Journal of Applied Medical Sciences, vol. 2, no. 4, 2013, 53-60
ISSN: 2241-2328 (print version), 2241-2336 (online)
Scienpress Ltd, 2013

A Socio-Historical Survey of Brain Diseases in Greek Post-Byzantine Society

Anastasia K. Kadda[1], Nikolas S. Koumpouros[2] and Aristotelis P. Mitsos[3]

Abstract

The aim of this study is to present a socio-historical survey of brain diseases and their treatment in Greek post-Byzantine society. For this purpose, research was carried out using Manuscript No. 218 of the Iviron Monastery of Mount Athos. The analysis of this manuscript produced the following conclusions: a) brain diseases are prominently discussed and described in the manuscript, b) the influence of ancient Greek and Roman medicine on Byzantine and on post-Byzantine medical science and society is manifested in the etiology, symptom-matology and therapeutic means of treating brain diseases, c) social factors were seriously taken into account as an important aspect of therapeutic procedure, d) many therapeutic methods were proved to be socially beneficial, e) brain disorders and diseases appear to be diachronic.

Keywords: Brain diseases; ancient Greek medicine; Byzantine medicine; social factors; socially beneficial therapeutic means;

1 Introduction

The apprehension of health and illness and the type of medicine used at different times and places are models which change according to each epoch and the prevailing social conditions. In other words, the main criteria for a society's definition of health/illness do not remain static throughout history; instead, they are constantly redefined according to the broad social and cultural frame in which they develop and according to the social concepts of each historical period, thus conferring a social dimension and background to health/illness, a fact which applies to all periods of time in history.

The beginnings of medical science in the West were marked by the birth of scientific medicine in Greece during the 5th century B.C with the work of Hippocrates. He rejected

[1]National and Kapodistrian University of Athens, Department of Nursing (Scientific Collaborator).
[2]S.S. Filippo e Nicola Hospital, Avezzano, Italy.
[3]401 Athens General Army Hospital, Department of Neurosurgery.

Article Info: *Received :* July 28, 2013. *Revised :* November 12, 2013.
Published online : December 1, 2013

the traditional means long used by the priestly caste (e.g. suggestion, self-suggestion, oneiromancy), asserting that the causes of disease are both internal and external and do not originate from 'divine punishment', this new perception giving rise to the beginnings of scientific experimentation. Later, during the Byzantine age, the main source of medical knowledge remained the written works of the ancient instructors, especially those of Galen and Hippocrates, which had been handed down from generation to generation, either in their full form or in sections, and selectively transcribed.

During the centuries which followed the Fall of Constantinople and during the Ottoman rule of Greece, when superstitions and magic were dominant as well as religionism, disease was again considered to be meted out by God as a form of punishment. During these years, the Greek people lived in relative ignorance and mental darkness, while their scientific doctors as well as other intellectuals emigrated to the West where their anciently derived knowledge was disseminated to the scholars and intellectuals of Europe. Nevertheless, the ancient works inherited by Greece and Byzantium, many of which were texts of ancient medical science-that is, works of the collections of Hippocrates, of Galen, of Dioskouridis, etc,-remained to inspire the newly awakening spirit in the eastern European lands. Among these were also the studies and writings of Byzantine doctors such as Actuarious, Aretaios, Orivassios, Paul of Aegina and others, although these were mainly copies of ancient medical texts with some interesting additions.

These very old manuscripts, products of the wisdom of the ancient doctors, along with the nostra which contained systematic medical instruction for treatment of the diseases, were regarded as invaluable intellectual possessions, preciously handed down from generation to generation over the intervening centuries [1]. They contained intricate descriptions of numerous diseases listed according to each part of the human body, starting from brain diseases and systematically dealing with each successive part of the human body, sometimes also providing more general information concerning human physiology,

An admirable example of a post-Byzantine manuscript from which vital information may be derived about brain diseases, among other diseases, and their treatment is Manuscript No. 218 of the Iviron Monastery of Mount Athos [2], which is the main research source of the present study.

2 Brain Diseases in Post-Byzantine Greek Society based on the Medical Manuscript

Manuscript No. 218 of the Iviron Monastery of Mount Athos is a truly impressive document, finely laid out and striking in its content. Firstly, we have the proem, which presents a hierarchical listing of the various diseases that develop in each part of the human body, with the human head occupying the most important place since it was regarded as "the seat of the mind", "the intelligence of the soul's logic".

