

ANALYSIS IDENTIFIES RAPE CLUSTERS IN MAINLAND U.S.

Study also identifies areas with highest, lowest rape arrest rates

ALEXANDRIA, VA, NOVEMBER 18, 2015 – Marion County, Texas has the highest rape risk rate of any county among the 92 statistically significant rape clusters in the continental United States identified by [an analysis published online](#) today by [Statistics and Public Policy](#)—an American Statistical Association (ASA) open-access, online public-policy journal.

The first-of-its-kind rape cluster study, titled “[Geographical Clusters of Rape in the United States: 2000-2012](#),” also identified the clusters with the highest and lowest rate of arrests relative to reported rapes.

The study was conducted by Raid Amin, a professor of statistics at the University of West Florida; Martin Kulldorff, a professor and biostatistician in the Division of Pharmacoepidemiology at Harvard Medical School and Brigham and Women’s Hospital; and Nicole Nabors, Arlene Nelson and Murshid Saqlain—all former statistics students of Amin.

In disease surveillance, it is common to map incidence and mortality rates to detect areas of high risk of cancer, cardiovascular diseases, infectious diseases or birth defects. On the national level, no such mapping has been conducted for rape, even though it is no less of a serious public health problem, noted the study authors.

“We have identified areas with exceptionally high rates of reported rape,” write Amin and Kulldorff in the *Statistics and Public Policy* article. “The clusters or problem areas are prime candidates for more intensive preventive counseling by public health and social service agencies and a commitment to engaging in more aggressive criminal prosecution activities by local law enforcement authorities.”

Rape is a serious crime and public health issue impacting both men and women. The 2010 National Intimate Partner and Sexual Violence Survey, conducted by the Center for Disease and Control Prevention’s National Center for Injury Prevention and Control, estimates approximately 1 in 5 women and 1 in 71 men in the country have been raped. Although the incidence of rape has dropped since 1993, the FBI data shows there still were an estimated 79,770 forcible rapes of females in 2013.

For the study, the authors analyzed Uniform Crime Reporting (UCR) program data for each county in the lower 48 states on the number of reported rape cases and the number of rape arrests. Although rape also occurs against men, this study only examined rape of women. Additionally, at the time of the study,

UCR data were only available through 2012, so the authors used reported rape case data for the years spanning 2003-2012 and data for rape arrests for the period of 2000-2012. Last, since a new definition of rape wasn't implemented until 2013, the rapes studied fall under the former definition: "Carnal knowledge of a female forcibly and against her will."

Analysis of Rape Relative Risk Rates

When adjusted for age, the highest rape relative risk (RR) rate—19.75—was found in Marion County in northeastern Texas, meaning a woman in that area is almost 20 times more likely to be raped than the national average. Rounding out the top five are Alpine County, Calif. with a 4.6 RR; Potter County, Pa. (4.43 RR); Pennington County, S.D. (3.99); and Pottawattamie County, Iowa (2.90).

Of the 92 rape clusters found, there were four in which women had more than a three-fold excess risk of reported rapes compared to the rest of the country and eight with more than a two-fold excess risk (refer to following table for locations of these excess-risk areas).

Table 1: Statistically significant cluster of age-adjusted reported rape rages with a relative risk greater than 1.9.

Nearest City	Counties	Reported Rapes	Relative Risk
Jefferson, Texas	Marion	617	19.75
Markleeville, Calif.	Alpine	15	4.58
Coudersport, Pa.	Potter	223	4.43
Rapid City, S.D.	Pennington	1,159	3.99
Council Bluffs, Iowa	Pottawattamie	811	2.90
Marienville, Pa.	Forest	36	2.59
Sioux Falls, S.D.	Minnehaha	1,250	2.57
Saint Joseph, Mich.	Berrien	1,079	2.33
Galax, Va.	Galax City	48	2.32
Augusta, Ga.	Richmond	1,343	2.17
Petersburg, Va.	Petersburg City	205	2.01
Philadelphia, Pa.	Philadelphia	9,538	2.01
Jackson, Miss.	Hinds, Warren	1,904	1.97
Hyde, Pa.	Clearfield	447	1.94
Charlottesville, Va.	Charlottesville City	277	1.93
Lima, Ohio	Allen, Putnam	800	1.92
Central Fla.	Alachua, Bradford, Citrus, Dixie, Gilchrist, Hernando, Hillsborough, Lake, Levy, Marion, Orange, Pasco, Pinellas, Polk, Putnam Sumter, Union, Volusia	33,690	1.92
Columbus, Ohio	Franklin	6,803	1.92
Lower Peninsula, Mich.	43 counties	26,425	1.91
Ironwood, Mich.	Gogebic	81	1.90

Analysis of Rape Arrest Rates

A cluster formed by four counties in the New York City area—Bronx, King, New York and Queens—has the highest arrest rate relative to reported rapes with nearly 8 in 10 cases (79.5%) resulting in an apprehension of the perpetrator. Other areas with arrest rates higher than 60% were the six counties comprising the Jacksonville, Fla. metropolitan area (68%); a 51-county cluster in Wisconsin (63.7%); a cluster of five counties stretching from Louisiana to western Florida (62.8%); and Waco, Texas (60.7%).

Meanwhile, the District of Columbia and Prince George’s County, Maryland make up the cluster with the lowest proportion of arrests with a 6.6% rate of apprehensions in rape cases. Other areas with a less than 10% arrest rate for rape are Liberty, Mo. (6.8%), Springfield, Ill. (8.3%); Sioux City, Iowa (8.5%); and Austin, Texas (8.6%).

“We conducted this study to highlight areas where more resources and efforts are needed to better combat the rape problem in this country,” wrote Amin and Kulldorff. “High rape clusters need expanded implementation of preventive measures, such as changing attitudes in society toward rape, in addition to the criminal justice system taking a larger, more active role in rape prevention. Areas with a low proportion of rape cases that lead to arrests need additional law enforcement resources that will lead to the arrest and conviction of rapists. We implore our elected and appointed representatives in government to dedicate more resources to ending this scourge on our society.”

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