

Preliminary Analysis of the Commingled Ossuary at Brădești (Fenyéd), Harghita County, Transylvania, Romania

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Introduction

The Székely are a Hungarian-speaking people that have occupied the Carpathian Basin in Eastern Transylvania for centuries in a region known as the Székelyföld. The Székely people are predominantly Christian and have historically belonged to either the Catholic Church or the Reformed Church (Bethard, 2019). The archaeological site at Brădești (in Hungarian: Fenyéd) in Harghita County, Romania consists of a Catholic church and graveyard with an associated ossuary. The graveyard at the site of Fenyéd was in use for hundreds of years—particularly in the 11th and 12th centuries (Zedjlik, 2019). The continuous use of the cemetery over time forced the Székely in Fenyéd to create an ossuary for the skeletal remains that were uncovered as the graveyard was filled. Evidence of historic postmortem alteration took the form of partial elements with sheared ends in both the cemetery and ossuary, as well as partial burials and unassociated elements in the cemetery.

The presence of an ossuary at Fenyéd indicates both the continued need for space in the cemetery and adherence to the Catholic belief of burying the dead in consecrated ground. The ossuary at Fenyéd was excavated in 2013 and was subsequently curated and analyzed over several field seasons. The dimensions of the ossuary were approximately one by 1.5 m with a depth of 20 cm. The remains in the ossuary were extremely fragmented and commingled (Figure 1). The goal of the present study is to provide a preliminary analysis of the minimum number of individuals (MNI) observed, in addition to describing the condition of the remains after being subject to anthropogenic taphonomic processes.



Figure 1. The Fenyéd ossuary *in situ* (photo credit Zsolt Nyáradi).

Discussion and Conclusions

The discussion surrounding the individuals in the ossuary and cemetery is trifold, concerning (1) the application of the two MNI methods, (2) the percent completeness of the long bones and mandibles and overall condition of the remains, and (3) the implications of the combined use of a cemetery and ossuary.

- (1) The results suggest that both the traditional method (White, 1953) and landmark analysis (Mack et al., 2016) are useful when calculating MNI; however, the nature and condition of the assemblage should be considered before application. While in this case the petrous portions were preserved and the traditional method was successful, in assemblages where the remains are extremely fragmented and commingled, landmark analysis may still be able to provide more accurate MNE estimates.
- (2) The measurements of percent completeness range from ~12-23% for the long bones and ~57% for the mandibles. Mack et al. (2016: 528) state that, "Percent completeness demonstrates how much of each element is present, not how fragmented the elements are." However, most of the fragments found at Fenyéd could not be rearticulated. Therefore, we argue that percent completeness can represent the relative fragmentation of each element. Using the percent completeness and different MNE estimates provides an opportunity to assess human agency over the handling of human remains moved from a primary to a secondary burial.
- (3) With the MNI calculations being larger than the number of burials in the graveyard and the evidence of postmortem, anthropogenic alteration (e.g. skeletal elements with shovel shearing), a constant removal of older burials from the cemetery into the ossuary is implied. This behavior demonstrates adherence to burying remains on consecrated ground that is consistent with Catholic beliefs. The values can also act as an indicator of the extensive use of the graveyard over time.

The analysis of the Fenyéd ossuary is not complete. Combining the MNI from the adult individuals and an additional four non-adults (from femora fragments), the total MNI for the collection following the combined workshops is 162 individuals. Analysis of the remainder of the non-adult remains will continue; due to pending analysis, the total MNI for the Fenyéd ossuary will increase. However, the implications of this preliminary study could be insightful in the analysis of other ossuaries.

Materials and Methods

Initially, the osteological material, which filled 51 bags, was washed, sorted by element, and sided when possible. Each element was counted to find a traditional Minimum Number of Individuals (MNI) based on White et al. (1953). While both adult and non-adult remains were observed in the ossuary, the present study focuses on the adult skeletal elements.

Based on methods from Mack et al. (2016), osteological features (e.g. Figure 2) were noted as present or absent for each element. A feature was considered absent if less than half of the landmark present. A Minimum Number of Elements (MNE) was determined for the femur, humerus, tibia, ulna, radius, and mandible by using the most frequently observed feature from each element's list of landmarks. An MNI was established by choosing the largest MNE from one of the paired elements.

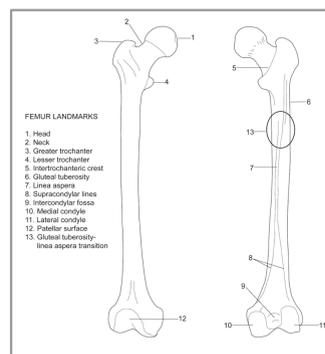


Figure 2. Features on the femur as an example of the landmarks used for analysis from Mack et al. (2016).

Finally, methods outlined by Mack et al. (2016) and Lambacher et al. (2016) were used to determine the percent completeness of each element. The number of observed landmarks, number of fragments, and defined number of element landmarks were entered into Formula 1. Based on the number of landmarks and fragments present, this measurement indicates the typical condition of each element.

$$\left(\frac{\text{total landmarks observed}}{\text{total identified fragments per element defined landmarks per element}} \right) = \% \text{ completeness}$$

Table 1. The Number of Identified Specimens (NISP) calculated from the fragmented skeletal material.

Element	Femur	Tibia	Humerus	Ulna	Radius	Os coxa	Petrous Portion
Left Side	309	201	199	87	80	163	153
Right Side	204	195	209	77	72	149	158
Unsidied	309	128	147	46	19	220	4
Total	822	524	555	210	171	532	315

Formula 1. Percent completeness formula compiled from Mack et al. (2016) and Lambacher et al. (2016).

Results

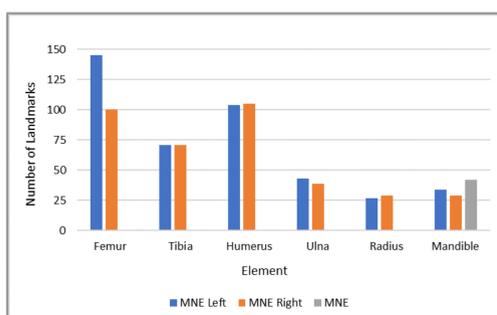


Figure 4. MNE results of the long bones and mandible using Mack et al. (2016).

Table 1. Final MNI results per element following White (1953) for the petrous portion and Mack et al. (2016) for all other elements.

Element	MNI
Petrous Portion	158
Femur	145
Humerus	105
Tibia	72
Ulna	43
Mandible	42
Radius	29

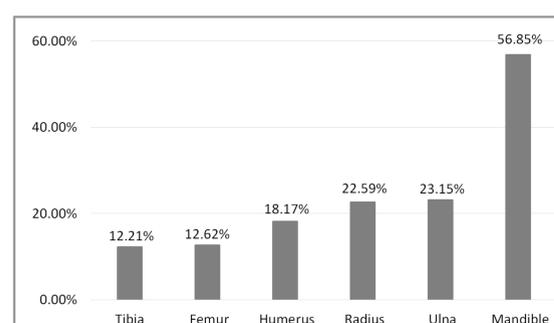


Figure 5. The relative percent completeness of each element following Mack et al. (2016) and Lambacher et al. (2016).

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