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Paleodemographic Analysis of Late Antiquity and Early Medieval Georgian Populations

Introduction

Demographic research on ancient populations is one of the important and necessary tasks for bioarchaeological population reconstruction. Paleodemography (from the Greek palaios, meaning ancient, demos, meaning people, and graphia, meaning description) is a part of historical demography.[1] The information base of paleodemography consists of the following sources: written (descriptive documents, epitaphs), paleoanthropological, and ethnoarchaeological.[2] Demography treats the population as a separate object for quantitative analysis and attempts to explain variations in population size, structure, and dynamics.[3] Until the 1930s, most studies of human paleodemography relied on historical records. After the studies of T. W. Todd, new possibilities emerged in paleodemography using anthropological data.[4] In the second half of the 20th century, studies on the age structure of buried individuals spread, and after that, paleodemographic studies became an important aspect of archaeological and anthropological studies. Based on paleoanthropological data, it is possible to determine the sex-age composition of the population, the average age, the ratio of the sexes, the ratio of different age groups, the average life expectancy of male and female, and the level of mortality of children and adolescents.[5]

The initial period of the demographic history of modern humans (Homo sapiens) began about 50 thousand years ago. By the onset of the Neolithic era, the population growth rate was very low, estimated at about 10-20% per millennium. Such a situation was attributed to high mortality rates, with the average lifespan not exceeding 20 years. As modern humans transitioned from subsistence agriculture to more productive methods and adopted settled lifestyles, significant settlements emerged, leading to a decrease in mortality rates and an increase in average life expectancy. Some sources suggest that by the fifth millennium BC, the population was approximately 15 million. As conditions improved, the population continued to grow, reaching around 200-250

[1] Bitadze (et al.), *Practical Anthropology*, p. 149.
[2] Tsuladze, Sulaberidze, *Basics of Demography*, p. 20.
[3] Chamberlain, *Demography in Archaeology*, pp. 275-286.
[4] Acsadi, Nemeskeri, *History of Human Life Span and Mortality*, pp. 51-57.
[5] Bitadze (et al.), *Practical Anthropology*, pp. 149-160.

million by the beginning of the Common Era. However, during the Middle Ages, population growth rates remained low, accompanied by high mortality rates.[1]

The aim of this study is to compare the demographic characteristics of the late antiquity and early medieval populations. Although my earlier article "Morphological and Genetical Polymorphism of the Georgia's Late Antique-Early Middle Ages Population", discusses paleodemographic analysis during these periods, this current article provides a brief overview of the demographic makeup of the population at that time, including sex-age structure and average life expectancy.[2] However, the factors contributing to longer lifespans in Late Antiquity compared to the Early Middle Ages are not discussed. Additionally, the paleodemographic analysis excludes child mortality. The primary objective of the current research is to investigate the potential reasons for the higher longevity observed in late antiquity. By comparing life tables and examining historical and archaeological data, possible causes of mortality are explored.

Materials

The research material is housed in the anthropological research laboratory of the Ivane Javakhishvili Institute of History and Ethnology, collected by archaeologists spanning different generations. Material from the Late Antiquity period originates from various sites, including Aragvispiri, Armazi, Ortchosani, Bagitchala, Nedzikhi, Bazaleti, Taltebi, Tetritskaro, Sagitara, Karsniskhevi, Mogvtakari, Karsani, Svetitskhoveli, Samtavro, Urbnisi, Natakhtari, Jieti, and Zhinvali. Similarly, Early Medieval material is sourced from sites such as Aragvispiri, Aranisi, Armazi, Klde, Bodbe, Bolnisi, Bulachauri, Gantiadi, Gorovani, Tcheremi, Dmanisi, Abanoskhevi, Bagitchala, Lapanaantkari, Mdziviana, Nedzikhi, Mlashe, Kobchiskari, Vani, Vashlijvari, Telovani, Kavtiskhevi, Kartana, Karsani, Svetitskhoveli, Martazi, Magharoskari, Armazi, Nabagrebi, Samtavro, Pitareti, Zhinvali, Rustavi, Tserovani, Tcheremi, Pikris Gora, and Khuntsi. In total, the study encompasses 592 individuals from these periods, with 235 individuals examined from the Late Antiquity period and 357 individuals from the Early Middle Ages.

