



Cairo University

Faculty of Archaeology

Egyptology Department



Prehistoric Infants and Child Burials in Egypt and Sudan: Anthropological, Paleopathological and Paleo-Environmental study

MA Thesis submitted in Faculty of Archaeology, Cairo University for
the partial fulfillment of the requirements of the MA program
“Environmental Archaeology”

By: Mona Akmal Mohamed Ahmed

Supervised by

Dr. Abooualhassan Bakry

Assistant Professor in Prehistory

Faculty of Archaeology

Cairo University

Prof. Dr. Moheb Shabaan

Professor of Physical Anthropology

Institute of African Studies and

Research

Cairo 2018

Abstract:

Investigating the evidence of infants and children in the prehistoric period is surrounded by several constraints and challenges. This is in part due to the low preservation of subadult skeletal remains in the archaeological record, and/or burying them outside the main graveyards, while also due to excluding them from the archaeological interpretations in many other cases. Such facts contributed to defining the research objectives, questions, and methodology, and also contributed to increasing the sources of inaccuracy of the research results. However, with the absence of textual, artistic, and illustrated evidence, subadult burials becomes the only source of information about infants and children during the prehistoric period. Therefore, searching for the evidence of such burials through the archive data was the first step prior to extracting all the possible information which aided in producing data tables for all the 22 sites selected for the current study , where each burial in each site is described using the same attributes including the burial numbers, burial type and location, number of occupants, types and frequency of grave goods deposited in the burial, the position of body, head and face, sex, age, depth of burial, and any recorded pathological condition. Producing comparable attributes was crucial for further data analysis. The results of analyzing and interpreting such data proved to be of great significance in inferring a wide range of information about how children were viewed and treated by their families and peers, while also helped in detecting the similarities and differences in the mortuary practices which were performed towards infants and children, when compared to that of adults. Moreover, the research offers a model for the evolution of the mortuary spaces related to infants and children in prehistoric Egypt and Sudan. Therefore, the research is considered as a significant step towards the inclusion of children in the archaeological interpretation, and towards the introduction of the archaeology of childhood as a developing discipline.

Index

| | |
|---|-----------|
| List of Figures | iii |
| List of tables | vi |
| List of Maps | vii |
| 1. Introduction | 1 |
| 1.1. Setting | 1 |
| 1.2. Statement of purpose | 4 |
| 1.3. Research Methodology | 6 |
| 1.4. The relevant literature | 8 |
| 2. The Archaeology of Childhood (Approaches & Constraints) | 12 |
| 3. Taphonomic approach | 17 |
| 3.1. Taphonomic factors and agents | 18 |
| 3.2. Significance of taphonomic studies | 22 |
| 3.3. Applications of taphonomic studies | 23 |
| 4. The Bioarchaeological approach | 25 |
| 4.1. Sexing and aging Subadult's skeletal remains | 27 |
| 4.1.1. Age estimation | 27 |
| 4.1.1.1. Skeletal age estimation | 28 |
| 4.1.1.2. Dental age estimation | 31 |
| 4.1.1.2.1. Overview on the dentation of infants and children | 32 |
| 4.1.2. Age categories of Infants and Children | 35 |
| 4.1.3. Sex determination | 40 |
| 5. The paleopathological approach | 42 |
| 5.1. Methods of Paleopathology | 47 |
| 5.1.1. Background data collection | 47 |
| 5.1.2. Applying Macro and Micro-scopic techniques | 48 |
| 5.2. The constraints and limitations in the study of paleopathology | 49 |
| 5.2.1. Limitations related to the literature | 49 |
| 5.2.2. Limitations related to the pathogens/diseases themselves | 50 |
| 5.2.3. Limitations related to the methods and tools used in this science | 51 |
| 5.2.4. Limitations related to the study of Paleopathology on the skeletal remains of infants and children | 52 |
| 5.3. Examples of the diseases that primarily influenced children in the archaeological record | 53 |
| 5.3.1. Porotic hyperostosis | 55 |
| 5.3.2. Scurvy | 57 |
| 5.3.3. Rickets | 59 |
| 5.3.4. Dental Caries | 62 |
| 5.3.5. Dental enamel hypoplasia | 63 |
| 5.3.6. Trauma | 65 |
| 5.3.7. Tuberculosis (TB) | 68 |
| 5.3.8. Congenital syphilis | 69 |
| 6. Temporal and environmental context of the research | 71 |

