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Death and Deposition: A study of the possible effects of sex, age-at-death, and socioeconomic status on the burial ritual in the Netherlands during the Late Middle Ages and Early Modern Period
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By Rosa Seepma

Figure front page: a page of the Book of Hours from France, dating to ca. 1480 AD. The manuscript now resides at the Morgan Library & Museum in New York (MS M.136 fol. 119r). (Medieval & Renaissance Manuscripts, 2022).

Death and Deposition

A study of the possible effects of sex, age-at-death, and socioeconomic status on the burial ritual in the Netherlands during the Late Middle Ages and Early Modern Period

By Rosa Seepma

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1. Introduction

1.1 Introduction to topic and research problem

The burial ritual has always been a topic of interest in archaeology as it reflects not only the individual buried but the bigger values and identity of a certain society overall (Stutz & Tarlow, 2013). Cross-disciplinary approaches to burial allow for the unpacking of multiple sociocultural aspects of a society, such as cosmologies, ritualized practices, and social structure (Stutz & Tarlow, 2013). A shift in these values, such as a change in religion, the arrival of a new community in the same place or the border between communities can also be detected by studying the change in burial rituals and treatment. The human skeleton found in these graves is an important part of understanding this burial ritual, as it is a unique source regarding the behaviour and habits of people in the past such as diet, migration and mobility, craft and occupation activities, living conditions, health and social interactions (Gowland & Knüsel, 2006). Funerary archaeology and the accompanying funerary remains are therefore crucial in understanding a certain society, together with other material and potential literary evidence, however, the latter is often lacking. In many ways, archaeology still relies on the information derived from the burial ritual and treatment of buried individuals to recreate past life (Stutz & Tarlow, 2013).

Issues on how people viewed sex, age and socioeconomic status and how these attributes affected one's role and stance in society can therefore be partly derived from their burial treatment. For instance, in Early Medieval Northern Europe, men and women were buried with a certain gender-specific set of grave goods, reflecting, among other things, the specific ideas about sex and gender that these early medieval societies had and which they felt necessary to display when conducting one's burial (Härke, 2011). With the arrival of Christianity in the Netherlands, the burial ritual changed, including the disappearance of these grave goods, as those do not commonly align with the Christian tradition (Williams, 2016). As a result, the burial ritual in the Middle Ages looked quite different than it did before.

Nonetheless, this does not indicate that factors such as sex, age-at-death and socioeconomic status did not influence the burial ritual in the Netherlands. In England, there are numerous studies on how these factors affected the burial treatment and ritual in this period. For example, it is believed that the burial of young children, neonates and infants close to the church, under the eaves, in early Christian cemeteries

was a widespread practice (Craig-Atkins, 2014). It is theorized that this type of eaves-drip burial occurred to provide a post-mortem baptism through the water running from the eaves of the church onto the young children's graves. Another example lies in a parish in Norwich, St. Margaret, that catered specially for the burial of individuals with severe chronic diseases, such as leprosy, between 1100 and 1468 AD (Fay, 2006). For example, cases of tuberculosis, treponemal disease, non-specific chronic infections, trauma, nutritional deficiencies, and neuromuscular dystrophy have been identified amongst the population in the parish's cemetery. It is hypothesized that, since these conditions were characterized by living in an impoverished environment, these individuals were of low socioeconomic status and relied on the Christian charitable obligation to bury the dead (Fay, 2006). These examples reveal that there is a link between Middle Age burial treatment and demography and socioeconomic status. However, unlike in England, little is known about how such factors, such as sex, age-at-death and socioeconomic status, play a role in and affect the burial ritual and treatment in the Netherland in the Middle Ages and Early Modern Period. That is to say, these factors have been studied individually in cemeteries in the Netherlands, but have not yet been looked at and compared on a national scale.

Therefore, in this thesis, the possible influence of age-at-death, sex, and socioeconomic status on the burial ritual and burial treatment in the Netherlands will be discussed. It is to serve as an overview and to discover a possible pattern of the effect of these factors on, for example, the placement of the burials, the body positions of the skeletons, and the nature of the graves. The chosen time frame for this research is the Late Middle Ages and the beginning of the Early Modern Period and it will focus on the burial ritual in an urban context. The Late Middle Ages and Early Modern Period (c. 1200-1650 AD) are an interesting timeframe for this research. The turbulent nature of these periods regarding political and religious developments, such as the strict stronghold of the Christian church on society, the iconoclasm by the protestants during the Reformation and the Eighty Year's War, make the Late Middle Ages and Early Modern Period interesting periods to conduct research on (O'Sullivan, 2013; Arts, 2019). These substantial changes to the ecclesiastical order during the transition from the Late Middle Ages to the Early Modern Period are not expected to significantly change the burial ritual between 1500 and 1650 AD (Kenzler, 2008). Therefore, in this thesis, it is justified to speak of a late medieval and early modern burial ritual. Furthermore, in these periods, an overview of the effect of demography and socioeconomic status on the

burial treatment in the Netherlands had not been made. This is unlike the previous period of the Early Middle Ages, where the effect of demography on the burial treatment and the expression of gender boundaries as a major feature of burial ritual has been heavily and primarily researched (Härke, 2011). The at first glance apparent simplicity of the fairly uniform set of simple practices in the burial treatment in the Late Middle Ages and Early Modern Period is often deceiving, as medieval societies were strongly focused on the prospects of the afterlife (O’Sullivan, 2013). Furthermore, the wide availability of Late Medieval and Early Modern skeletons, compared to the often poorly preserved or completely disintegrated human skeletal remains in the Early Middle Ages in the Netherlands, gives an interesting component in the study of the burial ritual as human skeletal remains are one of the richest providers of information in archaeology (Gowland & Knüsel, 2006). A city context was chosen specifically to limit the scope of this thesis as there might be possible differences between the burial ritual in a rural and urban context. Moreover, the chosen cemeteries are all located outdoors. However, the influence of socioeconomic status on the burial ritual will be studied using both the outdoor and indoor cemetery of one church, since it is often perceived that those of higher socioeconomic status were buried inside the church (O’Sullivan, 2013). By observing these possible patterns in the Late Medieval and Early Modern burial ritual, this research strives to contribute to a better understanding of the Late Medieval and Early Modern Dutch society as a whole and the significance that was attributed to death and burial.

1.2 Research questions

To investigate the possible influence of demography and pathology on the burial treatment, the following research question will be answered:

- *What influence did age-at-death, sex, and socioeconomic status have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?*

To help answer this main question, the following sub-questions have been posed:

- What influence did age-at-death have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

- What influence did sex have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?
- What influence did socioeconomic status have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

1.3 Approach

These questions will be answered by comparing three sites throughout the Netherlands with a large number of late medieval and early modern burials and good grave documentation. This is done to see if a certain pattern arises in the treatment of sex, age-at-death, and status-related burials, and if not, see which local factors affect the burial ritual. The materials used for this analysis are the following cemeteries and their accompanying reports:

- Outdoor and indoor cemetery of the St. Catharina church located in Eindhoven (Arts, 2013).
- Cemetery of the Franciscan monastery located on the Paardenmarkt in Alkmaar (Hakvoort et al., 2015; Schats, 2015).
- Northern cemetery of the Eusebius church located in Arnhem (Zielman & Baetsen, 2020).

These sites are located throughout the Netherlands, and each has a different context, such as a parish church or a monastery. This makes for an interesting and complete comparison. For each of the sites, the demographic information of the individuals will be correlated with their burial treatment. Body positions, orientations of the burial, and the nature of the graves will be investigated. If certain patterns arise, it will be attempted to explain why. For example, are these patterns linked to certain local or national (Christian) traditions? Or are they related to the type of cemetery?

Furthermore, the burial ritual and treatment between the cemetery outside the St. Catharina church in Eindhoven and the graves found in the chancel of the church will be compared. The same methods will be used as mentioned above. It will be discussed what influence socioeconomic status had on the possible differences that may arise.

1.4 Thesis outline

The second chapter of this thesis will be a background chapter, in which the field of funerary archaeology in general and previous research on this topic will be discussed. Furthermore, an introduction to medieval burial practices will be given.

In the subsequent third chapter, materials and methods, the sites used for the analyses will be introduced and the sample size selection will be discussed as well as the methods used for the data analyses.

In the fourth chapter, the results of the research and the dataset outlined in the previous chapter, materials and methods, will be given. This includes an overview of the ratios of sex and age-at-death of each cemetery, the placement of these burials with the information of the sex and age-at-death of these buried individuals attached, and the body positions, grave orientation, and nature of the grave of each individual cemetery. Moreover, the results of the analysis of the outdoor and indoor cemetery of the St. Catharina church will be presented.

In the fifth chapter, these results will be discussed. Namely, it will be debated if there are possible patterns in the burial treatment of individuals which are related to their age-at-death, sex, or socioeconomic status. These patterns can include certain body positions, placement of burials, or orientations of burials in relation to these factors. If these patterns will arise, it will be discussed if they could be, for example, linked to certain local or national (Christian) traditions or the context of the burials. Furthermore, the possible difference in these patterns between burials inside and outside the St. Catharina church will be discussed. The possible influence of socioeconomic status on these differences will be debated. If possible, the results will be placed in a bigger European context.

In the final chapter of this thesis, a conclusion will be derived from the results. The research questions will be answered and suggestions for further research will be given.

2. Funerary archaeology and its implications for the late medieval and early modern burial ritual

When trying to understand a past society, funerary archaeology and the accompanying funerary remains are crucial sources of information. The way someone is buried can not only reveal a great deal about the individual buried but also provide information regarding the living community conducting the burial. A late medieval individual could expect a plain and unfurnished burial, strictly regimented by the church (Turner, 2012). However, as will be seen in this chapter, there still was a great deal of diversity in the burial ritual of the Late Middle Ages and Early Modern Period.

This chapter provides the context for the research questions posed and the methods used. Therefore, the general field of funerary archaeology will be discussed as well as common medieval burial practices. It will end with a review of previous research on the topic of the influence of sex, age-at-death, and socioeconomic status on the burial ritual and treatment, and how this can help to better understand past populations.

2.1 Introduction to funerary archaeology

“More than anything, the archaeology of death and burial constantly reminds us that archaeology is about more than things; it is about people”

- (Stutz & Tarlow, 2013, p. 2)

Since the beginning of the archaeological discipline, burial practices and the way they materialize in the archaeological record have been a topic of interest (Rakita & Buikstra, 2005). In 1971, a symposium was held entitled “The Social Dimensions of Mortuary Practices”, during the annual meeting of the American Anthropological Association (Laneri, 2007). This symposium would mark a major shift in the field of funerary archaeology. Before the symposium, the popular attitude towards studying burial practices was the diffusionist/historical approach, which saw and studied the burial as an “object”. This approach was set aside in favour of the interpretation of funerary practices as a moment/period in which the living community could express their social and cultural practices. For instance, notions such as the funeral ritual as a ‘rite of passage’ for a given society and funerary rituals being an important moment for a community to reinforce ideologies and social structures became the norm (Laneri, 2007).

Today, archaeology still relies on the information derived from the burial ritual and treatment of deceased individuals to recreate past life and understand its complexity (Stutz & Tarlow, 2013). By studying the remnants of (ritualized) practices relating to the burial treatment of deceased individuals, funerary archaeology explores the way past people dealt with death. Through a cross-disciplinary approach to burial, sociocultural aspects of past societies can be revealed; aspects such as social structure, social relationships, identities, population histories and individual biographies, diet and health, ritualized practices, emotional discourse, cosmologies, and migrations (Stutz & Tarlow, 2013).

An important aspect of funerary archaeology and the key to unpacking much of these socio-cultural aspects is the study of (ritualized) human remains. Although often overlooked in funerary archaeology in the past, the human skeleton can be seen as the most direct and tangible form of evidence for understanding the life of past people (Gowland & Knüsel, 2006). Funerary archaeologists use a variety of evidence from the grave in order to understand the living person or living society that buried said person (Stutz & Tarlow, 2013). By studying both the biological remains of an individual and the cultural, social, ritual, and historical context, funerary archaeology combines both the natural and social sciences. An osteological analysis provides not only the biological sex and age of the buried individual but can also determine the possible diet and geographical origin of said individual. Furthermore, the study of palaeopathology can contribute to the knowledge of the health and lifestyle of the buried individual.

By combining osteological data with other archaeological data, such as grave goods, it is often attempted to reconstruct the social identities, gender roles, and social status of the buried individual (Stutz & Tarlow, 2013). For example, the composition of the buried population can reveal much about the social relationships in the community, if, for instance, people were buried in the same place and in the same way or people at a particular site only represented a specific group. However, it is strongly debated in the field of funerary archaeology if one could conclude factors such as social status from one's grave as it might reflect how the living community who conducted the burials saw the deceased individuals, not the deceased individuals themselves. As Pearson (1999) states: *"It is not so much about the dead themselves as the living who buried them"* (p.3). He further articulates that *"the dead do not bury themselves but are treated and disposed by the living"* (Pearson, 1999, p.3). Thus, social elements of past populations are important to take into consideration during the study of funerary rituals as ritual

shapes ideological frameworks and reinforces the construction of social, ethnic, and cultural identities in a society (Laneri, 2007). This not only divides the performers of the ritual from the "others", but also reveals the way a past community saw the deceased individual and not so much how the deceased individual saw themselves (Laneri, 2007; Pearson, 1999).

Of course, all of these techniques, theories, and hypotheses discussed in funerary archaeology can be applied to medieval and early modern burial practices specifically.

2.2 Introduction to medieval burial practices

At first glance, European late medieval burial practices appear uniform and simple, especially compared to the antecedent early medieval period where lavish grave goods, such as jewellery, weapons, tools, and drinking vessels were the custom (O'Sullivan, 2013; Härke, 2014). These early medieval graves were often filled with gender-specific grave good assemblages that were regionally distinct (Härke, 2014). However, with the advance of Christianity in Europe, this custom gradually disappeared throughout the early second millennium CE. Due to the religious dominance of Christianity under the central authority of the church in the Late Middle Ages, the grave ritual in the medieval West changed to a more uniform and sober one (O'Sullivan, 2013). The Christian ideology behind this sobriety was the notion that after death all Christians were equal no matter their sex or social standing, although this standard was not always upheld (O'Sullivan, 2013). Nonetheless, this uniform set of very simple burial practices is quite misleading. In fact, much diversity is seen within the burial ritual with regards to the different locations of burials, the nature of the graves, the orientation of the graves and body positions, and the occasional grave goods found in the graves. Moreover, the Christian burial traditions sometimes allow for the study of certain social relations in a community (Turner, 2012). For example, certain burial locations might reflect the status or patronage of a certain individual.

2.2.1 Locations of burial

In the Late Middle Ages, there were various locations one could be buried (Turner, 2012). The location where the burial took place was usually defined by two factors: which church was selected and where within/near that church one would be buried (Daniell, 1998). Within these two basic decisions lay a host of other considerations such as the wishes of the deceased, the decrees of authority, the expectations of the community, and the desires of friends and sometimes even the enemies. The choices

and conflicts were most apparent in the more wealthy and privileged burials as churches had the most to gain and lose from these burials such as patronage, prestige, or money. For most people, however, the only option was to be buried in the parish cemetery surrounding the church (Daniell, 1998). All members of the parish/church community could expect a burial space within the churchyard, regardless of their social standing (O'Sullivan, 2013). In both town and country, this pattern of churchyard community burial continued throughout the medieval period. Nonetheless, even though this was the general norm, upon death, still choices had to be made on burial location and other customs.

One of these options is a burial in the cemetery of a monastery. These places were generally reserved for the monastic community of the monastic church, including their laypersons (O'Sullivan, 2013; Tuin, 2018). However, it was also common for citizens to be buried in the cemetery of a monastery, as will be seen at the Franciscan cemetery in Alkmaar (Bitter, 2018). It was often believed that burial with the friars would reduce one's time in purgatory (Bruzelius, 2014). The burial ground of the monastic church was often located to the east of the chancel or choir (O'Sullivan, 2013). Yet, burials could also occur in the monastery itself. For instance, skeletons can also be found in the cloister walks or in the chapter house, which was often used for burials of bishops and abbots (O'Sullivan, 2013).

The burial grounds of hospitals or infirmaries were another option for burial. In the Middle Ages, several hospitals emerged in cities from the 12th to the 13th century onwards (de Groot, 2013). They first functioned as a temporary shelter for travellers and were located on the main road or close to a city gate. Hospitals were seen as charitable institutions where Christian values such as hospitality and charity were the number one priority. In the 14th century, the role of hospitals was taken over by inns. Thus, hospitals gained the additional task of caring for the sick and elderly. Additionally, *proveniers* could enjoy shelter and care in the hospitals against payment, similar to the current retirement homes. Therefore, the (chronically) sick, elderly, and *proveniers*, who were often residents of the hospital, were generally buried alongside outsiders in these hospital cemeteries (Tuin, 2018). The people buried in hospital cemeteries were often poor and dependent on the Christian charitable obligation to bury the dead (Fay, 2006).

Although all members of the church could expect a final resting place within the churchyard, circumstances could necessitate alternative arrangements (O'Sullivan,

2013). Crises such as war and disease could lead to emergency mass graves, where bodies were either carefully laid out or buried in no particular order, due to an overflow of calamities. An example of such a crisis is the Black Death which spread across Europe in the 14th century. For instance, in London, two emergency cemeteries were established just outside the city (O'Sullivan, 2013). In these cemeteries, mass burial trenches were located, which contained bodies that had been carefully laid out on top of each other, together with rows of regular graves. Another cause of an overflow of calamities was medieval warfare, such as the Eighty Year's War. Some of those killed in medieval warfare might be repatriated, but usually, the site of the battle was used for the majority of the victims. An example is the mass grave of the siege of Alkmaar in 1573, which is one of the sites used in the analysis of this thesis (Hakvoort et al., 2015).

Lastly, there were those who were buried outside of Christian hallowed ground; a so-called unconsecrated burial (Marafioti, 2019). Those who were rejected for Christian burial were specific groups and individuals, including Jews, heretics, the excommunicated, who were barred from the church, and executed criminals (O'Sullivan, 2013). Criminals were often buried at the judicial locations where they were executed, such as at the gallows (Tuin, 2018). These places were often located outside or at the border of the city. However, post-mortem status could be adjusted due to, for instance, a change of regime (O'Sullivan, 2013).

Despite the belief that in death all Christians were equal and the fact that Christian burial practice reflects religious expectations in many respects, social hierarchy most definitely played a role in the distribution of burials within a single location, such as a church or churchyard (O'Sullivan, 2013). For example, the tombs of the aristocracy and gentry were separated from those of lesser social standing. Furthermore, burial chapels can be identified to the north and the south of the chancel for individual kin groups in many churches. Often, the closer one was buried to the chancel or choir of the church, the higher the social status of that buried individual. However, burial in the church building itself, no matter the location, probably already denoted a certain degree of affluence as it was a more desirable location for burial than the churchyard (O'Sullivan, 2013; van de Vijver et al., 2018).

Both in churches and their surrounding churchyard, there usually was no post-mortem segregation of men and women, with the obvious exception of monastic cemeteries reserved for monks (O'Sullivan, 2013).

Children often did receive different burial treatments than adults, usually dependent on localized burial practices (Hausmair, 2017). The most important factor in the placement of the burial of children, especially infants, is the baptismal status of children. Baptism was the most profound rite of passage in Christianity as it clears the soul from Original Sin. Baptism preconditioned a person's acceptance into the Christian community and afforded the possibility to be resurrected on Doomsday. Consequently, if not baptized, there was no hope for salvation. This meant that unbaptized children could not be buried on sacred ground, since they were not able to ascend to heaven nor be sent to purgatory (Williams, 2016). Between the 12th and early 16th centuries, the idea that infants would be eternally confined to an isolated place at the margins of Hell, the *limbus puerorum* or Limbo, had fully developed in Christianity (Hausmair, 2017). The church of Central Europe had even started to introduce certain burial constraints for unbaptized children. Unbaptized infants could be buried on the edge of the sacred ground of the cemetery, the *Limbus Infantium*, sometimes in a ceramic vessel (Williams, 2016). Another option was a special type of burial ground exclusively for young children, the so-called "infant cemeteries" (Hausmair, 2017). Spatial clusters of infants also occur in medieval cemeteries. However, on occasion infants were buried on sacred ground. Instances of burial of infants directly under the church's eaves or neonates and infants predominantly located close to the walls of the choir have been discovered (Hausmair, 2017). Moreover, sometimes a child was placed together in the grave with an adult (Williams, 2016). A theory behind this is that the child is an enrichment of the adult's grave since the souls of innocent children could be attractive companions to go through purgatory with (Gilchrist & Sloane, 2005).

2.2.2 Nature of the graves

In the Early Middle Ages, both cremation and inhumation were used (Capuzzo et al., 2020). However, in the second half of the 7th century AD, the cremation rite gradually lost its importance. This shift towards exclusive inhumation is most likely the result of the organization of the Christian church becoming stronger and more centralized, causing it to implement certain ideologies and traditions surrounding the burial ritual (Capuzzo et al., 2020). What seemed to be of high importance in this, was the rise of church burial grounds and the increasing value of bodily preservation for the ascension to the Christian heaven.

In the Late Middle Ages, it was common to bury a deceased individual in a shroud (Nollen, 2013). The bodies of both men and women were washed, stripped naked, and tied up in a winding sheet, the shroud (O’Sullivan, 2013). They were then directly placed in the ground or in a coffin prior to the burial (see figure 2.1). Multiple Middle Age sources mention guidelines in Dutch cities regarding the coffin’s thickness of the planks, shape and size, and the type of wood that had to be used due to a lack of space in the cemetery (Williams, 2016). Interestingly, it is implied by multiple studies that the use of coffins is far more common within churches than in the surrounding churchyards, although it is unclear if this is also true for the Netherlands (Gilchrist & Sloane, 2005).



Figure 2.1: pen drawing of a medieval coffin burial by Pieter Cornelisz in 1524. (Arts, 2019, p. 55).

2.2.3 Orientation of the grave and body positions

Graves were usually West-East orientated, with the head orientated in the West and the feet in the East while laying on one’s back (O’Sullivan, 2013: Williams 2016). The traditional explanation for this West to East orientation of the deceased is linked to the Christian belief of Judgement Day where Christ will appear in the East (Williams, 2016). By putting the head of the dead in the West, they can face the resurrection of Christ.

Nonetheless, there is variation in this West to East orientation. In some cases, an individual is buried the other way round, namely East to West. It is argued that these individuals were priests, who, by facing the other way, could watch over their parishioners during the resurrection of Christ. However, a study of the cemeteries of Middle Age monasteries by Stroud and Kemp gave no evidence for an East to West orientation for priests (1993). Instead, they argued that this orientation could be interpreted as a punishment that would only apply on Judgement Day. Another, much simpler explanation could be that the individual was mistakenly placed in an East to West orientation due to a rectangular coffin that was unnoticeably turned around (Williams, 2016). In short, the exact reason for this reversed orientation of the grave is not clear.

With regards to the body position, buried individuals were usually laying on their back, with their arms commonly placed either by the side of the body or crossed on the breast, although variation in this exists (O'Sullivan, 2013). This variation includes hands folded on the stomach or pelvis of an individual, reflecting the gesture of prayer (Kenzler, 2015). Individuals buried in a face-down position are rare and often associated with punishment, sloppy or rushed burial, illness, or violent death (Gilchrist & Sloane, 2005).

2.2.4 Grave goods

As mentioned before, it was not common practice in Christianity to permit grave goods within a burial (Nollen, 2013; O'Sullivan, 2013; Williams, 2016). It is believed that burial in a shroud and/or coffin without accompanying objects was part of the Christian belief that the dead had moved away from the earthly world, which was divided by class and gender, to a paradise without these constraints (O'Sullivan, 2013). Therefore, it could be argued that grave goods would be meaningless in a medieval context since there was no need to take everyday objects with them to use in the afterlife. However, the custom of not giving grave goods was not always followed, as some burials still received certain items (Härke, 2014). For instance, in contexts where ordinary Christians were buried in just a shroud, in some clerics' graves croziers and pectoral crosses have been found. Other artefacts are very occasionally found in graves and could reflect personal and sentimental meaning rather than religious beliefs (O'Sullivan, 2013). These items may include tools, writing implements, keys, and personal seals among others. Coins, clothing items such as pins and buttons attached to the shroud, and jewellery that may

have had an aesthetic and/or symbolic-religious function have also been found in late medieval graves (Nollen, 2013).

2.3 A note on the early modern burial ritual

Having broadly discussed the late medieval burial ritual on a larger European scale, the transition to the Early Modern Period (1500-1650 AD) noted an important shift regarding the religious and political spheres in the Netherlands specifically. Not only did the Eighty Years' War (1568-1648) occur, in which the Dutch revolted against the Spanish rule (Arts, 2019), there was a substantial change within the ecclesiastical order as well. While only the Christian catholic faith existed in the Late Middle Ages, the Reformation introduced a new school of Christianity: Protestantism (Parish, 2018). This Protestant Reformation started in 1517, when Martin Luther nailed his 95 Theses to the door of the castle church in Wittenberg, and reached the Netherlands soon after (Parish, 2018). The schism caused great turmoil in the Netherlands and later resulted in the iconoclasm or iconoclastic fury of 1566 in the Low countries, when many churches throughout the country were confiscated by the protestant community. The Reformation in the Netherlands was often intertwined with the Dutch revolt, as the Protestant Dutch were fighting against the catholic Spanish (de Klerck, 2008). Altogether, the Reformation left the once catholic country predominantly protestant.

Surprisingly, this shift in religion and ecclesiastical order did not significantly change the burial ritual in the Netherlands or Europe in general. Differences between Catholic and Protestant burials are often not perceived in the archaeological record during this early period of transition, especially concerning church burials (Kenzler 2015; Williams, 2016). Protestant communities followed the catholic tradition of burying Christians in and around the church as well as their hierarchy on the burial ground; the closer to the church, the closer one was to God and the more expensive the grave location was (Claeys, 2010). Burial near or in the choir inside the church was also still seen as a privileged position which indicated high socioeconomic status. Furthermore, once catholic churches were confiscated by protestants, the old catholic communities were sometimes allowed to continue to bury their dead inside the church and surrounding graveyard (Arts, 2019).

