E30 Spatial and Demographic Patterns of Resolved Missing Persons Cases: What the National Missing and Unidentified Persons System (NamUs) Data Tell Us

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Learning Overview: The goal of this presentation is to demonstrate patterns found in a national database (NamUs) regarding spatial and demographic variables in resolved cases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by addressing questions regarding resolved missing person cases in the United States as a follow-up to a smaller 2013 county-based study.

NamUs has been used effectively by Medical Examiner's Offices (MEOs) in the United States since its inception in 2005. The investigative tool allows for the collection of important digital information from the public and from investigative agencies in order to develop profiles of missing persons and, at the same time, the compilation of biological and other scientific data of unidentified remains currently held by MEOs. Having these two separate databases has permitted death investigators, medical examiners, and other investigative personnel to run comparisons between them in order to determine if consistencies exist. If such similarities are found, follow-up testing and comparisons are conducted. The use of NamUs databases has resulted in 883 identifications by 2018. There is no doubt that NamUs has been an important positive development in the resolution of missing person cases in the United States.

These two databases were merged for the purposes of this study in order to analyze resolved (e.g., identified) cases (N=883), especially with an eye toward spatial factors. Bunch, Kim, and Brunelli conducted a county-wide study utilizing Geographic Information Systems (GIS) and investigator case notes in order to determine if any spatial patterning existed between the Victim Last Seen (VLS) location and the victim Body Recovered (BR) location.[1] Intriguing patterns did emerge and indicated that further study was warranted. The NamUs database records location of BR and, at times, VLS by county so that precision is limited in most cases. However, analysis using the county designations can be generally informative of relative proximity between these two data points. Within the merged NamUs data, the following spatial patterns emerged: 60% of remains were found (BR) within the borders of the same county where the missing person was last known to be alive. Moving further away from the VLS location, NamUs data showed that 17% of remains were found (BR) in the county adjacent to where the missing person was last known to be alive. Thus, 77% of resolved cases were those recovered (BR) within the same county as VLS (59%) or within the borders of the adjacent county to VLS (17%). Along with proximity patterns, this analysis will consider regions within the United States in order to understand where people are reported missing and where those cases are more likely to be resolved.

Demographic patterns were also explored, including sex, ancestry and age. Overall, 585 of the 883 cases, or 66%, were male**.** Males are overrepresented in a statistically significant way in the resolved missing person population based on this reported data because, according to the 2010 census, males make up 49.1% of the United States population. (chi-square=5.913, p value=.015029, significant at p <.05 level). With regard to ancestry (or bioaffinity), compared with 2010 census figures, the NamUs unidentified missing person and resolved cases roughly reflect the demographics of the country overall, with Blacks being the only group that is overrepresented in the missing and resolved cases, yet not in a statistically significant way. Analysis of age of those who have been identified via NamUs show the very young (0–17) and the elderly (65+) as the least numerous categories with 56 (or 6%) and 98 (or 11%), respectively. Adults from 18–24 years (110, or 12%), 25–44 years (354, or 40%), and those from 45–64 years (260, or 29%) comprised the vast majority of cases.

Additional spatial/demographic factors will be considered, and some interpretation of the observed patterns will be provided. The use of these data gives us a better understanding of the missing person reporting, investigatory, and recovery process in the United States; it can also be employed as a helpful and applicable tool when investigators approach "cold" or new missing person cases.

Reference(s):

1. Bunch, Ann W., Moonsun Kim, and Ronald Brunelli. Under Our Nose: The Use of GIS Technology and Case Notes to Focus Search Efforts. *Journal of Forensic Sciences* 62, no. 1 (2017): 92-98. https://doi:10.1111/1556-4029.13218.

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