Methods

The study exclusively utilized skulls due to the historical practice of collecting only cranial remains until the 2000s, resulting in the absence of postcranial skeletons.

[1] Tsuladze, Sulaberidze, *Basics of Demography*, pp. 29-31.
[2] Tavartkiladze, *Morphological and Genetical Polymorphism*.

Sex and age determinations were made using established anthropological methods commonly employed in the field.[1]

Furthermore, the research encompassed essential methodologies for paleodemography. Mortality tables were constructed to analyze various demographic parameters, including the average life expectancy of men and women, the percentage distribution of deceased individuals across different age groups, and the sex ratio.[2] Notably, the primary analytical tool employed for demographic research was the life table, which has been developed by various researchers.

The construction of life tables is a fundamental aspect of paleodemographic analysis, offering insights into mortality rates, life expectancy, and other demographic parameters. In this study, life tables were constructed for both Late Antiquity and Early Medieval Georgian populations based on skeletal remains obtained from various archaeological sites.

Life Table Parameters: The construction of life tables involved several key parameters:

x (Age Intervals): Age intervals were defined to categorize individuals into appropriate age groups for analysis.

Dx (Total Deaths): The total number of deaths occurring within each age interval was determined.

dx (Percentage of Total Deaths): The percentage distribution of total deaths across different age intervals was calculated.

lx (Number of Survivors): The number of individuals surviving within each age interval was recorded.

qx (Probability of Death): The probability of death within each age interval was calculated.

Lx (Years Lived): The total number of years lived by individuals within each age interval was determined.

Tx (Years Remaining): The number of years that individuals in a particular age interval may live for a given period was calculated.[3]

Results and Discussion

Based on the material obtained from Late Antiquity to the Early Middle Ages in Georgia, we compiled mortality tables with 6-year intervals, as age determination in

[1] Buikstra, Ubelaker, *Standards for Data Collection*, pp. 17-24.
[2] Bitadze (et al.), *Practical Anthropology*.
[3] Ubelaker, *Reconstruction of Demographic Profiles*, pp. 60-64.

the paleo population, except for children, relies on such gradation. It should be noted that in the paleo population, we determine biological age rather than passport age. The difference between biological and passport age exists universally, but there is no other way or method of determining the age and lifespan of the paleo population, although this difference is leveled within the population. Some individuals will be younger than their biological age, while others will be older, a phenomenon influenced by genetic and social factors. The average age of the group is an integrated indicator that reflects the influence of both factors.

It is noteworthy that during the Late Antiquity period, male significantly outnumbered female. According to the excavated material at our disposal, 61.7% (145 individuals) are men, and 36.5% (86 individuals) are women (nine N1). Additionally, 1.7% are children. A different age structure of mortality is also clearly expressed in the population of this period.

Table N1 – The sex-age structure of the population of Georgia in Late Antiquity, expressed in percentages.

Age	Male		Female		Total	
	N	%	N	%	N	%
0-5					4*	1.7
5-10					0*	0
15-20			3	3.49	3	1.27
20-25	10	6,90	7	8.14	17	7.23
25-30	10	6,90	8	9.3	18	7.65
30-35	10	6,90	9	10.47	19	8.1
35-40	13	8,97	8	9.3	21	8.93
40-45	18	12,41	12	13.95	30	12.76
45-50	19	13,10	7	8.14	26	11.1
50-55	23	15,86	16	18.6	39	16.59
55-60	17	11,72	8	9.3	25	10.63
60≥	25	17,24	8	9.3	33	14.04
Total	145	100	86	100	235	100

Mortality rates for female are high in reproductive age categories, while for male, they remain high even after the post-reproductive age. Among female, the most

frequent mortality occurs in the age range of 50-55 years, while for men, it's in the age category above 60 years. On average, men have a life expectancy 3.8 years longer than that of women (refer to Tables N1 and N2). The average life expectancy of the Late Antiquity population is 45.5 years (refer to N2). Through demographic analysis, it becomes evident that the average life expectancy of men (47) (refer to 9. N3) exceeds that of women (43).[1]

Table N2 – The ages of the Late Antiquity population, excluding infant mortality.