Nonetheless, small changes to the burial ritual, such as the lesser emphasize on the west-east burial, the wider occurrence of coffin burials rather than shrouds, and more variation in the position of the arms, can be observed (Kenzler, 2015). Furthermore,

catholic burials could contain grave goods reflecting their religion, while in protestant graves there was a lack of corresponding grave goods. Generally, the graves would be placed in a more orderly manner in the cemetery, with more space in between and consistent markers. However, the biggest change to the burial ritual was the allowing of cemeteries away from the church or other religious institutions (Kenzler, 2015).

2.4 Previous research

These various aspects of late medieval burial and their surrounding theories reveal that many studies have been conducted regarding the factors that determine the way one was buried in medieval Europe. However, on the topic of the influence of sex, age-at-death, and socioeconomic status on the late medieval burial ritual in the Netherlands specifically, virtually no studies have been conducted. The studies that have been conducted, consist of excavation reports that include a separate section dedicated to the (medieval) grave ritual perceived in the excavated cemetery, documenting, among others, the body positions of the skeletons, grave orientations, and the nature of the graves (Nollen, 2013; Williams, 2016; Zielman & Baetsen, 2020). If the factors such as age-at-death, pathology, and sex were studied in these reports, they often refer to English studies (Williams, 2016). Nonetheless, no general overview has been made of the effect of these factors on the late medieval burial ritual in the Netherlands and to what extent there are variations within and between different cemeteries across the country.

In England, this topic is much more developed; there have been multiple studies on the influence of sex, age-at-death, and socioeconomic status on the late medieval burial ritual. Additionally, there have been studies on the effect of these factors on the medieval burial ritual throughout Europe as well. For instance, Barbara Hausmair wrote a paper on burial practices in medieval Central Europe about children who died before, during, or shortly after birth (Hausmair, 2017). Hausmair uses three medieval cemeteries in Switzerland and Austria as examples in her paper to determine the relationship between medieval Christian believers, church persons, and social space. She concluded that there was a diversity in the burial treatment of (unbaptized) infants and children which was dependent on local factors. This diversity proved that despite the heavily regulated structure by the church regarding the cosmos and everyone's place in it, the parish church and local landscape were not always following and adherent to this structure (Hausmair, 2017). Hausmair (2017) ends her research by stating that the detailed study of individual sites is crucial for studying the medieval attitudes towards

death in early infancy and negotiation processes between Christian believers and members of the clergy. Namely, this type of research contributes to a broader discussion on medieval popular beliefs, practices, and their influence on long-term developments.

2.5 Conclusion

In conclusion, due to the dominance of the Christian belief under the central authority of the church in the Late Middle Ages, the grave ritual in the medieval West changed to a more uniform and sober one. Nonetheless, this uniform set of very simple burial practices still hides a lot of diversity which is seen within the different locations of burials, both in the location of an individual in the cemetery itself and the place of the cemetery, the nature of the graves, the orientation of the graves and body positions, and the occasional grave goods found in the graves. Interestingly, the burial ritual in the Early Modern Period (1500-1650 AD) did not significantly change, despite the national shift in the Netherlands from Catholicism to Protestantism as a result of the Reformation.

Previous studies on the topic of the influence of sex, age-at-death, and socioeconomic status on the late medieval and early modern burial ritual in the Netherlands are limited, as most reports of (post)medieval burial sites in the Netherlands only discuss the grave ritual at the local site that was excavated, if at all. No national overview of the late medieval and early modern burial ritual in the Netherlands has been made. Studies on the topic have been done elsewhere in Europe, with England being the most prominent. These studies show a variety in the burial treatment of (unbaptized) infants and children, dependent on localized factors (Hausmair, 2017). Moreover, grave orientations (Stroud & Kemp, 1993) and burial treatment of the sick from a low socioeconomic background (Fay, 2006) have been studied. These studies show that age-at-death, sex, and socioeconomic status could have an impact on the late medieval burial treatment and ritual.

Therefore, in this thesis, three sites consisting of different types of late medieval and early modern cemeteries throughout the Netherlands will be compared. This will give insight into the variation in burial practices in the medieval and early period and what influence sex, age-at-death, and socioeconomic status had on the late medieval and early modern burial ritual in the Netherlands specifically.

3. Materials and Methods

The history of a cemetery and its location can influence the burial ritual conducted there, as seen in the previous chapter. Therefore, in this chapter, the materials used for the analysis in this thesis will be introduced. These materials include the following three late medieval and early period catholic cemeteries that are located throughout the Netherlands and belong to various institutions such as a parish church or a monastery (see figure 3.1):

- Outdoor and indoor cemetery of the St. Catharina church located in Eindhoven (Arts, 2013).
- Cemetery of the Franciscan monastery located on the Paardenmarkt in Alkmaar (Hakvoort et al., 2015; Schats, 2015).
Northern cemetery of the Eusebius church located in Arnhem (Zielman & Baetsen, 2020)



*Figure 3.1: map of the Netherlands depicting the locations of the three cemeteries used for the analysis of this thesis.
Made by the author.*

The historical context of each cemetery and its adherent institution will be discussed as well as the excavation of the cemeteries during which the skeletons used for this thesis were uncovered. Furthermore, the sample size per cemetery will be given as well as the argumentation behind these chosen samples. All cemeteries are located outside, except for the St. Catharina Church, where a part of the excavation took part inside the choir of the church.

Furthermore, in order to fully understand the research conducted in this thesis, the methods used for the analysis will be explained. This includes a brief discussion of the methods regarding the determination of the age and sex per cemetery and the statistical analysis conducted in this thesis in more detail.

3.1 Materials

3.1.1 The Franciscan monastery, Paardenmarkt, Alkmaar

Historical context

Alkmaar is a city located in the current province of North-Holland. Earlier signs of human activity were detected from the Bronze Age onwards, however, continuous inhabitation started during the 10th century AD when the now city rose as a market centre (Hakvoort et al., 2015; Bitter, 2018). Alkmaar grew from then, earning her city rights in 1254 AD (Hakvoort et al.). The growth reached its peak in Alkmaar's Golden Age when the population grew from 4.000 to approximately 13.000 inhabitants between 1500-1600 AD (Bitter, 2018).

During the 15th century AD, ecclesial life also experienced growth in Alkmaar, leading to multiple monasteries being founded in the city (Hakvoort et al., 2015). Founded in 1448, the Franciscan friary was one of these and the only male monastery in the city (Bitter, 2018). The inhabitants of the monastery, the friars, came mostly from outside the city. They were tasked with living a sober life and educating the population of Alkmaar by preaching in the chapel, which was consecrated in 1486 (Hakvoort et al., 2015).

However, the monastery was short-lived. The church fell victim to the iconoclasm by the protestants in 1566, leading to significant damages, but not complete destruction, of the monastery and its chapel. In 1572, the monastery and its chapel were taken over by the Geuzen and used as an arsenal during the siege of Alkmaar by the Spaniards in the following year. The Franciscan friary saw its final end in 1574 when all the buildings were destroyed and the once monastic site was converted into the Paardenmarkt, the city's market square (Bitter, 2018).

The excavation

In 2009, the northern side of the Paardenmarkt was excavated (Bitter, 2018). During the excavation, it was discovered that the cemetery inside the chapel and its traces were mostly destroyed. In 2010, however, Hollandia archaeologists in association with the Human Osteoarchaeology department of Leiden University discovered skeletons of common citizens buried in the secular graveyard between the chapel and the outhouse of the monastery (Hakvoort et al., 2015; Bitter, 2018). A total of 189 primary burials were found. These graves and their accompanying skeletons were moderately preserved due to past and modern disturbances, such as the century's use of the site as an animal market. Furthermore, the total amount of graves excavated was lower than the number known to be there (Hakvoort et al., 2015,). Namely, some graves could not be fully excavated since they were only partly located in the trench. Moreover, two mass graves, one of 22 soldiers and one of 9 civilians, were also found in the cemetery connected to the Siege of Alkmaar (Bitter, 2018) (see figure 3.2).

It is hypothesized that the friars themselves were not buried here but inside the chapel (Bitter, 2018). It is therefore expected that this cemetery held the citizens of Alkmaar, who were most likely buried in this graveyard due to their piety to the Christian Franciscan friars (Bitter, 2018). These citizens were both wealthy and poor, but most of the people buried with the Franciscans were commoners or '*ambachtslieden*' (Bruinvis, 1893, as cited in Schats, 2016).



Figure 3.2: a layer of the mass grave found at the excavation of the Franciscan cemetery in Alkmaar.

(Hakvoort et al., 2015, p. 79).

3.1.2 The St. Catharina church, Eindhoven

Historical context

In the 13th century AD, Duke Hendrik I of Brabant founded the city of Eindhoven, which is located in the current province of North Brabant (Arts, 2019). In 1232, the same year it finished its construction, the city was granted its city rights. Throughout the Middle Ages, Eindhoven remained a small city with population numbers reaching around 900 in the 15th century and 16th century (Arts, 2019). Although small, Eindhoven suffered much violence and crises in the Late Middle Ages. For example, the town was largely destroyed in 1486 and a city fire occurred in 1554. The violence reached its peak during the Eighty Years' War (1568-1648) when the city suffered due to the Dutch revolt against Spain (Arts, 2019).

Serving as the pillar of the catholic community in the city, the first written record of the St. Catharina church dates to 1340 AD (Melssen, 2013) (see figure 3.3). It was built on the previous and only graveyard the city used during its first century of existence and its choir is orientated to the east, which is a common orientation of churches (Arts, 2019; Melssen, 2013). The church was elevated to a collegiate church in 1399 by the bishop of



Figure 3.3: drawing of the St. Catharina church made in 1645 by Isaac van Ostade (Haarlem 1621-1649). (De geschiedenis van de kerk, 2022).

Liège (Melssen, 2013). In 1590, the churchyard was extended for the first time and surrounded by a brick wall (Melssen, 2013; Arts, 2019).

Although it is the only medieval church in Eindhoven, it is not clear when the church formed its independent parish from the older church of Woensel, which lay two kilometres from St. Catharina church (Melssen, 2013). The first mention of Eindhoven and Woensel as separate parishes is not until 1571. The graveyard, however, was most likely used for the citizens of Eindhoven alone (Arts, 2019). Between 1637 and 1640, it is known that in order to be buried inside the church, one had to pay the double amount of a burial outside the church for children and adults alike. The people buried inside the choir of the church consisted of men of the ecclesial order of the church, such as churchwardens, pastors, and canons, and wealthy citizens of Eindhoven who could pay the higher burial fee (Melssen, 2013). Specifically, in 1617, it is mentioned that the guild brothers of the St. Catharina guild had to be committed fairly to the earth. If they wanted to be buried in the choir of the church, they had to pay 3 Guilder for adults and half for children. Families were often buried under the same tombstone inside the church (Melssen, 2013).

In 1566, the parish church fell victim to the iconoclasm and was confiscated by the reformed community (Arts, 2019). This confiscation was made permanent in 1648 and the church was closed for the catholic population (Arts, 2019). However, Catholics were allowed to continue burying their dead in the church's graveyard and choir. The old church building was destroyed in 1860. A new and still existing church building was built soon after on the site, leaving parts of the old graveyard and medieval choir exposed. A total of 55.000 people are thought to be buried in the church's graveyard between 1200 and 1850 AD (Arts, 2019).

The excavation

A trial excavation in 2002 was conducted to see if any of the foundations of the old church were still visible and to possibly find human remains (Arts, 2019). Among the numerous skeletons found, one boy was discovered who was thought to be of the local elite due to an exotic grave good found in his grave and his burial location in front of the altar located in the choir. His grave was dated between 1282 and 1392 AD. This discovery led to the decision to completely excavate the site, which took place in 2005 and 2006 (Arts, 2019).

This excavation was limited to the eastern part of the former medieval church and its surrounding graveyard, due to the new church building covering its prior foundations. In total, skeletal remains from 754 primary burials and 303 secondary burials were uncovered during the excavation, dating between 1200 and 1850 AD. These burials were spread over four sections of the former church and its churchyard, namely the southern churchyard, the northern churchyard, the main choir, and the second choir (see figure 3.4). However, no limits of the graveyard were found (Arts, 2019). The skeletal remains were mostly well preserved.

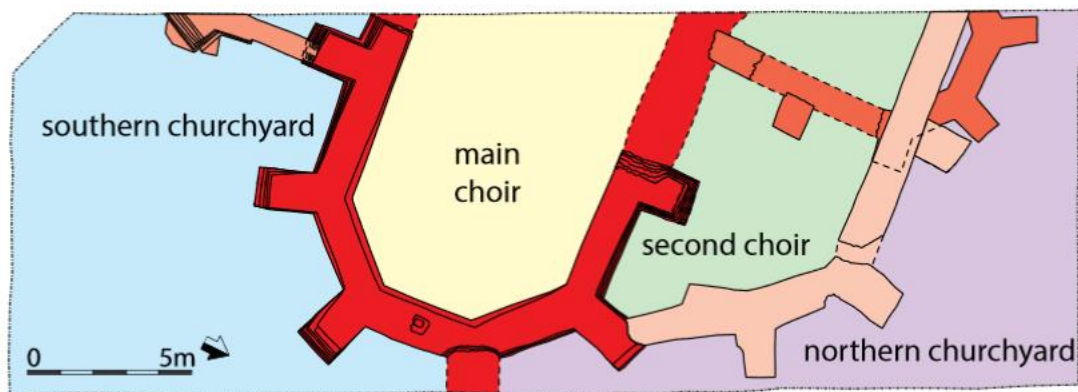


Figure 3.4: map of the excavation divided into four locations: the southern churchyard, northern churchyard, main choir, and second choir. (Arts, 2019, p. 42).

3.1.3 The Eusebius church, Arnhem

Historical context

Arnhem is a city located in the current province of Gelderland. The earliest signs of habitation date to the Iron Age, however, continuous habitation in the area started from the Early Middle Ages onwards when a small riverside settlement south of the Rhine was established (Verhagen & Wientjes, 2008). The settlement grew as an important market centre for short- and long-distance trade and valuable staging post in a pilgrim's route to Jerusalem. After city rights were granted in 1233 AD, the city grew substantially, reaching over 7.000 inhabitants in 1650 AD (Klep, 2008). However, this number was not always rising. Besides the plague reaching the city between 1550 and 1640, Arnhem suffered greatly between the years 1566 and 1580 (Klep, 2008; van Driel, 2008). During this period in the Eighty Years' War, the Spanish conflict was at its peak and the city completely protestantized in 1579, resulting in many citizens forcefully or voluntarily leaving the city (van Driel, 2008).

The origins of the Eusebius church start in 893 AD, when for the first time historical documents mention a church in Arnhem dedicated to Saint Maarten (Over de Eusebius, 2022). This church was replaced by a new church building in the 14th century. In 1453, the former St. Maarten church got a new patron, namely St. Eusebius. From then on, the church was known as The Eusebius church, also called the Great church (see figure 3.5).



Figure 3.5: drawing of the Eusebius church and its surrounding churchyard from a historic map by Blaeu of the city in 1649. (Zielman & Baetsen, 2020, p. 113).

The first mention of the northern cemetery of the Eusebius church, then still the St. Maarten church, was in 1361 (Zielman & Baetsen, 2020). It was named the old cemetery or 'Oude Kerkhof' in 1444, when a new cemetery, 'het Nieuwe Kerkhof,' was founded at the *Grote Markt* in the city. The cemetery was in use until 1829 (Zielman & Baetsen, 2020).

Medieval urban regulations revealed much about the rules and regulations of the cemetery of Eusebius church. For example, in 1636, there was a shortage of space in the cemetery due to the outbreak of the plague in Arnhem (Zielman & Baetsen, 2020). The city council thus dictated strict regulations regarding the use of the burial ground, such as the placing of three coffins on top of each other in the ground and only allowing coffins with a flat hood to save space. There was even mention of closing the cemetery that year due to the space shortage, however, due to unrest from the population, the

cemetery was reopened and further extended to the West (Zielman & Baetsen, 2020). The regulations further state that non-Christians, murderers, the excommunicated and unbaptized children were not allowed to be buried in the sacred ground of the cemetery (Zielman & Baetsen, 2020).

In 1579, the Eusebius church was immediately confiscated by the reformed community after it fell victim to the iconoclastic fury (de Klerck, 2008). By 1581, the Catholic church had no public role in the city of Arnhem. This came as no surprise since in the 16th century, less than 50 percent of the population in Arnhem was catholic. In 1635, this percentage dwindled down to around 15 percent (de Klerck, 2008). It can therefore be assumed that population buried in the cemetery of the Eusebius church between 1579 and 1650 was mostly protestant.

The excavation

In 2017, the archaeological company RAAP excavated part of the old Sint Jansbeek in the centre of Arnhem (Zielman & Baetsen, 2020). Over 800 human remains were found during the excavation, dating approximately between 1350 and 1850 AD. These remains were found in three different locations during the excavation, namely the northern cemetery of the Eusebius church, the cemetery of the *Broerenkerk*, and the choir of the *Broerenkerk*. 783 primary and secondary skeletal remains were selected for further analysis of which 659 primary graves from the old cemetery, 14 from the cemetery of the *Broerenkerk*, and 6 from inside the choir of the *Broerenkerk*. Overall, the skeletal remains were moderately well to well preserved (Zielman & Baetsen, 2020). The people buried in the northern cemetery of the Eusebius church are expected to be of low socioeconomic status (Zielman & Baetsen, 2020). In fact, the northern side and cemetery of a church were commonly perceived in medieval and post-medieval folk belief as the cold and/or cursed side of the church, where the low classes were buried (van Oosten, 2019). Due to this folk belief, this northeast area was the least-desirable location one could be buried and therefore also bore the lowest burial prices.

3.1.4 Sample selection

The number of skeletons available between 1200-1650 AD varies between the three cemeteries. The samples per site were selected based on the available and appropriate dating, age, and sex estimations of the skeletons. If possible, all skeletons found per site were selected, since this gives the best overview of the overall burial treatment of the entire population at that particular cemetery.

All of the 189 skeletons from the Franciscan monastery in Alkmaar were selected for the analysis of this thesis (see table 3.1). All the individuals were selected since most of the skeletons had both an age and sex estimation. They all date to the Late Middle Ages, during the existence of the monastery, and therefore fit within the timeframe of this thesis (Hakvoort et al., 2015). However, the two mass graves and their skeletons were excluded in the analysis of this thesis since this is an already known and studied instance of special burial treatment.

Regarding the sample size of the St. Catharina church in Eindhoven, a total assemblage of 326 skeletons has been chosen. All these skeletons date between 1200 and 1650 AD, fitting exactly into the timespan of this research. For all the skeletons, either a sex or age estimation could be given. The sample of the St. Catharina church is divided into the skeletons from outside the church, namely the northern and southern cemeteries, and the skeletons from inside the church from the choir and the second choir. The outside sample consists of 175 skeletons, whereas the inside sample includes a total of 151 skeletons in this particular period.

Of the Eusebius church in Arnhem, 384 primary graves were selected from the period between 1315 and 1650 AD. All these individuals are from the northern cemetery of the Eusebius church, also referred to as the old cemetery or '*Het Oude Kerkhof*'. The outside cemetery of the *Broerenkerk* was not chosen due to its small sample size of 14 individuals. The cemetery inside the *Broerenkerk* specifically consisted of only six individuals and therefore was also too small to conduct the case study on. Of all the skeletons from the northern cemetery of the Eusebius church, either a sex or age estimation could be estimated.

The demographics of each of the samples will be presented in the results chapter of this thesis as well as burial locations, the nature of the graves, body positions and grave orientations. The data of each cemetery by individual is provided in the appendices (see appendix 1, 2 and 3).

Table 3.1: the number of selected skeletons and their date per site. The number of selected skeletons from Eindhoven is divided between those buried inside the church and those from the outside cemetery.

Site		Individuals (n)	Date
Alkmaar		189	c.1448-1573 AD
Eindhoven	Inside	151	1200-1650 AD
	Outside	175	1200-1650 AD
Arnhem		384	1315-1650 AD

3.2 Methods

All the data used in the statistical analysis of this thesis was collected by others.

Therefore, methods regarding the age and sex estimations will be discussed only briefly.

3.2.1 Age estimation

There were some differences in the methods used for the age-at-death estimation of the skeletons per site. Overall, the same areas on the skeletons were studied, but different publications were used to study them (Beatsen & Weterings-Korthorst, 2013; Schats, 2015; Baetsen & Baesten, 2020). These areas of study generally include the degeneration and ossification of the pubic symphysis (Brooks & Suchey, 1990), the degeneration and wear of the auricular surface (Lovejoy et al., 1985, Buckberry & Chamberlain, 2002), suture closure on the cranium (Meidle & Lovejoy, 1985), the ossification of the medial rib ends, preferably the 4th (Iskan et al., 1984, 1985), late epiphyseal fusion, and the dental attrition of the molars (Maat, 2001) for adult individuals. Generally, the age-at-death estimation of non-adults was based on the overall dental eruption (Ubelaker, 1978), the dental development of the deciduous and permanent dentition (Moorrees et al., 1963), epiphyseal fusion and general ossification of the skeleton (Schaefer et al., 2009), and various bone measurements (Maresh, 1955; Black & Scheuer, 1996). These differences in publications regarding the methods for age-at-death estimations between the three sites do not lead to big differences and are thus comparable. Especially since the broad age categories of adult (18+) and non-adult (18-) is used for the comparison between the sites in this thesis.

3.2.2 Sex estimation

Overall, the same methods for the sex estimation of the skeletons were used per site (Beatsen & Weterings-Korthorst, 2013; Schats, 2015; Baetsen & Baesten, 2020). The pelvic, cranial, and mandibular traits of adult individuals were scored using the WEA

scoring method, which scores the degree of sexualization on a scale of -2 (female) to +2 (male) (Workshop of European Anthropologists, 1980). Moreover, osteometric techniques were used, such as measuring the head of the humerus and femur (Stewart, 1979). Nonetheless, there were small differences in the methods used. For example, at Arnhem and Alkmaar, Phenice traits, three morphological structures surrounding the pubic bone, were scored additionally to those of the WEA traits, while at Eindhoven this method was not used (Phenice, 1969; Beatsen & Weterings-Korthorst, 2013; Schats, 2015; Baetsen & Baesten, 2020). Furthermore, additional measurements were taken at both Alkmaar and Arnhem and at Eindhoven the scores of the mandibular traits were not included in the final sex estimation of a skeleton (Beatsen & Weterings-Korthorst, 2013; Schats, 2015; Baetsen & Baesten, 2020). Despite the slight differences in the methods used, they are comparable and do not lead to big differences in the sex estimation of the skeletons between the three sites.

3.2.3 Data analyses

In this thesis, statistical analysis is performed to study if there is a significant correlation between sex, age, socioeconomic status, and burial treatment. Before this analysis could be performed, however, the data of the sample sizes had to be organized and put into Excel, as seen in appendix 1-3. This data includes the feature number, find number, skeletal number, sex estimation, and age estimation for every individual per site. For Eindhoven, the burial location was included per individual. The data of Arnhem includes the grave orientations, body positions, positions of the arms and the nature of the graves per individual. When the data is properly organized, statistical analysis can be performed in SPSS.

The age categories of the excavation and skeletal reports of each site were used for the independent study of each cemetery. At Alkmaar this includes the following age categories: fetus (<0), infant (1-3), child (4-12), adolescent (13-18), early young adult (18-25), late young adult (26-35), middle adult (36-45), old adult (46+) (Schats, 2015). Arnhem uses the age categories fetus (<0), perinatal (+/- 36 weeks *in utero* to +/- 3 months), neonate (0-1), infant (1-3), young child (3-6), child (7-12), adolescent (13-18), early young adult (18-25), middle young adult (26-35), middle adult (36-49), old adult (50+), and adult (18+). For Eindhoven as well as comparison between the sites and comparison of the distribution of the age categories between the aforementioned factors, the age categories adult (18+) and non-adult (18-) were created.

The maps of the burial locations of Alkmaar were made in GIS using data provided by the official report of the excavation. Regarding Eindhoven, the maps of the burial locations that are used were directly taken from the excavation report (Arts, 2013). Therefore, they include the age categories 0-1, 1-2, 3-3, 3-5, 5-7, 7-13, and 13-20 years old.

In order to study the effect of socioeconomic status on the burial ritual, the sex ratios, age distributions, and the number of individuals will be compared between the outdoor and indoor cemeteries of the St. Catharina church. All the data used in the analysis is categorical. More specifically, factors such as sex, body positions, grave orientations, and the nature of the grave are examples of nominal data. The only ordinal data used in this thesis are the age categories of the samples. Therefore, only the chi-square for goodness-of-fit and the chi-square test of independence could be performed on the data to see if there were statistically significant differences between variables. Which test was used, depends on the number of variables.

When only one variable is tested, the chi-square for goodness-of-fit is used. This includes a comparison of the ratios of men and women per cemetery or, for example, the comparison of the ratios of grave orientations per cemetery. By using this test, the observed ratio of a variable is tested against the expected ratio, which is assumed to have been 1:1 in this study.

For comparison between two variables, a chi-square test of independence was performed. This includes comparisons between the sites and comparison between the distribution of the age categories or sex ratios and grave orientations, body positions, or nature of the graves in a cemetery. The level of statistical significance is set at 5% ($p < 0.05$).

4. Results

This chapter presents the results of the analysis performed on the three cemeteries of Alkmaar, Eindhoven and Arnhem. Firstly, the demographics (age and sex) per cemetery are presented and compared. This also includes a comparison of the St. Catharina church, focusing specifically on the differences between the burials inside and outside the church. Secondly, the results regarding the grave orientations, body positions, and nature of the graves will be presented. This chapter ends with the results concerning the burial locations.

4.1 Demographics

4.1.1 The cemetery of the Franciscan monastery

The population of Alkmaar consists of 24 non-adults (12.7%) and 165 (87.3%) adults of which 66 were estimated to be male and 83 female. Of 16 individuals the sex could not be ascertained. See figures 4.1-4.3 for the exact distribution of sex and age-at-death among the Alkmaar population. As can be seen, the percentage of females in the cemetery is slightly higher than that of males. A chi-square test for goodness-of-fit was performed to see if the percentage of females was significantly higher than the expected ratio (1:1). The results found that the difference was not statistically significant ($\chi^2=1.940$, $p=0.164$, $N=149$). Furthermore, old adult is the only age category that consist of more men than women.

