ABSTRACT

Looting is a destructive force at archaeological sites and sites of cultural heritage around the world. Looting is affected by culture practices, religious beliefs and practices, political climate, and economic stability. With the prevalence of looting both in antiquity and modernity it has become increasingly important to understand the effects of looting on archaeological and skeletal collections from recent fieldwork, as well as museum storage. This research investigates quantitative bioarchaeological methods that can be utilized to understand taphonomic processes and reconstruct mortuary practices. Based on qualitative (in situ and laboratory conditions) and quantitative (fragmentation size and weight) observations, there are statistically significant differences between skeletal remains from looted and unlooted contexts, but not within each context.

CASE STUDY: AL-WIDAY SUDAN

- Al-Widay has both Kerma Moyen (2050–1750 BCE) and Kerma Classique (1750–1380 BCE) tombs, which are round and rectangular respectively (see inset map, right).
- Al-Widay is now fully submerged under the Merowe Dam Reservoir.
- The undisturbed tombs are isolated to the southern-most part of the cemetery; this is potentially due to accumulation of sand and sediment in this area.
- Our goal is to use a Logistic Regression model to determine whether graves from unknown taphonomic contexts more closely match the disturbed and undisturbed signatures, unknown graves are shown in gray in the inset map.

INVENTORY, FRAGMENTATION & ZONATION

- Inventories of each Culturally Significant Anatomical Region were taken using the Zonation method described in Stodder and Osterholtz 2010 and Knüsel and Outram 2004.
- Quantitative Percentage Completeness was calculated based on Number of Zones Present, divided by Number of Zones Possible.
- Qualitative Completeness was based off of photographs taken with the skeletons in situ during the excavation process.

FUTURE RESEARCH

- Logistic Regression Analysis will be used to predict “looted” or “unlooted” status based on fragmentation data collected for each burial (Beck).
- Histological data collected from the Al-Widay collection will be investigated to see what types of histological preservation patterns are evident at the microscopic level, and to evaluate what effect porosity has on disturbed remains (Kinkopf).

SELECTED REFERENCES


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CULTURALLY SIGNIFICANT ANATOMICAL REGIONS

Ethnographic and archaeological evidence for funerary practice in north-central Sudan was used to define five Culturally Significant Anatomical Regions:

- The head and neck region, which are usually adorned with head-ties, head-covers, necklaces, necklaces, and other high-value pieces in both ancient and modern Nubian burial practice.
- Stone and metal beads and other decorations were found near or around the hands and feet of individuals from undisturbed burials at Al-Widay.

Anatomical regions were categorized as:

1. Present – Present, Crushed
2. Disturbed – Fragmentary, Disarticulated
3. Absent

which are based on the degree of fragmentation and percentage completeness.

The photograph (above) shows an individual that has absent fragmentary culturally significant anatomical regions.

The figure (left) highlights the anatomical regions identified for this analysis.

STATISTICAL ANALYSIS

- In the disturbed context, the neck has a higher proportion of absent bones than the other CSCAR regions. This may be related to the distinctive articulation of the cervical vertebrae.
- No other anatomical region shows a significant difference from the overall pattern of variation within a given taphonomic context.
- For disturbed contexts, this pattern is relatively evenly divided between present, disturbed and absent bones, while in undisturbed contexts, present bones predominates.
- There are statistically significant differences between the undisturbed sample and the disturbed sample.

- Fisher’s Exact Test: 2x2 comparisons of each anatomical region were made for each pair of taphonomic conditions (e.g. Present vs. Disturbed, Disturbed vs. Absent). Results suggest that there are significant differences in the preservational patterns of CSCAR regions between Disturbed and Undisturbed contexts, particularly regarding the proportion of bones that are present relative to the proportion of bones that are absent.

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