H9 Pubic Aging Indicator Symmetry

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After attending this presentation, attendees will understand that age estimation from the pubic symphysis is not as straightforward as it appears and that assumptions about the methods employed may not always hold true. anthropologists should consider more carefully how they create age estimates from pubic symphyses. Forensic anthropologists routinely determine age estimates from established and commonly-used methods as part of the biological profile. However, whether age is estimated by a student anthropologist or seasoned professional, precision of the estimation may be affected by as minor a factor as which side of a bone is chosen for analysis. In forensic cases where only partial remains are recovered, this factor becomes even more significant in age estimation.

If aging indicators are truly linked to biological age then it is logical to presume that, barring gross pathological exceptions, the left side indicators should mirror the right side, and vice versa. In this study, the degree of symmetry between the right and left sides is measured on various age indicators of the pubic symphysis. One hundred seventy-six pairs of pubic symphyses from the William M. Bass Donated Collection housed at the University of Tennessee, Knoxville were scored according to the definitions of 35 different aging indicators compiled from eight aging methods. Both component and phase methods were used. Five of the variables are newly created variables based on variations or alternative interpretations of variable definitions from the literature. The two sides were observed independently by the same observer to maintain consistency.

The data were analyzed using simple statistical calculations on the differences of the observations between the sides. Calculations included the range of the differences and the magnitude of the asymmetry. The percentage of observations that demonstrated a difference between sides was calculated, as well as the average magnitude of asymmetry for those observations scoring differently on the two sides.

There is significant difference between the right and left pubic symphysis. Generally, the differences between the two sides are no more than one stage removed from one another. Thus, an aging indicator having only three or four possible states would be highly unlikely to score a difference measure of three or even two between the two sides. Likewise, methods with a large number of different states can more easily achieve a greater magnitude of asymmetry. Therefore, the percentage of observations that exhibited a difference bilaterally is more meaningful than the magnitude of the difference. None of the 35 variables tested exhibited 100% concordance between the two sides, although a few were relatively close. Eleven of the 35 variables had more than 30% of the observations differ between sides, with a maximum range of 47%.

These data illustrate that anthropologists cannot assume the right pubic symphysis will be aged the same as the left. This factor should also be taken into account when establishing definitions for new aging indicators.

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