Proceeding to the texts/nostra of this manuscript, we see that a large number of brain disorders and diseases are reported such as: "headache", "migraine", "brain inflammation", "frenzy", "lethargy", "deep sleep", "sodden sleep", "coma", "catatonia", "memory loss", "dizziness", "epilepsy", "stroke", "loss of mind due to a disease", "lethargy", "intoxication due to wine". These are accompanied by dermal diseases of the head such as: "falling hair", "pityriasis", "phthiriasis", "cutaneous inflammation",

"alopecia", "hair depilation". One may also observe a classification of 'chronic brain diseases' ("lethargy") and 'incurable brain maladies' ("apoplexy").

A description of the symptoms of brain diseases follows, as, for example: "*About headaches caused by combustion because of wine and oil or fever:* these are accompanied by pulsate pain and a feeling of combustion and redness of the eyes[1] and insomnia", or *"About lethargy*: the lethargy that follows a light fever followed by diarrhea and memory loss".

The causes of brain diseases are then presented, such as "the surplus of bad humors caused by the dominance of one of the four humors: salty, nitrous or choleric phlegm, blood or blond choler" Some examples are: "*About pityriasis*: It is caused by an excess of bad humor in the head, or by salty phlegm, or choleric phlegm, and dark blood"; "*About madness: the cause of phrenitis is the surplus of humors: blood or blond choler*" or by conflicting humors "*About sleepless coma"*: It is caused by the conflicting humors of choler and phlegm", or by the corresponding 'qualities' (hot, cold, moist and dry, as defined by Aristotle); "*About memory loss*: memory loss happens due to coldness and dryness".

However, some diseases are reported to have other causes such as internal/organic. For example: "*About headache:* It is due to wind or it is attributable to spirits".

With regard to the therapeutic means and methods[1] used for dealing with brain diseases, we typically see the following: a) Medicaments derived from plants or animals, mineral or chemical, as for example: "Of the brain's purgative": A puree made of beetroot should be poured through the nostrils, or a puree of cyclamen should be poured through the nostrils; b) A salve such as the pain-relieving salve of Apollonios[2] ("*pain-relief according to Apollonios*: suitable for fractures, headaches, etc."); c) Medicaments/antidotes with therapeutic properties for a large number of diseases such as "acid honey" and "seal of Limnos" ("*About acid honey:* Acid honey is prepared this way. We take four liters of good vinegar, one liter and four ounces of salt, thirteen liters of honey, eight liters of water: this is good for the epileptic", "*Concerning the seal of Limnos:* The seal of Limnos has the power of an antidote, an excellent medicament"), or even other antidotes such as the antidote salutary for epilepsy and insomnia ("*The salutary antidote*: it is good for epilepsy during the intermission and the exacerbescence; it can stop mania and calm down frenzy and it can induce sleep in those who cannot sleep").[3] We also note the use of special preparations for certain diseases such as a "*nerves calmative*" for "pain in the nerves".

Phlebotomy of the head is additionally mentioned as an especially common therapeutic method of the time: In "*About phlebotomy of the head*", the number of veins of the head is recorded as well as their exact location ("How many veins the head has: it has twenty veins, two veins behind the ears, two veins in the upper section and two veins behind the neck"), and following this is an account of the manner in which phlebotomy is performed to the head as well as the brain diseases for which it is useful: "When you want to take blood from the head because of pain, put the four fingers of one hand all together onto one ear and the four fingers of the other hand onto the ear. There are two veins in the meninx and if you take blood from them it is good for your eyes. There are two veins under the tongue as well and this technique is good for every mouth disease".

