)	38 (9.6)	9 (5.1)	3.367	1	0.067
Spatial layout of the venue made it hard to find help	47 (8.2)	37 (9.3)	10 (5.6)	2.267	1	0.132
I figured no one would believe me	36 (6.3)	28 (7.1)	8 (4.5)	1.387	1	0.239
Someone else addressed it for me	30 (5.2)	21 (5.3)	9 (5.1)	0.015	1	0.902
The perpetrator had status or was well known	13 (2.3)	12 (3.0)	1 (0.6)	3.381	1	0.066

\*p&lt;0.05.

### Respondent characteristics

Respondents were asked to answer questions about their age (in years) and gender (men, women, non-binary, transgender, or prefer to self-identify).

### Data management and analysis

All data were downloaded into Excel and imported into SPSS for analysis. Four survey questions were identified as required for inclusion in the analyses before data collection began. These included LME attendance in the previous year (first questionnaire item), age, SM incidents and gender (last questionnaire item). There were 1091 valid questionnaire responses.

Descriptive statistics were used to describe the data.  $\chi^2$  tests were used to examine significant associations between SM incidents and respondent characteristics, between SM incidents and gender (men/women) and between SM reporting barriers by gender (men/women). Statistical significance was set to  $p < 0.05$  a priori.

### Human subject research protections

The study underwent review and received approval from the Sacred Heart University Institutional Review Board (IRB No 230926C). All participants provided informed consent before completing the questionnaire and no identifiable information was collected during the survey process. The informed consent form included all elements recommended by the US National Institutes of Health (NIH).<sup>25</sup> No incentives were offered to complete the questionnaire, but the announcement indicated that the questionnaire results would be used to improve concert experiences and safety. Given the topic being examined, we provided an online resource for sexual trauma (Rainn.org) on the informed consent landing page and on the survey completion page. Contact information for the lead investigator and the University's IRB office was provided in case the respondents had any questions or concerns. Respondents were also warned in the

informed consent form that they would be asked questions about sexual misconduct that might be disturbing and told they could skip questions or quit the questionnaire at any time without penalty.

### RESULTS

Just over half (50.9%) of the survey respondents were women (46.4% men, 2.7% non-binary) and most respondents were middle-aged (7.4% aged 18–29 years, 24.3% aged 30–39 years, 42% aged 40–49 years and 26.3% aged 50+ years) and attended LMEs often (47.2%) or very often (20.2%).

### Sexual misconduct incidents

A total of 667 respondents (61%) indicated that they had experienced SM at an LME. As shown in [table 3](#), a greater proportion of women, younger respondents and those who reported attending LMEs frequently experienced at least one SM incident in their lifetime compared with men, older respondents and those who attended LMEs infrequently.

### Context for sexual misconduct incidents

[Table 1](#) includes the frequency of SM experienced at LMEs, the type(s) of SM experienced, the venue type(s) where SM incident(s) have occurred, who the respondent attended the show with when SM occurred and the impact of the SM incident overall and by gender (men/women). Respondents who selected 'non-binary/trans/self-identify' for gender are not included in these analyses as the sample size for this group was limited ( $n=30$ ).

Women reported experiencing SM at LMEs more often than men ([table 1](#)). As shown in [table 1](#), respondents encountered various types of SM incidents. A higher percentage of women than men experienced each type of SM assessed; all comparisons between gender and SM type were statistically significant ( $p < 0.001$ ), except for forced kissing ([table 1](#)).

Additionally, as shown in [table 1](#), significantly more women than men reported experiencing SM in large arenas and when attending LMEs with acquaintances such as friends and significant others ( $p=0.022$ ). While most respondents reported that their SM incidents negatively impacted their musical experience, a greater proportion of women than men reported a negative impact.