| | |
|---|-----|
| 7. Tracing the evidence of infants and children through the burials | 76 |
| 7.1. Child burials in Egypt | 82 |
| 7.1.1. Tell el Farkha | 82 |
| 7.1.2. Merimde Beni-Salama | 87 |
| 7.1.3. Minshat Abu Omar | 100 |
| 7.1.4. Helipolis | 104 |
| 7.1.5. Maadi and Wadi Digla | 108 |
| 7.1.6. El Omari | 117 |
| 7.1.7. Gerzeh | 121 |
| 7.1.8. Mahsna | 125 |
| 7.1.9. Armant | 129 |
| 7.1.10. Badari | 133 |
| 7.1.11. Adaima | 140 |
| 7.1.12. Nag ed deir | 152 |
| 7.1.13. Gebel Ramlah | 163 |
| 7.1.14. A-Group cemeteries | 169 |
| 7.2. Child burials in Sudan | 174 |
| 7.2.1. El Barga | 174 |
| 7.2.2. R12 cemetery in Northern Dongola Reach | 176 |
| 7.2.3. El Kadada | 181 |
| 7.2.4. Es Sour | 184 |
| 7.2.5. Qala'at Shenan | 185 |
| 7.2.6. Esh Shaheinab | 188 |
| 7.2.7. Kadero | 191 |
| 8. Data analysis | 198 |
| 8.1 Site's Chronology – Setting an overarching chronological frame | 200 |
| 8.2. Demographic data, age at death, and the number of burials in each site | 207 |
| 8.3. The site's context in accordance to the burial's contexts | 216 |
| 8.4. The burials types | 220 |
| 8.5. Types, location, and ontexsts of child burials / Mortuary spaces of infants and children | 225 |
| 8.6. The types of grave goods and burial practices | 228 |
| 8.7. Coverings and Wrappings | 238 |
| 8.8. Body orientation, position, and number of inhumation(s) in the same burial | 241 |
| 8.9. Comments on the preservation status and taphonomic data | 241 |
| 8.10. General health pattern and paleopathological data | 244 |
| 9. Concluding Remarks | 250 |
| Bibliography | 257 |

List of Figures

| | | |
|--------|---|-----|
| Fig.1 | The number of publications related to adults and subadults over the past ten years, from 51 countries including the U.S.A, and European countries | 10 |
| Fig.2 | Right) showing the temporary dentation of subadults | 34 |
| Fig.3 | Indication of the mixed dentation of deciduous and permanent teeth | 34 |
| Fig.4 | The anatomy of the tooth:a.enamel,b.dentin,c.pulp cavity, d.cementum, e.cementuenamel junction, f.bone, g.gum. | 34 |
| Fig.5 | Chart showing childhood mortality rate of paleoindians in the Americas during Clovis culture prehistoric period | 45 |
| Fig.6 | Endocrinal lesions on the occipital bones of a child | 54 |
| Fig.7 | The etiology of Cribra Orbitalia, and Porotic hyperostosis | 56 |
| Fig.8 | Cribra Orbitalia in the right orbit | 56 |
| Fig.9 | Graph showing the effects of Ascorbic acid intake within the its first and second stages of diagnosis using clinical and pathological approaches, as suggested by Stark | 58 |
| Fig.10 | Distribution of the areas mostly affected by scurvy in sud adults skeletons | 58 |
| Fig.11 | Areas mostly affected in rachitic subadults skeletal elements | 61 |
| Fig.12 | Long bone deformations caused by rickets | 61 |
| Fig.13 | Radiographic image of a tooth with indication of the caries on the occulsa and interproximal surfaces | 62 |
| Fig.14 | The different types of DEH, as seen on the molars | 62 |
| Fig.15 | The types of fractures commonly recorded in children’s bones in distal humerus, proximal and distal tibia and the distal femur | 67 |
| Fig.16 | The area’s most likely to be influenced with tuberculosis lesions in subadult skeletons | 68 |
| Fig.17 | The tarmsa child after its entire uncovering, with closer view of the skull to the right | 77 |
| Fig.18 | Burial.1. E.Kom. | 84 |
| Fig.19 | Burial. 7. E Kom. | 84 |
| Fig.20 | Burial.6. E.Kom. | 84 |
| Fig.21 | The stratigraphic sequence and the five phases of Merimde culture as identified by Eiwanger – indicating the hiatus between ursicht and sicht II | 88 |
| Fig.22 | Burial B/2 from the middle Merimde Phase of a 15-16 years child | 92 |
| Fig.23 | Burial C/18 of a 3 years old child. | 92 |
| Fig.24 | Burial B/4 of 2-3 years child | 92 |
| Fig.25 | Burial. B/21 of 9-11 years child | 92 |
| Fig.26 | Burial B/18 of a 2-3 years child | 92 |
| Fig.27 | Burial.4 | 106 |
| Fig.28 | Burial.155 | 106 |
| Fig.29 | Storage pits, and postholes in the habitation area at Maadi. | 110 |
| Fig.30 | Plan of the cemetery at Maadi | 111 |
| Fig.31 | Burial MA.31 | 112 |
| Fig.32 | Burial MA.58 | 112 |
| Fig.33 | Area.B from the east. | 119 |
| Fig.34 | Burial.B.55. | 119 |
| Fig.35 | The distribution of Infant, small children, children burials at Gerzeh. | 123 |
| Fig.36 | Burial. H13 | 127 |
| Fig.37 | Burial. No.17 | 127 |