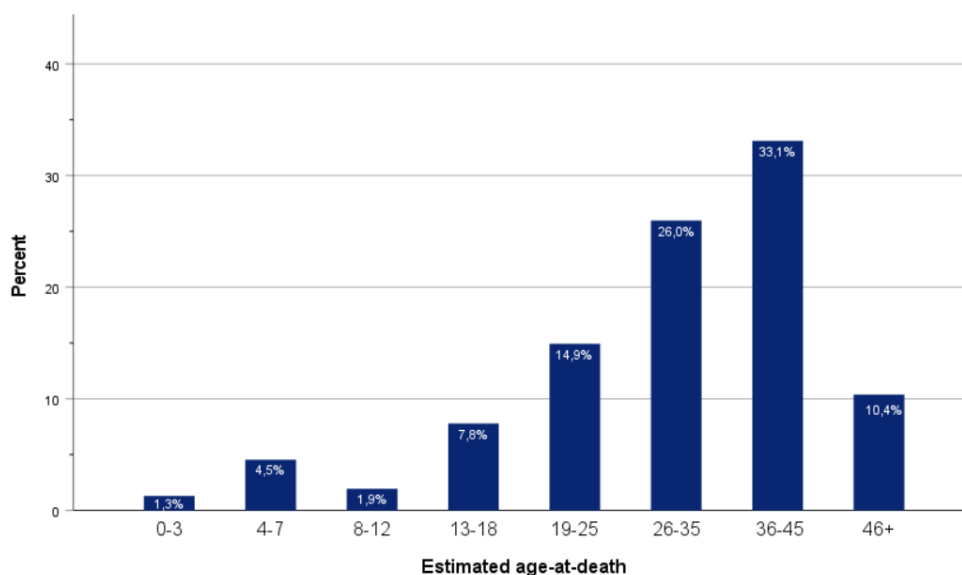


Figure 4.1: the distribution of individuals per age category at Alkmaar (N=154).

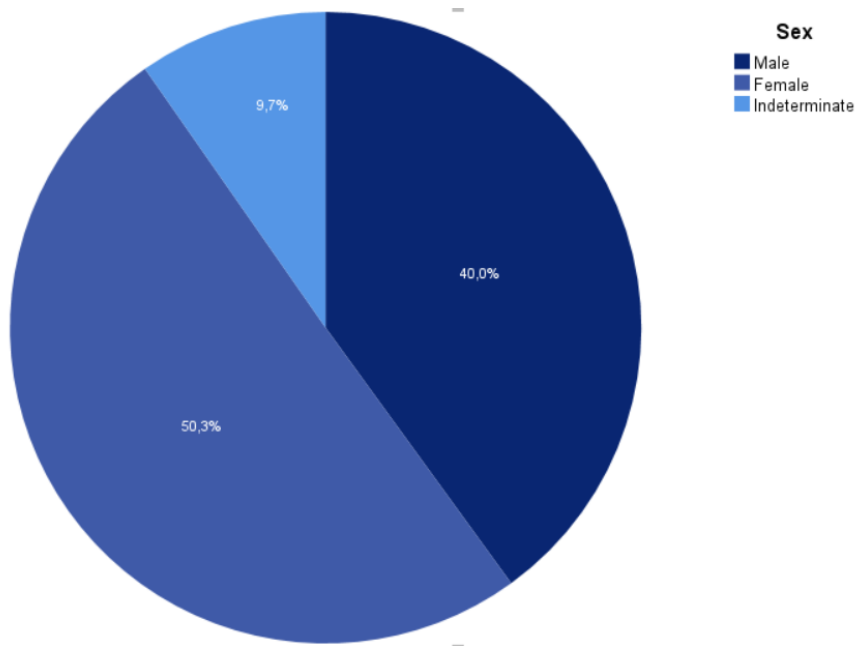


Figure 4.2: the distribution of the sexes at Alkmaar (N=165).

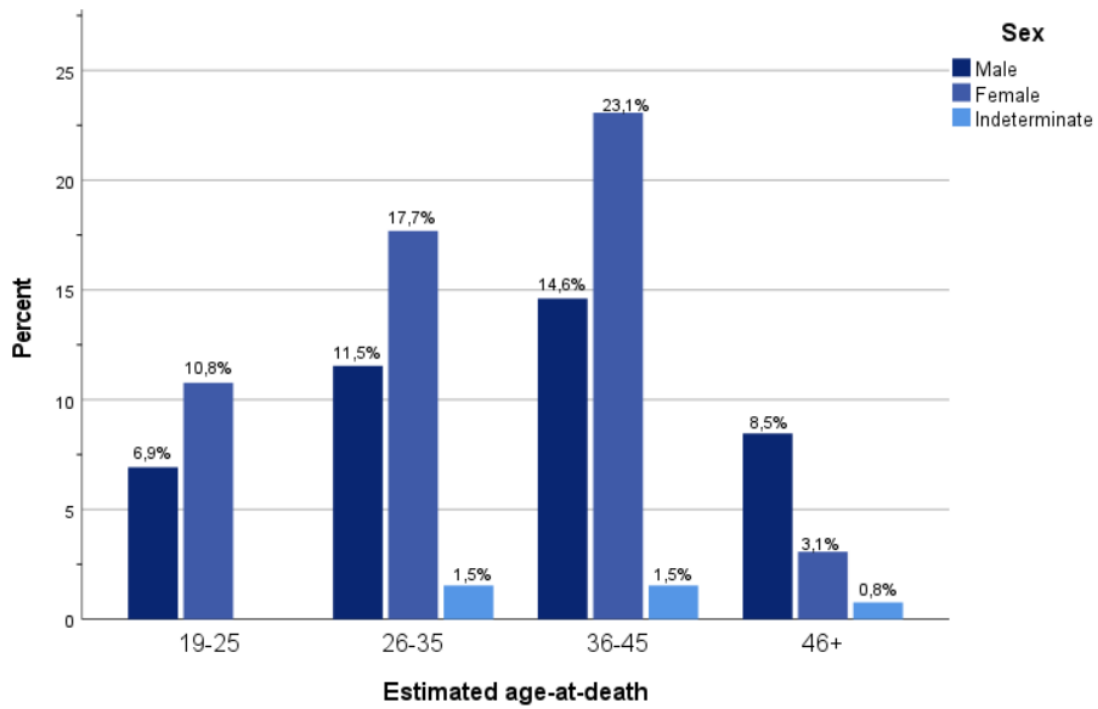


Figure 4.3: the distribution of the sexes per age category at Alkmaar (N=130).

4.1.2 The indoor and outdoor cemeteries of the St. Catharina church

The cemetery of the St. Catharina church is divided into the outdoor cemetery, the northern and southern cemeteries, and indoor cemetery, the choir and second choir. The total population of Eindhoven consist of 326 individuals, of which 262 are adults (80.4%) and 64 non-adults (19,6%). 96 individuals were estimated to be male (57.5%) and 68 female (40.7%). Of 3 individuals the sex could not be confirmed (1.8%). The sex could not be estimated for 95 individuals due to the significant incompleteness of the skeletons. See figure 4.4 for the sex distribution between inside and outside the church using the total population of Eindhoven.

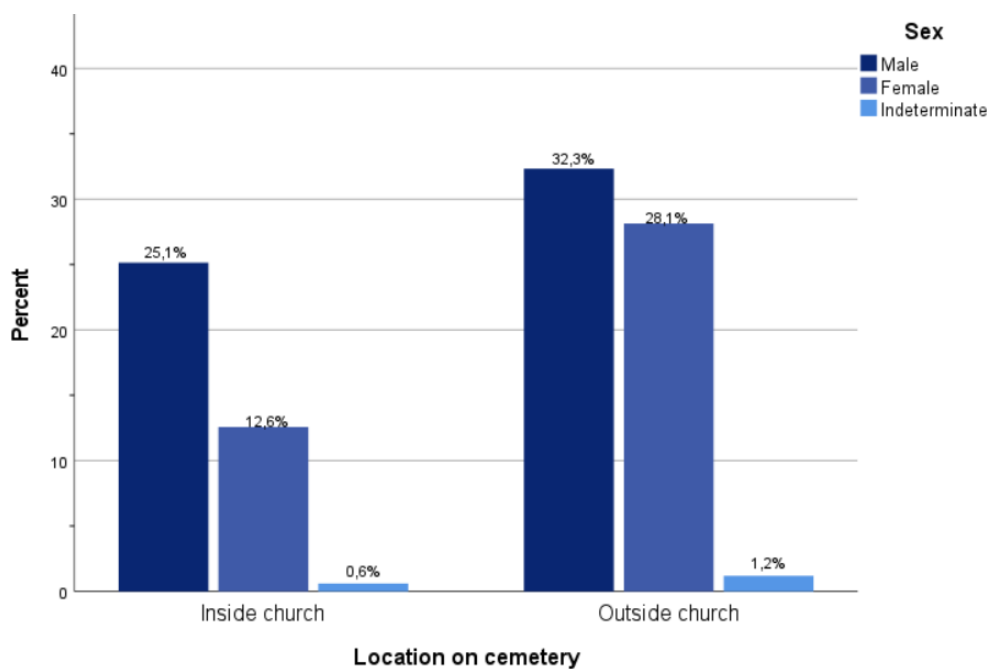


Figure 4.4: distribution of the sexes at Eindhoven between inside and outside the church (N=167).

In total, the sample of the northern and southern cemeteries of the St. Catharina church includes 175 skeletons. This sample consists of 42 non-adults (26%) and 133 adults (74%), of which 54 individuals were male, 47 individuals were estimated to be female, and of 2 individuals the sex could not be ascertained (see figure 4.5). The ratio between males and females was not significant in comparison with the expected ratio (1:1) ($\chi^2=0.485$, $p=0.486$, $N=101$).

Inside the Catharina church, the population consist of 129 adults (85.4%) and 22 non-adults (14.6%), which consists of 42 male individuals and 21 female individuals (see figure 4.6). Of 1 individual, the sex could not be ascertained. In contrast to the outdoor

cemetery, inside the church there seems to be more men than women, which can be observed in both figure 4.4 and 4.5. This is a significant difference when compared to the expected ratio (1:1) ($\chi^2=7.000$, $p=0,008$, $N=63$).

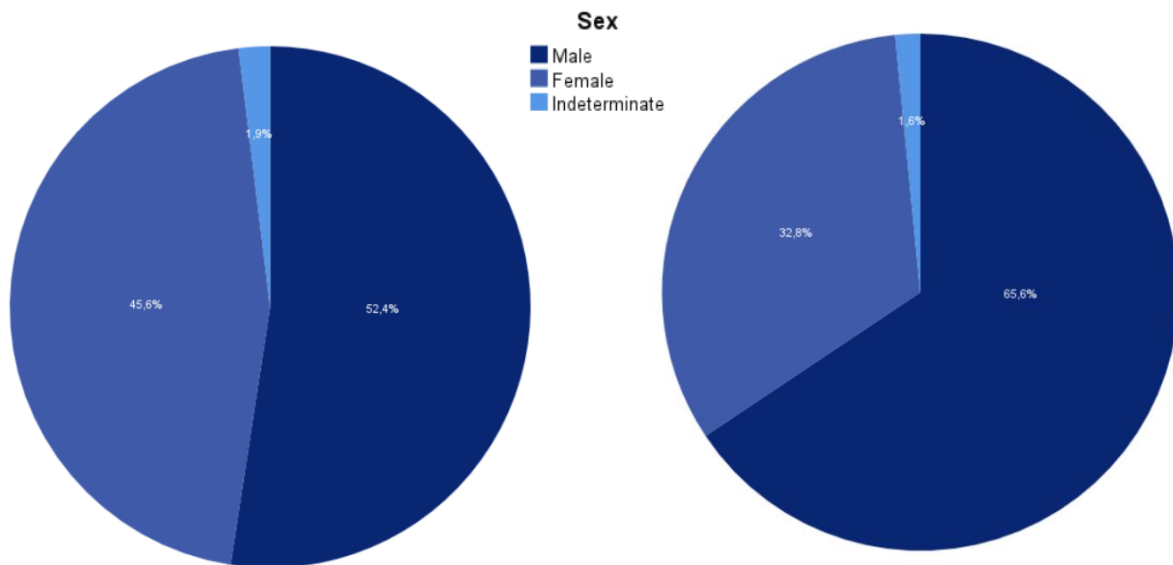


Figure 4.5: distribution of the sexes at Eindhoven, separated in the population outside the church (N=103) and inside the church (N=64).

4.1.3 The northern cemetery of the Eusebius church

The sample size of the northern cemetery of the Eusebius church includes a total of 384 individuals. This population of Arnhem consists of 109 non-adult (28.4%) and 275 adults (71.6%), of which 95 were estimated to be male, 100 female, and for 11 individuals their sex could not be ascertained. See figures 4.6-4.8 for the exact distribution of sex and age-at-death among the Arnhem population.

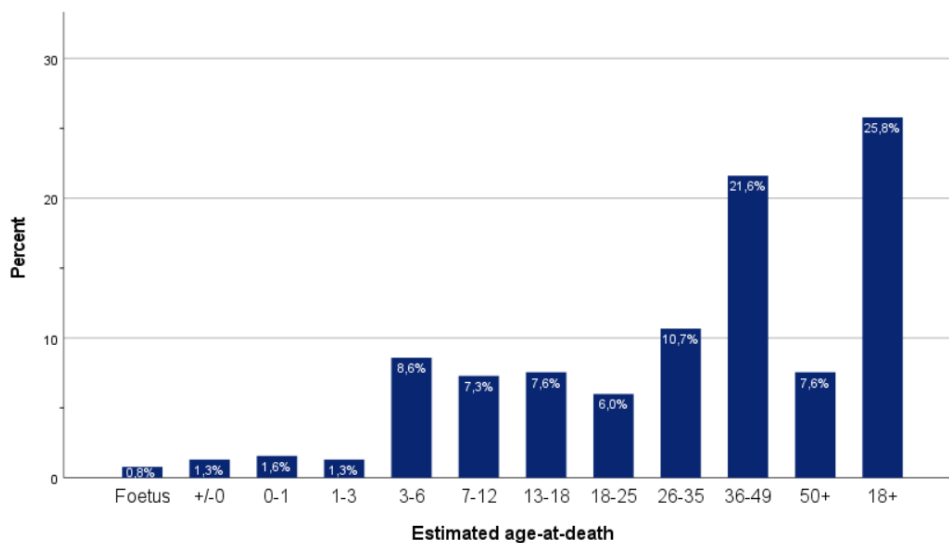


Figure 4.6: distribution of the individuals per age category at Arnhem (N=384).

In these figures, a slight prevalence in the number of females can be observed. However, this number was not significant when compared to the expected ratio (1:1) ($\chi^2=0.128$, $p=0.720$, $N=195$). A significant difference in the sex ratio regarding the prevalence in females in the early young adult category was observed when compared to the expected ratio (1:1) ($\chi^2=4.765$, $p=0.029$, $N=17$).

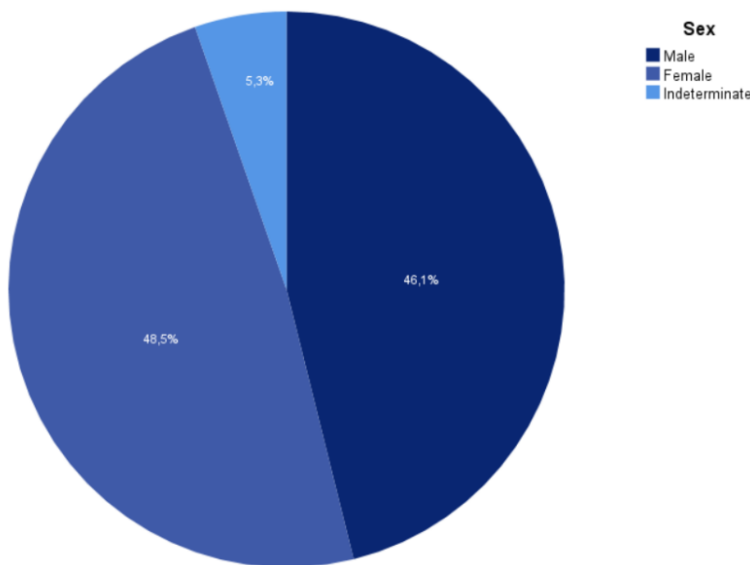


Figure 4.7: distribution of the sexes at Arnhem (N=206).

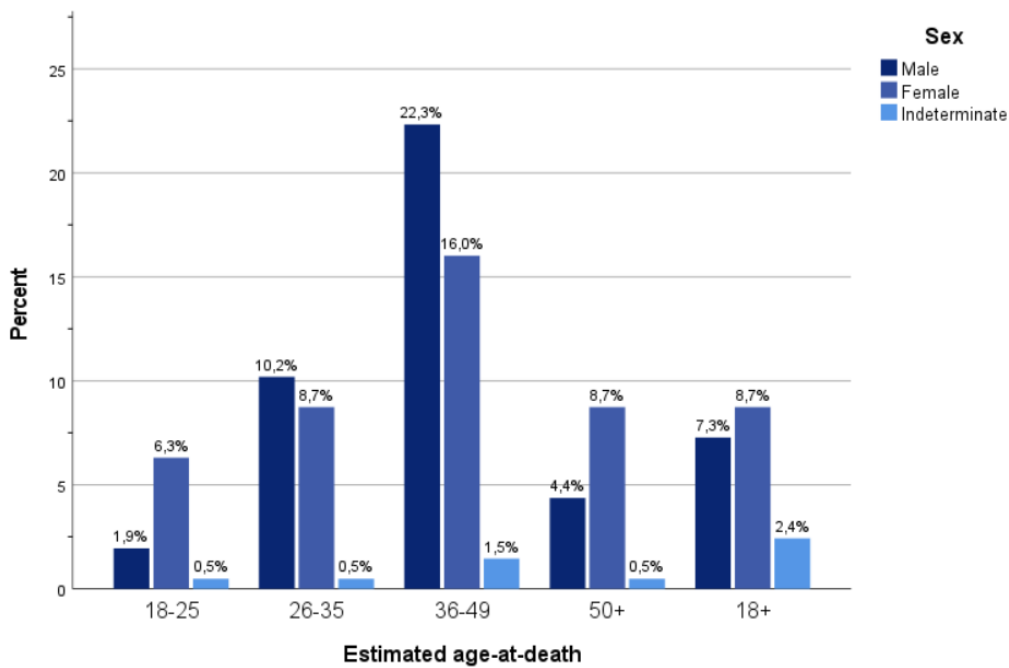


Figure 4.8: distribution of the sexes per age category at Arnhem (N=206).

4.1.4 Comparison between sites

The comparisons between the sites are divided into the comparison between the outdoor cemeteries and the comparison between the indoor and outdoor burial zones of the St. Catharina church. This division was made since the population buried inside of the St. Catharina church is of a much higher socioeconomic status than the population from the three outdoor cemeteries thus its demographics can differ greatly from outdoor cemeteries.

Comparison between outdoor cemeteries

The ratios of adult (18+) and non-adult (18-) individuals as well as the ratios of sex were compared between the three sites to assess if the collections are comparable. As seen in table 4.1, the ratio of non-adults seems to be higher in Arnhem than in those in the other two cemeteries. Contrarily, among the Alkmaar population, the ratio of non-adults seems lower in comparison, even lower than the percentage children inside the St. Catharina church. This was tested using the chi-square test of independence. The results confirmed that there is indeed a statistically significant difference in the distribution of the age categories between the outdoor cemeteries three sites ($\chi^2=17.438$, $p<0.001$, $N=748$).

Table 4.1: distribution of the non-adults and adults between the three cemeteries.

Site		Adult (18+)		Non-adult (18-)	
		(n)	%	n	%
Alkmaar		165	87.3	24	12.7
Eindhoven	Inside	129	85.4	22	14.6
	Outside	133	74	42	26
Arnhem		275	71.6	109	28.4

When looking at table 4.2, it seems that the sex ratios are evenly distributed among the sites. No significant difference was found when comparing the distribution of the sex ratios between the three sites ($\chi^2=1.745$, $p=0.418$, $N=445$).

Table 4.2: distribution of the sexes between the three cemeteries.

Site		Male		Female		Indeterminate	
		(n)	%	n	%	n	%
Alkmaar		66	40	83	50.3	16	9.7
Eindhoven	Inside	42	65.6	21	32.8	1	1.6
	Outside	54	52.4	47	45.6	2	1.9
Arnhem		95	42.1	100	48.5	11	5.3

Comparison between inside and outside burial of the St. Catharina church

The ratio of adults and non-adults as well as the ratios of sex were compared between the burials inside and outside of the St. Catharina church to see what effect status can have on burial placement. As can be seen in table 4.1, less non-adults are buried inside the church than outside. When conducting a chi-square test of independence, a significant difference was indeed found in the distribution of age categories between the two burial zones ($\chi^2=4.569$, $p=0.033$, $N=326$).

Table 4.2 shows the seemingly higher ratio of men inside the church when compared to the outdoor cemetery. However, unlike when comparing solely the distribution inside the church, no significant difference was found when comparing the distribution of the sexes between the two burial zones ($\chi^2=2.786$, $p=0.095$, $N=164$).

4.2 Grave orientation

The cemetery of the Eusebius church was chosen for the analysis regarding grave orientations. The ratio of the grave orientations in the cemetery will first be given. These ratios will then be compared to the sex and age ratios of the population of Arnhem to see whether certain patterns arise. Only Arnhem was chosen because the other two cemeteries did not have the raw data of their grave orientations available.

Of the 384 individuals at Arnhem, 190 were buried in a West to East orientation, making it the most popular grave orientation in the cemetery. See figure 4.9 for the exact distribution of the grave orientations.

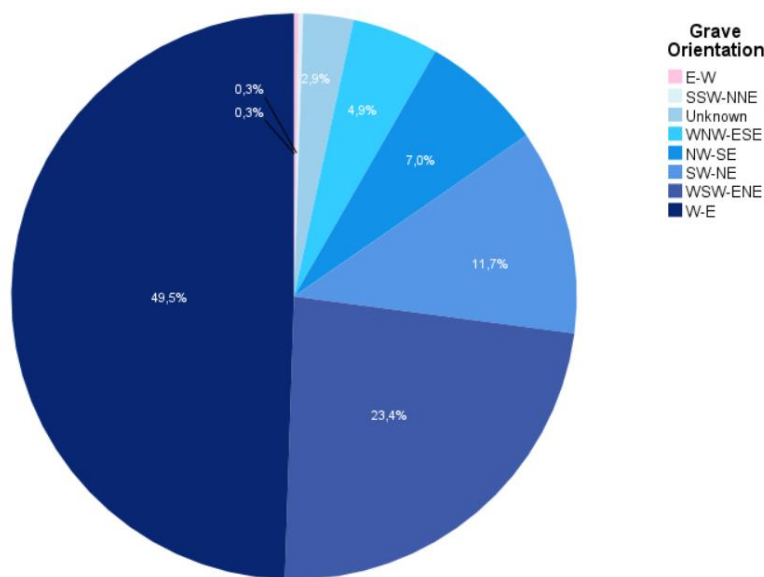


Figure 4.9: distribution of the grave orientations at Arnhem (N=384).

The Arnhem population consists of 373 individuals buried with a known grave orientation, of which 271 individuals were adults and 102 individuals belong to the non-adult age category (see figure 4.10). Adults and non-adults seem to follow the same exact pattern regarding most to least common grave orientations. Furthermore, no adults were buried in an East to West orientation as well as no non-adult in an SSW-NNE orientation. A chi-square test of independence was conducted to see whether there is a correlation between age and a certain grave orientation. No statistically significant difference in grave orientations between age categories was found ($\chi^2=3.625$, $p=0.727$, $N=373$).

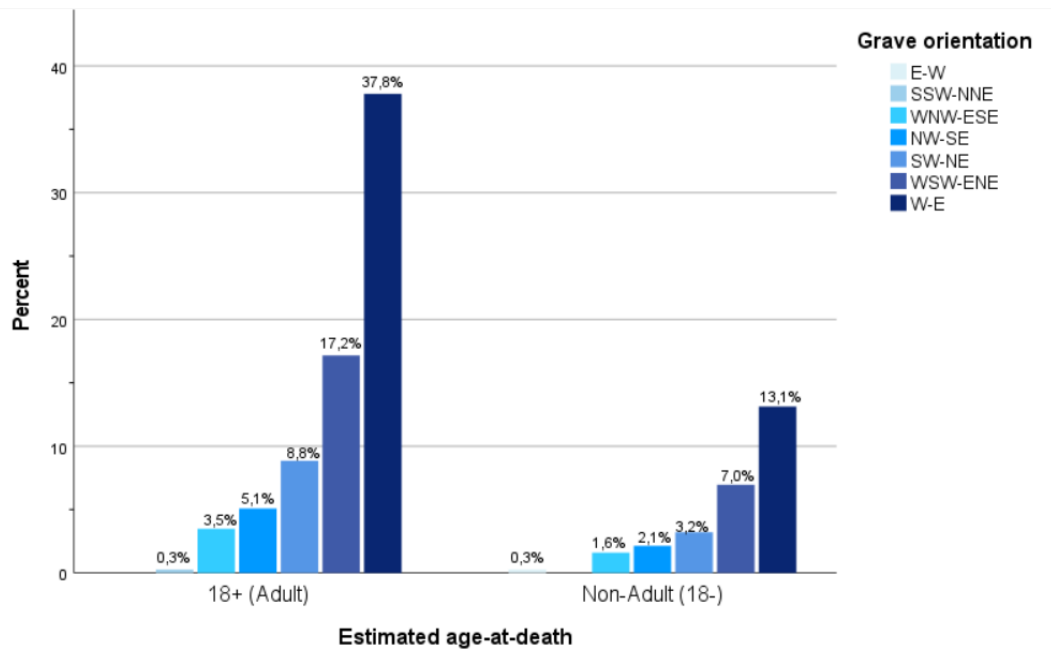


Figure 4.10: distribution of the grave orientations between adults and non-adults at Arnhem (N=373).