### Reporting status for most recent sexual misconduct incident

Most respondents who experienced at least one SM incident at an LME (89.8%,  $n=574$ ) did not report their most recent SM incident to music venue security or staff. Among those who did not report their SM incident, 47.8% did not feel they could report their incident and 42.0% felt like they could report their incident but chose not to. There were no significant differences between these groups by demographics or SM incident type ( $p > 0.05$ , data not shown). We combined these two groups into one (hereafter called 'non-reporters') to ensure a robust sample size for subgroup analyses.

Regarding demographic associations, a greater proportion of men (94.7%) than women (88.0%) did not report their latest SM incident ( $\chi^2=6.558$ ,  $df=1$ ,  $p=0.010$ ). There was no significant association between reporting and age group ( $p=0.218$ ).

[Table 3](#) includes non-reporters' barriers to reporting their most recent SM incident, overall and by gender. A greater proportion of women than men reported feeling uncomfortable reporting their incident because they were in an altered state due to alcohol or drugs. No other significant associations existed

**Table 3** Respondent characteristics according to sexual misconduct experience ( $n=1091$ )

Respondent characteristics	Experienced sexual misconduct		$\chi^2$	df	P value
	Yes ( $n=667$ ) f (%)	No ( $n=424$ ) f (%)			
Gender identity			208.535	2	<0.001**
Women	454 (81.8)	101 (18.2)			
Men	195 (38.5)	311 (61.5)			
Non-binary, transgender or prefer to self-identify	18 (60.0)	12 (40.0)			
Age (years)			25.099	3	<0.001**
18–29	53 (66.3)	27 (33.8)			
30–39	186 (71.3)	75 (28.7)			
40–49	272 (60.3)	179 (39.7)			
50+	143 (50.7)	139 (49.3)			
Live music event attendance			16.409	3	<0.001**
Rarely	50 (48.5)	53 (51.5)			
Sometimes	140 (55.6)	112 (44.4)			
Often	326 (63.3)	189 (36.7)			
Very often	151 (68.6)	69 (31.4)			

\*\* $p < 0.001$ .



between gender and the reason selected for not reporting an SM incident.

## DISCUSSION

This study fills a gap in the existing literature by investigating SM incidents at LMEs in the USA across various types of music venues. As with findings from other countries around the world,<sup>1 10–18</sup> SM at LMEs in the USA is prevalent, with three of five respondents reporting one or more SM incident at an LME in their lifetime. The high prevalence of SM incidents reported in this study is disturbing as SM incidents can have both short- and long-term consequences to health and quality of life<sup>3</sup> and unfavourable social, cultural and economic impacts.<sup>5–7</sup>

Gender disparities in SM incidents were significant, with four out of five women indicating an SM incident at an LME in their lifetime and 20% indicating that SM at LMEs occurs frequently. These total and gender-specific prevalence estimates are higher than those in other countries. One reason might be that studies estimating SM prevalence at LMEs in other countries have focused solely on music festival experiences.<sup>11 14</sup> This study focused on concertgoers across music venue types. A 2021 report in the UK showed that 84% of 18–24-year-old women in the UK have experienced SM in public spaces (eg, bars, clubs, etc).<sup>26</sup> This is not dissimilar to the prevalence of SM at LMEs among women across music venue types in this US study. Future research examining SM at LMEs should include music venues of all types, as SM is not limited to music festivals. Prior research suggests that men-dominated cultures like live music scenes and hyper-sexualised norms can culturally condone and normalise SM.<sup>1 15</sup>

Differences in prevalence estimates across studies may also be due to variations in wording and time frames used when asking about SM at LMEs across different questionnaires. As this area of study progresses, standard measures for gender identity and estimating the prevalence of SM at LMEs will enable better comparisons across studies.<sup>27</sup> Differences in current events, cultural norms and expectations across countries, as well as within countries, influence the prevalence of SM, SM reporting, SM prevention and other related factors. For example, Worthen and colleagues<sup>28</sup> found that reporting for sexual violence increased in the year following the #MeToo movement among white women, but reporting returned to pre-#MeToo levels 2 years after the movement began.

