



Risky Party and Nightclub Attendance during the COVID-19 Nightlife Shutdown in New York City

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Abstract From March 2020 through May 2021, nightlife venues were shut down and large gatherings were deemed illegal in New York City (NYC) due to COVID-19. This study sought to determine the extent of risky party attendance during the COVID-19 shutdown among people who attend electronic dance music parties in NYC. During the first four months that venues were permitted to reopen (June through September 2021), time–space sampling was used to survey adults ($n=278$) about their party attendance during the first year of the shutdown (March 2020–March 2021). We examined prevalence and correlates of attendance and mask-wearing at such parties. A total of 43.9% attended private parties with more than 10 people, 27.3% attended nightclubs, and 20.5% attended other parties such as raves. Among those who attended any, 32.3% never wore a mask and 19.3% reported attending parties in which no one wore a mask. Past-year ecstasy use was associated with increased risk for attending private (aPR = 1.51, 95% CI: 1.00–2.28) or other parties (aPR = 2.75, 95% CI: 1.48–5.13), and use of 2C series drugs was

associated with increased risk for attending nightclubs (aPR = 2.67, 95% CI: 1.24–5.77) or other parties (aPR = 2.50, 95% CI: 1.06–5.87). Attending >10 parties was associated with increased risk for never wearing a mask (aPR = 2.74, 95% CI: 1.11–6.75) and for no other attendees wearing masks (aPR = 4.22, 95% CI: 1.26–14.07). Illegal dance parties continued in NYC during the COVID-19 shutdown. Prevention and harm reduction efforts to mitigate risk of COVID-19 transmission during such shutdowns are sorely needed.

Keywords COVID-19 · Drug use · Nightclubs · Harm reduction

Introduction

First identified in Wuhan, China, in December of 2019, coronavirus disease 2019 (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus that has led to a profound global pandemic and global health emergency [1]. The first confirmed death in the United States (US) was reported on February 19, 2020, with the first confirmed New York (NY) case recorded on March 1, 2020 [2]. After declaring a state of emergency [3], the NY State Governor's office subsequently issued an executive order on March 20, 2020, that mandated the closure of all non-essential businesses—effectively a stay-at-home order that also

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prohibited any non-essential gatherings of individuals of any size [3, 4].

The rationale underlying the aforementioned public health measures was that restricting the number and duration of person-to-person contacts would curb transmission of COVID-19 [5, 6]. Despite limited evidence at the time—largely premised upon epidemiological models and past epidemics [7–10]—the rapid trajectory with which infections were spreading nevertheless compelled most governments to implement such measures. By September of 2020, at least 186 countries had established policies restricting population mobility, with 82 resorting to complete shutdowns of all nonessential businesses [11].

Some studies early in the pandemic reported that these uniform restrictions were effective in curbing the rates of COVID-19 transmission overall [5, 12]. However, follow-up studies have demonstrated that such measures were becoming less effective, presumably due to dynamic factors such as the dissemination of vaccines and population fatigue leading to nonadherence to restrictive measures [6, 11, 13]. In fact, it has been shown that adherence to physical distancing measures had waned from March 2020 to December 2020 across all world regions, country-income levels, and societal groups, though adherence to mask-wearing policies remained steady [14]. The latter point is important given that wearing masks has been shown to be effective at reducing the spread of COVID-19 infections among both healthcare workers and the general population [15–17].

While these studies evaluated overall effectiveness of restrictive measures at the macro level, more granular research exploring how specific subpopulations fared is lacking. For example, a large component of NYC's widespread shutdown measures targeted the nightlife scene, likely due to a fear of superspreader events [4, 18, 19]. However, news outlets in NYC have covered many occurrences of illegal parties throughout the pandemic in spite of the Governor's shutdown orders [20–25]. Indeed, it has long been known that this subpopulation is at greater risk of extensive drug use compared to the general population [26–29], but the added element of illegally attending dense parties during a pandemic—and potentially without adhering to mask recommendations—makes their risky behaviors an underscored concern. When taking into consideration specific groups of the population, then, the true effectiveness of broad COVID-19-related

shutdown measures likely becomes more nuanced than previous research findings suggest.

