



Pathology/Biology Section - 2016

H109 Effects of Weather and Lunar Phases on Forensic Autopsy Case Load: A Four-Year Review

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After attending this presentation, attendees will appreciate the effects weather and lunar phases have on forensic cases, including homicide, suicide, accident, and natural death rates.

This presentation will impact the forensic science community by proving or disproving the anecdotal evidence that weather and the full moon play a substantial role in forensic caseloads or types. This presentation shows the effects, or lack thereof, of temperature, weather events (such as rain or snow), seasonal changes, and moon phases on manner of death and caseload.

Changes in seasons, such as the “winter blues,” have long been known to affect the mood of individuals. In fact, medical diagnoses, such as Seasonal Affective Disorder, exist because of the significant impact weather has on some individuals.¹ Furthermore, weather events that decrease the amount of sunlight, such as rain, can exacerbate symptoms.¹

In this study, information was extracted from the Jefferson County Coroner/Medical Examiner Office database regarding the number of cases and manner of death from 2010 to 2014. This data was merged with weather data collected for Birmingham, AL, as well as moon phase data.^{2,3} In total, there was evaluation of 3,756 cases. For the preliminary temperature statistics, average temperatures were grouped into 10° increments (i.e., 31°F-40°F). This categorical data was paired with manner of death data and evaluated with an Analysis of Variance (ANOVA) in Statistical Analysis System (SAS). Seasonal data was analyzed using a Chi Goodness of Fit. Moon phases and weather events were evaluated by t-tests.

No statistical significance was observed when categorized temperatures were compared to homicide, suicide, accident, and natural deaths ($p=0.97$, 0.33 , 0.87 , and 0.64 , respectively). Accidents (0.85 cases/day) followed by natural death (0.62 cases/day) were the most common manners of death. The evaluation of weather events, such as rain or snow, demonstrated an increased suicide average (0.24 versus 0.20 cases/day); however, this was not statistically significant ($p=0.097$). Seasonal data revealed a weak trend of increased spring accidents (0.92 versus total average 0.85 cases/day), but was not statistically significant ($p=0.08$). Lunar affects were initially examined by checking for statistical differences between full moon, new moon, and other phases. This examination showed a slight increase in suicide rate for the day of a full moon (0.27 versus 0.21 cases/day), but this was not significant ($p=0.34$). This was followed by examination of an approximate full moon range, two days before and after the full moon, and this showed almost no deviation from any other moon phase.⁴ Finally, Sunday had the heaviest case load and was significant (2.3 total cases/day, $p=0.005$). This increase was due primarily to increased homicide and accident rates.

These findings indicate that weather patterns, moon phases, and seasonal changes do not significantly impact the trends for homicide, suicide, accidents, or natural deaths. Weather events, such as rain and snow, showed a slight increase in the suicide rate, but not to a significant level. The dataset does indicate that homicide and accident rates are increased on Sundays. While anecdotal accounts about the “full moon” or “summer heat” will continue to abound, this data shows these ideas are unfounded myths.

Reference(s):

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3. Humbad, Shailesh. (2011). *Moon Phases for PHP Script* (CSV format). Retrieved from: <http://www.somacn.com/p570.php>
4. Moon Phases.info (2011). *For How Long Does A Full Moon Last*. Retrieved from: <http://www.moonphases.info/for-how-long-does-a-full-moon-last.html>

Forensic Autopsy, Moon Phase, Weather Effect