It is illegal to post this copyrighted PDF on any website. Hotel Room Suicide: Cuyahoga, Orange, Travis, and Wayne Counties

Cuyanoga, Orange, Travis, and wayne Counties

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ABSTRACT

Objective: To compare the suicide rates of local residents registering in local hotels with the general suicide rate in that county and to compare the suicide rates of hotel guests from outside the county with the national suicide rate.

Methods: The numbers of cases of suicide in hotel rooms and the general community were tabulated for Cuyahoga County, Ohio, for calendar years 2010–2017; in Orange County, California, and Travis County, Texas, for 2010–2012; and in Wayne County, Michigan, for 1997 to March 2005. The percentage of local residents registering in local hotel rooms was estimated from various sources to stratify the suicide risk for travelers and local residents.

Results: The suicide rate of local residents registering in local hotels was elevated compared to the general nonhotel population in each county (range of relative risk, 15.1-37.8; P < .0001, Poisson distribution). Hotel guests from outside each county had a reduced rate of suicide compared to the national rate (range of relative risk, 0.124-0.524; P < .05, Poisson distribution). With regard to suicide method, drug overdoses accounted for a significantly greater percentage in hotel rooms than in the nonhotel population in 3 of 4 counties (range of risk ratios, 2.03-4.51, P < .01; test of proportions), with the opposite pattern for gunshot wounds (range of risk ratios, 0.27-0.50; P < .01, test of proportions).

Conclusions: Although local residents register in hotels for various reasons, there appears to be a subpopulation with a purpose of avoiding rescue. Consistent with the risk-rescue rating, means of suicide with lower lethality, eg, drug overdoses, account for a greater percentage of cases in a setting with less chance of rescue. In contrast to the local use population, the sense of purpose or meaning inherent in travel could explain the decreased risk of suicide in guests from outside the county.

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he most robust risk factor in suicide risk assessment is a history of past suicide attempts, but not all suicide attempts carry equal prognostic weight. The risk-rescue rating aids clinicians in assessing each suicide attempt by including well-known factors of lethality of method, damage inflicted, and medical treatment required, but also measures taken to decrease likelihood of rescue including remote location or motel room with less probability of discovery and longer delay for treatment.¹ Although there is an abundance of data on the relative lethality of methods of suicide,² empirical evidence on efforts to decrease chance of rescue is rare. Registration in a local hotel room as a method for diminishing chance of rescue has been associated with an increased rate of completed suicide among residents of King County, Washington,³ and Clark County, Nevada.⁴ The elevated risk of local residents was contrasted with the diminished risk of suicide seen in hotel guests from out of state. After analyzing similar data from Wayne County, Michigan, Wasserman and Stack⁵ concluded that traveling was a risk factor for hotel room suicide using a multiple regression model that did not take into account the greater prevalence of travelers than local residents in hotel rooms. In previous studies,^{3,4} local residents accounted for 1% to 6% of hotel guests, partially dependent on the number of hotel rooms per county. Omission of this factor could account for the results from Wayne County.⁵

The regional incidence of suicide has been shown to vary with latitude,⁶ local economic indicators,⁷ and cultural factors.⁸ Cuyahoga County (Cleveland, Ohio), Travis County (Austin, Texas), and Orange County (Anaheim, California), along with Wayne County (Detroit, Michigan), form a sample that differs with respect to each of these factors. Our first aim is to investigate whether including a denominator for the risk of hotel room suicide in Wayne County would reverse the finding of increased risk in visitors. Our second aim is to investigate whether regional variation affects earlier findings in King and Clark counties.^{3,4} Our hypothesis is that local residents check into local hotel rooms to decrease the chance of rescue. A second hypothesis or pleasure, conveys a sense of meaning that is protective against suicide.

METHODS

Coroner case files of suicide in Cuyahoga County, Ohio, were reviewed for calendar years 2010 to 2017; Travis County, Texas, and Orange County, California, were reviewed for 2010 to 2012. Cases were included if the coroner listed mode

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- Local residents checking into local hotels have a 15 to 38 times greater suicide rate than other local county residents, possibly due to a subpopulation with a goal of avoiding rescue.
- With efforts to avoid rescue in the setting of a hotel room, less lethal methods of suicide become more effective; the accuracy of suicide risk assessments may benefit from including previous efforts to avoid rescue.
- Hotel guests from outside the local or neighboring county have a 48% to 88% reduction in suicide rate, possibly due to the meaning or purpose inherent in travel.

or cause of death as suicide. Residential data were based on identification found on the subject, eg, driver's license or equivalent documentation. A general indication of location of suicide was indicated in the data, and subjects found in a hotel or motel room were noted. Both hotels and motels will be referred to as hotel rooms, as the coroners did not differentiate between them. Although Wasserman and Stack⁵ reported the combined number of suicides in local hotel rooms for residents of both Wayne and Monroe County, Steven Stack, PhD, later reported the number from the counties of Wayne and Monroe for January 1, 1997, to March 1, 2005, separately in a written personal communication dated May 4, 2017.