	Total		Female	Male
N	231	N	86	145
Min	18	Min	18	22.5
Max	72.5	Max	72.5	72.5
Sum	10529.5	Sum	3712	6822.5
Mean	45.58225	Mean	43.16279	47.05172
Std. error	0.892879	Std. error	1.467324	1.109344
Variance	184.1606	Variance	185.1614	178.4435
Stand. dev	13.57058	Stand. dev	13.6074	13.35827
Median	47.5	Median	42.5	47.5
25 prcntil	32.5	25 prcntil	32.5	37.5
75 prcntil	57.5	75 prcntil	52.5	57.5
Skewness	-0.03254	Skewness	0.135978	-0.12867
Kurtosis	-0.69204	Kurtosis	-0.42877	-0.74912
Geom. mean	43.3727	Geom. mean	40.88714	44.96206
Coeff. var	29.77163	Coeff. var	31.52577	28.39062

In regards to the population of Early Medieval Georgia, as I mentioned above a total of 357 individuals have been studied (see Table N4), comprising 60% men and 37.5% women. Only 2.5% are children. Table N3 clearly illustrates that mortality among women in the first age category is higher than that among men, whereas in the second and third age categories, the percentage of men's mortality surpasses that of female.

[1] Tavartkiladze, *Morphological and Genetical Polymorphism*, pp. 403-406.

Table N3 – The sex-age structure of the population of Early Medieval Georgia.

Age	Male		Female		Total	
	N	%	N	%	N	%
0-5					7	2
5-10					2	0.56
15-20	3	1,4	8	5.97	11	3.08
20-25	7	3,27	10	7.46	17	4.76
25-30	6	2,80	20	14.93	26	7.28
30-35	22	10,28	16	11.94	38	10.64
35-40	34	15,89	23	17.16	57	15.96
40-45	47	21,96	25	18.66	72	20.16
45-50	24	11,21	10	7.46	34	9.52
50-55	24	11,21	11	8.21	35	9.8
55-60	13	6,07	2	1.49	15	4.2
60≥	34	15,89	9	6.72	43	12.04
Total	214	100	134	100	357	100

In the Early Middle Ages, the highest percentage of deaths for both males and females occurred between the ages of 40 and 45. The average life expectancy of the entire population is 42.7 years (refer to N4).

Table N4 – The average age of the population in the Early Middle Ages.

	All
N	348
Min	17.5
Max	82.5
Sum	14861.5
Mean	42.70546
Std. error	0.674909
Variance	158.5146
Stand. dev	12.59026
Median	42.5
25 prcntil	32.5

75 prcntil	52.5
Skewness	0.326407
Kurtosis	-0.16068
Geom. mean	40.78796
Coeff. var	29.48161

In a comparative analysis of the demographics of the Late Antiquity and Early Medieval populations (see Table N6), it is evident that the average life expectancy was higher in the Late Antiquity period than in the Early Medieval period. Additionally, it's noteworthy that in both periods, the average life expectancy of males exceeded that of females, which may be attributed to factors related to reproductive health. In Late Antiquity, males outlived females by 3.8 years, while in the Early Middle Ages, the difference increased to 6.9 years.[1]

Table N5 – The sex-age structure of the population of the Late Antiquity-Early Middle Ages.

