A99 Reporting Biases Between Missing Persons and Unidentified Persons in the United States

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Learning Overview: After attending this presentation, attendees will be aware of potential bias associated with reporting in the National Missing and Unidentified Persons System (NamUs). Discrepancies between Missing Persons (MP) and Unidentified Persons (UP) datasets will be explored using the qualitative biological variables of ancestry and sex.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by quantifying levels of inherent bias in sex and ancestry via case data to stimulate discussion of current labeling systems and forensic anthropological methodology in the United States.

The NamUS database contains data submitted across the United States. The database contains MPs and UPs—these two datasets may not be synonymous for a variety of reasons (e.g., reporting biases, method inaccuracies). However, the datasets *should* closely approximate one another unless biases are present in forensic methodology (UP data) or in the reporting culture (MP data). The purpose of this project is to understand if any patterns of biases exist.

NamUs case report data were obtained for 10,000 random UPs and 10,000 random MPs. Individuals with one recorded ancestry (American Indian/Alaska Native, Asian, Black, Hawaiian/Pacific Islander, Hispanic/Latino, White) and sex (female, male) category were chosen to minimize variables and decrease computational complexity. The final sample includes MP (n = 9,079) and UP (n = 6,760) data. Many individuals self-identify socially to multiple ethnicities/ancestral groups and/or to trans/non-binary genders, classifications not easily recorded in the current NamUS system. It is acknowledged that single ancestry and binomial sex categories are unrealistic conventions, but they are applicable for this preliminary theoretical exploration. Counts by ancestry and sex were cross tabulated and converted to proportions to control for sample size. The MP and UP datasets were compared to each other using chi-square tests. These comparisons were done for sex, ancestry, and the interaction of both variables.

Assuming homogeneity, one would expect a near 1:1 ratio between MPs and UPs. However, the chi-square test indicated statistically significant differences between these overall datasets (p = 0.003). Females were significantly underrepresented in the UP records compared to males (p = 0.002). For ancestry, American Indian/Alaska Native (p = 0.004), Hawaiian/Pacific Islander (p = 0.001), and Hispanic/Latino (p = 0.074) were all significantly different, indicating underrepresentation among the UPs when compared to the MP samples. When combining sex and ancestry, only two groups showed significant differences: Hispanic/Latino males (p = 0.010) were overrepresented in UPs compared to MPs, while the opposite was true for White females (p = 0.014).

These results suggest several factors may influence bias in reporting (MP) or methodology (UP). For ancestry, differences may reflect biases in one or several of the following: (1) a reliance on the three-group model because practitioners are either unfamiliar with refined methodology or uncomfortable using them in practice; (2) broad category estimates when reporting for fear of inaccuracy; and/or (3) the absence of reference data and/or sampling bias. Examining only sex, this study found females were underrepresented in the UP data compared to MPs, indicating a potential sex bias in forensic methodology toward male classification, contrary to published literature.[1] White women are the only group significantly underrepresented in the MP data when combining sex/ancestry. These data show a bias against UP White females, but not for UP and MP minority females. Theoretically, Missing White Woman Syndrome assumes White women are reported missing over other socially constructed races and genders.[2,3] Therefore, White females should be the most accurate representation using forensic methods. Additionally, there is a well-documented phenomenon of underreporting for minority females (MP), but this study may be under-classifying minority females with these methods (UP). These data also suggest underreporting for Hispanic males. The most parsimonious explanation points to bias in sex and/or ancestry methodology for White women, underreporting of Hispanic males, and likely underreporting minority women.

This research provides evidence for biases both in reporting and forensic anthropological methodology related to sex and ancestry estimation. The call for population-specific methods for sex and ancestry represent one way forward to potentially minimize these biases.

Reference(s):

1. Hefner J.T., Emanovsky P.D., Byrd J., Ousley S.D. The value of experience, education, and methods in ancestry prediction. *Proceedings of the American Academy of Forensic Sciences*, 59th Annual Scientific Meeting, San Antonio, TX. 2007.
2. Sommers Z. Missing White Woman Syndrome: An empirical analysis of race and gender disparities in online news coverage of missing persons. *The Journal of Criminal Law and Criminology* 2016; 106:275-314.
3. Moss J.L. The forgotten victims of missing white woman syndrome: An examination of legal measures that contribute to the lack of search and recovery of missing black girls and women. *William & Mary Journal of Race, Gender, and Social Justice* 2019;25(3), 737-764.

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