The same nearly identical pattern can be detected regarding the distribution of grave orientations among the sexes; however, the WSW-ENE orientation is slightly more popular for males as is the W-E orientation for females. No males were found buried in an East to West orientation. Nonetheless, by conducting a chi-square test of independence, it is concluded that there is no statistically significant difference in grave orientations between males and females ($\chi^2=5.435$, $p=0.365$, $N=192$). Moreover, no females were buried in an SSW-NNE orientation.

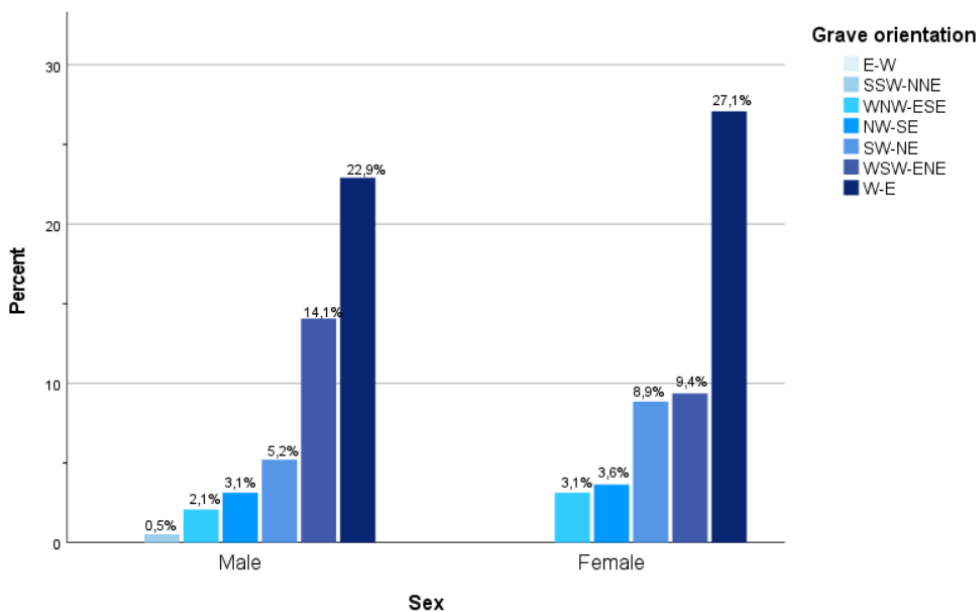


Figure 4.11: distribution of the grave orientations between males and females at Arnhem (N=192).

4.3 Body positions

The cemetery of the Eusebius church was chosen for the analysis concerning the body positions in the grave due to the unavailability of the raw data on the body positions in Alkmaar and Eindhoven. The analysis will follow the same procedures as that of the previous grave orientation analysis.

4.3.1 The position of the arms at the Eusebius church

The position of the arms could be documented for 132 individuals from the population of Alkmaar, that consist of 29 non-adults and 103 adults. As seen in figure 4.12, there were eight different recorded positions of which position 1, both arms alongside the body, was the most popular, with 58 individuals found in this position. See figures 4.12-4.14 for the exact distribution of the arm positions among the Arnhem population.

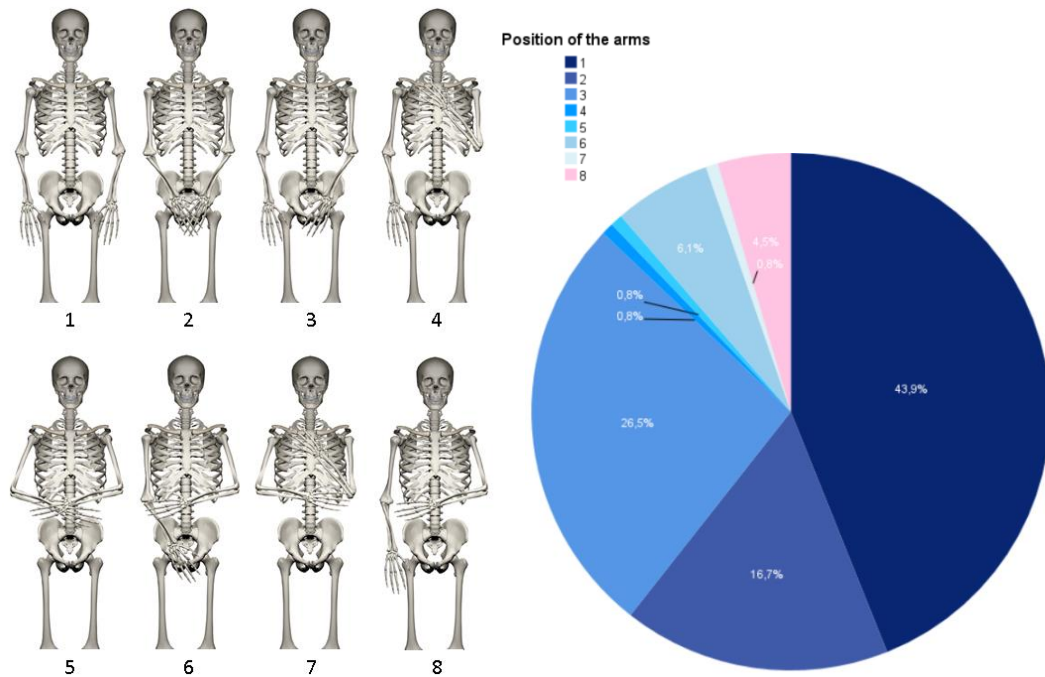


Figure 4.12: the eight different positions of the arms recorded at Arnhem and the distribution of these arm positions at the site (N=132).

When observing these figures, adults seem to have a bigger variety in arm positions than non-adults. Especially position 3 and 6 seem to be more prevalent with adults than children. However, by conducting a chi-square test of independence it was found that there was no significant between adults and non-adults and the positions of their arms ($\chi^2=10.580$, $p=0.158$, $N=132$).

This same pattern can be observed when comparing the arm positions between men and women. Men also seem to have a bigger variety in arm positions than women, specifically regarding position 4 and 5. Position 3 is the most popular among men, while most women take position 1. Besides this difference, men and women essentially follow the same pattern. A chi-square test of independence found that there was no significant difference in the positions of the arms between men and women ($\chi^2=5.961$, $p=0.428$, $N=99$).

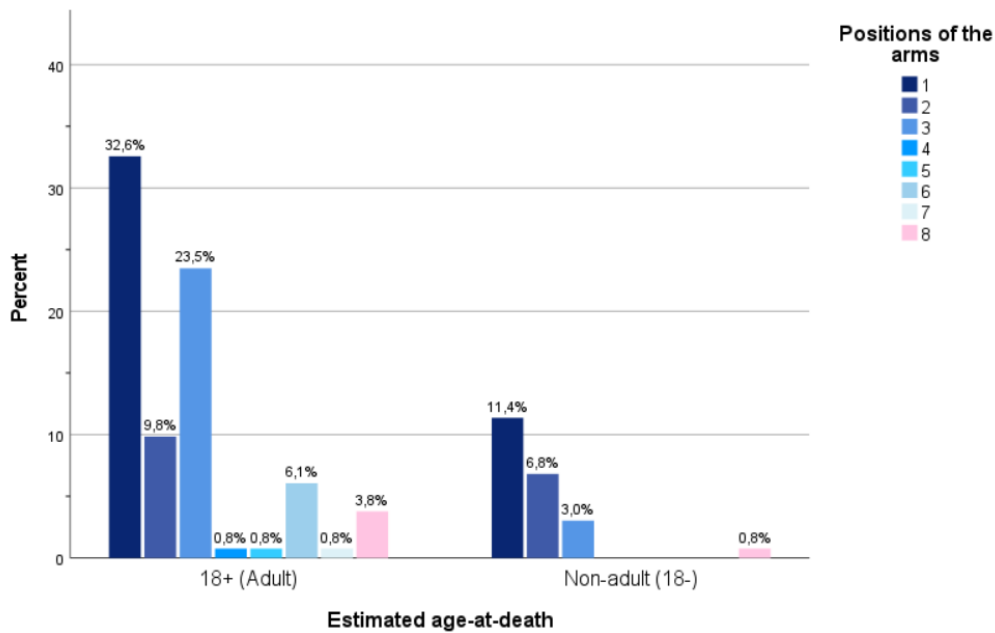


Figure 4.13: distribution of the arm positions between adults and non-adults at Arnhem (N=132).

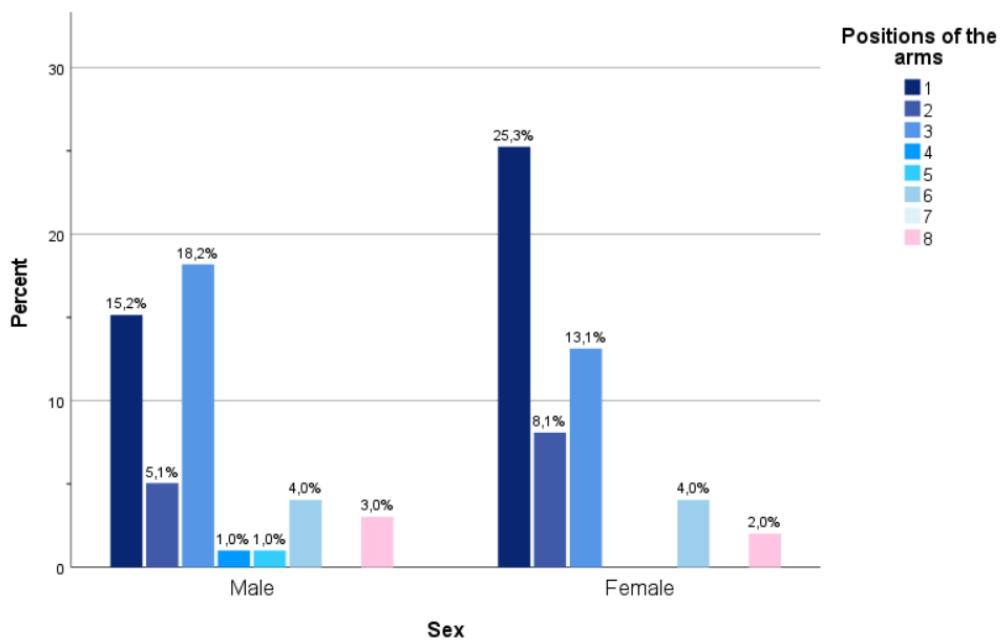


Figure 4.14: distribution of the arm positions between males and females at Arnhem (N=99).

4.3.2 The body positions at the Eusebius church

Of 384 individuals at Arnhem, 344 individuals, both adults and non-adults, were buried laid on their back, which makes this body position most popular by far. The same pattern can be seen when comparing the body positions between both men and women. There were some exceptions; one female individual was buried half on the right side of her back, while two non-adults were buried on their left side. Moreover, one female individual was buried on her stomach. The individual buried in the foetal position was a foetus. See figure 4.15 for the exact distribution of the body positions at Arnhem.

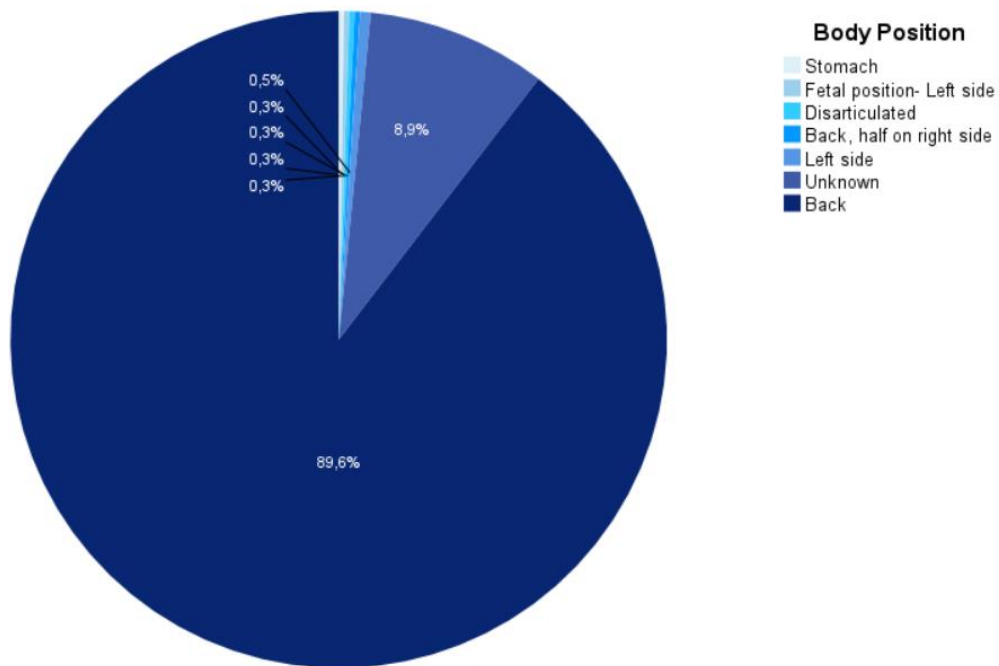


Figure 4.15: the distribution of the body positions at Arnhem (N=384).

4.4 Nature of the grave

To study the nature of the grave, the cemeteries of the Franciscan monastery and the Eusebius church have been chosen due to their availability of raw data regarding this factor. The ratio of the nature of the graves in Arnhem will be given and compared to the sex and age ratios among the population. A map of Alkmaar including coffin burials will also be presented to identify possible clusters.

4.4.1 The northern cemetery of the Eusebius church

The nature of the graves could be determined for 190 individuals at Arnhem, of which the vast majority was buried in a coffin, while only two individuals were put directly into the ground. See table 4.3 for the exact distribution of the nature of the graves amongst the adults, non-adults and different sexes of the Arnhem population. Coffin burials seem to be more prevalent with adults than non-adults, however no significant difference was found of the nature of the graves between the two age categories ($\chi^2=0.646$, $p=0.422$, $N=190$). Furthermore, coffin burials seem to be slightly more popular amongst women than men, yet no significant difference of the nature of the graves between the sexes was found when conducting a chi-square test of independence ($\chi^2=0.014$, $p=0.906$, $N=133$).

Of 88 coffins various types of wood could be determined, oak being the most popular followed by pine wood (van Daalen, 2020). Since it is not clear from which period most of these coffins date, this data could not be elaborated on in this thesis.

Table 4.3: distribution of the nature of the graves between adults and non-adults and the sexes.

Nature of the grave	Total		Adult (18+)		Non-adult (18-)		Male		Female	
	(n)	%	n	%	n	%	n	%	n	%
Coffin	188	49	142	74.7	46	24.2	60	45.1	71	53.4
Directly into the ground	2	0.5	2	1.1	0	0	1	0.8	1	0.8

4.4.2 The cemetery of the Franciscan monastery

As can be seen in figure 4.16, the coffins at Alkmaar are evenly distributed throughout the cemetery. No clusters could be detected. Nonetheless, as for Arnhem, the coffins depicted on the map, are only the ones that were found during the excavation.

Substantially more individuals could have been buried in coffins.



Figure 4.16: map of the distribution of the wooden coffins at Alkmaar.

4.5 Burial location

The burial locations from the cemetery of the Franciscan monastery and the St. Catharina church have been selected to study potential sex or age related clusters on the cemetery. This data will be presented using maps of the cemeteries, which include the sex or age-at-death per individual. Unfortunately, the raw data concerning the sex and/or age per individual in connection to their burial locations or pre-existing maps from the excavation report of Arnhem are unavailable, and thus this site could not be analysed. Only a few maps of Eindhoven were selected. For a full overview of the burial locations in Eindhoven, see (Arts, 2013, p. 119-121, p. 126-128, p. 131-133).

4.5.1 The cemetery of the Franciscan monastery

Using data of the excavation report of Alkmaar, maps were made in order to identify possible spatial clusters in certain age categories or of male or female individuals. When observing the distribution of the non-adults in the cemetery, no specific patterns or clusters can be detected (see figure 4.17). Non-adults were mostly buried alongside adults. Two adolescents were buried next to each other in the middle of the cemetery as well as a juvenile on top of an adolescent in the northern border of the cemetery. However, this did not occur enough to be a trend. Moreover, an infant was buried inside the coffin of an early young adult female (see figure 4.18). The other infant in the cemetery is buried next to an adult male, who has an East to West grave orientation.

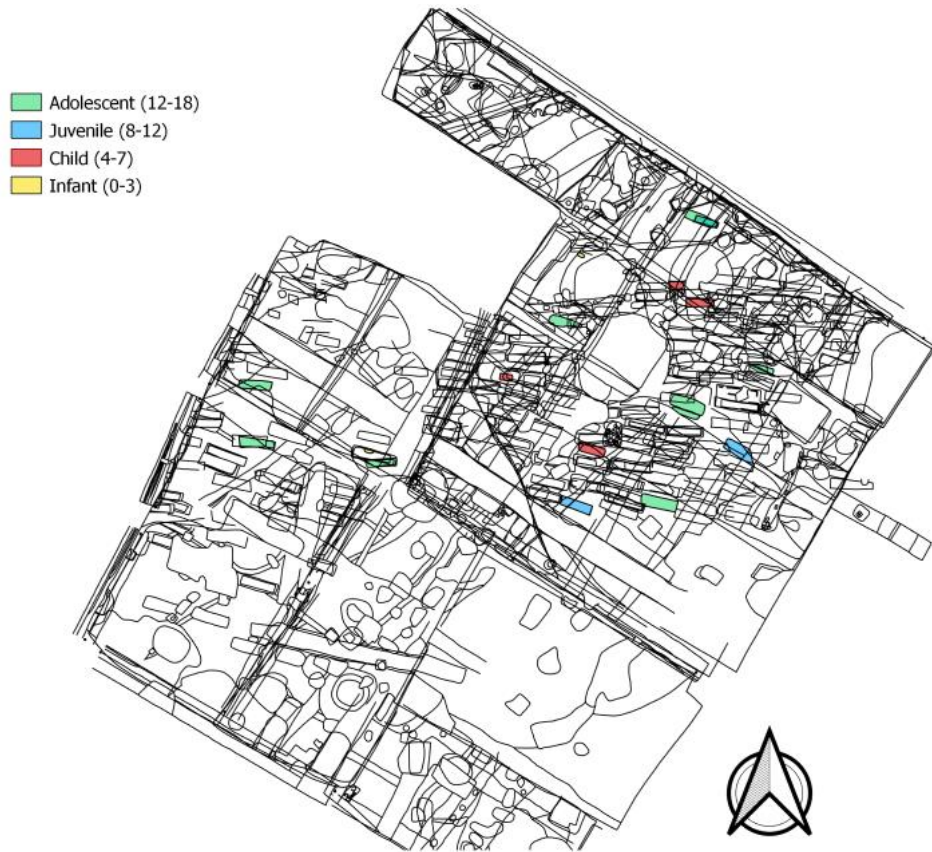


Figure 4.17: map of the distribution of the non-adults at Alkmaar.

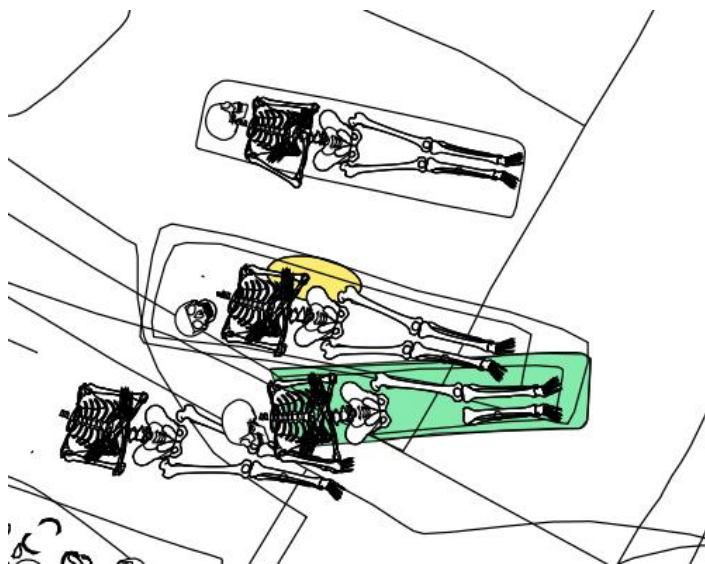


Figure 4.18: close-up of the infant buried with the adult woman at Alkmaar.

As seen in figure 4.19, the burial locations of men and women were mixed at Alkmaar. No significant spatial clusters or patterns can be observed. One male individual was buried slightly further away from the other individuals at the northern part of the cemetery.

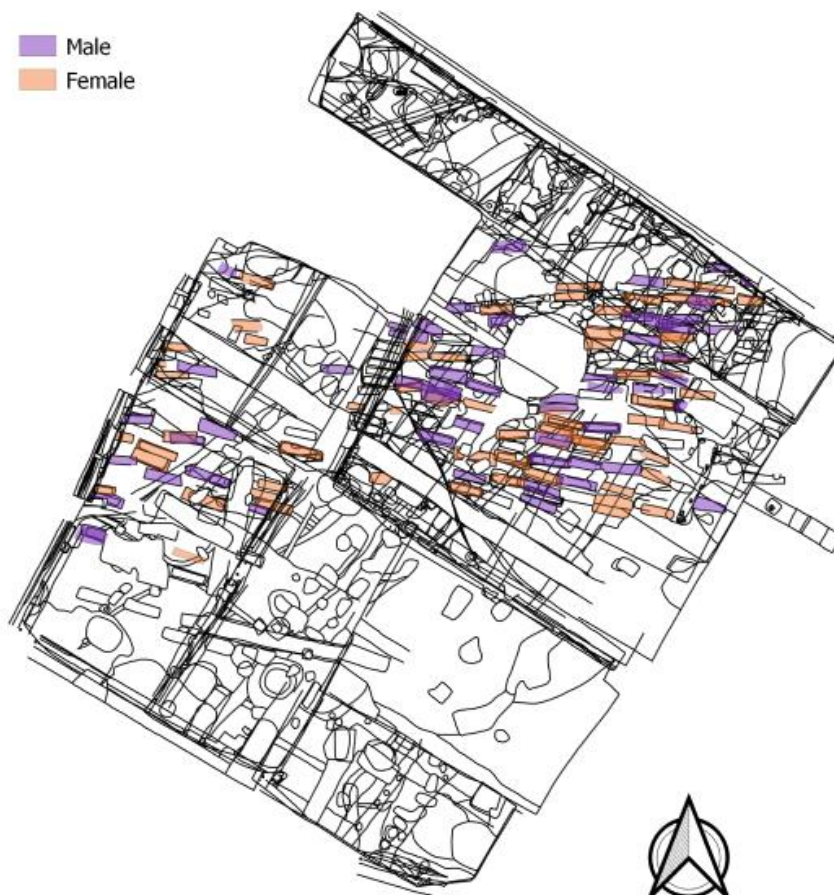


Figure 4.19: map of the distribution of the sexes at Alkmaar.

4.5.2 The indoor and outdoor cemeteries of the St. Catharina church

The excavation report of the St. Catharina church includes maps of the burial locations per period, sex, and age category for each excavation level and thus shows individuals from 1200-1850 AD meshed together (Arts, 2013). Only a few were selected that showed interesting clustering or patterns or were most relevant. Needless to say, the patterns described are those observed in the burials dated between 1200 and 1650 AD.

Unlike at Alkmaar, some patterns and clustering can be observed both inside the church as outside at Eindhoven. Figures 4.20-4.23, best display the patterns in the burial

location of non-adults in the northern and southern cemeteries of the St. Catharina church. In the northern cemetery, there seems to be a pattern of burying young and older children, between 1 and 20 years, against or near the outer church's wall. However, in the southern cemetery, most non-adults, between 0 and 20 years, are buried away from the church's wall and seem to partly cluster together. It cannot be said if they are buried on the border of the southern cemetery, since it was not found during the excavation (Arts, 2013). Furthermore, there seem to be more non-adults buried in the southern cemetery of the St. Catharina church than in the northern cemetery, especially children in the age group 0-1 years.

Inside the St. Catharina church, non-adults of all ages are buried. Notably, there are two burials of a young child, 1-2 years and 5-7 years, against the inner wall of the choir and one burial, 3-5 years, against the outer wall of the choir (see figure 4.23 and 4.21). Moreover, there seem to be slightly more burials of non-adults inside the second choir than inside the main choir, but certain clusters of specific age groups or non-adults overall could not be detected.

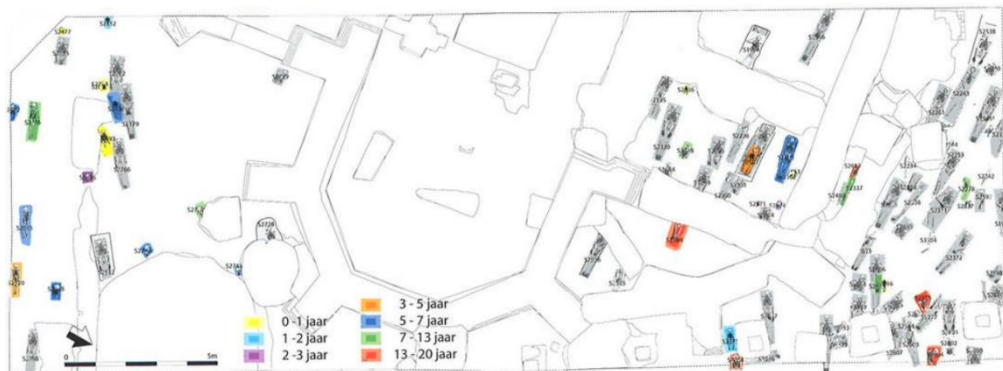


Figure 4.20: map of the distribution of the non-adults for levels 9 and 10 at Eindhoven. (Arts, 2013, p. 132).