	Late Antiquity-Female	Early Middle Ages-Female	Late Antiquity-Male	Early Middle Ages-Male
N	86	134	145	214
Min	18	17.5	22.5	17.5
Max	72.5	72.5	72.5	72.5
Sum	3712	5148.5	6822.5	9713
Mean	43.16279	38.42164	47.05172	45.38785
Std. error	1.467324	1.082228	1.109344	0.8130542
Variance	185.1614	156.9431	178.4435	141.4662
Stand. dev	13.6074	12.52769	13.35827	11.89396
Median	42.5	37.5	47.5	42.5
25 prcntil	32.5	27.5	37.5	37.5
75 prcntil	52.5	42.5	57.5	52.5
Skewness	0.1359782	0.7914289	-0.1286651	0.1494362
Kurtosis	-0.4287678	1.14474	-0.7491232	-0.4778694
Geom. mean	40.88714	36.46633	44.96206	43.75108
Coeff. var	31.52577	32.60582	28.39062	26.20516

If we categorize the population based on age groups, we can analyze the percentage of individuals who died during reproductive years and whether they left

[1] Tavartkiladze, *Morphological and Genetical Polymorphism*, p. 407.

offspring or not. In the methodological work published by the Forensic Osteological Group, adult individuals are classified into three primary groups based on their age:

1. Young Adult: 20-34 years
2. Middle Adult: 35-49 years
3. Old Adult: over 50 years[1]

The first age category, 'Young Adult', pertains to the age group capable of leaving offspring. In this category, 32.3% of females and 20.6% of males died during Late Antiquity. In the Early Medieval population of Georgia, the percentage of female's deaths in the first age category is notably high, with 40.3% of females and only 17.7% of males succumbing. Such a high mortality rate among females in both periods would certainly have had a negative impact on population growth.[2]

Finally, it should be noted that the average life expectancy of females is consistently lower than that of males across all periods, which can be attributed to various factors such as premature and unplanned births, unsanitary conditions, decreased immunity, etc. A study on the average life expectancy of the paleo population of Georgia from the Early Bronze Age to the Late Middle Ages has revealed that, for the first time, the average life expectancy of females in the developed Middle Ages equals that of males.[3]

The most informative statistical analysis for demographic research is the life table, which has been developed by various researchers. A life table is a system of age indicators that measures mortality rates, life expectancy, and more.

Essentially, a life table involves the calculation of several attributes that characterize the demographic structure of a living population and can be compared with data from both modern and paleo populations.

A comparison of life tables between two populations reveals important demographic information. Comparing the life tables of the Late Antiquity and Early Medieval populations reveals several notable differences and trends. In Late Antiquity, characterized by economic prosperity and political stability, the probability of survival was generally higher for all age groups than in the Early Middle Ages. This suggests that individuals in Late Antiquity had a greater chance of reaching old age than in the Early Middle Ages.

In Late Antiquity, compared to the Early Middle Ages (see Table N7 and N8), survival probability is higher in all age categories. The probability of death is high in the age categories of 45-50 and 50-55, and the probability of survival decreases from these age categories. As for the Early Middle Ages, the probability of death increases

[1] Buikstra, Ubelaker, *Stardards for Data Collection*, pp. 42-43.
[2] Tavartkiladze, *Morphological and Genetical Polymorphism*, p. 408.
[3] Bitadze, *Life Expectancy Dynamics*, pp. 183-193.

in the age categories of 25-30, 30-35, 35-40, and 40-45, although the probability of survival is higher in the Early Middle Ages than in Late Antiquity in the age categories of 40-45, 45-50, 50-55, 55-60, and 60+. Regarding life expectancy, in Late Antiquity compared to the Early Middle Ages, it is higher in the first and second age categories, while in the third age category, on the contrary, life expectancy is 5 years in the Early Middle Ages and 2.5 years in Late Antiquity.

The lower probability of survival and higher probability of death in the population of the Early Middle Ages are particularly evident in the age categories of 30-35 and 40-45. This indicates vulnerability to mortality during this period, possibly due to factors such as political instability, socio-economic disturbances, and environmental challenges.

In general, it's essential to bear in mind that in paleodemographic studies, there is always a possibility of error because we lack an exact population count. Therefore, the available data may change over time. Unfortunately, there are very few collections of children's bones because early excavations did not prioritize their use for scientific research, often leading to their prohibition at the discovery sites. Without accounting for child mortality, the paleodemographic picture cannot be fully accurate.