The suicide rate was calculated for visitors and local residents registering in hotels for each county. The number of people staying in local hotels was estimated by the product of the number of rooms, occupancy rate, and mean party size. The number of hotel rooms and occupancy rate for Cuyahoga, Orange, and Travis counties are available in reports from Smith Travel Research,⁹⁻¹¹ and for Wayne County in a report from Hospitality Advisors.¹² The mean party size for Orange County is listed in a report from CIC Research.¹³ The percentage of Orange and Wayne County hotel rooms occupied by local residents (local use population) and mean party size for Wayne County was quantified by Warren L. Hull, CIC Research, Inc, San Diego, California, in a written personal communications on April 4, 2017; May 7, 2019; and July 19, 2017, respectively. The local use population and mean party size in hotel rooms of Travis and Cuyahoga counties were quantified in a survey of 10 hotel managers in each respective county.

The level of significance was tested between each group of visitors, local residents registering in local hotels, and the general population using the Poisson distribution.¹⁴ The suicide rate of local residents was compared with the rate of suicide in the general nonhotel population of each county. The rate of suicide in travelers was compared with the national incidence of suicide to reflect their origin outside each county. The level of significance for the percentage of male suicide decedents in hotel rooms compared with the nonhotel population and risk ratio for marital status and method of suicide was evaluated for each county using the test of proportions. The results are displayed in Table 1 with a column each for Cuyahoga, Orange, Travis, and Wayne counties, along with previously published results for King and Clark counties for reference. The suicide rate of local residents registering in local hotels was elevated compared to the general nonhotel population in each county (P<.0001, Poisson distribution). Hotel guests from outside each county had a reduced rate of suicide compared to the national rate (P<.05, Poisson distribution).

Drug overdoses accounted for a significantly greater percentage of suicides in hotel rooms than in the nonhotel population in 4 of 6 counties (P<.05, test of proportions), with the opposite pattern for gunshot wounds (P<.01, test of proportions).

Although single marital status was associated with significantly more suicides in hotel rooms than in the nonhotel population in Orange County, it was associated with fewer hotel suicides in Wayne County, which reported a greater association with divorced marital status. Only widowed marital status trended toward fewer hotel room suicides in all counties.

Across all counties, the percentage of men completing suicide in hotel rooms did not differ significantly from the percentage outside of hotel rooms using the test of proportions.

DISCUSSION

Replicating the results from our earlier studies in King and Clark counties, the residents of Cuyahoga, Orange, Travis, and Wayne counties have a significantly increased risk of suicide when checking into local hotels. These 6 counties form a diverse sample with varying socioeconomic conditions, suicide incidence, and number of hotel rooms. Although local residents check into local hotel rooms for a variety of reasons, there appears to be a consistent subpopulation that checks into local hotels with a purpose of decreasing the probability of rescue. Consistent with the risk-rescue rating, agents with lower lethality become more effective when measures are implemented to reduce the chance of rescue. The most lethal agent, firearms, in the general population tended to be used less in hotel rooms, and drug overdoses, usually considered a low lethality agent, were overrepresented. Case studies of suicide in hotel rooms suggest a greater degree in planning including purchasing cyanide on the deep web¹⁷ and using a scuba full face mask to inhale pure nitrogen.¹⁸ Finally, local hotel registration may reflect an effort to avoid not only rescue but also discovery by family members after completion. We are unable to rule out other objectives involved in local hotel registration, including illicit drug use, prostitution, and domestic turbulence that may elevate suicide risk in this subpopulation.

Also replicating our earlier studies, hotel guests from outside Cuyahoga, Orange, Travis, and Wayne counties and

Clinical Points

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Variable	Cuyahoga County	Orange County	Travis County	Wayne County ^a	King County ^b	Clark County
Total suicides ^d	1,283	856	396	1,381	642	933
Time frame	2010-2017	2010-2012	2010-2012	1997-2005	2002-2004	2003-2005
County population ^e	1,253	3,053	1,024	1,775	1,761	1,747
County suicide incidence ^f	12.6	8.8	12.4	9.4	11.7	16.6
National suicide incidence ^g	12.8	12.3	12.3	10.7	10.8	11.0
Gender						
(% male hotel/nonhotel)	67/79	84/74	80/80	81/83	87/75	84/79
Marital status risk ratio ^h						
Single	0.76	1.51**	0.94	0.50*	0.69	0.82
Married	1.30	0.69	1.53	0.75	1.00	0.98
Divorced	1.17	0.97	0.60	3.44***	1.44	0.89
Widowed	0.86	0.00	0.00	0.00	0.00	0.40
Method risk ratio ⁱ						
Gunshot wound	0.73	0.50**	0.27**	0.33***	0.95	0.68**
Hanging	0.62	0.40**	1.67	2.03**	1.01	0.74
Drug toxicity	2.99**	2.03**	1.49	4.51**	1.95	1.65*
Hotel room suicides ^j						
County residents	13	37	9	19	14	24
Neighboring county	5	11	3	1	4	0
In state	1	1	1	^j	0	0
Out of state	2	3	1	7	5	33
Unknown	0	3	1	0	0	4
Magnitude of local use population ^k						
Total hotel rooms	15,394	53,697	22,657	13,166	31,665	145,000
Occupancy	0.631	0.706	0.687	0.684	0.617	0.880
Party size	1.8	2.4	1.9	1.8	2.3	2.1
Local use rate	0.049	0.041	0.050	0.057	0.060	0.011
Local use results						
Local use suicide rate ^l	190	331	203	252	173	271
Relative risk	15.1***	37.8***	16.4***	27.0***	14.8***	16.3***
Visitor results						
Visitor suicide rate ^m	2.26	1.53	2.37	5.61	3.95	4.15
Relative risk	0.176***	0.124***	0.193**	0.524*	0.365**	0.377***