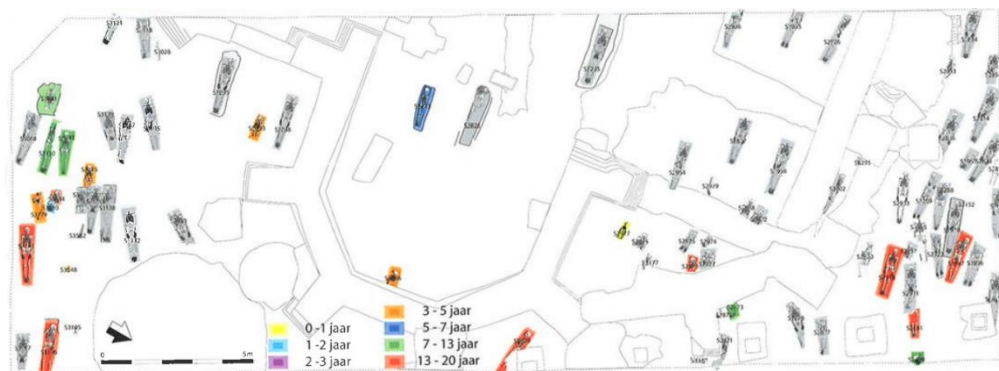


Figure 4.21: map of the distribution of the non-adults for level 11 at Eindhoven. (Arts, 2013, p. 132).

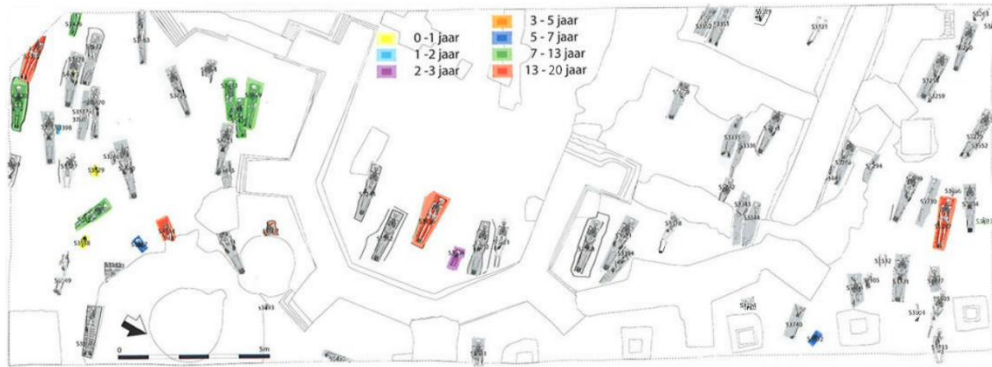


Figure 4.22: map of the distribution of the non-adults for level 12 at Eindhoven. (Arts, 2013, p. 132).



Figure 4.23: map of the distribution of the non-adults for levels 15-19 at Eindhoven. (Arts, 2013, p. 133).

As seen in figures 24-25, the burial locations of both men and women, like at Alkmaar, are mixed. This applies to both the inside and outside burial zones of the church. There seems to be a spatial cluster of women on the edge of the southern cemetery in figure 24. However, when comparing all the levels in the excavation report this only applied to this particular level, and thus is not a pattern.



Figure 4.24: map of the distribution of the sexes for level 14 at Eindhoven. (Arts, 2013, p. 128).



Figure 4.25: map of the distribution of the sexes for levels 15-19 at Eindhoven. (Arts, 2013, p. 128).

4.6 Conclusion

In this chapter, the results of the analysis performed on the three cemeteries of Alkmaar, Eindhoven and Arnhem were presented. No significant difference was found in the demographics of the individual sites, except regarding the indoor church burials of the St. Catharina church. Here, men were more prevalent than women. When comparing the demographics outdoor cemeteries of three sites, the adult to non-adult ratio was unequally distributed. More non-adults were buried at Arnhem than at the other sites, while the number of non-adults at Alkmaar was lower. The comparison between the indoor and outdoor burial zones at Eindhoven found that there were less adults buried inside the church than outside.

As for the grave orientations, the West to East orientation was the most popular among the Arnhem population. Both adults and non-adults follow the same pattern concerning the most to least popular grave orientations. The same pattern can be observed between the sexes. No significant differences were found for the grave orientation between adults and non-adults as well as men and women.

The analysis of the arm positions at Arnhem found that most individuals were buried with their arms alongside their body. There was no significant difference when comparing these positions between the sexes and age categories. Furthermore, the vast majority of individuals, both adults and non-adults as well as men and women, were buried on in a supine position.

The most popular nature of the grave at Arnhem was the wooden coffin. No significant difference was found for the nature of the grave between adults and non-adults as well as between the sexes. It is important to note that most coffins were completely deteriorated at the time of the excavation and thus the number used in the analysis could be far greater. No spatial clusters in the distribution of the wooden coffins at Alkmaar were found.

The analysis of the maps of the burial locations at Alkmaar and Eindhoven found that men and women had no designated burial location in the cemetery. They were buried mixed together. The non-adults buried at Alkmaar were buried also alongside adults, with one infant placed in the grave of an adult. The burial locations of the non-adults at Eindhoven show that non-adults were buried against the outer wall and inner walls of the church in the northern and indoor cemetery. The southern cemetery showed

clustering of non-adults further away from the church as well as holding more non-adults than the northern cemetery.

The implication of these results for the research questions will be discussed in the next chapter. Since the analysis of the grave orientations, body positions, and nature of the graves were only performed for one site, Arnhem, they will be compared to other Dutch cemeteries to provide more context regarding these aforementioned factors in the Netherlands.

5. Discussion

This thesis aims to identify the influence of sex, age-at-death, and socioeconomic status on the burial treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650). To achieve this, previous knowledge of the late medieval and early modern burial ritual, the history of the chosen cemeteries and the analysis conducted in this thesis were presented. By combining this knowledge, we might come to a better understanding of the burial ritual in the Netherlands.

Thus, in this chapter, the results of the analyses in the previous chapter and their implications are discussed. The interpretation of the results is divided into the implications it brings for the effect of sex, age-at-death and socioeconomic status on the burial ritual. This includes comparing the results to studies of other contemporary (outdoor) urban cemeteries in the Netherlands since not every aspect of the burial ritual could be compared between the three sites. The limitations of the research are also considered when interpreting the results of the analysis. Furthermore, the effect of socioeconomic status is discussed specifically when interpreting the results of the St. Catharina church. Lastly, by comparing the results to previous research from Belgium, they are put in a bigger context of the burial ritual in the Low Countries.

5.1 Discussion of the results

When discussing the results of Alkmaar, Eindhoven, and Arnhem, it is important to note that only a part of the buried community is excavated and studied. For example, a total of 55.000 are thought to be buried in Eindhoven alone between the ages of 1200 and 1850 AD, but only 326 were studied within the time frame of this thesis (Arts, 2019). How this surveyed sample size departments from the total deposited population is explained in figure 5.1. This figure is made for the provenience of animal bone data (Meadow, 1980), but it can also be applied to human remains. As seen in the figure, bone loss is determined by controllable and non-controllable factors (Meadow, 1980). For example, the potential bone population is already determined by the community deciding who is allowed to be buried in the cemetery. During the burial, varying post-depositional processes cause some bones to completely deteriorate. When excavating, the remaining preserved bones can also be lost due to incorrect excavation techniques or because only part of the former cemetery is excavated. Moreover, not all the bones that are excavated are eventually studied and published in the final excavation report (Meadow, 1980).

Thus, in this thesis, and archaeology in general, the recovered population at a cemetery is used to comment on the deposited population, which in turn is used to reflect upon the values and practices of the living community conducting the burial (Meadow, 1980). However, one does not always accurately represent the other, since the studied sample size is often very small. Thus, one must be careful when drawing conclusions about a society as a whole. This critical note is important to keep in mind when studying the burial practices of a society.

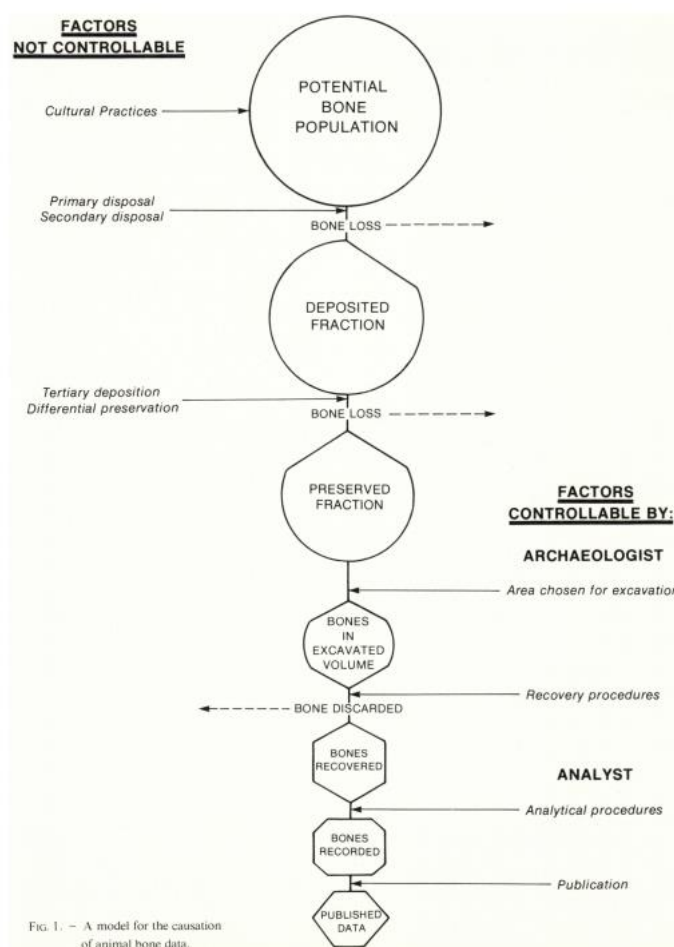


Figure 5.1: the provenience of animal bone data. (Meadow, 1980, p. 67).

5.2.1 Age-at-death

The cemeteries of the Franciscan monastery, St. Catharina church, and Eusebius church all have a low non-adult ratio. Especially when considering the high child mortality rate in the Middle Ages and the lower burial costs for children compared to adults (Schats, 2015; Arts, 2019). However, this is not a rare phenomenon in archaeology. This reflects on the schematic of the deposited and recovered population by Meadow (1980). The bones of children are more brittle than those of adults (Schats, 2015). This creates

preservation issues as they are easily affected by post-depositional processes. Furthermore, children's bones are often mistaken for those of small animals or are overlooked at an excavation due to their small size. The different social statuses of children, such as their baptism status, could also cause them to be buried elsewhere (Schats, 2015). Thus, the actual percentage of non-adults might have been higher at the three cemeteries.

Nonetheless, there was a significant difference in the distribution of adults and non-adults between the outdoor cemeteries at the three sites. Especially the ratio of non-adults at Alkmaar was very low. The monastic cemetery of the *Broerderkerk* in Zutphen displays somewhat the same pattern, with only three non-adults buried at the cemetery after 1600 AD, excluding any child under the age of 8 years (Baetsen & Groothedde, 2019). This cemetery (c. 1300-1800 AD) was connected to the Dominican order, an order that like the Franciscans allowed their laypersons, and citizens, to be buried in their cemetery. It is hypothesized that due to the monastic nature of the cemetery, the young children were buried elsewhere, such as in the cemetery of the nearest parish church in the city (Baetsen & Groothedde, 2019). Perhaps this also explains the low percentage of non-adults at the citizen Franciscan cemetery in Alkmaar. However, it is important to note that, unlike at Alkmaar, monks were buried alongside the citizens in Zutphen (Baetsen & Groothedde, 2019), which could also have affected the lack of non-adults at the site.

Despite this low non-adult ratio, other aspects of the burial ritual, such as grave orientations and body positions, corresponded with those of adults. Nonetheless, some differences in burial treatment did occur, as will now be further discussed.

Grave orientations

As already mentioned, the burial ritual reflects the values of the community who conducted the burial rather than how the deceased viewed themselves (Pearson, 1999; Laneri, 2007). Therefore, the fact that the grave orientations between adults and non-adults follow the same pattern at the Eusebius church, could indicate that children were not viewed differently from adults in either the burial practices or afterlife (Nater, 2018). The most popular grave orientation among children was West to East, which follows the standard Christian tradition (O'Sullivan, 2013; Williams 2016).

This result is comparable with other urban medieval and post-medieval cemeteries in the Netherlands. The cemetery of the St. Plechelmus church in Oldenzaal (7th/8th-19th

century AD) shows that non-adults were buried in the same grave orientations as adults, with the West to East orientation being the most prevalent (Williams, 2016). The same pattern was seen at the *Oude en Nieuwe Gasthuis* infirmary in Delft (1265-1620 AD) (Bult, 2019).

Body positions

The majority of the non-adults at the Eusebius church followed the traditional Christian medieval body positions in the grave. This meant being buried on their back with their arms alongside their body (O'Sullivan, 2013), which were also the most popular positions for adults at the cemetery. The second most popular arm position for non-adults was their hands folded on their lap. This is often interpreted as a gesture of prayer (Kenzler, 2015) and thus reflects their alignment with the church. The lesser variety in arm positions for non-adults could be explained by the fact they were buried in a coffin more often than adults. Variation in arm positions at cemeteries may be connected to shroud burials since here the body is less restricted than in a coffin and thus allows for movement of the arms due to post-depositional processes (Schats & Klomp, 2019). However, since most of the wood from the coffins in Arnhem has deteriorated (Zielman & Baetsen, 2020) and no significant difference was found between adult and non-adult burials in coffins, this is unlikely.

Positions of the arms are often related to local habits, burial traditions, religious guidelines, and personal preference, which is difficult to determine archaeologically (Williams, 2016). In the cemetery of the St. Plechelmus church in Oldenzaal, no connection between age and certain arm positions was found. However, a different arm position, both arms crossed on the abdomen, was most popular among the population (Williams, 2016).

Nature of the graves

It is important to note that the number of wooden coffins presented in the results includes solely the coffin burials that were found during the excavation of the cemetery. The wood of the majority of the coffins had decomposed over time, with often only the nails of the coffin remaining (Zielman & Baetsen, 2020). In most cases, the contours of the grave were also not visible. Therefore, the number of coffin burials among the Arnhem population might have been greater than what is presented in the results.

Nonetheless, it was found that non-adults were not treated differently at the Eusebius church based on the nature of their graves. This was also observed at the parish

cemetery of the old church in Reusel (c. 10th-13/16th century AD), where age was found not to affect the chosen container in which one was buried (Nater, 2018). Unfortunately, the types of wood used for the coffins at Arnhem were largely unknown (van Daalen, 2020), so no analysis on this factor could be performed in this thesis. Certain wood types are associated with differences in the socioeconomic status of the deceased (Williams, 2016; Bult, 2018). In the cemetery of the Sint John's Cathedral in s'-Hertogenbosch, it was found that non-adults were more likely to be buried in coffins of a cheaper wood type, pine wood, than adults (Williams, 2016). However, this link was not detected throughout the Netherlands as seen in the cemetery of the St. Plechelmus church in Oldenzaal, where no relationship was found between wood type and age-at-death (Williams, 2016).

Burial location

No *Limbus Infantium*, the burial of unbaptized infants on the edge of the sacred burial ground could be detected in both the Franciscan cemetery and the outdoor cemetery of the St. Catharina church, although unbaptized children were not allowed to be buried in the sacred ground (Williams, 2016). In the cemetery of the Franciscan monastery, non-adults were buried alongside adults. The lack of designated space for non-adults, especially young (unbaptized) infants, suggests that children were not considered differently from adults regarding the burial practices or place in the afterlife (Nater, 2018). However, there was one exception; the infant that was placed in the grave of an early young adult woman. This could be connected to the theory that young children were placed in the graves of adults to ease their way through purgatory since the soul of the child was innocent (Gilchrist & Sloane 2005). It was not uncommon for adult women to be buried with children in medieval and postmedieval cemeteries (Williams, 2016). An example can be found in the cemetery of the St. Plechelmus church, where an adult woman was buried with five children ranging from the ages of two to eight years old. The children were found to not be her own (Williams, 2016). Therefore, it cannot be excluded that the adult was the mother of the infant who died in childbirth, as these burials are often also interpreted (van de Vijver et al., 2018).

While non-adults in the indoor and outdoor cemetery of the St. Catharina church were also buried alongside adults, some patterns and clustering could be detected. The infants buried near or next to the outer walls of the church in the outdoor cemetery could be examples of eaves-drip burials, in which rainwater dripping from the eaves of the church was thought to provide a posthumous baptism to these unbaptized infants

(Craig-Atkins, 2014). However, besides these few instances, no systematic burial of infants under the eaves of the church took place as would be expected with this type of burial (Craig-Atkins, 2014; Hausmair, 2017). It is difficult to prove if these infants were unbaptized solely from an archaeological context (Hausmair, 2018). Since older children, above the age of 3, were also buried under or near the eaves of the church, it becomes even more unlikely that these children were unbaptized. Additionally, infants and neonates in the age group 0-1 year, of which an unbaptized status is most likely, were not buried under the eaves.

Therefore, other reasons for this location must be considered when interpreting these burials. It is worthy to note that burials directly under the eaves of the church occurred on the east side of the northern cemetery, which was often viewed as the cursed or cold side of the church (van Oosten, 2019). Perhaps this was an attempt from the parents to give their children a more favourable position in the afterlife, since the closer one was buried to the church, the closer one was perceived to be to God (Claeys, 2010).

Furthermore, the outdoor burials were located against the wall of the second choir, close to the altar of the church. The burials of children and the infant inside the church were located in even closer proximity to the altar, namely against the walls of the main choir. This meant they were located closer to the altar than other people buried in the churchyard (Hausmair, 2017). This might suggest that the children were baptized, and their closeness to the altar represented their closeness to God in the afterlife (Hausmair, 2017). Children who died close after they were baptized, were believed to instantly enter heaven, where they were closer to God than other regular Christians (Hausmair, 2017).

As said before, the infants and neonates in the age group 0-1 year were not buried under the eaves of the church but farther away from the church's walls in the southern cemetery. They were relatively clustered together with other non-adults between the ages of 1-20 years, some of them buried on the border of the excavated terrain.

However, it is difficult to speak of a *Limbus Infantium* in this part of the cemetery since, again, older children were buried there, making their baptism status hard to determine, and only part of the cemetery is excavated with its borders never found (Arts, 2013).

Nonetheless, they, together with other non-adults, are buried in the more favourable southern cemetery as opposed to the cursed or cold eastern part of the northern cemetery (van Oosten, 2019). This, as well as the fact that there were non-adults buried

alongside adults inside the St. Catharina church, demonstrates that they were not per definition treated or viewed differently as adults regarding burial practices.

That is not to say that the *Limbus Infantium* did not occur in various cemeteries throughout the Netherlands. For example, a cluster of burials of children under one year old on the north-western edge of the cemetery of the hospital in Breda (c. 1300-1650 AD) was found (de Jonge, 2017). Furthermore, on the southern edge of the St. Plechelmus cemetery, a possible infant grave inside a ceramic vessel was found as well as two infant burials outside but close to the cemetery's walls (Williams, 2016).

Due to the significant changes in the ecclesial order during the Reformation, it cannot be disregarded that there would have been small changes at the three cemeteries in the burial ritual concerning children from the 16th century onwards. Especially since the concept of Limbo was not a part of reformed protestant theology (Hausmair, 2018). The same can be said concerning the burial of men and women.

5.2.2 Sex

Despite the inferior position of women compared to men in the social hierarchy of medieval and post-medieval society, the Christian perception of equality in death seems to be followed in all aspects of the burial ritual between the three outdoor cemeteries (Rigby, 1995; O'Sullivan, 2013). This can already be seen in the sex ratio of the outdoor cemetery as no significant differences were found in both the distribution between the three sites and in the individual cemeteries in the number of men and women buried there. This indicates that any member of the parish community or citizen with piety to a friar community could expect a burial within the churchyard or monastic graveyard, regardless of their sex (O'Sullivan, 2013). Equality was also seen in other aspects of the burial ritual as will now be discussed.

Grave orientations

Men and women followed the same pattern concerning their grave orientations at the Eusebius church. Again, Christian tradition was followed as west-east burials were the most dominant among both men and women. The same pattern can be observed in cemeteries throughout the Netherlands, such as those of the hospital in Breda and the St. Plechelmus church, where west-east burials were most prevalent, leaving no difference in the grave orientations between the sexes (Williams, 2016; de Jonge, 2017). While multiple grave orientations were deviating from this standard in Arnhem, one is most interesting: the east-west burials.

As already discussed, the East to West burials are often associated with the burial of priests, thus it could be expected that the East to West burial in Arnhem would be of a man (Williams, 2016). However, the only east-west burial was a non-adult individual. East to West burials often occur in the Netherlands, yet they often do not belong to a man. For example, out of the eleven east-west burials at the St. Plechelmus church in Oldenzaal, five belonged to women and one to a child (Williams, 2018). The same was observed at the hospital in Breda, where the individuals buried in an East to West orientation were mostly children and only two individuals were identified as male (de Jonge, 2017). This gives the impression that east-west burials in the Netherlands were indeed not solely reserved for the members of the clergy. Perhaps the interpretation that the orientation was caused accidentally, or the individual was excommunicated is more appropriate in these cases (Stroud and Kemp, 1993; Williams, 2016). Nonetheless, the reasoning behind these deviant burials remains unclear.

The other variations within the West to East grave orientation, such as NW-SE and WNW-ESE, at the Eusebius Church could be explained by practical reasons rather than differentiations based on age-at-death or sex. To optimize the available space in the cemetery, the orientations of the graves would be decided based on the shape of the cemetery's borders and structures above ground, rather than tradition (Zielman & Baetsen, 2020). This would especially have been needed during the plague outbreak in Arnhem, resulting in a shortage of space in the cemetery (Zielman & Baetsen, 2020). In Oldenzaal, the burials were also clearly following the borders of the cemetery, resulting in deviating grave orientations (Williams, 2016). This demonstrates that fitting the burials within the churchyard would be prioritized over the traditional West to East orientation from time to time.

Body positions

Men and women were not differentiated based on their arm and body positions in the grave at the Eusebius church. Their body positions were in alignment with the Christian tradition as both men and women were mostly buried in a supine position (O'Sullivan, 2013). The one female individual buried on her stomach could thus be seen as punishment, or correlated with a rushed burial, violent death or illness as is often associated with a face-down burial (Gilchrist & Sloane, 2005).

Nonetheless, men had slightly more variability in arm positions than women. As already written, this variability in arm positions can be caused by burial in a shroud (Schats &

Klomp, 2019). In Arnhem, slightly more women were buried in coffins than men. However, the sample size of the excavated coffins and shrouds is too small to make definitive conclusions.

When comparing the result to those of St. Plechelmus church, a similar pattern arises. In Oldenzaal, the arm positions of the sexes correlate even more than at the Eusebius church, with both men and women having the same dominant arm positions and an equal number of variations (Williams, 2016). Crossed arms are often more prevalent among men in medieval cemeteries, although no universal trend for any arm positions has been discovered (van de Vijver et al., 2018).

Nature of the graves

No significant difference in the nature of the graves between men and women was found at the Eusebius church. The correlation between sex and container type was also studied at the cemetery of the old church in Reusel (Nater, 2018). Here, it was found that the container types were equally distributed between men and women. It therefore seems that the nature of one's grave did not depend on their sex, but rather on their socioeconomic status, as will be discussed further in this chapter.

Burial locations

As expected, no post-mortem segregation of men and women was observed in both the Franciscan cemetery and the outdoor cemetery of the St. Catharina church (O'Sullivan, 2013). In other outdoor medieval and post-medieval cemeteries throughout the Netherlands, such as those of the St. Plechelmus church in Oldenzaal, the hospital in Breda, the *Broerderkerk* in Zutphen, the *Oude en Nieuwe Gasthuis* infirmary in Delft, and the old church in Reusel, the burial locations of men and women are mixed (Williams, 2016; de Jonge, 2017; de Bult, 2018; Nater, 2018; Baetsen & Groothedde, 2019). The only segregation of men and women on the burial ground in the Netherlands can be observed at monastic cemeteries reserved for monks or nuns such as the Maria Magdalena Convent (1400-1573 AD) in Delft, where only women were buried against the wall of the second quarter when the convent still served as a nunnery (Bult, 2018).

The reason behind this lack of segregation was most likely that, unlike in life, men and women were viewed as equal in death and thus there was no reason to segregate them in the cemetery (O'Sullivan, 2013). Furthermore, spouses were possibly buried next to each other (Nater, 2018).

5.2.3 Socioeconomic status

This equality between the sexes concerning all aspects of the burial ritual in the outdoor cemeteries was not perceived when studying the indoor burials of the second and main choir of the St. Catharina church. When comparing the men-to-women ratio inside the church with the outdoor burials, it was found that significantly more men were buried inside the church than women. People buried inside the St. Catharina church were of considerable higher socioeconomic standing than those buried in the churchyard and in the remaining outdoor cemeteries of the Franciscan monastery and Eusebius church that were either of low or middle socioeconomic standing (Bruinvis, 1893, as cited in Schats, 2016; Melssen, 2013; Zielman & Baetsen, 2020). Therefore, this unequal ratio might be related to this great difference in socioeconomic status, since the population buried in the three outdoor cemeteries received predominantly the same burial treatment despite the small differences in socioeconomic status between the cemeteries. Part of the population buried inside the church belonged to the ecclesial order of the St. Catharina church (Melssen, 2013). Members of the clergy belonged among the highest status group in the social hierarchy of medieval society, separated from the laity by their access to wealth and way of life (Rigby, 1995). The clergy consisted essentially solely of men, who took varying positions in the ecclesiastic hierarchy such as priests, and bishops, monks. Women in the clergy were restricted to the role of nuns, but as seen in the Maria Magdalena Convent in Delft, they were most often buried at their nunnery (Rigby, 1995; de Bult, 2018). Therefore, the unequal distribution of men within the church might be explained by the fact that members of the clergy were more likely to be buried in the more favourable position within the church rather than in the outdoor cemetery. They have associated with the church herself and high socioeconomic status within medieval and early modern society, such as the guild brothers of the St. Catharina church (Rigby, 1995; Melssen, 2013). This argument is further supported by the location of the burial zone where the unequal distribution occurred, the main and second choir, close to the holy altar of the church and the most expensive and desirable location to be buried inside the church (Hausmair, 2017; van de Vijver et al., 2018; Palmer, 2019).