Table N6 – The life table of the Late Antiquity population.

Age	Dx	dx	lx	qx	Lx	Tx	ex°
0-5	2.3	0.97	100	0.0097	497.575	3502.65	35.0265
5-10	6.6	2.8	99.03	0.028274	488.15	3005.075	30.3451
15-20	12.6	5.36	96.23	0.0557	467.75	2516.925	26.1553
20-25	18	7.65	90.87	0.084186	435.225	2049.175	22.55062
25-30	19.3	8.21	83.22	0.098654	395.575	1613.95	19.39378
30-35	23.3	9.91	75.01	0.132116	346.025	1218.375	16.24283
35-40	25.6	10.89	63.4	0.171767	294.025	872.35	13.75946
40-45	31.6	13.44	54.21	0.247925	237.45	578.325	10.66823
45-50	30	12.76	40.77	0.312975	171.95	340.875	8.360927
50-55	32.3	13.74	28.01	0.490539	105.7	168.925	6.030882
55-60	20.6	8.76	14.27	0.613875	49.45	63.225	4.430624
60≥	12.3	5.23	5.51	0.949183	13.775	13.775	2.5

Table N7 – The life table of the Early Middle Ages population.

Age	Dx	dx	lx	qx	Lx	Tx	ex°
0-5	6.6	1.84	100	0.0184	495.4	3251.85	32.5
5-10	10	2.8	98.16	0.028	483.8	2756.45	28.08
15-20	18	5.04	95.36	0.05	464.2	2272.65	23.83
20-25	27	7.56	90.32	0.083	432.7	1808.45	20.02
25-30	40.3	11.28	82.76	0.13	385.6	1375.75	16.62
30-35	55.6	15.57	71.48	0.21	318.4	990.15	13.85
35-40	54.3	15.21	55.91	0.27	241.5	671.75	12.01
40-45	47	13.16	40.7	0.32	170.6	430.25	10.57
45-50	28	7.84	27.54	0.28	118.1	259.65	9.42
50-55	31	8.68	19.7	0.44	76.8	141.55	7.18
55-60	21.6	6.05	11.02	0.54	39.9	64.75	5.87
60≥	17.3	4.84	4.97	0.97	24.85	24.85	5

Conclusion

Amidst the backdrop of reconciling Late Antiquity and Early Medieval demographic analyses, it can be concluded that the environment in Late Antiquity was more favorable for the longevity of its inhabitants. This may be attributed to several reasons: trade, which flourished in Late Antiquity; the differing political courses between Late Antiquity and the Early Middle Ages; and the transition from farming to agriculture. Each of these factors will be reviewed to explain their potential impact on life expectancy.

In the 1st century, the territory of Georgia was divided into two major units: Iberia and Colchis. Trade, predominantly conducted by the Romans, led to the breakdown of family structures, the emergence of economic inequality, and the establishment of social ranks. The rise of Persia and the decline of the Roman Empire weakened Georgia economically. Mtskheta, politically and economically significant until the 4th century, declined, leading to isolation. East and West Georgia became trading centers and arenas for Persian-Byzantine conflicts. Internal changes occurred within Georgian tribes, with the emergence of private land ownership and the establishment of noble and non-noble ranks.[1] [2]

Mtskheta was economically and politically advanced during Late Antiquity, as evidenced by the Romans' favorable attitude towards it. The interest of Roman trade

[1] *Essays on the History of Georgia,* Vol. I, pp. 500-537.
[2] Ratchvelishvili, *The History of Georgian Feudalism.*

capital was represented by the strong government of Eastern Georgia.[1] However, from the 3rd century onward, Georgia's trade with foreign countries declined, primarily due to the weakening of the Roman Empire and the rise of Persia. The domination of Persia, with its different imperial aspirations, further impacted trade and socioeconomic dynamics. Persian dominance and constant warfare led to a decline in trade and agriculture, affecting the economy and, consequently, the quality of life and life expectancy.[2]

