Research Questions

- What are the current practices and preferences of physical anthropologists for sex estimation in unidentified, adult individuals encountered in forensic and bioarchaeological contexts?
- To what extent are sex estimation practices standardized within the field of physical anthropology?

Goal

“To raise awareness of our practices as a unified discipline and promote discussion on future improvements and standardization.”

(Martin & Passalacqua 2012 pg.427 for adult age estimation survey)

Materials & Methods

- 32 question electronic online survey
  - concerning respondent’s education, background, and preferences for sex estimation
- Participants recruited via email based on their membership in professional anthropology organizations
- 122 respondents

Results

Education & Current Position

- Most respondents were academic or professional physical anthropologists with advanced degrees in anthropology that are mostly based in North America. 40.3% were also AAAS members.

Experience

- 65.6% self identified as bioarchaeologists
- 60.9% self identified as forensic anthropologists

Skeletal Region Preference

- Respondents ranked the skull, pelvis, long bones, and the hands and feet, based on their preference and perceived reliability of those areas for sex estimation when the skeleton was complete or nearly complete.
- Pelvis ranked highest (89.8%) as most preferred region
- Skull ranked second (22, average rank) most preferred area, followed by the long bones (2.9 average rank)

<table>
<thead>
<tr>
<th>Region</th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Fifth</th>
<th>Don’t Use</th>
<th>Average Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvis</td>
<td>123</td>
<td>109</td>
<td>94</td>
<td>85</td>
<td>72</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Skull</td>
<td>199</td>
<td>181</td>
<td>127</td>
<td>105</td>
<td>87</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Long Bones</td>
<td>197</td>
<td>168</td>
<td>122</td>
<td>119</td>
<td>101</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>Hands/Feet</td>
<td>73</td>
<td>69</td>
<td>54</td>
<td>39</td>
<td>29</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Pelvis Preferences

- Metric: FORDISC
- Nonmetric: Phenice’s three traits (54.5% 1st choice)

Skull Preferences

- Metric: FORDISC
- Nonmetric: Biukstra & Ubelaker (59.7% 1st choice)

Long Bone Preferences

- Metric: FORDISC
- Nonmetric: most prefer not to use (66.6%)

Methodological Preference

- Nonmetric methods preferred 2.25:1 to metric methods when both types are not used for sex estimation

Discussion

- Methods employed and way results are reported varies considerably across the discipline
  - problematic, especially in forensic contexts
- Pelvis (pubic bone) is generally accepted as best indicator of sex due to differences between males and females related to childbirth
  - overwhelming preference of pelvis above all other regions by respondents reflects this long-held belief
- Selection of the skull as second most preferred area over the long bones is not surprising, as the skull has generally been presented in many introductory texts as the second best indicator of sex
- Spradley & Jantz (2011) demonstrated that long bones outperform skull in correct sex classification using metric methods
  - may be time to reconsider or reevaluate the utility of the skull for sex estimation above other skeletal regions

Conclusions

Understanding the preferences and methods being employed for sex estimation, as well as how results are reported, is the first step towards standardization. The main themes and findings from this research are consistent with those found for adult age estimation (Garvin & Passalacqua 2012). There is considerable variation present; however, the results of the various methods used are likely still accurate for sex estimation. The next step is recognizing the choices being made and our preferences to promote further discussions and then work towards standardization within our field.

Acknowledgements

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