Findings from studies examining behaviour at LMEs<sup>15</sup> and nightlife events in general<sup>22</sup> show that women take a variety of preventive measures to avoid experiencing SM, including avoiding certain spaces or areas at LMEs, ensuring friends are never alone, avoiding interactions with strangers, keeping a close watch on their drinks, reducing alcohol consumption, wearing clothing that makes harassment less likely<sup>18</sup> and shaming or alerting others to aggressors.<sup>15</sup> While these preventive measures might be useful for persons of all genders, interventions promoting these preventive behaviours might be off-putting to some. For example, in a prior study women perceived individual-level recommendations for preventing SM as patronising and ignoring other influencing factors, such as music venue environments or problematic societal norms.<sup>29</sup> In addition, these preventive measures are not always enough to prevent SM. Women in this study experienced SM more often than men, even when they attended LMEs with friends or significant others. Further, efforts to prevent SM at LMEs focused solely on preventive action among potential victims could be viewed as victim blaming should SM incidents occur when

recommended preventive measures are not taken. As such, a more comprehensive ecological approach to preventing SM at LMEs is recommended.

As mentioned previously, few individuals identifying as non-binary, trans and other self-described genders completed the questionnaire, which limits subgroup analyses. However, incidents of SM were common within this small group, with 60% having experienced SM at an LME during their lifetime. Previous researchers investigating SM have also reported small sample sizes for non-binary, trans and other self-described genders. We identified one study<sup>19</sup> that examined inappropriate behaviour targeting non-binary, trans and other self-described genders at music festivals; 59% of respondents reported experiencing some form of inappropriate behaviour including gender-based harassment, sexual harassment, physically threatening situations and harassment due to appearance or clothing. Future research, with a more substantial sample size of individuals who are non-binary, trans and other self-described genders, is needed to investigate SM incidents at LMEs in the USA within these groups. A holistic approach to SM prevention that aims to change the culture and norms at LMEs would benefit people of all genders.

## Sexual misconduct reporting

Limited SM reporting at LMEs has been highlighted previously in the literature.<sup>8 10</sup> A public poll from the UK found that only 7% of those who experienced SM at a music festival reported it to festival staff during or after the event.<sup>14</sup> In this study, one in 10 respondents reported their most recent SM incident at an LME to venue staff or security. Kidd and Chayet<sup>30</sup> argue that non-reporting stems from persons believing authorities will not effectively address the incident and/or fearing further victimisation by the police.

Respondents in this study selected a variety of barriers to SM reporting, most of which were related to the culture or physical environment at music venues. In line with Kidd and Chayet's argument,<sup>30</sup> the most common barrier to reporting SM was the belief that 'nothing would be done anyway'. Music venues might consider training specialised staff to identify and proactively assist patrons in need of assistance. This approach has been evaluated in both bar and music festival settings, with findings showing promise for increased SM reporting and potential prevention of SM incidents.<sup>31</sup> Further proactive assistance is valuable across myriad safety issues that might arise in live music environments (eg, substance use-related issues, other types of violence, health emergencies).

One-quarter of respondents who did not report their SM incident indicated that they either managed the incident themselves or someone else (ie, a bystander) managed it for them, making reporting seem unnecessary. Bystander intervention<sup>10</sup> can effectively address SM at LMEs<sup>22</sup>; however, women may be more willing to intervene as bystanders than men.<sup>10</sup> Future research might compare the context and outcomes of SM incidents at LMEs when addressed by the individual violated, bystanders and/or venue staff. Such research could inform best practices for recognising and responding to SM incidents.