In the same way, dephlegmatisations are described: "*About headache*: you should void the whole body through phlebotomy and expurgation", as well as other therapeutic means such as: compresses ("*Compress for the pleura"*), plasters ("*About night disturbances:* plasters on the chest, adding butter or anise"), embrocations ("*About memory loss:*

rubbing the head with oil") and spa therapies ("*About arterials:* tepid baths are beneficial").
In addition, we often find reports in the text of diagnostics of brain diseases such as, for instance, observation of the patient's complexion ("*About alopecia and hair depilation*: they are obvious from the complexion and the surplus of the humor").
Apart from diagnosis, of great importance for the society of the time, as it had been for the ancient renowned physicians, Hippocrates and Galen, was the prognosis of diseases including the diseases under study, this being confirmed by the fact that an entire segment of the manuscript text is dedicated to prognosis and to the factors on the basis of which prognosis is made, such as the 'temperament' of the patient, the time of year, the age and the physique of the patient, atmospheric conditions and the periods of exacerbescence. As is mentioned in the text: "*Prognosis of the disease is made by assessment*: During the *assessment* of this disease, you will take into consideration the 'temperament' of the patient, the time of the year and the age and the physique of the patient and the atmospheric conditions, the periods of exacerbescence".

3 Socio-historical Survey of Brain Diseases

Based on the evidence derived from the texts/nostra of the historical source under review, historically, among the diseases of various organs of the body described, brain diseases, some of which are chronic or incurable, occupy an important place in the nosologic profile of the Greek post-Byzantine society and time. It should be mentioned in passing that descriptions of brain diseases are to be found in the medical records of many ancient peoples, one outstanding example being Hebraic medicine, elements of which are evident in the Bible where one often comes across accounts of, for instance, cerebral accidents. Meanwhile, with regard to brain disorders during the Byzantine era, it is also of interest to note that there is documentation recording the fact that several Byzantine Emperors suffered from a number of brain diseases, among which were vertigo, epilepsy, phrenitis and 'unreasonable behavior'[3].
As mentioned in the previous section, a major characteristic of post-Byzantine medicine is the perpetuation of ancient Greek medicine and therapeutics, and very brief reference could be made at this point to the medical studies of two of the most famous of the ancient Greek physicians, Hippocrates (460-370 BC) and Galen (130-201 AD). Thus, in the context of the present study of brain disorders in the post-Byzantine era, a bibliographical study of Hippocratic medicine will reveal approximately 42 diseases described by him, this number including numerous brain diseases such as: "apoplexy", "hemiplegia", "para-plegia", "nerves' paralysis", "lethargy" etc [4, 5, 6]. Apart from Hippocrates, Galen's many works also contain several reports of brain diseases such as: "headache", "migraine", "apoplexy", "epilepsy", "scotoma", "frenzy" [7].
Research has revealed that the manuscript under study is based primarily on the works of these two ancient physicians, Hippocrates and Galen, but also on the science of other prestigious doctors, both Greek and foreign, into whose knowledge, moreover, the advances of Byzantine medicine and therapeutics were also incorporated. Thus, the influence of the past on post-Byzantine medicine is obvious, the numerous both Greek and foreign names and techniques of antiquity and of the Byzantine age that are recorded in its pages lending the Manuscript in question a distinctly scientific character. In addition, the presentation in this manuscript of the ancient system for the recording of

therapeutics [8] from head to toe unmistakably shows the profound and continuing influence of ancient Greek and Roman medicine (Dioskouridis, Galen) on Byzantine and on post-Byzantine medical science.

The significance attributed to the brain, which has historically and traditionally been regarded as an organ of paramount importance, is obvious in the works of ancient Greek doctors and especially in those of Hippocrates and Dioskouridis [9], and this perception remains unaltered within the works of the age under review.

With regard to the manuscript in question, the description of the symptoms of brain diseases refers to the Hippocratic method and evaluation of the symptoms of these diseases as well as to the symptomatology/semiotics of Galen [10, 7]. There is moreover reference to the differentiation of the functional symptoms of the disorder from the organic symptoms and from the symptoms which manifest under the excessive secretion of a humor, a differentiation which is considered as a prerequisite for the diagnosis of the disease.

From the causal analysis of the diseases under study, as mentioned above, considerable reference is made to the Hippocratic and Galenic point of view concerning the role of the outer social environment in the manifestation of the diseases, this being attributed to a disharmony in the balance of the humors which may be due to unhealthful behavior, social milieu and environmental influences.

In the same way, diagnosis and prognosis also present features of the diagnostics of ancient peoples, including most importantly that of the Hippocratic method.

Hippocratic influence in post-Byzantine medicine is also evident in the dedication of a whole section of the manuscript to an analytical presentation of his views and theories on life and death. It is most interesting to note that this information was found recorded in a tome in his grave and was studied by Caesar's doctor. It included a wide range of 'secrets' of the medical art with a special report describing a great number of disorders such as "headache", "frenzy" and their symptoms.