Additionally, the unequal distribution of the sexes buried inside the church as opposed to outdoors is also found in the old church of Reusel. Of the burials inside the second presbytery, third presbytery and transepts built from the 15th century onwards of the then Gothic church in Reusel, males were overrepresented (Nater, 2018). Nater (2018)

hypothesizes that this unequal distribution could indeed be linked to the profession of the individual rather than sex. This hypothesis is further supported by the fact the burial location of men and women were unsegregated both inside and outside the parish church of Eindhoven and Reusel, leaving women to be buried in favourable positions in the church as well as men. This suggests that women were viewed equal to men in terms of burial practices (Nater, 2018) and thus another factor must be causing this the overrepresentation. Furthermore, since families, including women, were often buried under the same tombstone in the St. Catharina church (Melssen, 2013), the overrepresentation of men inside the church would most likely not come from the wealthy citizens buried in the church.

Nonetheless, it is important to note that the sample size of the individuals who could be ascertained a sex inside the St. Catharina church was very small. Only of less than half of the population's sex could be estimated. Therefore, this overrepresentation of males within the church might be coincidental. In Reusel, sex could be ascertained in less than half of the skeletons found. This also might explain the unequal distribution inside the presbyteries of the old church (Nater, 2018). Moreover, this comparison between the St. Catharina church and the Gothic church is slightly problematic, since Reusel is a rural site and thus slight differences in the burial ritual cannot be excluded. Nonetheless, this site was chosen for this comparison, since it is very difficult to find excavations of contemporary indoor church burials, as most of the excavations take place outside of the parish walls.

The ratio of non-adults buried within the choir of the church was also significantly lower than those buried in the churchyard. This might be due to their lower socioeconomic status among those of the higher classes, since the cemetery of the Eusebius church with the population of the lowest socioeconomic status of the three sites held the highest number of non-adults. However, this is only speculative.

Socioeconomic status and other aspects of the burial ritual

Unfortunately, other aspects of the burial ritual, such as the nature of the graves, grave orientations, and body positions, could not be studied at the St. Catharina church due to the unavailability of the raw data. However, these factors could certainly have been influenced by socioeconomic status.

As already mentioned, the type of wood used for coffins can be indicative of the socioeconomic status of the deceased (Williams, 2016; Bult, 2018). The price of the

wood often depended on the durability of the species and the thickness of the coffin (Bult, 2018). Oak was the most durable wood type and thus the most expensive, while less durable species such as pine and beech were often much cheaper. For example, in the graveyard of the parish church of the *Nieuwe Kerk* (1384-1829), less durable wood was used for burials on the north side of the church than on the west (Bult, 2018). This indicates that the population buried on the northern side of the church were poorer than those on the western side and further reinforces the belief that those of low socioeconomic status were buried on the cursed or cold north side of the church (van Oosten, 2019). Those not buried in a coffin but in a shrouded or plain earth burial instead are often associated with people of low socioeconomic status (Bult, 2018). Thus, it could be expected that those buried inside the choir of the St. Catharina church might be more likely to be buried in oak coffins than those in the churchyard.

It is believed that often those buried in the nave of the church were of high secular status or religious importance since burials in the Late Middle Ages generally were determined by socioeconomic status (Bult, 2018). Therefore, east-west burials inside the church might have a higher chance of belonging to clergymen than those buried outside. Additionally, certain arm positions might also be related to socioeconomic or secular status as no relation between age-at-death or sex was found. Arms reflecting prayer positions are often found at monastic sites (van de Vijver, 2018). For example, women buried in the nunnery of the Maria Magdalena Convent in Delft were all buried with their hands folded on their abdomen, a position often interpreted as a gesture of prayer (Kenzler, 2015; Bult 2018). This is unlike other contemporary cemeteries in Delft where both arms alongside the body was the predominant body position and variation was possible. That is not to say that everyone buried in an arm position reflecting a gesture of prayer is associated with the clergy, as was seen in the outdoor cemeteries, where commoners were also buried in those positions. Nonetheless, perhaps those buried inside the church or monastery were more likely to if they were of high secular status. Especially east-west burials of a male individual with a prayer arm position in such a context might be more easily interpreted as a member of the clergy.

5.2 The bigger context of the Low Countries

Three late and post-medieval urban cemeteries from Belgium have been chosen to compare the results and place them in the bigger context of the burial ritual in the Low Countries overall. These sites include both the mostly citizen and strictly monastic cemetery of the Carmelite monastery and adjacent church (1497-1797 AD) associated

with those of high socioeconomic status as well as the cemetery of the *Lious D'Haeseleerstraat* in Aalst where the more general population of middle socioeconomic status was buried (de Grootte et al., 2018; Palmer, 2019). The cemetery of the St. Rombout in Mechelen (10th– 18th century AD) is also included (van de Vijver et al., 2018).

Overall, the cemeteries in Belgium show the same trends regarding the effect of age-at-death, sex, and socioeconomic status on the burial ritual as the sites in Alkmaar, Eindhoven, and Arnhem. Adults, men and women alike, and non-adults were both predominantly buried (approximately) west to east orientated in a supine position (de Grootte et al., 2018; van de Vijver et al., 2018; Palmer, 2019). The main arm positions across the three cemeteries consisted of arms resting alongside the body or crossed on the pelvis. Both sexes and non-adults followed more or less the same trends, however, in the St. Rombout's cemetery, non-adults were more likely to be buried with their arms crossed than adults (van de Vijver et al., 2018). As in Arnhem, more evidence of a coffin burial was found among women when compared to men in Mechelen. Non-adults were also buried in coffins similar to adults. Furthermore, no clusters of sex or specific age groups could be detected in the churchyard of the St. Rombout's church. Comparable to Alkmaar, some infants were also buried in the graves of adults in Mechelen (van de Vijver et al., 2018).

The individuals buried inside the monastic church of the Carmelites were adults of high socioeconomic status with the percentage of non-adults being smaller than those buried outside the church's walls, similar to the St. Catharina church (de Grootte et al., 2018; Palmer, 2019). Notably, these burials consisted of more men than women, however, the difference is considerably smaller than in Eindhoven. Similar to Alkmaar, the non-adult ratio across the site was low. Non-adults were mainly clustered in the cloister garth of the monastery. In the cemetery of the *Lious D'Haeseleerstraat*, the percentage of non-adults was significantly higher (Palmer, 2019). Since this cemetery is mostly connected to the general cemetery in Aalst, it might indicate that non-adults were less likely to be buried in a monastic context and instead were buried in the main churchyard of the city rather than the cloister garden or alley, as also hypothesized in the Netherlands (de Grootte et al., 2018; Baetsen & Groothedde, 2019; Palmer 2019).

Lastly, mostly men were found with the prayer arm positions in the cemetery of the Carmelite monastery and are thus hypothesized to be clergymen as seen in the Maria Magdalena Convent in Delft (Bult, 2018; de Grootte, et al., 2018). Moreover, east-west

burials are strongly associated with those of secular status as, again, they mostly belong to men buried in the cloister alley reserved for monks.

6. Conclusion

This thesis studied the influence of age-at-death, sex, and socioeconomic status on the burial ritual in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context. This was studied by analysing different aspects of the burial ritual, such as the body positions, orientations of the burial, the nature of the graves, and burial location. By correlating these aforementioned factors to the demographic information of individuals buried at the outdoor cemeteries of the Franciscan monastery in Alkmaar, the St. Catharina church in Eindhoven, and the Eusebius church in Arnhem, the main research question of this study can be answered. Additionally, the effect of socioeconomic status on the burial ritual was researched by comparing the burials inside the choir of the St. Catharina church to those in the churchyard. By analysing these burial aspects of the Late Medieval and Early Modern burial ritual, this thesis has contributed to a better understanding of the Late Medieval and Early Modern Dutch society and the significance that was attributed to death and burial.

In this final chapter, the research questions that were posed in the first chapter of this thesis will be answered. This will be done systematically, presenting the conclusions to the sub-questions first followed by the main research question. This thesis will end with suggestions for further research in order to gain further insight into the topic.

6.1 The effect of age-at-death on the burial ritual

What influence did age-at-death have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

The analysis of the three cemeteries revealed that age-at-death influenced certain aspects of the burial ritual. The burial treatment of non-adults mostly followed those of adults in terms of grave orientations, body positions, and nature of the graves. Most non-adults were buried alongside adults in both Alkmaar and Eindhoven, which suggests that the majority of children were not considered much different from adults regarding place in the afterlife or burial practices.

However, differences occur within the burial location of young children, especially infants. The burial location of non-adults seems to greatly vary across and in urban cemeteries throughout the Netherlands and is closely tied to medieval perceptions of

purgatory, local traditions and beliefs of the afterlife, death at childbirth, and the context of the burial ground. Burials against the walls of the choir of the St. Catharina church were found both in the churchyard as in the choir itself. Although unbaptized children were officially not allowed to be buried on sacred ground, these burials could be linked to the concept of eaves-drip burials, which provided a post-humous baptism. However, since some of these non-adults were over the age three, other reasons for this burial placement must be considered. The infant burial inside the coffin of an adult in Alkmaar might also be linked to beliefs surrounding purgatory, as the soul of an innocent child was thought to ease one's way through purgatory. Moreover, comparisons between other urban cemeteries in the Netherlands found strong evidence for the existence of a *Limbus Infantium* in both Oldenzaal and Breda.

Evidence was also found for the partial exclusion of non-adults in the monastic cemeteries in the Netherlands where citizens were allowed to be buried. In Alkmaar, the non-adult ratio was significantly lower than in Eindhoven and Arnhem and when compared to the monastic cemetery in Zutphen, no non-adults were to be found. It is hypothesized that children would be buried in the general cemetery rather than in a monastic context. Evidence for this hypothesis was discovered in the Belgian city of Aalst.

6.2 The effect of sex on the burial ritual

What influence did sex have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

The results of this thesis have found that sex had no particular influence on the late medieval and early modern burial ritual. Both men and women received the uniform Christian burial treatment in the outdoor cemeteries of Alkmaar, Eindhoven and Arnhem. This included a west to east burial, a supine body position with arms placed alongside the body or crossed on the pelvis or stomach, a coffin or shroud burial, and unsegregated burial locations. When compared to other contemporary cemeteries across the Netherlands of various contexts, such as those in Oldenzaal and Delft, the same uniform burial treatment occurs. Naturally, this excludes the burial grounds at monastic sites reserved only for monks or nuns. This demonstrates that despite the inferior position of women in the medieval hierarchy during life, in death, they were equal to men in the burial practices of the outdoor cemeteries. Additionally, spouses

could be buried next to each other on the burial grounds which would also result in equal burial treatment.

6.3 The effect of socioeconomic status on the burial ritual

What influence did socioeconomic status have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

By comparing the burial treatment of those of high socioeconomic status buried inside the choir of the St. Catharina church to those of middle to low socioeconomic status in the adjacent churchyard, it was found that socioeconomic status influences the burial ritual. Most notably, there was a significantly higher prevalence of males buried inside the choir than females. It is speculated that this inequality was not based on sex but profession. The choir of the church is the most desirable, sacred and expensive location to be buried. Therefore, members of the clergy, who were among the highest status group in medieval society and often belonged to the ecclesial order of the church they were buried in, might be favoured for these burial locations. The clergy consisted almost solely of men and thus their presence inside the choir would inflate the numbers of men buried inside the church. However, this overrepresentation of males within the church might be coincidental, since the sample size of the St. Catharina church is very small.

Unfortunately, other aspects of the burial ritual, such as body positions or wood type, could not be independently studied in this thesis. These aspects require further study as they are known or speculated to be affected by the socioeconomic status of the individual.

6.4 Main research question

What influence did age-at-death, sex, and socioeconomic status have on the burial ritual and treatment in the Netherlands during the Late Middle Ages and Early Modern Period (c. 1200-1650 AD) in an urban context?

This thesis has demonstrated that despite the strict regulations and uniformity imposed by authority of the Christian church regarding burial practices, such as grave orientations and body positions, local variation was still possible in the late medieval and early modern burial ritual in the urban context of Netherlands between 1200-1650

AD. The burial locations of young children, such as infants, especially depended on local tradition and beliefs which could be intertwined with medieval notions of purgatory, death at childbirth, or the context of the burial ground. This indicates that the regulations by the church were not always followed, and communities were also active agents in deciding the burial treatment of an individual. However, the uniformity regarding the burial treatment of men and women in all aspects of the burial ritual in the outdoor cemeteries does show that they were viewed equal in burial practices despite their difference in social hierarchy during life. This is in accordance with the Christian ideology of equality in death, no matter one's sex or social standing. However, this equality was not always followed as socioeconomic status did most definitely influence the burial ritual. This was demonstrated by the significant prevalence of men buried inside the choir of the St. Catharina church compared to the middle and low socioeconomic population in the churchyard. This could be related to men of high secular status, who had a high socioeconomic standing in medieval and postmedieval society, being buried more often inside the choir of the church than in the churchyard. However, the results could be distorted due to the small sample size that could be ascertained a sex. Additionally, other aspects of the burial ritual need to be further studied in order to fully understand the effect of socioeconomic on the late medieval and early modern burial ritual.

6.5 Suggestions for future research

This thesis has researched the effect of demographics and socioeconomic status on the Dutch burial ritual in the Late Middle Ages and Early Modern Period. Nonetheless, it also raised new questions and highlighted that additional research into the topic is still needed which, due to the scope and limitations of this thesis, could not be discussed. These directions for future research will now be presented.

In order to better understand the effect of age-at-death, sex, and socioeconomic status on the medieval and postmedieval burial ritual in the Netherlands more cemeteries need to be compared on a national scale. Due to the limit of the scope of this thesis and the unavailability of necessary raw data of many cemeteries, only three cemeteries could be compared. Especially factors such as grave orientation, body positions, and the nature of the graves needs to be further analysed between demographics and compared between sites as done in this thesis. This type of analysis is not always provided in excavation reports. Moreover, including different cemeteries attached to institutions of various contexts, such as infirmaries, would allow for a more complete analysis of the

effect of the aforementioned factors on the Dutch burial ritual. By comparing the findings to more sites outside the Netherlands, the topic can also be studied on a European scale, contributing to the knowledge of the Christian burial practice.

Additionally, the subject of socioeconomic status could be elaborated on. As only the prevalence of men buried inside the church was discussed, study of other factors analysed in this research such as grave orientations, body positions and the nature of the graves would reveal more information on the effect of socioeconomic status in the burial ritual. The potential effect of socioeconomic status on these aspects of the burial ritual have already been briefly discussed in chapter five. It would be interesting to include the wood types of the coffins, as this is known to reflect differences in socioeconomic status. However due to the limited preservation of wood in archaeology this might prove difficult.

Lastly, the effect of the Reformation on the Dutch medieval and postmedieval burial practices needs to be studied on a larger scale. As discussed, this large change in the ecclesial order is already known to have effects on the burial ritual, especially on non-adults. Protestantism does not acknowledge the notion of purgatory to which the burial location of infants and neonates often depends on in the Catholicism of the medieval period. This would be interesting to study on the cemeteries of converted church, such as those in Arnhem and Eindhoven, to see if the burial ritual significantly changed in the Netherlands when churches were confiscated.

Abstract

This thesis studies the effect of age-at-death, sex, and socioeconomic status on the burial ritual in the Netherlands between 1200 and 1650 AD by analysing archaeological data from three urban cemeteries across the country. The late medieval and early modern burial ritual is often perceived as uniform and plain restricted by the regulations set out by the church. These regulations included strict rules on grave orientations, body positions, nature of the graves, and burial locations. Although, by analysing and comparing these different aspects of the burial ritual from the urban cemeteries of the Franciscan monastery in Alkmaar, the St. Catharina church in Eindhoven, and the Eusebius church in Eindhoven, this view of uniformity has been challenged.

The results of this thesis revealed the occurrence of local variation in the burial location of non-adults, especially infants, in the urban context of the Netherlands. This variation is hypothesized to be related to the baptism status of the individual, varying beliefs about purgatory and the afterlife, death at childbirth, and/or the context of the burial ground. Nonetheless, men and women were found to receive uniform burial treatment, implicating that, despite their different social standing in life, in death, they were considered equal in terms of burial practices. Furthermore, it was found that socioeconomic status influenced burial treatment. The St. Catharina church displayed not only a statistically significant difference in non-adults buried inside the choir as opposed to the adjacent churchyard, considerably more men were present than women. This prevalence of men buried inside the church compared to the low to middle socioeconomic populations buried in outdoor cemeteries could be related to high secular status.

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Appendices

Appendix 1: Alkmaar

Spoornr.	Vondstnr.	Begravingstype	Geslacht	Leeftijdscategorie
15	515	Primair	Onbepaald	Onbepaald
18	520	Primair	Man	Jong Volwassene: 19-25
19	541	Primair	Man	Jong Midden Volwassene: 26-35
20	547	Primair	Man	Oud Adolescent: 16-18
22	563	Primair	Onbepaald	Onbepaald
23	543	Primair	Onbepaald	Oud Adolescent: 16-18
28	535	Primair	Vrouw	Jong Volwassene: 19-25
29	580	Primair	Man	Jong Volwassene: 19-25
30	517	Primair	Man	Oud Adolescent: 16-18
40	570	Primair	Vrouw	Oud Midden Volwassene: 36-45
41	527	Primair	Onbepaald	Jong Kind: 4-7
44	528	Primair	Man	Jong Volwassene: 19-25
45	534	Primair	Onbepaald	Oud Kind: 8-12
45	573	Primair	Vrouw?	Jong Midden Volwassene: 26-35
46	542	Primair	Man?	Onbepaald
58	587	Primair	Onbepaald	Oud Kind: 8-12
59	562	Primair	Vrouw	Onbepaald
60	533	Primair	Onbepaald	Oud Midden Volwassene: 36-45
62	531	Primair	Onbepaald	Oud Adolescent: 16-18
63	581	Primair	Onbepaald	Oud Kind: 8-12
67	582	Primair	Onbepaald	Jong Kind: 4-7
72	572	Primair	Man	Onbepaald
73	568	Primair	Man?	Onbepaald
74	588	Primair	Man	Oud Midden Volwassene: 36-45
75	575	Primair	Onbepaald	Oud Adolescent: 16-18
85	615	Primair	Vrouw	Oud Midden Volwassene: 36-45
86	666	Primair	Vrouw	Oud Midden Volwassene: 36-45
87	645	Primair	Vrouw?	Oud Midden Volwassene: 36-45
88	667	Primair	Man?	Jong Midden Volwassene: 26-35
89	621	Primair	Man	Jong Volwassene: 19-25
90	670	Primair	Onbepaald	Onbepaald
91	639	Primair	Man	Oud Midden Volwassene: 36-45
92	706	Primair	Man	Onbepaald
95	659	Primair	Vrouw	Oud Midden Volwassene: 36-45
102	660	Primair	Vrouw	Oud Midden Volwassene: 36-45
104	601	Primair	Onbepaald	Oud Midden Volwassene: 36-45
106	602	Primair	Vrouw	Jong Midden Volwassene: 26-35
107	636	Primair	Man	Jong Volwassene: 19-25
109	635	Primair	Onbepaald	Onbepaald
111	648	Primair	Man	Oud Volwassene: 46+
112	598	Primair	Vrouw	Oud Midden Volwassene: 36-45
115	724	Primair	Man	Oud Volwassene: 46+
116	607	Primair	Man	Oud Volwassene: 46+

118	610	Primair	Man	Jong Midden Volwassene: 26-35
119	612	Primair	Vrouw	Jong Volwassene: 19-25
127	620	Primair	Man	Oud Volwassene: 46+
128	651	Primair	Vrouw	Jong Volwassene: 19-25
129	657	Primair	Onbepaald	Jong Kind: 4-7
129	658	Primair	Vrouw	Oud Midden Volwassene: 36-45
132	692	Primair	Vrouw?	Jong Midden Volwassene: 26-35
133	701	Primair	Vrouw	Jong Midden Volwassene: 26-35
139	836	Primair	Man	Jong Midden Volwassene: 26-35
140	787	Primair	Man?	Jong Midden Volwassene: 26-35
141	880	Primair	Vrouw	Oud Midden Volwassene: 36-45
142	656	Primair	Vrouw	Oud Midden Volwassene: 36-45
143	771	Primair	Vrouw	Jong Midden Volwassene: 26-35
145	747	Primair	Man	Oud Midden Volwassene: 36-45
147	679	Primair	Vrouw	Oud Volwassene: 46+
148	684	Primair	Onbepaald	Oud Adolescent: 16-18
149	668	Primair	Man	Oud Volwassene: 46+
149	669	Primair	Onbepaald	Jong Kind: 4-7
150	737	Primair	Vrouw	Jong Volwassene: 19-25
152	631	Primair	Man	Jong Volwassene: 19-25
153	696	Primair	Vrouw	Oud Midden Volwassene: 36-45
154	740	Primair	Man?	Onbepaald
155	630	Primair	Vrouw?	Jong Volwassene: 19-25
157	642	Primair	Vrouw	Jong Midden Volwassene: 26-35
164	655/890	Primair	Vrouw?	Oud Midden Volwassene: 36-45
165	683	Primair	Man	Jong Midden Volwassene: 26-35
184	689	Primair	Vrouw?	Jong Volwassene: 19-25
185	690	Primair	Vrouw?	Onbepaald
186	695	Primair	Vrouw	Oud Midden Volwassene: 36-45
197	705	Primair	Man?	Jong Midden Volwassene: 26-35
206	723	Primair	Vrouw?	Jong Midden Volwassene: 26-35
207	728	Primair	Onbepaald	Oud Adolescent: 16-18
208	729	Primair	Vrouw	Oud Midden Volwassene: 36-45
209	734	Primair	Onbepaald	Infant: 0-3
210	751	Primair	Vrouw	Oud Midden Volwassene: 36-45
211	760	Primair	Onbepaald	Jong Kind: 4-7
227	750	Primair	Vrouw?	Oud Midden Volwassene: 36-45
231	758	Primair	Vrouw	Oud Midden Volwassene: 36-45
233	739	Primair	Onbepaald	Oud Volwassene: 46+
234	762	Primair	Vrouw	Oud Midden Volwassene: 36-45
236	767	Primair	Man	Jong Volwassene: 19-25
242	772	Primair	Vrouw	Jong Midden Volwassene: 26-35
263	773	Primair	Man	Onbepaald
264	788	Primair	Man	Jong Volwassene: 19-25
266	782	Primair	Vrouw?	Onbepaald
269	810	Primair	Man	Oud Midden Volwassene: 36-45

270	784	Primair	Man	Oud Volwassene: 46+
271	831	Primair	Vrouw	Oud Midden Volwassene: 36-45
272	798	Primair	Vrouw?	Onbepaald
274	825	Primair	Onbepaald	Onbepaald
276	803	Primair	Onbepaald	Jong Kind: 4-7
276	877	Primair	Vrouw	Oud Midden Volwassene: 36-45
277	818	Primair	Vrouw?	Oud Midden Volwassene: 36-45
278	802	Primair	Vrouw	Jong Midden Volwassene: 26-35
280	859	Primair	Man	Oud Midden Volwassene: 36-45
282	997	Primair	Vrouw?	Jong Volwassene: 19-25
283	797	Primair	Onbepaald	Onbepaald
284	865	Primair	Man	Jong Midden Volwassene: 26-35
285	822	Primair	Man	Jong Midden Volwassene: 26-35
285	840	Primair	Vrouw	Jong Midden Volwassene: 26-35
285	854	Primair	Onbepaald	Jong Kind: 4-7
286	900	Primair	Vrouw	Jong Volwassene: 19-25
288	792	Primair	Vrouw	Onbepaald
289	832	Primair	Vrouw	Oud Volwassene: 46+
289	1000	Primair	Vrouw?	Oud Adolescent: 16-18
290	812	Primair	Man	Oud Midden Volwassene: 36-45
291	875	Primair	Vrouw	Oud Midden Volwassene: 36-45
292	883	Primair	Vrouw?	Jong Volwassene: 19-25
293	902	Primair	Vrouw?	Oud Midden Volwassene: 36-45
294	826	Primair	Vrouw?	Oud Volwassene: 46+
295	848	Primair	Man	Oud Volwassene: 46+
296	811	Primair	Vrouw?	Onbepaald
297	820	Primair	Man	Oud Midden Volwassene: 36-45
299	1003	Primair	Man	Oud Midden Volwassene: 36-45
302	846	Primair	Man	Jong Volwassene: 19-25
304	1012	Primair	Vrouw	Oud Midden Volwassene: 36-45
307	869	Primair	Vrouw?	Jong Midden Volwassene: 26-35
309	842	Primair	Vrouw	Jong Volwassene: 19-25
310	887	Primair	Onbepaald	Jong Midden Volwassene: 26-35
311	1041	Primair	Vrouw	Oud Midden Volwassene: 36-45
313	892	Primair	Vrouw	Oud Midden Volwassene: 36-45
318	853	Primair	Vrouw	Jong Midden Volwassene: 26-35
319	841	Primair	Vrouw?	Oud Volwassene: 46+
320	844	Primair	Man	Oud Midden Volwassene: 36-45
327	872	Primair	Vrouw?	Oud Midden Volwassene: 36-45
328	885	Primair	Vrouw?	Jong Volwassene: 19-25
334	930	Primair	Vrouw?	Oud Midden Volwassene: 36-45
343	1008	Primair	Vrouw?	Jong Midden Volwassene: 26-35
344	905	Secundair	Vrouw?	Oud Midden Volwassene: 36-45
347	1001	Primair	Vrouw?	Onbepaald
351	1010	Primair	Onbepaald	Onbepaald
354	910	Primair	Vrouw?	Jong Midden Volwassene: 26-35