The domination of Persia took on a different character, characterized by a prolonged struggle and rivalry with Rome throughout pre-Asia. However, the motivations of Rome and Persia differed significantly. Rome sought control over Asia to serve as a base for its trade capital, while Persia appeared to embody a more distant and religious imperialism. Iran was the first foreign power to conquer Eastern Georgia, leaving a lasting mark on the region. The very term 'kharki' seems to be a relic of Iranian influence in the Georgian language. Additionally, another socio-economic term, 'Begara', also originates from Iranian roots. The imposition of monetary tribute further underscored the impact of Persian dominance on economic and social development.[3]

The nature of Persian dominance, coupled with ongoing warfare, inevitably led to the weakening of trade networks that flourished during Late Antiquity. This decline in trade directly correlated with economic decline, subsequently diminishing the quality of life and impacting average life expectancy.

As trade declined, agriculture suffered. Previously, trade and cattle breeding had been crucial for prosperity, but now land ownership became paramount. The transition from agriculture to pastoralism likely affected nutrition, a significant factor influencing life expectancy. Thomas Malthus noted that well-fed populations experience fewer diseases, while malnutrition increases disease rates.[4]

Overall, trade dynamics, political changes, nutrition, environmental conditions, and sociocultural practices collectively influenced life expectancy. Late Antiquity societies often had more stable political and social structures than the Early Middle Ages, which experienced greater fragmentation and upheaval. Stable societies typically have better access to resources and infrastructure, positively affecting life expectancy.

In conclusion, a combination of factors, including nutrition and social stability, likely contributed to the disparity in life expectancy between Late Antiquity and the Early Middle Ages.

[1] Ratchvelishvili, *The History of Georgian Feudalism,* pp. 28-29.
[2] Ratchvelishvili, *The History of Georgian Feudalism,* p. 35.
[3] Janashia, *Feudal Revolution in Georgia*, pp. 12-13.
[4] Larsen, *Bioarchaeology Interpreting Behavior*, p. 10.

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Summary

Demographic research on ancient populations stands as a crucial endeavor for the bioarchaeological reconstruction of societies. This study delves into the comparison of demographic characteristics between Late Antiquity and the Early Middle Ages in Georgia. Utilizing bone material, the research compiled mortality tables to analyze parameters such as life expectancy, age distribution, and sex ratio. The anthropological research laboratory of the Ivane Javakhishvili Institute of History and Ethnology houses the materials, comprising of 235 skulls from the Late Antique period and 357 from the Early Middle Ages, sourced from various archaeological sites. Paleodemographic research methods were employed, including the construction of mortality tables and the analysis of the sex-age structure of the population. The study also utilized the "life table" methodology, a comprehensive system of age indicators developed by various researchers, to discern mortality rates and life expectancy. Comparison of the data reveals that the population of Late Antiquity experienced longer lifespans than their counterparts in the Early Middle Ages. Notably, males outnumbered females in both periods, with 61.7% males and 36.5% females in Late Antiquity, and 60% males and 37.5% females in the Early Middle Ages, while children comprised 1.7% and 2.5%, respectively.

The Early Middle Ages witnessed a smaller population size with elevated mortality rates, particularly among females of reproductive age, resulting in a decreased average life expectancy of 42.7 years compared to Late Antiquity. A comparative analysis suggests that Late Antiquity offered a more conducive environment for longevity, potentially attributed to factors such as flourishing trade, political stability, and agricultural advancements.