Brain diseases are scientifically recorded during the Byzantine period as well, a prime example being those contained in a medical encyclopaedia written under the orders of Constantinos Porfirogennitos titled "*Compendium of the whole of the medical art"*. This is a work which has preserved a large number of the traditional practices of ancient scientific medicine and covers a great variety of diseases pertaining to every part of the human body, from head to toe. These are firstly intricately described, after which their main symptoms and causes are detailed and finally their cure is suggested with the listing of a number of prescriptions[4] [11, 12, 13].

Bibliographically, Byzantine medicine, which was applied in a wide range of both mental and physical disorders, cured a great number nervous disorders and brain diseases such as coma, tremor, Parkinson's disease, cerebral vascular incidents, memory loss, migraine, epilepsy, etc [14].

With specific reference to brain and nervous diseases, when we study the treatment of these as practised in the Greek lands during the post-Byzantine age from a sociological angle, we confirm the unbroken continuity of Greek tradition and heritage as regards all facets of medical/therapeutic views and practice. Thus, the diseases adduced in the manuscript under study not only clearly display numerous elements of the scientific knowledge of the ancient Greek, Roman and Byzantine civilizations, as well of several other ancient peoples, but also clearly reflect the scientific status of the society of the 16th and 17th centuries, a sum total of knowledge that comprised both a societal model and a

nosologic model which manifestly remained virtually unchanged from ancient times until the post-Byzantine age.

Moreover, the symptomatology provided for the diseases of the time, including brain diseases, clearly demonstrates the people's capacity of observation while also enlightening us as to the particular methodology used-i.e. the systematic discernment, study and recording of specific physical and mental disturbances-for the naming, clustering and explication of diseases [15].

The prognosis employed at the time also suggested a holistic approach to the treatment of the patient and his disease. As is well known, this is both a philosophy and a methodology which takes into account the sum total of the human being in determining the cause of manifestation of disease. Results are achieved by considering every ailment as a 'psychosomatic' problem stemming from the individual's psychological condition, this in turn strongly influenced by the patient's social circumstances, his society as a whole and the entirety of his external milieu and environment. It is an approach which, far from being static, dynamically changes, among other reasons because of the fact that variable factors, such as the periods of exacerbescence, are taken into consideration for the prognosis and diagnosis to be made.

In addition, the practice of painstaking diagnosis of all diseases, including those under review, gives evidence in the Manuscript of being socially very widespread and enthusiastically embraced. This is made abundantly clear via the account of the rich documentation that was in use at the time of a wide range of therapeutic techniques, of the numerous valuable tools available to the physician, of the meticulous classification and description of diseases, of the wealth of ancient knowledge preciously preserved, consulted and often supplemented. This wealth of data and knowledge obviously enabled the doctors of the time to practice their medical art efficiently and effectively, thereby assuring a broad spectrum of medical/therapeutic treatment for the entirety of society at a time when medical technology was still developing and, in many other places, hardly developed at all.

A major factor that we have concluded from the manuscript concerns the prudent adjustment of the recommended therapeutic means and methods according to the specific gender and age of the patient, a fact that proves that social factors were considered important and were borne in mind during therapeutic procedures and practice. Other confirmation from this document that therapeutic treatments were not generalized but were finely modified is evidence that each and every case of healing and medication was adjusted in accordance with the patient's personal attributes and traits, such as his strength, (for example: "*About lethargy***:** the strength of these individuals permits phlebotomy"), and this in turn was adjusted according to the precise type of disease as well as to whether it involved chronic or acute episodes or emergency cases.

An interesting example of the refinement of medical procedure as regards brain diseases in post-Byzantine times is the detailed description of phlebotomy to the head, as well as its positive effect for a number of diseases. The fact that phlebotomy was an important and beneficial therapeutic means of medical treatment during this age was based on the fact that it had been deeply investigated by both ancient and Byzantine medicine, and chiefly in the works of Orivasios [12] who describes the subject in great detail.

The continuity of the prevalence of brain diseases and the frequent reports of them down through the ages and in a wide array of societies provides indisputable proof that they are diachronic. Today, many of the brain disorders mentioned in this article (e.g. headache, migraine, coma, catatonia, memory loss, epilepsy, stroke, etc.) are still prevalent and

being treated, albeit via incomparably more efficient techniques and methods. Even those diseases brought on by human folly, and which also received extensive coverage in the ancient texts, are still evident in our modern world, one prime example being "intoxication from wine", a disease of modern civilization which is seen to be on the increase in many societies.