Ultimately, the ongoing COVID-19 pandemic presents ever-changing problems that must be met with evolving policy measures. Widespread “blanket” measures, such as shutdowns of entire industries for the population at large, appear not to be sustainable options moving forward owing to their tremendous economic and societal burdens as well as limited effectiveness of late [6, 11, 30]. A more nuanced understanding of the impact of previous restrictive measures can provide insight for future policy, especially as it pertains to certain groups of the population that may be less compliant with restrictive policy measures, such as frequent partygoers. To this end, our study aims to determine the extent and correlates of risky illegal party attendance during the COVID-19 shutdown among people who typically attend electronic dance music (EDM) parties in NYC, as well as to explore correlates of adhering to mask-wearing mandates at said parties. In particular, we examined behaviors at three types of parties: nightclubs, private parties, and other settings such as underground raves.

Methods

Procedure

Our parent study monitors drug use among EDM party attendees in NYC, but it was halted from March 2020 through June 2021 due to the COVID-19-related shutdown. Upon re-initiating this study, we added questions about illegal party attendance during the COVID-19 lockdown. Time-space sampling [31] was utilized to recruit participants from June 2021 through late September 2021, once clubs in NYC were permitted to reopen. Each week, a list of parties was constructed based on listings on a popular EDM ticket website and through nightclubs known to host EDM parties. We then randomly selected parties and surveyed adults about to enter. Recruitment typically occurred one to two nights per week, Thursday through Sunday. Individuals were also surveyed three days outside of a large EDM dance festival. Individuals about to enter parties were approached by staff and asked if they were willing to take a survey about drug use. To be eligible, individuals must have been age ≥ 18 and about to enter the selected

party. Participants provided informed consent and self-administered the anonymous survey on tablets. The survey response rate was 62%. This study was approved by the New York University Langone Medical Center institutional review board.

Variables

Participants were asked, “During the peak of the COVID-19 pandemic (March 2020 through March 2021), did you ever attend any of the following?” Answer options were nightclub, private party (with > 10 people), and other types of party such as an underground rave. Participants were able to check all that applied. Those reporting any attendance were asked how many times they attended such events that year, with answer options being 1–2 times, 3–5 times, 6–9 times, 10–19 times, and ≥ 20 times. A new variable was coded indicating attendance of ≥ 10 times. Those reporting attendance were also asked, “When you attended, how often did you wear a face mask?” and answer options were always, most of the time, some of the time, and never. They were also asked, “When you attended, on average, how many people wore face masks?” and answer options were all, most, some, and none. These variables were recoded into never vs. always or most/some of the time and into none vs. all/most/some, respectively.

Participants were asked their age, which we recoded into young adult (18–25) and older adult (age ≥ 26), sex, race/ethnicity, education, and sexual orientation. They were also asked whether they live in NYC. With respect to drug use, participants were asked about past-year use of ecstasy (MDMA, Molly), powder cocaine, LSD, ketamine, and 2C series drugs (e.g., 2C-B). We focused on these drugs because they are among the most prevalent among EDM party attendees [32].

Analyses

Percentages for all variables included in the analysis were first calculated. Next, chi-square was used to determine potential bivariable associations between independent variables (demographic characteristics and drug use) and dependent variables including nightclub attendance, private party attendance, other party attendance, whether participants never wore a mask, and whether no other attendees wore masks.

These variables were then fit into multivariable generalized linear models using Poisson and log link. This allowed us to generate adjusted prevalence ratios (aPRs) for each independent variable.

Results

Sample characteristics are presented in Table 1. The majority was age 18–25 (54.7%), male (53.2%), white (59.4%), and heterosexual (71.6%), with nearly two-thirds (65.1%) having at least a college degree. Over a third (35.3%) used ecstasy in the past year, and 30.6% used cocaine, and a quarter (25.5%) used LSD. Most participants (57.9%) had attended an illegal party during the shutdown, with 43.9% attending private parties with > 10 people, 27.3% attending nightclubs, and 20.5% attending other parties. Among those who attended any type of party, 32.3% never wore a mask and 19.3% attended parties in which no one wore a mask.