Respondents' fear of disrupting the concert experience for others was also a barrier to SM reporting. In line with the Spiral of Silence theory,<sup>32</sup> persons who 'disrupt' others' musical experiences to report SM might fear isolation or stigmatisation. This fear is likely exacerbated by outdated rape myths and theories of victim precipitation that blame the victim.<sup>33</sup> In this study, almost twice the proportion of women versus men reported feeling too uncomfortable to report their SM incident because they were in

an altered state due to alcohol/drugs. Based on prior research, these women might feel others would accuse them of inviting SM<sup>1</sup> through 'irresponsible' alcohol or drug use. Continued work is needed to dispel this and similar rape myths.<sup>1</sup>

Music venues are ultimately responsible for minimising and responding effectively to SM at their venue. Support from community partners and local authorities can help music venues develop effective prevention and response strategies.<sup>8</sup> Example strategies might include comprehensive safer space policies that (1) clearly define unacceptable behaviour (ie, all behaviours along the SM continuum)<sup>1,2</sup>; (2) encourage patrons to report SM; and (3) specify procedures for responding to SM incidents.<sup>13</sup> In 2017, in the UK, only one-third of live music venues had policies aimed at combating or reducing sexual violence.<sup>34</sup> No data could be identified for other countries, including the USA. Future research might examine the existence and impact of comprehensive SM policies at LMEs.

Findings from this and prior studies<sup>1</sup> indicate that music venues should also consider removing environmental barriers to SM reporting. For example, music venues can add high-visibility signage in strategic locations (eg, queue at the venue entrance, bathroom stalls and bar) indicating procedures for reporting SM and other problematic behaviours during LMEs. Venues might also consider how their spatial layout (ie, layout of the public space including seating, tables, walkways) might impact patrons' ability to move quickly to report SM. Future research might examine how different spatial layouts<sup>35</sup> could impact SM occurrence and response. Spatial layouts that enable swift SM reporting may have co-benefits for reducing response time for drug overdose, violence or other safety concerns.

It is in the best interest of music venues to prevent and respond to SM effectively as concertgoers may avoid venues where SM occurs frequently or is not appropriately addressed.<sup>13</sup> Venue policies and procedures should be developed with input from management, staff, patrons, musicians and other stakeholders to maximise buy-in, adoption and implementation fidelity.<sup>36</sup> It is also important to note that strategies suggested in this discussion section might look different in different areas of the world.

### Study limitations

Purposive non-probability sampling was used, limiting the generalisability of the study findings. For example, it is possible that individuals who have experienced SM were more likely to complete the questionnaire, potentially inflating the prevalence of SM incidents. Furthermore, this study focused on lifetime SM incidents; future research might examine the number of SM incidents within a specific time frame (eg, prior 6 or 12 months) in the USA. In addition, some types of SM were not included as options in the questionnaire (eg, upskirting, inappropriate photography, flashing). Future research may include an updated, more comprehensive list of SM types. Future researchers should also better define music venue types for respondents in the questionnaire to ensure respondents' understanding of the differences between the types (eg, mid-size venue vs small theatre). Venue type definitions exist,<sup>34</sup> but the study authors were not aware of these definitions until after the study was complete.

Additionally, the non-profit and industry partners who recruited respondents primarily target fans of live improvisational music, also known as 'jam bands'. While the jam band scene is known for its sense of community and belonging, substance use, which is associated with SM incidents,<sup>22</sup> is also common.<sup>37</sup> The findings from this study may not be generalisable across all music genres.

Despite these limitations, this study had a robust sample size. It employed a questionnaire developed based on prior SM studies and with input from GrooveSafe, our non-profit partner working to support those violated by SM at LMEs. The study also fills a critical gap in the literature by providing the first population-level estimate of SM at LMEs in the USA and by examining non-reporting for SM and the reasons underlying non-reporting.

### Recommendations for future research and practice

Our findings indicate that SM is prevalent at LMEs in the USA, particularly among women patrons, and that reporting of these incidents is currently limited. Reasons for not reporting SM incidents indicate that comprehensive ecological approaches, including policy and environmental adaptations by music venues, are warranted to reduce SM at LMEs and encourage reporting when SM occurs.

Future research in this area of study would benefit from standardised measures for key variables such as gender identity, sexual harassment and assault, and music venue types. Standardised measures would enable comparisons across studies within and between countries. Additionally, research is needed to examine the existence of current safer space policies in music venues of various types and how these policies may be associated with reductions in SM. Researchers should also prioritise research with genders other than, or in addition to, men and women as studies with men and women currently dominate the field.

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