At the same time, this store of data substantiates the continuity and diachronicity of the Greek people, their society, their mentality and their heritage of ancient knowledge, this permanence of mindset dating from Homeric times right up until today.

4 Conclusions

The accounts and descriptions of brain diseases and their treatment that are found in Manuscript No. 218 of the Iviron Monastery of Mount Athos, as these were applied in the Greek lands during Turkish rule and specifically in the 17th-18th century, are seen 1) to consistently follow in the footsteps of the earliest Western physicians and their knowledge, mainly ancient Greek and Byzantine, and thus to offer a faithful reflection of the medical art of ancient times 2) to record the same ailments that prevailed in preceding ages and societies and that often persist in our own presentday societies; and 3) to demonstrate how vital is the role of the individual's social environment in the manifestation of the diseases under study and in the management of their treatment.

In summary, Manuscript No. 218 of the Iviron Monastery of Mount Athos has proven to be a truly precious literary source, recording as it does not only the medical knowledge and practice of its own age, this based on entire centuries and millennia of ancient accumulated data, but also providing an extraordinary window onto both the social norms and customs as well as the philosophical outlook of the society of its time.

Notes:

[1] The therapeutic means and methods mentioned are common to the medical practice of both ancient Greek and other ancient peoples, as well as to the Byzantines and Ottomans.

[2]Since another reference is made to Apollonius, we conclude that his influence on the medicine of the time was unchallengeable

[3] Antidotes and salves are often mentioned in the manuscript. These are said to cure a great number of somatic and psychosocial diseases, exerting different effects according to the individual's temperament, social milieu and natural environment. Some of them are specialized for the treatment of certain diseases, while others are recorded as being used only by the higher social class, this implying a high status of medicine in the society of the time, not all of it, however, available to the population as a whole.

[4] It is of interest to point out that a comparison that we made of our investigation into the manuscript under review with the work of Sonderkamp demonstrated a considerable degree of congruency between the two.

References

[1] S. Haviara-Karahaliou, Folklore and medicine, Reprint from Issue 39 of *Newsletter of Institution of Corinthian Studies*, 2006, pp. 4-5
[2] A. Kadda, Social-historical approach of health, illness and medicine in the Greek area during the 16th-17th century: the example of manuscript No. 218 of the Monastery of Iviron of Mount Athos, Athens: PhD, 2007
[3] N. Papadimitriou, Diseases and accidents in imperial families of Byzantium, 1996
[4] S. Marketos, Hippocrates from the island of Kos, *Kathimerini*: SevenDays. 1997, 23700: 1,
[5] V. Nutton, "History of therapy", Proceedings of the 10th International Symposium on the Comparative History of Medicine-East and West, Japan: Ishiyaku Euro America Inc. Publishers, 1990
[6] Th. Ntolatzas, "The evolution of medicine through art", Athens: Grafida, 1999
[7] K. Mitropoulos, Galenos, Salonica: *Medical Journal "Galenos*: 1962, pp. 125-129, 134-135
[8] G. Rigatos, "Ancient medicine in our popular tradition", Athens: Beta, 1999
[9] D. Lypourlis, Hippocratic medicine, Pharmaceutical plants: http:/www.papoutsakis2.blogspot.com, 1983
[10] G. Pournaropoulos, "Introduction to Hippocrates", A΄, Athens, 1967
[11] E. Glykatzi-Arveller, "Science in the years of Porfirogennitos, Medical Byzantine Manuscripts", Domos: 16-28, 1995
[12] G. Pournaropoulos, Contribution in the history of Byzantine medicine, PhD under lectureship, Athens, 1943
[13] J. Sonderkamp, "Theophanes Nonnus: Medicine in the Circle of Constantine Porphyrogenitus", Symposium on Byzantine Medicine, Dumbarton Oaks Papers: 34, 1984. Washington: J. Scarborough pp. 29-30
[14] A. Eftihiadis, "Introduction into Byzantine therapeutics", Athens
[15] K. Hrissanthis, "Theriaca of Cyprus", Cyprian Studies: C΄, 1940