Table 2 presents bivariable and multivariable correlates of having attended each type of party. Those who used ecstasy (46.1% vs. 31.2%, $p=0.021$) or 2C series drugs (15.8% vs. 3.0%, $p<0.001$) were more likely to attend nightclubs, but in the multivariable model, only 2C series use remained significant (aPR = 2.67, 95% CI: 1.24–5.77). Those who used ecstasy (45.1% vs. 27.6%, $p=0.002$) or ketamine (25.4% vs. 14.1%, $p=0.017$) were more likely to attend private parties, but in the multivariable model, only ecstasy use remained significant (aPR = 1.51, 95% CI: 1.00–2.28). With respect to attendance of other types of parties, attendance was more likely among those surveyed outside of nightclubs as opposed to festivals (87.7% vs. 72.0%, $p=0.014$), and among those reporting use of ecstasy (61.4% vs. 28.5%, $p<0.001$), cocaine (42.1% vs. 27.6%, $p=0.034$), ketamine (31.6% vs. 15.8%, $p=0.007$), or 2C series drugs (19.3% vs. 3.2%, $p<0.001$). In the multivariable model, being surveyed at a festival was associated with lower risk of other party attendance (aPR = 0.32, 95% CI: 0.13–0.77), while use of ecstasy (aPR = 2.75, 95% CI: 1.48–5.13) and 2C series drugs (aPR = 2.50, 95% CI: 1.06–5.87) were associated with increased risk.

Finally, with respect to mask-wearing at events (Table 3), those who used cocaine were more likely to never wear a mask (44.2% vs. 28.4%, $p=0.047$),

Table 1 Sample characteristics ($n=278$)

	%	n
Age		
18–25	54.7	152
≥ 26	45.3	126
Sex		
Male	53.2	148
Female	46.8	130
Race/ethnicity		
White	59.4	165
Black	10.4	29
Hispanic	8.6	24
Asian	11.9	33
Other/mixed	9.7	27
Education		
High school or less	13.3	37
Some college	21.6	60
College degree	65.1	181
Sexual orientation		
Heterosexual	71.6	199
Gay/lesbian	6.5	18
Bisexual/other	21.9	61
Resides in NYC		
No	47.1	131
Yes	52.9	147
Where surveyed		
Nightclub	75.2	209
Festival	24.8	69
Past-year drug use		
Ecstasy	35.3	98
Powder cocaine	30.6	85
LSD	25.5	71
Ketamine	19.1	53
2C series	6.5	18
Party attendance during COVID-19		
Nightclub	27.3	76
Private party	43.9	122
Other party	20.5	57
Party attendance frequency		
0 times	42.1	117
1–2 times	12.6	35
3–5 times	14.4	40
6–9 times	12.6	35
≥ 10 times	18.4	51

and there was a significant difference detected regarding level of attendance ($p=0.001$), with 53.9% of

those attending >10 parties never wearing a mask (compared to 21.1% of those who wore a mask sometimes/always). In the multivariable model, only level of attendance remained significant with those attending >10 parties at increased risk for never wearing a mask (aPR=2.74, 95% CI: 1.11–6.75). With regard to no other attendees wearing masks, only level of attendance was significant in bivariable model ($p=0.006$), with 58.1% of those attending >10 parties reporting no others were wearing masks (compared to 25.4% of parties in which others sometimes/always wore masks). In the multivariable model, those attending >10 parties were at increased risk for attending parties in which no one wore a mask (aPR=4.22, 95% CI: 1.26–14.07), as were those who used ketamine (aPR=2.73, 95% CI: 1.02–7.28).

Discussion

The escalation of COVID-19 throughout 2020 and beyond led to swift but broad forms of restrictive measures to control transmission rates and avoid overwhelming health systems. In NYC, these measures included a shutdown of all non-essential businesses that lasted several months, in addition to various mandates involving face masks, vaccinations, and other public health actions. However, news coverage from various outlets suggests that many illegal parties nevertheless took place.

Overall, our findings show that over half (57.9%) of participants illegally attended some type of party during the period between March 2020 and March 2021, when nightlife venues in NYC were officially shut down by executive order. The plurality (44%) of these were private parties comprising over 10 people, though over a quarter (27.3%) of participants attended parties at nightclubs and over one-fifth (20.5%) attended other parties such as raves. These figures could be concerning owing to the high transmissibility of COVID-19, though perhaps not entirely unexpected given that EDM party attendees are known to commonly engage in other risky behaviors that are associated with adverse health effects, such as extensive and risky drug use [27–29, 32–34].