ნინო თავართქილაძე

გვიან ანტიკური – ადრე შუა საუკუნეების საქართველოს მოსახლეობის პალეოდემოგრაფიული ანალიზი

რეზიუმე

უძველესი მოსახლეობის დემოგრაფიული კვლევა ერთ-ერთი მნიშვნელოვანი და აუცილებელი ამოცანაა მოსახლეობის ბიოარქეოლოგიური რეკონსტრუქციისთვის. კვლევა ფოკუსირებულია საქართველოში გვიან ანტიკური და ადრეული შუა საუკუნეების დემოგრაფიული მახასიათებლების შედარებაზე. ძვლოვანი მასალის გამოყენებით, შედგენილია მოკვდაობის ცხრილები ისეთი პარამეტრების გასაანალიზებლად, როგორიცაა სიცოცხლის საშუალო ხანგრძლივობა, ასაკობრივი განაწილება და სქესის თანაფარდობა. მასალა, რომელიც ეფუძნება კვლევას, დაცულია ივანე ჯავახიშვილის სახელობის ისტორიისა და ეთნოლოგიის ინსტიტუტის ანთროპოლოგიური კვლევის ლაბორატორიაში. გვიან ანტიკური პერიოდიდან სულ წარმოდგენილია 235 თავის ქალა, ხოლო ადრე შუასაუნეებიდან – 357, რომლებიც მოპოვებულია სხვადასხვა არქეოლოგიური ძეგლიდან. კვლევაში ჩართულია პალეოდემოგრაფიული კვლევის მეთოდები, შედგენილია მოკვდაობის ცხრილები, მოსახლეობის სქესობრივ-ასაკობრივი სტრუქტურა და ასევე გამოყენებულია „სიცოცხლის ცხრილი“. მოკვდაობის ცხრილების საფუძველზე გამოთვლილია კაცების და ქალების სიცოცხლის ხანგრძლივობის საშუალო ასაკი, ასევე სხვადასხვა ასაკობრივ ჯგუფში გარდაცვლილი მოსახლეობის პროცენტული განაწილება, სქესთა შეფარდება. დემოგრაფიული კვლევისთვის სტატისტიკური ანალიზიდან ყველაზე ინფორმატიული არის სიცოცხლის ცხრილი. სიცოცხლის ცხრილი შემუშავებულია სხვადასხვა მკვლევრების მიერ. სიცოცხლის ცხრილი წარმოადგენს ასაკობრივ მაჩვენებელთა სისტემას, რომლებიც ზომავენ მოკვდაობის დონეს, სიცოცხლის ხანგრძლივობას და სხვა. არსებული მონაცემების შეჯერების ფონზე დგინდება რომ გვიან ანტიკური ხანის მოსახლეობა უფრო დიდხანს ცხოვრობდა, ვიდრე ადრე შუა საუკუნეების. როგორც გვიან ანტიკურ, ასევე ადრე შუა საუკუნეებში მამაკაცების რაოდენობა ბევრად ჭარბობს ქალებისას. ჩვენს ხელთ არსებული განათხარი მასალით, გვიან ანტიკურ ხანაში 61,7 პროცენტს (145 ინდივიდი) მამაკაცები, ხოლო 36,5 პროცენტს (86 ინდივიდი) ქალები შეადგენენ. ხოლო 1,7 % შეადგენენ ბავშვები. რაც შეეხება ადრე შუა საუკუნეების საქართველოს მოსახლეობას – 60 % მამაკაცს განეკუთვნება, ხოლო 37,5 % ქალბატონს. მხოლოდ 2,5% შეადგენენ ბავშვები.

ადრეულ შუა საუკუნეებში მოსახლეობა უფრო მცირე იყო, სიკვდილიანობის მაღალი მაჩვენებლებით, განსაკუთრებით რეპროდუქციული ასაკის ქალებში. სიცოცხლის საშუალო ხანგრძლივობა 42,7 წლამდე შემცირდა, რაც მიუთითებს უფრო მძიმე საცხოვრებელ პირობებზე გვიან ანტიკურ პერიოდთან შედარებით. შედარებითი ანალიზი ცხადყოფს, რომ გვიან ანტიკურ ხანაში უფრო ხელსაყრელი გარემო იყო სიცოცხლის ხანგრძლივობისთვის, შესაძლოა ისეთი ფაქტორების გამო, როგორიცაა ვაჭრობა, პოლიტიკური სტაბილურობა და სასოფლო-სამეურნეო პრაქტიკა.