359	938	Primair	Man	Onbepaald
364	1017	Primair	Vrouw	Jong Volwassene: 19-25
367	923	Primair	Man	Jong Midden Volwassene: 26-35
376	919	Primair	Vrouw?	Oud Midden Volwassene: 36-45
378	932	Primair	Vrouw?	Jong Midden Volwassene: 26-35
387	937	Secundair	Man	Jong Midden Volwassene: 26-35
388	934	Primair	Vrouw	Jong Midden Volwassene: 26-35
395	1037	Primair	Vrouw	Onbepaald
402	950	Primair	Onbepaald	Oud Adolescent: 16-18
406	972	Primair	Vrouw?	Onbepaald
408	971	Primair	Onbepaald	Onbepaald
410	699	Primair	Man	Onbepaald
411	1048	Primair	Man	Jong Midden Volwassene: 26-35
414	1050	Primair	Vrouw?	Onbepaald
415	1035	Primair	Vrouw	Oud Midden Volwassene: 36-45
416	1054	Primair	Vrouw	Onbepaald
417	992	Primair	Vrouw	Jong Midden Volwassene: 26-35
418	949	Primair	Onbepaald	Jong Midden Volwassene: 26-35
419	1046	Primair	Man	Oud Volwassene: 46+
420	1099	Primair	Onbepaald	Jong Adolescent: 13-15
442	1039	Primair	Onbepaald	Oud Adolescent: 16-18
442	1042	Primair	Man	Oud Midden Volwassene: 36-45
463	1094	Primair	Vrouw	Jong Midden Volwassene: 26-35
464	1074	Primair	Vrouw	Jong Volwassene: 19-25
482	1252	Secundair	Onbepaald	Onbepaald
488	1141	Primair	Vrouw	Oud Midden Volwassene: 36-45
489	1272	Primair	Man	Oud Midden Volwassene: 36-45
493	1079	Primair	Vrouw?	Onbepaald
503	1093	Primair	Vrouw	Oud Midden Volwassene: 36-45
507	1243	Primair	Vrouw?	Oud Midden Volwassene: 36-45
508	1204	Primair	Vrouw	Onbepaald
509	1146	Primair	Vrouw?	Jong Midden Volwassene: 26-35
510	1185	Primair	Man	Onbepaald
511	1137	Primair	Vrouw	Jong Midden Volwassene: 26-35
512	1140	Primair	Vrouw	Jong Midden Volwassene: 26-35
514	1116	Primair	Man	Oud Midden Volwassene: 36-45
515	1176	Primair	Vrouw	Oud Midden Volwassene: 36-45
517	1249	Primair	Man	Oud Midden Volwassene: 36-45
518	1113	Primair	Vrouw	Onbepaald
519	1245	Primair	Man	Jong Midden Volwassene: 26-35
531	1111	Primair	Vrouw	Jong Volwassene: 19-25
534	1108	Primair	Onbepaald	Infant: 0-3
535	1133	Primair	Man	Onbepaald
546	1135	Primair	Onbepaald	Oud Adolescent: 16-18
548	1125	Primair	Man	Oud Volwassene: 46+
549	1151	Primair	Vrouw?	Jong Midden Volwassene: 26-35

550	1150	Primair	Man	Oud Midden Volwassene: 36-45
566	1186	Primair	Vrouw	Oud Volwassene: 46+
579	1205	Primair	Onbepaald	Onbepaald
580	1211	Primair	Vrouw	Jong Midden Volwassene: 26-35
583	1278	Primair	Onbepaald	Onbepaald
584	1276	Primair	Man	Jong Midden Volwassene: 26-35
585	1258	Primair	Vrouw	Jong Midden Volwassene: 26-35
586	1267	Primair	Man	Oud Volwassene: 46+

Appendix 2: Eindhoven

Spoornr.	Individunr.	Volgnr.	Periode	Locatie op kerkhof	Geslacht
661	27	66	1225-1350	Koor	onvolwassen
860	69	253	1350-1500	Koor	volwassen
861	26	64	1500-1650	Koor	man
1066	37	108	1500-1650	Koor	vrouw
1171	49	138	1500-1650	2de koor	vrouw
1239	40	114	1500-1650	2de koor	man
1278	85	293	1500-1650	2de koor	volwassen
1284	124	392	1500-1650	2de koor	onvolwassen
1351	167	494	1500-1650	Koor	onvolwassen
1477	89	303	1500-1650	2de koor	volwassen
1723	146	447	1350-1500	Koor	man
1727	179	511	1350-1500	Koor	man
1730	187	524	1500-1650	Koor	man
1904	129	408	1500-1650	2de koor	volwassen
1966	252	655	1500-1650	2de koor	vrouw
2013	174	503	1350-1500	Noordelijk Kerkhof	onvolwassen
2240	193	540	1500-1650	Zuidelijk Kerkhof	onvolwassen
2243	260	669	1500-1650	Zuidelijk Kerkhof	man
2243	260	669	1500-1650	Zuidelijk Kerkhof	onvolwassen
2298	261	671	1350-1500	2de koor	man
2298	261	671	1350-1500	2de koor	onvolwassen
2299	233	622	1500-1650	2de koor	vrouw
2300	202	560	1350-1500	2de koor	vrouw
2301	211	577	1350-1500	2de koor	volwassen
2303	214	584	1500-1650	2de koor	onvolwassen
2466	196	545	1500-1650	Zuidelijk Kerkhof	onvolwassen
2476	409	904	1500-1650	Zuidelijk Kerkhof	onvolwassen
2515	740	1271	1500-1650	Zuidelijk Kerkhof	onvolwassen
2520	556	1082	1500-1650	Zuidelijk Kerkhof	onvolwassen
2540	221	596	1500-1650	Noordelijk Kerkhof	volwassen
2546	287	726	1350-1500	2de koor	man
2575	308	765	1350-1500	Noordelijk Kerkhof	onvolwassen
2577	297	741	1500-1650	Noordelijk Kerkhof	man
2577	297	741	1500-1650	Noordelijk Kerkhof	onvolwassen
2585	245	645	1500-1650	2de koor	man

2598	227	611	1500-1650	Noordelijk Kerkhof	volwassen
2599	225	608	1500-1650	Noordelijk Kerkhof	vrouw
2604	479	998	1350-1500	Noordelijk Kerkhof	onvolwassen
2752	241	638	1500-1650	Zuidelijk Kerkhof	onvolwassen
2756	284	720	1500-1650	Zuidelijk Kerkhof	man
2762	274	699	1500-1650	Zuidelijk Kerkhof	man
2762	274	699	1500-1650	Zuidelijk Kerkhof	onvolwassen
2788	330	798	1350-1500	Zuidelijk Kerkhof	man
2817	272	695	1500-1650	2de koor	man
2825	276	704	1350-1500	Noordelijk Kerkhof	volwassen
2828	285	721	1500-1650	Noordelijk Kerkhof	indifferent
2833	754	675	1500-1650	Noordelijk Kerkhof	man
2854	309	767	1500-1650	Noordelijk Kerkhof	vrouw
2856	343	813	1350-1500	Noordelijk Kerkhof	man
2858	554	1079	1500-1650	Zuidelijk Kerkhof	onvolwassen
2871	310	768	1350-1500	Noordelijk Kerkhof	vrouw
2872	256	661	1500-1650	Noordelijk Kerkhof	volwassen
2873	250	652	1500-1650	Noordelijk Kerkhof	onvolwassen
2876	356	831	1500-1650	Noordelijk Kerkhof	vrouw
2879	480	999	1350-1500	Noordelijk Kerkhof	onvolwassen
2885	331	799	1500-1650	Noordelijk Kerkhof	man
2887	492	1014	1350-1500	Noordelijk Kerkhof	onvolwassen
2893	463	981	1500-1650	Zuidelijk Kerkhof	onvolwassen
2902	348	818	1350-1500	Noordelijk Kerkhof	vrouw
2926	283	718	1500-1650	2de koor	man
2935	321	784	1500-1650	2de koor	volwassen
2956	298	745	1350-1500	2de koor	man
2973	485	1006	1500-1650	2de koor	onvolwassen
2974	279	709	1225-1350	2de koor	vrouw
2975	278	707	1350-1500	2de koor	volwassen
2976	570	1097	1500-1650	2de koor	vrouw
2979	322	785	1350-1500	2de koor	volwassen
2985	555	1081	1500-1650	Zuidelijk Kerkhof	onvolwassen
2986	329	797	1350-1500	2de koor	vrouw
3056	428	940	1350-1500	Koor	onvolwassen
3068	313	773	1350-1500	Noordelijk Kerkhof	man
3095	577	1105	1500-1650	Zuidelijk Kerkhof	vrouw
3105	299	747	1500-1650	Zuidelijk Kerkhof	man
3105	299	747	1500-1650	Zuidelijk Kerkhof	onvolwassen
3121	301	752	1500-1650	Zuidelijk Kerkhof	volwassen
3138	302	754	1500-1650	Zuidelijk Kerkhof	man
3139	303	755	1500-1650	Zuidelijk Kerkhof	onvolwassen
3139	303	755	1500-1650	Zuidelijk Kerkhof	vrouw
3152	366	847	1500-1650	Noordelijk Kerkhof	volwassen
3177	316	778	1500-1650	2de koor	man
3179	467	985	1500-1650	Zuidelijk Kerkhof	onvolwassen

3181	411	908	1500-1650	Zuidelijk Kerkhof	onvolwassen
3197	605	1134	1350-1500	Zuidelijk Kerkhof	man
3205	371	854	1225-1350	Koor	man
3221	604	1133	1350-1500	Koor	man
3222	391	886	1350-1500	Koor	man
3236	337	806	1500-1650	Koor	onvolwassen
3242	400	895	1350-1500	Koor	man
3244	581	1109	1350-1500	Koor	n.t.d.
3259	323	786	1350-1500	Noordelijk Kerkhof	volwassen
3260	342	812	1350-1500	Noordelijk Kerkhof	man
3296	355	830	1350-1500	Noordelijk Kerkhof	man
3305	336	805	1350-1500	Noordelijk Kerkhof	vrouw
3321	335	804	1350-1500	2de koor	volwassen
3343	575	1103	1350-1500	2de koor	man
3344	608	1137	1350-1500	2de koor	vrouw
3352	687	1216	1225-1350	2de koor	n.t.d.
3378	354	829	1350-1500	2de koor	man
3381	372	855	1500-1650	2de koor	man
3384	362	840	1500-1650	2de koor	man
3388	380	867	1500-1650	2de koor	man
3401	403	898	1225-1350	Zuidelijk Kerkhof	onvolwassen
3421	384	877	1500-1650	Zuidelijk Kerkhof	man
3423	389	882	1500-1650	Zuidelijk Kerkhof	onvolwassen
3424	496	1018	1500-1650	Zuidelijk Kerkhof	vrouw
3431	631	1160	1225-1350	Noordelijk Kerkhof	man
3463	387	880	1500-1650	Zuidelijk Kerkhof	man
3467	654	1183	1500-1650	Zuidelijk Kerkhof	vrouw
3472	383	876	1500-1650	Zuidelijk Kerkhof	onvolwassen
3472	383	876	1500-1650	Zuidelijk Kerkhof	vrouw
3480	597	1125	1500-1650	Zuidelijk Kerkhof	onvolwassen
3489	716	1246	1225-1350	Zuidelijk Kerkhof	vrouw
3493	416	914	1500-1650	Zuidelijk Kerkhof	onvolwassen
3519	552	1077	1500-1650	Zuidelijk Kerkhof	onvolwassen
3521	666	1195	1225-1350	Zuidelijk Kerkhof	man
3522	607	1136	1500-1650	Zuidelijk Kerkhof	onvolwassen
3529	397	892	1500-1650	Zuidelijk Kerkhof	onvolwassen
3531	728	1257	1500-1650	Zuidelijk Kerkhof	onvolwassen
3532	379	865	1500-1650	Zuidelijk Kerkhof	volwassen
3534	620	1149	1500-1650	Zuidelijk Kerkhof	onvolwassen
3536	568	1095	1500-1650	Zuidelijk Kerkhof	man
3548	399	894	1500-1650	Zuidelijk Kerkhof	onvolwassen
3549	633	1162	1500-1650	Zuidelijk Kerkhof	man
3572	405	900	1500-1650	2de koor	man
3602	569	1096	1500-1650	2de koor	man
3609	447	963	1225-1350	2de koor	volwassen
3610	600	1129	1225-1350	2de koor	n.t.d.

3615	618	1147	1350-1500	2de koor	onvolwassen
3618	576	1104	1350-1500	2de koor	vrouw
3628	692	1221	1350-1500	2de koor	man
3640	386	879	1500-1650	Zuidelijk Kerkhof	man
3645	418	917	1500-1650	Koor	onvolwassen
3648	735	1264	1350-1500	Koor	vrouw
3649	729	1258	1350-1500	Koor	volwassen
3652	493	1015	1350-1500	Koor	man
3656	546	1070	1350-1500	Koor	man
3658	395	890	1350-1500	Koor	man
3670	621	1150	1350-1500	Koor	vrouw
3675	561	1088	1500-1650	Koor	indifferent
3677	422	933	1500-1650	Koor	man
3681	669	1198	1350-1500	Koor	vrouw
3697	590	1118	1500-1650	Noordelijk Kerkhof	vrouw
3709	711	1241	1225-1350	Noordelijk Kerkhof	man
3710	579	1107	1225-1350	Noordelijk Kerkhof	man
3711	611	1140	1500-1650	Noordelijk Kerkhof	vrouw
3718	718	1248	1225-1350	Noordelijk Kerkhof	man
3721	541	1065	1350-1500	Noordelijk Kerkhof	man
3722	470	988	1350-1500	Noordelijk Kerkhof	vrouw
3724	651	1180	1350-1500	Noordelijk Kerkhof	man
3725	591	1119	1500-1650	Noordelijk Kerkhof	vrouw
3729	630	1159	1350-1500	Noordelijk Kerkhof	vrouw
3732	690	1219	1350-1500	Noordelijk Kerkhof	vrouw
3737	623	1152	1500-1650	Noordelijk Kerkhof	man
3740	606	1135	1500-1650	Noordelijk Kerkhof	vrouw
3741	709	1239	1500-1650	Noordelijk Kerkhof	man
3742	385	878	1500-1650	Noordelijk Kerkhof	man
3746	683	1212	1225-1350	Noordelijk Kerkhof	volwassen
3747	414	912	1225-1350	Noordelijk Kerkhof	onvolwassen
3754	394	889	1350-1500	Koor	onvolwassen
3761	619	1148	1500-1650	Zuidelijk Kerkhof	onvolwassen
3776	382	874	1350-1500	Koor	onvolwassen
3778	660	1189	1500-1650	Zuidelijk Kerkhof	vrouw
3781	715	1245	1500-1650	Noordelijk Kerkhof	vrouw
3789	615	1144	1225-1350	Zuidelijk Kerkhof	man
3793	685	1214	1350-1500	Zuidelijk Kerkhof	vrouw
3794	420	921	1500-1650	Zuidelijk Kerkhof	onvolwassen
3796	531	1054	1500-1650	Zuidelijk Kerkhof	man
3799	688	1217	1500-1650	Zuidelijk Kerkhof	man
3800	530	1053	1225-1350	Zuidelijk Kerkhof	vrouw
3801	558	1085	1500-1650	Zuidelijk Kerkhof	onvolwassen
3802	548	1073	1500-1650	Zuidelijk Kerkhof	vrouw
3806	658	1187	1350-1500	Zuidelijk Kerkhof	volwassen
3821	629	1158	1500-1650	Zuidelijk Kerkhof	man

3844	656	1185	1500-1650	Noordelijk Kerkhof	volwassen
3848	659	1188	1225-1350	Noordelijk Kerkhof	volwassen
3850	749	1259	1225-1350	Noordelijk Kerkhof	man
3857	527	1050	1225-1350	Zuidelijk Kerkhof	vrouw
3864	404	899	1500-1650	Zuidelijk Kerkhof	onvolwassen
3864	404	899	1500-1650	Zuidelijk Kerkhof	vrouw
3865	634	1163	1500-1650	Zuidelijk Kerkhof	volwassen
3867	677	1206	1350-1500	Zuidelijk Kerkhof	volwassen
3870	515	1038	1350-1500	Noordelijk Kerkhof	volwassen
3873	632	1161	1350-1500	Noordelijk Kerkhof	vrouw
3896	653	1182	1350-1500	Noordelijk Kerkhof	vrouw
3899	592	1120	1350-1500	Noordelijk Kerkhof	vrouw
3900	547	1071	1350-1500	Noordelijk Kerkhof	man
3902	714	1244	1350-1500	Noordelijk Kerkhof	vrouw
3903	593	1121	1500-1650	Noordelijk Kerkhof	man
3904	425	936	1500-1650	Noordelijk Kerkhof	man
3905	571	1099	1500-1650	Noordelijk Kerkhof	man
3908	710	1240	1225-1350	Noordelijk Kerkhof	vrouw
3909	698	1227	1225-1350	Noordelijk Kerkhof	volwassen
3911	641	1170	1225-1350	Noordelijk Kerkhof	volwassen
3922	551	1076	1500-1650	2de koor	volwassen
3926	445	961	1350-1500	2de koor	volwassen
3928	545	1069	1350-1500	2de koor	man
3932	643	1172	1225-1350	2de koor	vrouw
3936	612	1141	1350-1500	2de koor	vrouw
3937	696	1225	1225-1350	2de koor	volwassen
3943	700	1229	1350-1500	2de koor	man
3944	673	1202	1500-1650	2de koor	onvolwassen
3945	573	1101	1350-1500	2de koor	volwassen
3950	514	1037	1225-1350	2de koor	volwassen
3954	436	951	1350-1500	2de koor	vrouw
3961	505	1028	1350-1500	2de koor	man
3962	437	952	1350-1500	2de koor	volwassen
3963	731	1260	1350-1500	2de koor	onvolwassen
3965	645	1174	1350-1500	2de koor	vrouw
3967	487	1008	1225-1350	2de koor	onvolwassen
3970	518	1041	1350-1500	2de koor	man
3972	572	1100	1225-1350	Noordelijk Kerkhof	man
3978	662	1191	1225-1350	Koor	man
3986	426	937	1225-1350	Noordelijk Kerkhof	man
3987	523	1046	1350-1500	Noordelijk Kerkhof	vrouw
3988	652	1181	1350-1500	Noordelijk Kerkhof	vrouw
3989	689	1218	1350-1500	Noordelijk Kerkhof	vrouw
3992	713	1243	1500-1650	Noordelijk Kerkhof	man
3993	564	1091	1500-1650	Noordelijk Kerkhof	man
3995	676	1205	1500-1650	Noordelijk Kerkhof	volwassen

4009	695	1224	1225-1350	2de koor	volwassen
4011	613	1142	1225-1350	2de koor	man
4026	610	1139	1500-1650	Zuidelijk Kerkhof	vrouw
4039	703	1232	1350-1500	Koor	man
4049	650	1179	1350-1500	Koor	vrouw
4050	678	1207	1350-1500	Koor	n.t.d.
4055	435	950	1350-1500	Koor	volwassen
4062	121	1072	1500-1650	Koor	man
4064	691	1220	1350-1500	Koor	vrouw
4068	553	1078	1350-1500	Koor	man
4070	497	1019	1350-1500	Koor	volwassen
4072	525	1048	1350-1500	Zuidelijk Kerkhof	indifferent
4078	567	1094	1350-1500	Noordelijk Kerkhof	vrouw
4094	684	1213	1500-1650	2de koor	volwassen
4095	682	1211	1350-1500	2de koor	volwassen
4098	640	1169	1500-1650	Zuidelijk Kerkhof	man
4099	616	1145	1225-1350	Zuidelijk Kerkhof	man
4114	424	935	1350-1500	Zuidelijk Kerkhof	onvolwassen
4114	424	935	1350-1500	Zuidelijk Kerkhof	vrouw
4118	521	1044	1225-1350	Zuidelijk Kerkhof	man
4122	665	1194	1350-1500	Zuidelijk Kerkhof	man
4123	670	1199	1500-1650	Zuidelijk Kerkhof	vrouw
4125	550	1075	1500-1650	Zuidelijk Kerkhof	man
4132	635	1164	1500-1650	Zuidelijk Kerkhof	vrouw
4143	737	1266	1225-1350	Zuidelijk Kerkhof	vrouw
4150	699	1228	1500-1650	Zuidelijk Kerkhof	vrouw
4153	501	1024	1225-1350	Zuidelijk Kerkhof	vrouw
4154	459	976	1225-1350	Zuidelijk Kerkhof	man
4164	549	1074	1500-1650	Zuidelijk Kerkhof	vrouw
4165	456	973	1225-1350	Zuidelijk Kerkhof	volwassen
4176	149	1282	1350-1500	Koor	volwassen
4177	706	1235	1350-1500	Koor	volwassen
4178	649	1178	1350-1500	Noordelijk Kerkhof	volwassen
4180	602	1131	1225-1350	2de koor	man
4181	444	960	1350-1500	Zuidelijk Kerkhof	vrouw
4185	646	1175	1225-1350	Noordelijk Kerkhof	volwassen
4187	672	1201	1350-1500	Noordelijk Kerkhof	onvolwassen
4192	566	1093	1225-1350	Noordelijk Kerkhof	man
4195	433	947	1225-1350	Noordelijk Kerkhof	vrouw
4196	500	1023	1225-1350	Koor	volwassen
4197	443	959	1225-1350	Koor	onvolwassen
4198	507	1030	1350-1500	Koor	volwassen
4199	452	969	1350-1500	Koor	onvolwassen
4200	582	1110	1350-1500	Koor	volwassen
4201	502	1025	1225-1350	Koor	volwassen
4203	461	978	1225-1350	Koor	man

4206	586	1114	1225-1350	Koor	volwassen
4208	712	1242	1350-1500	Koor	man
4211	448	964	1350-1500	Koor	volwassen
4214	704	1233	1225-1350	Koor	vrouw
4215	431	945	1225-1350	Koor	volwassen
4216	681	1210	1500-1650	Koor	volwassen
4217	460	977	1350-1500	Koor	n.t.d.
4219	519	1042	1225-1350	Koor	volwassen
4220	509	1032	1225-1350	Koor	n.t.d.
4223	526	1049	1350-1500	Koor	volwassen
4226	511	1034	1225-1350	Koor	volwassen
4228	533	1056	1225-1350	Koor	volwassen
4230	708	1238	1350-1500	Koor	vrouw
4231	446	962	1225-1350	Koor	volwassen
4232	471	989	1225-1350	Noordelijk Kerkhof	n.t.d.
4245	583	1111	1225-1350	2de koor	n.t.d.
4247	732	1261	1350-1500	2de koor	onvolwassen
4249	537	1060	1350-1500	2de koor	volwassen
4253	707	1237	1500-1650	2de koor	volwassen
4254	489	1011	1350-1500	2de koor	onvolwassen
4261	508	1031	1350-1500	Noordelijk Kerkhof	man
4262	462	979	1350-1500	Noordelijk kerkhof	volwassen
4265	498	1020	1225-1350	Noordelijk Kerkhof	volwassen
4266	639	1168	1225-1350	2de koor	volwassen
4268	454	971	1225-1350	Noordelijk Kerkhof	volwassen
4270	506	1029	1500-1650	Koor	volwassen
4271	423	934	1500-1650	Zuidelijk Kerkhof	vrouw
4275	736	1265	1225-1350	2de koor	volwassen
4276	469	987	1225-1350	Noordelijk Kerkhof	volwassen
4277	432	946	1225-1350	2de koor	volwassen
4288	528	1051	1350-1500	Zuidelijk Kerkhof	onvolwassen
4291	529	1052	1225-1350	Zuidelijk Kerkhof	vrouw
4293	499	1022	1225-1350	2de koor	volwassen
4298	733	1262	1225-1350	Noordelijk Kerkhof	onvolwassen
4299	468	986	1225-1350	Koor	volwassen
4303	512	1035	1350-1500	Koor	volwassen
4305	753	980	1350-1500	Noordelijk Kerkhof	man
4308	438	954	1350-1500	Noordelijk Kerkhof	man
4313	563	1090	1350-1500	Noordelijk Kerkhof	man
4317	439	955	1350-1500	Noordelijk Kerkhof	volwassen
4322	536	1059	1350-1500	Noordelijk Kerkhof	n.t.d.
4323	430	943	1350-1500	Noordelijk Kerkhof	volwassen
4327	451	968	1225-1350	Koor	volwassen
4333	517	1040	1350-1500	2de koor	n.t.d.
4336	488	1009	1225-1350	2de koor	onvolwassen
4339	538	1061	1225-1350	2de koor	n.t.d.