Indeed, upon investigating potential correlates of attending illegal parties, our findings suggest that those who used ecstasy or 2C series drugs within the past year were notably more likely to have

Table 2 Bivariable and multivariable models examining correlates of attending nightclubs, private parties, and other parties during COVID-19 nightlife closures

	Nightclubs			Private parties			Other parties		
	No, %	Yes, %	aPR (95% CI)	No, %	Yes, %	aPR (95% CI)	No, %	Yes, %	aPR (95% CI)
Age									
18–25	54.0	56.6	1.00	51.3	59.0	1.00	52.9	61.4	1.00
≥ 26	46.0	43.4	0.96 (0.58–1.59)	48.7	41.0	0.80 (0.53–1.19)	47.1	38.6	0.62 (0.34–1.15)
Sex									
Male	51.0	59.2	1.00	51.3	55.7	1.00	51.6	59.7	1.00
Female	49.0	40.8	0.99 (0.58–1.59)	48.7	44.3	1.01 (0.68–1.51)	48.4	40.4	0.85 (0.46–1.56)
Race/ethnicity									
White	58.4	61.8	1.00	59.0	59.8	1.00	58.4	63.2	1.00
Black	12.4	5.3	0.52 (0.18–1.49)	10.9	9.8	0.93 (0.49–1.76)	10.4	10.5	1.01 (0.40–2.54)
Hispanic	7.4	11.8	1.48 (0.71–3.12)	6.4	11.5	1.32 (0.73–2.39)	8.1	10.5	0.79 (0.31–2.04)
Asian	12.4	10.5	0.71 (0.32–1.58)	13.5	9.8	0.80 (0.42–1.53)	12.2	10.5	0.73 (0.28–1.94)
Other/mixed	9.4	10.5	1.22 (0.56–2.63)	10.3	9.0	1.02 (0.54–1.95)	10.9	5.3	0.68 (0.20–2.26)
Education									
College degree	66.3	61.8	1.00	69.2	59.8	1.00	65.2	64.9	1.00
Some college	21.8	21.1	1.14 (0.61–2.16)	19.9	23.8	1.31 (0.81–2.13)	21.3	22.8	1.24 (0.61–2.53)
High school or less	11.9	17.1	1.46 (0.73–2.91)	10.9	16.4	1.59 (0.91–2.76)	13.6	12.3	1.24 (0.51–3.00)
Sexual orientation									
Heterosexual	69.3	77.6	1.00	71.2	72.1	1.00	72.9	66.7	1.00
Gay/lesbian	7.9	2.6	0.30 (0.07–1.31)	5.8	7.4	0.87 (0.42–1.81)	5.9	8.8	0.81 (0.29–2.21)
Bisexual/other	22.8	19.7	0.67 (0.36–1.26)	23.1	20.5	0.78 (0.48–1.28)	21.3	24.6	0.81 (0.40–1.65)
Resides in NYC									
No	47.4	46.1	1.00	50.6	42.6	1.00	47.5	45.6	1.00
Yes	52.6	53.9	1.29 (0.78–2.15)	49.4	57.4	1.41 (0.93–2.11)	52.5	54.4	1.02 (0.55–1.87)
Where surveyed									
Nightclub	77.7	68.4	1.00	73.7	77.1	1.00	72.0	87.7	1.00
Festival	22.3	31.6	1.24 (0.69–2.21)	26.3	22.9	0.88 (0.48–1.28)	28.0	12.3^a	0.32 (0.13–0.77)^a
Past-year drug use									
Ecstasy	31.2	46.1^a	1.42 (0.83–2.44)	27.6	45.1^b	1.51 (1.00–2.28)^a	28.5	61.4^c	2.75 (1.48–5.13)^b
Powder cocaine	28.2	36.8	1.09 (0.58–1.59)	28.2	33.6	0.95 (0.60–1.49)	27.6	42.1^a	0.97 (0.50–1.88)
LSD	24.8	27.6	0.85 (0.46–1.59)	23.1	28.7	0.99 (0.62–1.60)	23.5	33.3	1.04 (0.53–2.05)
Ketamine	17.3	23.7	1.17 (0.57–2.36)	14.1	25.4^a	1.38 (0.82–2.34)	15.8	31.6^b	1.00 (0.47–2.12)
2C series	3.0	15.8^c	2.67 (1.24–5.77)^a	4.5	9.0	1.20 (0.59–2.44)	3.2	19.3^c	2.50 (1.06–5.87)^a