| | | |
|--------|---|-----|
| Fig.38 | Burial. No.19 | 127 |
| Fig.39 | Burial. No.41 | 127 |
| Fig.40 | Burial.5710. | 136 |
| Fig.41 | Burial.5719 | 136 |
| Fig.42 | The southern proportion of the eastern cemetery which is dedicated to subadults | 143 |
| Fig.43 | The northern proportion of the eastern cemetery which is dedicated to adults. | 143 |
| Fig.44 | Burial . 1001/5.1. of a 6-9month Infant | 144 |
| Fig.45 | Child burial. 9000 within the settlement area | 144 |
| Fig.46 | Burial.S166 | 147 |
| Fig.47 | Burial S.176 | 147 |
| Fig.48 | Burial S.154 | 147 |
| Fig.49 | Burial S.35 | 147 |
| Fig.50 | Burial N 7282 | 156 |
| Fig.51 | Burial N 7275 | 156 |
| Fig.52 | Burial N 7329 | 156 |
| Fig.53 | Burial N 7439 | 156 |
| Fig.54 | Infant burials in the subadult's cemetery | 167 |
| Fig.55 | The types of the child burials recorded in the 41 sites | 171 |
| Fig.56 | A-group child burial | 171 |
| Fig.57 | The number of child burials in the A-group sites | 172 |
| Fig.58 | Child with hippopotamus ivory bracelet and necklace with bone and amzonite beads | 175 |
| Fig.59 | Distribution of age categories within the skeletal remains at R12 | 178 |
| Fig.60 | Burial.143 | 178 |
| Fig.61 | Burial. 144 | 178 |
| Fig.62 | Burial.149 | 178 |
| Fig.63 | Burial 22/31 | 181 |
| Fig.64 | Burial 22/72 | 181 |
| Fig.65 | Burial 22/71 | 181 |
| Fig.66 | Burial 22/83 | 181 |
| Fig.67 | Pot burial without grave goods | 184 |
| Fig.68 | Pot burial with grave goods of two bowls | 184 |
| Fig.69 | Four pot burials from es sour | 185 |
| Fig.70 | Late Neolithic Child burials with grave goods from Mound.B. | 187 |
| Fig.71 | Pot burial with grave goods | 187 |
| Fig.72 | Infant burial inside a large vessel | 185 |
| Fig.73 | Burial 160 : Burial in the middle, left:pendants, right: necklace of carnilean beads as part of the grave goods | 195 |
| Fig.74 | Burial.186 | 195 |
| Fig.75 | Burial.166 | 195 |
| Fig.76 | Burial.133 | 195 |
| Fig.77 | Chart showing the number of infants and child burials in the Egyptian prehistoric sites | 208 |
| Fig.78 | The age categories at Gebel Ramlah | 211 |
| Fig.79 | The age categories at Badari | 211 |
| Fig.80 | The age categories at R12 | 212 |
| Fig.81 | The age categories at Kadero | 212 |
| Fig.82 | The age categories at Wadi Digla | 212 |

| | | |
|--------|---|-----|
| Fig.83 | The age categories at Maadi | 212 |
| Fig.84 | The age categories at El Kadada | 214 |
| Fig.85 | The age categories at Minshat Abu Omar | 214 |
| Fig.86 | Age categories at Merimde | 214 |
| Fig.87 | Age categories at Nag ed deir | 214 |
| Fig.88 | Age class distribution in the western cemetery and the southern sector of the eastern cemetery at Adaima | 214 |
| Fig.89 | The number of infants and child burials in the Sudanese prehistoric sites | 215 |
| Fig.90 | The context of infants and child burials in all the sites. | 216 |
| Fig.91 | The pot burials recorded in the Egyptian prehistoric sites | 222 |
| Fig.92 | a) The sites where wrappings are present, with the number of cases shown in the chart to the right, and the percentage they represent out of hr total number of burials to the left | 239 |
| Fig.93 | The number of individual and double burials | 241 |
| Fig.94 | The skeleton of a female adult, who died while giving birth. The remains of the fetus are visible in the pelvic area | 247 |
| Fig.95 | Bone lesions on TB children from Adaima, in the form of periosteal new bone formation on different bone elements (long bones of ulna, tibia | 247 |
| Fig.96 | Endocranial lesions on frontal bones (a), and occipital bones, (d), of a 4-5 years old child from Adaima | 247 |
| Fig.97 | Radiographs showing harris lines on the tibias of three children (from Adaima 6-12 month), (5-9 years), and (18-24month) | 247 |