

ORIGINAL ARTICLE

Myth-Centered Medicine in Ancient Greece and the Cognitive Effect Relationship between Medical Notions and Treatment Methods

Abstract

Medicine is a manifestation of social life and intellectual infrastructure in every society at any time in history. As a technic focusing on needs, its existential roots can be found in any place in different eras. Although in pre-historic period medicine was at myths' service which was enriched by imaginary necessities, partial and iconographic approach, it is not possible to strip off the aspects accordant with reality. In fact, the myths gave meaning to minor instances of mythology in human life in order to bring an answer worthy of human understanding to needs and proportions of the mysterious life in this world. This answer, certainly has roots in reality and affects one's individual and social life. In ancient Greece, the mythical thoughts gave meaning to people's lives. In fact, understanding life was in the same direction with existential understanding of myths. Continual needs of mortal human linked to solid thoughts, which resulted in deep beliefs inclined to reality. In Greek mythology, healing God, Asclepius, had a great role in medicine. Disease and health depended on the interaction between people, and the temple and the priests, and of course, the most prominent of all, on deep beliefs. Although the therapy factors were more spiritual and supernatural, gradually experimental behavior continued and, as a result, it was a beginning for the emergence of scientific experimental medicine. The idea that visualized tangible factors for each occurrence finally resulted in a mental synchronization. Eventually, the whole concept became generalizable and paved the way for empiricism and experimental medicine.

Key words: Ancient Greece, History of Medicine, Mythology, Treatment Methods

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Introduction

Every nation has demonstrated its intellectual and cultural evolutions differently, which in turn were manifested as religious traditions and mythical gods/goddesses in ancient Greek. Before adopting a rational method, early humans were searching for irrational methods because of the primitive requirements and circumstances as they lacked a clear and realistic understanding of their surroundings. Hence, natural events and elements such as day and night, light and dark, storm and thunderbolt, draught, fertility, pain, and disease led to the creation of different gods to form the basis of the primitive beliefs and religious rituals¹. Human mental needs and the unknown anxiety governing his thoughts made him create and imagine the causes and concepts of natural elements and phenomena and breathed life into them to make them mythical gods with special customs and traditions². This trend was essential to human minor mental image. According to ancient beliefs, diseases are the results of deeds of evil spirits, demons, and devils. Therefore, to drive them out of the body of patients, they had come up with ideas for actions taken by priests, spiritualists and Zoroastrian magis. In general, the theories of universe were the answer to scientific issues in life³, and the interaction between thought and action has always existed in all aspects of human life, including the medical one.

1- Problem Statement

Given the place of medicine in the history of science and its importance throughout the history in different time periods, scholars studying the philosophy and medicine gained an insight into human thoughts with regard to his personal and social life. This is because of the nature of medicine that has a social in addition to its personal dimension. Since medicine is a profession fitting human nature, there is a reason for it, and diseases appeared wherever human lives because of the mortal nature of continuity. Hence, there have always been treatment methods. Pain has always been the man's companion, and individuals have always tried to soothe his pain. This has formed the basis of medicine in all periods⁴.

Medicine can be analyzed and approached from two dimensions. One dimension includes the treatment methods and practices done as solutions to diseases by physicians, and the other dimension includes the intellectual basis that made the medic act in accordance with the approved principles. However, any viewpoint on these two dimensions depends on the definitions of health and disease, which reflect man's physical status and are closely related to human knowledge. These definitions play a substantial role in clarifying the basics of medicine as a science. In ancient Greece when human

- 1- Fatemi, 2008: 5-6.
- 2- Fatemi, 2008: 13.
- 3- Azkayi, 2012: 129.
- 4- Elgood, 2010: 9.



mind was occupied and influenced by myths, medicine was being practiced under the influence of myths as a dimension of social life in line with fractional mentalities. However, the philosophical place of this thought can be also explored and analyzed^{5, 6}. The present study was an attempt to determine the epistemological orientation of the selection of each mythical element and the actions and deeds associated with it.