4340	495	1017	1225-1350	2de koor	man
4341	584	1112	1225-1350	2de koor	man
4342	513	1036	1225-1350	2de koor	volwassen
4348	520	1043	1350-1500	Koor	volwassen
4350	524	1047	1225-1350	Koor	volwassen
4351	453	970	1225-1350	Noordelijk Kerkhof	volwassen
4353	434	949	1225-1350	Koor	volwassen
4359	535	1058	1225-1350	Koor	n.t.d.
4362	589	1117	1350-1500	Koor	n.t.d.
4366	543	1067	1225-1350	2de koor	volwassen
4367	539	1062	1225-1350	Koor	n.t.d.
4369	637	1166	1350-1500	2de koor	onvolwassen
4372	516	1039	1225-1350	Zuidelijk Kerkhof	man
4375	730	1254	1225-1350	2de koor	volwassen
4384	742	1273	1200-1350	Koor	onvolwassen

Appendix 3: Arnhem

Individunr.	Vondstnr.	Spoornr.	Locatie	Datering	Leeftijd	Geslacht	Graftype	Orientatië	Lichaamshouding	Grafhouding armen
41	1585	771	Oude Kerkhof	1315-1435	26-35 (LYA)	F	Kist?	WZW-ONO	Rug	2
718	2366	1199	Oude Kerkhof	1330-1448	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	1
484	524	416	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
493	1015	589	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Onbekend	n.v.t.
371	412	338	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Onbekend	West-Oost	Onbekend	n.v.t.
72	433	355	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	WZW-ONO	Rug	n.v.t.
608	898	360	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Onbekend	NW-ZO	Rug	n.v.t.
317	423	362	Oude Kerkhof	1350-1650	18+ (Adult)	F	Kist?	West-Oost	Onbekend	n.v.t.
480	456	369	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	NW-ZO	Rug	n.v.t.
423	492	370	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	Onbekend	Onbekend	n.v.t.
325	481	371	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	Oost-West	Onbekend	n.v.t.
481	442	373	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
315	402	377	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Onbekend	WZW-ONO	Rug	n.v.t.
478	438	388	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	WNW-OZO	Rug	n.v.t.
523	494	401	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Kist?	West-Oost	Onbekend	n.v.t.
187	496	403	Oude Kerkhof	1350-1650	Foetus	Niet-volwassen	Onbekend	West-Oost	Onbekend	n.v.t.
489	548	404	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	n.v.t.
399	533	407	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
19	528	409	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	Onbekend	Onbekend	n.v.t.
482	514	413	Oude Kerkhof	1350-1650	18-25 (EYA)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
483	534	417	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
310	560	418	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	Onbekend	Onbekend	n.v.t.
320	550	419	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	Onbekend	Onbekend	n.v.t.
287	586	420	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	Onbekend	Onbekend	n.v.t.
249	595	422	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	ZW-NO	Onbekend	n.v.t.
52	616	423	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
319	559	424	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	West-Oost	Onbekend	n.v.t.
396	585	425	Oude Kerkhof	1350-1650	50+ (OA)	M	Kist?	West-Oost	Rug	n.v.t.
250	577	428	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
457	589	429	Oude Kerkhof	1350-1650	18-25 (EYA)	I	Onbekend	West-Oost	Rug	n.v.t.
326	631	430	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	West-Oost	Onbekend	n.v.t.
515	599	432	Oude Kerkhof	1350-1650	1-3 (Infant)	Niet-volwassen	Kist	Onbekend	Onbekend	n.v.t.
540	642	436	Oude Kerkhof	1350-1650	18+ (Adult)	I	Onbekend	West-Oost	Rug	n.v.t.
183	687	438	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	WZW-ONO	Rug	n.v.t.
286	634	440	Oude Kerkhof	1350-1650	50+ (OA)	M	Kist?	ZW-NO	Onbekend	n.v.t.
565	723	441	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	Onbekend	Onbekend	n.v.t.
531	636	444	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Kist?	WZW-ONO	Rug	n.v.t.
534	652	446	Oude Kerkhof	1350-1650	18-25 (EYA)	N.t.d	Kist?	West-Oost	Onbekend	n.v.t.
671	738	448	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	WZW-ONO	Onbekend	n.v.t.
154	686	449	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	West-Oost	Onbekend	n.v.t.
532	672	450	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
88	674	451	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
514	678	452	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
114	688	453	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	Onbekend	Onbekend	n.v.t.
602	717	455	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	WZW-ONO	Onbekend	n.v.t.
624	721	502	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Onbekend	Onbekend	Onbekend	n.v.t.
284	754	503	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	Onbekend	Gedisarticuleerd	n.v.t.

633	755	504	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	n.v.t.
541	731	507	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	NW-ZO	Rug	n.v.t.
474	732	508	Oude Kerkhof	1350-1650	18+ (Adult)	I	Onbekend	West-Oost	Rug	n.v.t.
564	744	509	Oude Kerkhof	1350-1650	18+ (Adult)	I	Onbekend	ZW-NO	Rug	n.v.t.
452	797	510	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	WNW-OZO	Rug	1
566	761	511	Oude Kerkhof	1350-1650	18+ (Adult)	F	Kist?	WNW-OZO	Rug	n.v.t.
285	790	512	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Kist?	NW-ZO	Rug	3
567	772	513	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Onbekend	NW-ZO	Rug	3
568	756	514	Oude Kerkhof	1350-1650	50+ (OA)	N.t.d	Kist?	West-Oost	Rug	n.v.t.
569	752	515	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	n.v.t.
456	817	517	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	West-Oost	Rug	n.v.t.
638	862	519	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	ZW-NO	Foetushouding - Linkerzijde	n.v.t.
393	811	521	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	ZW-NO	Rug	1
453	808	522	Oude Kerkhof	1350-1650	18-25 (EYA)	N.t.d	Onbekend	WNW-OZO	Rug	3
454	809	524	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1
352	1049	528	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Kist?	WZW-ONO	Rug	n.v.t.
674	863	529	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	NW-ZO	Rug	n.v.t.
347	852	530	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	NW-ZO	Rug	8
659	848	532	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	WNW-OZO	Rug	n.v.t.
46	850	533	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WNW-OZO	Rug	n.v.t.
248	868	537	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	NW-ZO	Rug	n.v.t.
47	849	538	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	NW-ZO	Rug	n.v.t.
49	870	540	Oude Kerkhof	1350-1650	18+ (Adult)	F	Onbekend	NW-ZO	Rug	n.v.t.
637	871	541	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	NW-ZO	Rug	1
663	926	543	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	West-Oost	Rug	n.v.t.
543	884	557	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
424	885	558	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Onbekend	WZW-ONO	Rug	1
617	929	565	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
233	974	571	Oude Kerkhof	1350-1650	50+ (OA)	I	Kist?	WNW-OZO	Rug	n.v.t.
167	978	577	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	ZW-NO	Rug	1
580	999	581	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Kist?	West-Oost	Rug	n.v.t.
378	1014	582	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Onbekend	West-Oost	Rug	1
127	1023	592	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	ZW-NO	Rug	3
605	1024	593	Oude Kerkhof	1350-1650	18+ (Adult)	F	Onbekend	West-Oost	Rug	n.v.t.
606	1025	594	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Onbekend	NW-ZO	Rug	2
604	1041	596	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	WNW-OZO	Rug	1
200	1043	597	Oude Kerkhof	1350-1650	50+ (OA)	M	Kist?	NW-ZO	Rug	n.v.t.
177	1087	604	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	ZW-NO	Rug	n.v.t.
500	1088	605	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	WZW-ONO	Rug	n.v.t.
501	1103	606	Oude Kerkhof	1350-1650	Foetus	Niet-volwassen	Onbekend	WNW-OZO	Rug	3
165	1145	611	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	WZW-ONO	Rug	1
491	1152	612	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
379	1162	613	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	NW-ZO	Rug	3
152	1163	614	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	NW-ZO	Rug	n.v.t.
545	1177	619	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
538	1179	620	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
156	1190	622	Oude Kerkhof	1350-1650	18+ (Adult)	F	Onbekend	WNW-OZO	Rug	n.v.t.

377	1193	623	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Onbekend	WNW-OZO	Rug	n.v.t.
463	1202	625	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	NW-ZO	Rug	2
170	1218	627	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	NW-ZO	Rug	1
503	1229	631	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WNW-OZO	Rug	n.v.t.
24	1230	632	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
546	1233	633	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Onbekend	West-Oost	Rug	n.v.t.
409	1249	636	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	NW-ZO	Rug	n.v.t.
129	1247	639	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	WZW-ONO	Rug	n.v.t.
439	1251	641	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	West-Oost	Buik	n.v.t.
414	1252	642	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	West-Oost	Rug	n.v.t.
65	1253	643	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	NW-ZO	Rug	n.v.t.
413	1254	644	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
22	1255	645	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	3
23	1256	646	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	NW-ZO	Rug	n.v.t.
408	1269	650	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
537	1270	651	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	NW-ZO	Rug	n.v.t.
366	1274	653	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WNW-OZO	Rug	2
365	1275	654	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	NW-ZO	Rug	n.v.t.
214	1298	659	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
517	1309	664	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	n.v.t.
403	1313	666	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	NW-ZO	Rug	3
180	1329	667	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	West-Oost	Rug	n.v.t.
445	1320	671	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
440	1325	673	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
135	1338	680	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	NW-ZO	Rug	1
138	1345	682	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	WZW-ONO	Onbekend	n.v.t.
193	1359	691	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
139	1362	692	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	ZW-NO	Rug	n.v.t.
516	1365	693	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	3
195	1366	694	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	ZW-NO	Rug	n.v.t.
184	1387	702	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	West-Oost	Rug	n.v.t.
197	1392	706	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	ZW-NO	Rug	n.v.t.
667	1401	710	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	WZW-ONO	Rug	1
387	1408	712	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Kist?	WZW-ONO	Rug	n.v.t.
323	1414	714	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	West-Oost	Rug	2
322	1413	715	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	Gedisarticuleerd	Onbekend	n.v.t.
169	1434	722	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	WZW-ONO	Rug	2
142	1440	726	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	NW-ZO	Rug	n.v.t.
178	1457	731	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	ZW-NO	Rug	n.v.t.
149	1461	732	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WNW-OZO	Rug	n.v.t.
227	1495	750	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Kist?	WZW-ONO	Rug	2
43	1506	754	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Onbekend	West-Oost	Rug	n.v.t.
426	1515	755	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	WZW-ONO	Onbekend	n.v.t.
234	1520	757	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Onbekend	WZW-ONO	Rug	3
385	1521	758	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
207	1522	759	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	2
25	1523	760	Oude Kerkhof	1350-1650	18-25 (EYA)	M	Kist?	West-Oost	Rug	n.v.t.

370	1554	770	Oude Kerkhof	1350-1650	26-35 (LYA)	I	Kist?	WZW-ONO	Rug	n.v.t.
201	1588	781	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	ZZW-NNO	Rug	n.v.t.
303	1601	784	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
295	1617	789	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	WZW-ONO	Rug	1
294	1626	794	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	West-Oost	Rug	3
90	1638	801	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Kist?	West-Oost	Rug	1
292	1714	817	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	1
321	1753	863	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	WZW-ONO	Rug	n.v.t.
611	1843	907	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
11	2053	1015	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	n.v.t.
1	2054	1016	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Onbekend	n.v.t.
68	2055	1017	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	West-Oost	Rug	6
4	2058	1018	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	WZW-ONO	Rug	n.v.t.
125	2060	1019	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
126	2061	1020	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	WZW-ONO	Rug	1
27	2062	1021	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	West-Oost	Rug	n.v.t.
174	2064	1022	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	WZW-ONO	Rug	1
31	2067	1023	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
8	2070	1024	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	ZW-NO	Rug	1
30	2071	1025	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Kist?	WNW-OZO	Rug	2
70	2072	1027	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	ZW-NO	Rug	n.v.t.
69	2074	1030	Oude Kerkhof	1350-1650	50+ (OA)	PF	Onbekend	West-Oost	Rug	n.v.t.
703	2077	1031	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Onbekend	n.v.t.
87	2080	1032	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	ZW-NO	Rug	n.v.t.
66	2079	1033	Oude Kerkhof	1350-1650	18-25 (EYA)	N.t.d	Onbekend	ZW-NO	Rug	1
40	2081	1034	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
560	2082	1035	Oude Kerkhof	1350-1650	36-49 (MA)	F	Onbekend	WZW-ONO	Rug	1
67	2083	1036	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
39	2084	1037	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	3
120	2085	1038	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	ZW-NO	Rug	3
16	2089	1039	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Onbekend	ZW-NO	Rug	1
199	2090	1040	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	West-Oost	Rug	1
562	2098	1041	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	ZW-NO	Rug	1
17	2096	1042	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	3
18	2095	1043	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	1
561	2097	1044	Oude Kerkhof	1350-1650	18+ (Adult)	F	Kist?	West-Oost	Rug	n.v.t.
116	2101	1045	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	WZW-ONO	Rug	6
115	2102	1046	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	ZW-NO	Rug	9
460	2104	1047	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	ZW-NO	Rug	n.v.t.
765	2105	1048	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	ZW-NO	Rug	n.v.t.
192	2106	1049	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	ZW-NO	Rug	2
801	2107	1050	Oude Kerkhof	1350-1650	26-35 (LYA)	PM	Kist?	West-Oost	Rug	n.v.t.
704	2110	1051	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	1
778	2111	1053	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	ZW-NO	Rug	n.v.t.
762	2113	1054	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Onbekend	ZW-NO	Rug	8
204	2114	1055	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	ZW-NO	Rug	2
589	2115	1056	Oude Kerkhof	1350-1650	26-35 (LYA)	F	Kist?	ZW-NO	Rug	2

511	2118	1058	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
799	2120	1059	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	ZW-NO	Rug	2
781	2122	1061	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	ZW-NO	Rug	n.v.t.
775	2124	1062	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	2
800	2511	1074	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	WZW-ONO	Rug	n.v.t.
759	2135	1075	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	1
802	2141	1081	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	WZW-ONO	Rug	1
705	2142	1082	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
763	2145	1084	Oude Kerkhof	1350-1650	36-49 (MA)	F	Onbekend	WZW-ONO	Rug	2
761	2147	1085	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	WZW-ONO	Rug	n.v.t.
796	2163	1092	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	n.v.t.
706	2164	1093	Oude Kerkhof	1350-1650	1-3 (Infant)	Niet-volwassen	Onbekend	ZW-NO	Rug	3
461	2167	1095	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	5
769	2168	1096	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	2
758	2174	1097	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
795	2181	1101	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	n.v.t.
815	2177	1102	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Onbekend	n.v.t.
783	2182	1103	Oude Kerkhof	1350-1650	18+ (Adult)	I	Onbekend	West-Oost	Rug	1
766	2186	1104	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
794	2190	1107	Oude Kerkhof	1350-1650	18-25 (EYA)	PM	Kist?	West-Oost	Rug	n.v.t.
235	2193	1110	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Kist?	West-Oost	Rug	n.v.t.
707	2203	1117	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
757	2205	1118	Oude Kerkhof	1350-1650	26-35 (LYA)	N.t.d	Kist?	West-Oost	Rug	n.v.t.
224	2213	1120	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
613	2214	1121	Oude Kerkhof	1350-1650	18-25 (EYA)	M	Kist?	West-Oost	Rug	n.v.t.
563	2218	1122	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	WZW-ONO	Rug	3
44	2223	1124	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	n.v.t.
29	2228	1126	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	ZW-NO	Rug	1
175	2235	1127	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	WZW-ONO	Rug	3
612	2237	1128	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
228	2238	1129	Oude Kerkhof	1350-1650	36-49 (MA)	I	Kist?	West-Oost	Rug	n.v.t.
231	2239	1130	Oude Kerkhof	1350-1650	36-49 (MA)	F	Onbekend	West-Oost	Rug	n.v.t.
597	2241	1131	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	West-Oost	Rug	1
595	2244	1132	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	West-Oost	Rug	n.v.t.
15	2246	1133	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
28	2253	1135	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
596	2254	1136	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	1
614	2255	1138	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	6
7	2256	1139	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	West-Oost	Rug	1
344	2261	1140	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	2
594	2262	1141	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
785	2266	1144	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	n.v.t.
782	2269	1145	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Kist?	West-Oost	Rug	1
774	2270	1146	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
610	2271	1147	Oude Kerkhof	1350-1650	18-25 (EYA)	PF	Kist?	West-Oost	Rug	1
211	2272	1148	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	WZW-ONO	Rug	n.v.t.
677	2276	1150	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.

472	2278	1152	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	West-Oost	Rug	3
676	2281	1153	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	West-Oost	Rug	n.v.t.
708	2282	1154	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	West-Oost	Rug	3
505	2283	1155	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	WZW-ONO	Rug	n.v.t.
786	2285	1156	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kuil?	ZW-NO	Rug	n.v.t.
473	2286	1158	Oude Kerkhof	1350-1650	18+ (Adult)	M	Kist?	ZW-NO	Rug	n.v.t.
770	2288	1159	Oude Kerkhof	1350-1650	50+ (OA)	PM	Kist?	West-Oost	Rug	1
471	2289	1160	Oude Kerkhof	1350-1650	1-3 (Infant)	Niet-volwassen	Onbekend	WZW-ONO	Onbekend	n.v.t.
559	2292	1161	Oude Kerkhof	1350-1650	36-49 (MA)	I	Onbekend	WZW-ONO	Rug	1
620	2294	1162	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Kist?	West-Oost	Rug	3
558	2295	1163	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
793	2307	1165	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	1
289	2308	1167	Oude Kerkhof	1350-1650	+/-0 (Perinaat)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
290	2311	1168	Oude Kerkhof	1350-1650	18+ (Adult)	I	Kist?	WZW-ONO	Rug	n.v.t.
225	2320	1171	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	West-Oost	Linkerzij	n.v.t.
721	2324	1172	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	WZW-ONO	Rug	8
737	2330	1175	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kuil?	ZW-NO	Rug	1
729	2326	1177	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
730	2327	1178	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
691	2328	1179	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	8
779	2329	1180	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	ZW-NO	Rug	n.v.t.
728	2331	1181	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	West-Oost	Rug	n.v.t.
733	2333	1182	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1
771	2334	1183	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
772	2336	1184	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	3
681	2337	1185	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	WZW-ONO	Rug	n.v.t.
716	2340	1186	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	West-Oost	Rug	1
750	2347	1190	Oude Kerkhof	1350-1650	50+ (OA)	M	Onbekend	West-Oost	Rug	8
741	2350	1191	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Kist?	ZW-NO	Rug	n.v.t.
742	2364	1192	Oude Kerkhof	1350-1650	50+ (OA)	M	Kist?	West-Oost	Rug	n.v.t.
745	2357	1193	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	3
789	2358	1194	Oude Kerkhof	1350-1650	36-49 (MA)	F	Onbekend	West-Oost	Rug	n.v.t.
714	2362	1196	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Onbekend	West-Oost	Rug	n.v.t.
724	2363	1197	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	WZW-ONO	Rug	n.v.t.
788	2365	1198	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Onbekend	WZW-ONO	Rug	n.v.t.
755	2367	1200	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	n.v.t.
791	2369	1201	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	WZW-ONO	Rug	1
738	2370	1202	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	1
798	2351	1203	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	1
723	2371	1204	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	West-Oost	Rug	n.v.t.
584	2379	1207	Oude Kerkhof	1350-1650	18+ (Adult)	F	Onbekend	West-Oost	Rug, half op rechterzij	3
712	2380	1208	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	West-Oost	Rug	1
692	2381	1209	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	n.v.t.
725	2382	1210	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	West-Oost	Rug	n.v.t.
720	2384	1211	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	n.v.t.
740	2389	1218	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Kist?	West-Oost	Rug	n.v.t.
739	2390	1219	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1

797	2392	1221	Oude Kerkhof	1350-1650	18-25 (EYA)	PM	Kist?	WZW-ONO	Rug	6
790	2395	1222	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
754	2397	1223	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	West-Oost	Rug	3
752	2399	1225	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
751	2400	1226	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
736	2404	1227	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
748	2405	1228	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
131	2406	1229	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	6
715	2403	1230	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Onbekend	West-Oost	Onbekend	n.v.t.
710	2409	1231	Oude Kerkhof	1350-1650	+/-0 (Perinaat)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
709	2408	1232	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
717	2410	1233	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	6
100	2412	1234	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	1
753	2417	1236	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
102	2424	1240	Oude Kerkhof	1350-1650	50+ (OA)	F	Onbekend	West-Oost	Rug	n.v.t.
756	2426	1241	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
97	2429	1242	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	3
747	2430	1243	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1
792	2432	1244	Oude Kerkhof	1350-1650	18+ (Adult)	M	Kist?	West-Oost	Rug	n.v.t.
155	2433	1245	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Rug	n.v.t.
101	2434	1246	Oude Kerkhof	1350-1650	50+ (OA)	F	Onbekend	West-Oost	Rug	n.v.t.
9	2435	1247	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Kist?	ZW-NO	Rug	1
10	2436	1248	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
122	2437	1249	Oude Kerkhof	1350-1650	36-49 (MA)	I	Kist?	West-Oost	Rug	3
124	2438	1250	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Onbekend	West-Oost	Rug	n.v.t.
711	2439	1251	Oude Kerkhof	1350-1650	+/-0 (Perinaat)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
230	2449	1254	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	3
229	2452	1256	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1
687	2453	1257	Oude Kerkhof	1350-1650	50+ (OA)	PM	Kist?	West-Oost	Rug	1
407	2454	1258	Oude Kerkhof	1350-1650	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
406	2477	1260	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	WZW-ONO	Rug	n.v.t.
94	2463	1262	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Kist?	ZW-NO	Rug	n.v.t.
96	2465	1263	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	ZW-NO	Rug	3
123	2466	1264	Oude Kerkhof	1350-1650	50+ (OA)	PF	Kist?	ZW-NO	Rug	n.v.t.
686	2469	1266	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	West-Oost	Rug	1
121	2470	1267	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	West-Oost	Rug	n.v.t.
54	2476	1268	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
37	2481	1269	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	WZW-ONO	Rug	3
86	2484	1270	Oude Kerkhof	1350-1650	36-49 (MA)	F	Kist?	West-Oost	Linkerzij	n.v.t.
255	2486	1271	Oude Kerkhof	1350-1650	36-49 (MA)	PF	Kist?	WZW-ONO	Rug	n.v.t.
55	2489	1272	Oude Kerkhof	1350-1650	26-35 (LYA)	PF	Onbekend	WZW-ONO	Rug	n.v.t.
38	2490	1273	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	1
689	2505	1275	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Kist?	West-Oost	Rug	n.v.t.
722	2494	1278	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	WZW-ONO	Rug	2
92	2496	1280	Oude Kerkhof	1350-1650	18+ (Adult)	F	Kist?	West-Oost	Rug	n.v.t.
735	2499	1281	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Kist?	West-Oost	Rug	n.v.t.
91	2498	1282	Oude Kerkhof	1350-1650	50+ (OA)	F	Kist?	WZW-ONO	Rug	n.v.t.

487	472	386	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Onbekend	West-Oost	Onbekend	n.v.t.
488	472	386	Oude Kerkhof	1350-1650	1-3 (Infant)	Niet-volwassen	Onbekend	West-Oost	Rug	4
573	893	561	Oude Kerkhof	1350-1650	26-35 (LYA)	M	Onbekend	West-Oost	Rug	n.v.t.
696	401	345	Oude Kerkhof	1350-1650	1-3 (Infant)	Niet-volwassen	Onbekend	West-Oost	Rug	6
186	421	376	Oude Kerkhof	1350-1650	Foetus	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
524	494	401	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Onbekend	n.v.t.
530	698	454	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Onbekend	WZW-ONO	Rug	n.v.t.
450	799	518	Oude Kerkhof	1350-1650	36-49 (MA)	N.t.d	Onbekend	West-Oost	Rug	1
451	818	527	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
639	894	534	Oude Kerkhof	1350-1650	18-25 (EYA)	F	Onbekend	West-Oost	Rug	n.v.t.
425	885	558	Oude Kerkhof	1350-1650	18+ (Adult)	PM	Onbekend	West-Oost	Rug	n.v.t.
660	905	562	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
616	927	566	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	ZW-NO	Rug	2
570	969	576	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
492	1015	589	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WZW-ONO	Rug	n.v.t.
586	1072	602	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	1
353	1073	603	Oude Kerkhof	1350-1650	36-49 (MA)	PM	Onbekend	West-Oost	Rug	n.v.t.
176	1161	615	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
462	1223	629	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
158	1235	634	Oude Kerkhof	1350-1650	0-1 (Neonaat)	Niet-volwassen	Onbekend	ZW-NO	Rug	7
495	1250	699	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
179	1524	761	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	8
42	1585	771	Oude Kerkhof	1350-1650	+/-0 (Perinaat)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
764	2116	1057	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
776	2124	1062	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
767	2188	1106	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
713	2210	1119	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
341	2264	1142	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
342	2265	1143	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
343	2275	1149	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	3
340	2279	1151	Oude Kerkhof	1350-1650	18+ (Adult)	M	Onbekend	WZW-ONO	Rug	1
504	2300	1164	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WNW-OZO	Rug	n.v.t.
726	2341	1187	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	ZW-NO	Rug	n.v.t.
727	2342	1188	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	ZW-NO	Rug	1
773	2346	1189	Oude Kerkhof	1350-1650	18-25 (EYA)	N.t.d	Onbekend	ZW-NO	Rug	3
746	2359	1195	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
734	2375	1206	Oude Kerkhof	1350-1650	36-49 (MA)	M	Onbekend	WZW-ONO	Rug	6
719	2391	1220	Oude Kerkhof	1350-1650	7-12 (Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	n.v.t.
732	2398	1224	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
690	2416	1235	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	West-Oost	Rug	n.v.t.
749	2418	1237	Oude Kerkhof	1350-1650	13-18 (Adolescent)	Niet-volwassen	Onbekend	WNW-OZO	Rug	n.v.t.
245	2422	1239	Oude Kerkhof	1350-1650	+/-0 (Perinaat)	Niet-volwassen	Onbekend	West-Oost	Rug	3
95	2465	1263	Oude Kerkhof	1350-1650	3-6 (Jong Kind)	Niet-volwassen	Onbekend	West-Oost	Rug	1
85	2468	1265	Oude Kerkhof	1350-1650	18+ (Adult)	PF	Onbekend	NW-ZO	Onbekend	n.v.t.
93	2496	1280	Oude Kerkhof	1350-1650	18+ (Adult)	N.t.d	Onbekend	WNW-OZO	Rug	n.v.t.
117	2442	1253	Oude Kerkhof	1410-1457	50+ (OA)	PM	Kist?	West-Oost	Rug	2
400	439	378	Oude Kerkhof	1436-1625	36-49 (MA)	PF	Kist?	West-Oost	Rug	n.v.t.

372	980	578	Oude Kerkhof	1436-1625	50+ (OA)	M	Onbekend	WZW-ONO	Rug	3
544	685	447	Oude Kerkhof	1437-1618	13-18 (Adolescent)	Niet-volwassen	Kist?	WNW-OZO	Rug	3
784	2121	1060	Oude Kerkhof	1439-1619	7-12 (Kind)	Niet-volwassen	Onbekend	WZW-ONO	Rug	n.v.t.
327	624	439	Oude Kerkhof	1447-1634	36-49 (MA)	M	Kist?	West-Oost	Rug	n.v.t.
143	470	372	Oude Kerkhof	1459-1635	26-35 (LYA)	PM	Onbekend	NW-ZO	Rug	3
760	2165	1094	Oude Kerkhof	1467-1636	36-49 (MA)	PM	Kist?	WZW-ONO	Rug	2
485	475	392	Oude Kerkhof	1480-1640	3-6 (Jong Kind)	Niet-volwassen	Kist?	WZW-ONO	Rug	2
486	472	386	Oude Kerkhof	1482-1642	18+ (Adult)	F	Onbekend	WZW-ONO	Rug	n.v.t.