^aSuicide incidence in the hotel rooms of Wayne County⁵ was recalculated from the original study to address differences in relative size of the traveling and local use populations.

^bResults from King County³ were recalculated to exclude local residents living in neighboring counties and to compare travelers with national suicide incidence.

^cResults from Clark County⁴ were recalculated to compare travelers with national suicide incidence.

^dTotal number of suicides in each county for the duration of the time frame in the second row.

^eCounty population for the middle year of the time frame listed in thousands.¹⁵

^fIncidence of suicide per 100,000 people in the general population after excluding the cases that occurred in hotel rooms.

^gNational suicide incidence per 100,000 people for the middle year of the time frame.¹⁶

^hRisk ratio for marital status for cases in a hotel room to the general nonhotel population.

Risk ratio for method of suicide for cases in a hotel room to the general nonhotel population.

¹The number of suicides in local hotel rooms by county of residence. Wasserman and Stack⁵ did not distinguish between other counties in Michigan or other states in the nation.

^kMagnitude of local use population is calculated as the product of total number of hotel rooms, occupancy rate, average party size, and local use rate.

Rate of suicide per 100,000 county residents. Relative risk is calculated as the rate of suicide of county residents in local hotel rooms divided by the rate in the general nonhotel population of the county.

^mRate of suicide per 100,000 travelers. Relative risk is calculated as the rate of suicide of visitors from outside the county or neighboring counties divided by the national rate of suicide during the time frame.

*P<.05, **P<.01, ***P<.0001; Poisson distribution for relative risk of travelers and local use population; test of proportions for risk ratios of methods.

their neighboring counties have a reduced risk of suicide compared to the national incidence. This effect appears to be consistent in destinations with diverse economic and cultural attractions. The least protective destination in our sample was Wayne County. However, Wayne County is unique for this time period, as 3 visitors traveled to see Dr Jack Kevorkian for physician-assisted suicide. Even with this confound, Wayne County follows the overall protective effect of travel seen in the other counties in our sample. If the 3 cases with an uncommon purpose to travel were omitted, the magnitude of the relative risk would fall by 43%, and Wayne County would no longer be the least protective destination for travel in our sample, leaving Clark County as the least protective. Clark County also has various confounds for suicide risk for travelers including gambling, adult entertainment, and an Oscar-winning movie about completing suicide in Las Vegas. Yet, even with all the possible objectives for travel, the overall effect is protective, with a decreased risk of suicide across all 6 counties.

Although 2 categories of marital status were associated with significant findings, only widowed marital status consistently trended toward fewer cases of suicide in hotel rooms than in the nonhotel population. One could conjecture that these individuals live alone more frequently and do not need to implement mechanisms to avoid rescue. Furthermore, attempting suicide could be associated with

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it is illegal to post this copy joining their deceased partner and could be committed more fragmently in their provious home

frequently in their previous home.

There are limitations to this study. As this study is based on coroner data, we did not have access to other information that could stratify risk including the number of guests in each hotel room. The party size could be useful for differentiating purpose, as couples or groups checking into a local hotel room for an event would be less likely to be avoiding rescue than guests registering alone.

In conclusion, the pattern of increased risk of suicide of local residents registering in local hotels and decreased risk in travelers is seen in a variety of counties across the country over the past 20 years. Our study validates elements of the risk-rescue rating and highlights the clinical significance of measures taken to reduce the chance of rescue, in this **check PDF on any website**, ease, registration in a local hotel room. One implication of these data is that a suicide attempt by a person who checked into a local hotel should be regarded as a serious attempt regardless of the method. Our results are most applicable in the evaluation of risk after a suicide attempt, the most important factor in assessing future risk. In populations derived from the community, including hotel guests, these results are less applicable. Even with a double-digit relative risk, suicide is still a rare event even in local hotel room guests, occurring in 1 in 300 to 500 local guests over a year. Although screening for local residents registering alone could improve the likelihood of detection of a guest with suicidal ideation, multiple barriers impede the implementation of a primary prevention plan, including the confidential nature of the hotel industry.

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