Note. Percentages refer to column totals. aPR, adjusted prevalence ratio; CI, confidence interval. Percentages were compared using chi-square (bivariable tests) and aPRs are multivariable results (controlling for all independent variables listed). Bold values indicate statistical significance.

^a $p < .05$, ^b $p < .01$, ^c $p < .001$

attended one or more of these types of parties. In particular, participants who used ecstasy were 1.5 times and 2.75 times more likely to attend private parties and other parties, respectively, while those who reported using 2C series drugs were similarly at 2.67 times and 2.5 times the risk of attending

nightclub parties and other parties, respectively. Since ecstasy and 2C drugs are often considered “club drugs” or “designer drugs” commonly used in party contexts [27, 32, 35, 36], the urge among people who currently use these drugs may be conducive to attending various parties in spite of public

Table 3 Bivariable and multivariable models examining correlates of mask-wearing at parties during COVID-19 nightlife closures

	Participant never wore mask			Other attendees never wore masks		
	No, %	Yes, %	aPR (95% CI)	No, %	Yes, %	aPR (95% CI)
Age						
18–25	64.2	48.1	1.00	61.5	48.4	1.00
≥ 26	35.8	51.9	1.65 (0.84–3.24)	38.5	51.6	1.79 (0.74–4.33)
Sex						
Male	53.2	57.7	1.00	54.6	54.8	1.00
Female	46.8	42.3	1.40 (0.73–2.70)	45.4	45.2	1.43 (0.62–3.30)
Race/ethnicity						
White	55.1	69.2	1.00	57.7	67.7	1.00
Black	8.3	9.6	1.25 (0.46–3.42)	7.7	12.9	1.21 (0.36–4.05)
Hispanic	12.8	7.7	0.61 (0.20–1.81)	13.1	3.2	0.20 (0.03–1.60)
Asian	15.6	3.9	0.21 (0.05–0.97) ^a	13.1	6.5	0.52 (0.10–2.58)
Other/mixed	8.3	9.6	1.06 (0.39–2.85)	8.5	9.7	0.81 (0.20–3.31)
Education						
College degree	59.6	69.2	1.00	62.3	64.5	1.00
Some college	23.9	17.3	0.81 (0.35–1.90)	20.0	29.0	2.16 (0.77–6.07)
High school or less	16.5	13.5	0.96 (0.39–2.40)	17.7	6.5	0.62 (0.13–2.86)
Sexual orientation						
Heterosexual	73.4	76.9	1.00	73.9	77.4	1.00
Gay/lesbian	8.3	3.8	0.92 (0.20–4.28)	6.9	6.5	2.03 (0.39–10.50)
Bisexual/other	18.4	19.2	0.68 (0.31–1.51)	19.2	16.1	0.56 (0.18–1.67)
Resides in NYC						
No	45.0	40.4	1.00	44.6	38.7	1.00
Yes	55.0	59.6	1.02 (0.54–1.90)	55.4	61.3	1.23 (0.52–2.90)
Where surveyed						
Nightclub	74.3	78.9	1.00	73.1	87.1	1.00
Festival	25.7	21.1	1.16 (0.51–2.66)	26.9	12.9	0.48 (0.13–1.76)
Attendance frequency						
1–2 times	25.7	13.5 ^b	1.00	23.9	12.9 ^b	1.00
3–5 times	28.4	17.3	1.02 (0.37–2.84)	26.9	16.1	0.88 (0.22–3.47)
6–9 times	24.8	15.4	1.27 (0.43–3.77)	23.9	12.9	1.00 (0.23–4.33)
≥ 10 times	21.1	53.9	2.74 (1.11–6.75) ^a	25.4	58.1	4.22 (1.26–14.07) ^a
Past-year drug use						
Ecstasy	40.4	51.9	0.97 (0.49–1.93)	43.1	48.4	0.82 (0.34–2.04)
Powder cocaine	28.4	44.2 ^a	1.34 (0.67–2.70)	33.1	35.5	0.84 (0.33–2.14)
LSD	27.5	28.9	1.22 (0.58–2.56)	26.1	35.5	2.73 (1.02–7.28) ^a
Ketamine	22.9	23.1	0.55 (0.23–1.30)	23.9	19.4	0.44 (0.14–1.36)
2C series	6.4	15.4	2.37 (0.86–6.55)	10.0	6.5	1.01 (0.18–5.75)

Note. Percentages refer to column totals. *aPR*, adjusted prevalence ratio; *CI*, confidence interval. Percentages were compared using chi-square (bivariable tests) and *aPRs* are multivariable results (controlling for all independent variables listed). Bold values indicate statistical significance.

^a*p* < .05, ^b*p* < .01, ^c*p* < .001

health restrictions. Although EDM party attendees represent but a small portion of the overall population, the ease with which COVID-19 can spread as more infectious variants of the virus emerge [37–39]—and especially in the context of potential

superspreader events [40]—greatly places entire communities at risk. Therefore, targeted public health measures to address this subpopulation and their risky behaviors is certainly warranted as the pandemic continues to unfold.

While attending parties during the peak of the COVID-19 pandemic itself constitutes risky behavior, doing so without wearing some form of face mask can augment the risk of infection. Our findings further demonstrate that approximately one-third (32.3%) of participants who attended parties typically never wore masks at said parties. In fact, nearly one-fifth (19.3%) attended parties at which typically no attendees wore masks. To a certain degree, this contrasts existing research that has found that levels of adherence to mask-wearing mandates and recommendations remained consistent over time compared to levels of adherence to social distancing measures and other restrictions on population mobility, which have waned as the pandemic progressed [6, 41].

With respect to correlates of not wearing masks, we found that participants who attended 10 or more parties were nearly three times more likely to have not worn masks at parties, and over four times as likely to have attended parties in which no one else was wearing masks. Several potential explanations include a desensitization to the risks associated with COVID-19 during a protracted pandemic, having been vaccinated, a perceived normalization of not wearing masks if others are without masks, and a stigma associated with wearing masks at social events if no others are wearing masks. While the participants in our study may consistently wear masks in other scenarios, the failure to do so at parties around many other persons during a pandemic is sufficient to facilitate spread of the disease, and particularly so if potential spreaders are young and more likely to be asymptomatic [42].

Ultimately, the findings reported in this study suggest that party scenes and nightlife will continue during the pandemic irrespective of public health restrictions. As such, a more targeted approach towards reducing risk and promoting harm reduction among subsets of the population, such as frequent partygoers, may be more efficient than enforcing uniform shutdowns and restrictions. Berlin, for example, recently banned dancing in nightclubs in December of 2022 [43]. We posit that a more effective approach would have been to explore means of promoting self-regulation within scenes, such as nudging promoters of illegal parties to mandate mask-wearing, require patrons to be vaccinated, encourage COVID-19 tests following parties, and establish means of putting forth contact-tracing protocols.

Limitations

Data were collected from participants during the first four months of nightclubs legally reopening, so self-reported past-year drug use does not perfectly overlap with the March 2020–March 2021 period specified regarding outings. As such, self-report of use would not refer to use very early in the pandemic and could have referred to use in spring or summer. Extent of mask-wearing was reported subjectively so use could have been misestimated. Types of masks may further impact the degree of risk, but such information was not queried. Although participants were surveyed in NYC, it is unknown to what extent parties attended during the shutdown occurred inside NYC. This study was cross-sectional so temporality of associations could not be inferred. Finally, participants were not probed regarding their vaccination status, which is a variable that may affect the extent of mask-wearing.

Conclusion

Attending illegal parties and nightclubs during the COVID-19 shutdown in NYC was a common occurrence, and many attendees did not wear masks. Use of party drugs such as ecstasy and 2C series drugs appears to be a risk factor for attending illegal parties, while more frequent partygoers are less likely to wear masks at these parties. Banning large nightlife gatherings may deter many from attending such events, but efforts towards reducing transmission among those who flout these laws are needed owing to the high risk for superspreader events to occur in this scene.

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