2- Research Significance and Rationale

Scientific events have always been studied in the context of history, and the influential factors are described as interconnected to a descriptive approach. This research is important as it went beyond the description of phenomena and approached the examples of medicine in this historic period with a holistic approach. This research was an attempt to carry out an epistemological and structural analysis of medical notions in the mythical period. It is known and accepted that understanding ancient nations was based on their mythical beliefs in a period of time, and many historians and researchers have provided reasons to explain it. However, a philosophical analysis of this intellectual atmosphere and actualization of objective events with subjective backgrounds is inevitable and will be a step toward garnering a deeper understanding of the trend of thought in the historic context. It was, therefore, an attempt to reach this goal.

Research Goal

1- The Worldview of Ancient Nations, Mythological Beliefs, and Perception of the World

In primitive societies, individuals believed a force governing the whole world and its evolution in order to explain the behavior of human beings and nature. They believed everything had a double nature, a spirit, and that the movement or lack of movement for everything originated from the presence or absence of the double, what was exactly like it. Hence, human needed mastery over the spirit of the nature to control it. They argued the spirit or the double was independent, and sometimes trades and interacts with human beings to change their fates. Therefore, they felt obliged to adapt the force to their desires with the aid of prayers and sacrifices⁷.

Undoubtedly, the connections among the gods and their relationship with natural elements and principles have indicated the fear of natural factors and the need for support in confronting these phenomena, which form the basis of the myths⁸. Hence, before the embodiment of the world with its complicated empirical attributes and characteristics, as an empirical container, the world was a collection of mythical powers and magical effects⁹.

Since the worldviews of ancient nations, especially that of

- 5- Robin, 1973: 33-34.
- 6- Flacelière, 1959: 45.
- 7- Zeymaran, 2013: 5.
- 8- Fatemi, 2008: 15.
- 9- Cassirer, 1953: 41.



the Greek, were closely related to the myths, it is necessary to describe the notion of myth to explain the worldviews. Mythology is a primitive knowledge aiming at explaining the odd, extraordinary, or frightening phenomena and events by attributing them to supernatural forces, gods, or evil spirits. They considered the myths, gods, and evil spirits to be forces upon which human was dependent. Human beings needed the attention and grace of these forces and had the fear of their anger and furiousness¹⁰. Myths provide a special insight into human existence. According to myths, the world and human life are based on and limited by a power beyond everything that can be controlled by man. In fact, myths make supernatural and spiritual beings real and earthly¹¹.

In an attempt to gain a better understanding, a structural similarity with the man's awareness and subjectivity was made to increase affiliation with that concept, and a myth-oriented human is not capable of understanding a power beyond that of his own. Hence, he forms an adaptation to increase his awareness of the concept and understand it more deeply. The person trying to understand a notion searches for its causes, but since he fails to find the actual cause and reason, he unconsciously thinks of a supernatural one, which are manifested as notions and concepts that can become objectified. With a basic understanding, man searches for what he understands and describes and models everything he faces in the form of his understanding. He creates a framework within which he tries to understand whatever he wants. (Figure 1)

10- Golchin, 2014: 72.

11- Bultmann, 1997: 26.

12- Capasso, 1986: 24.

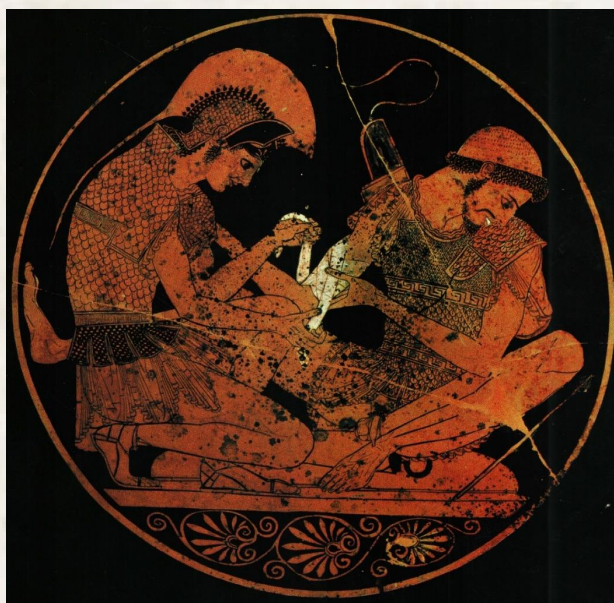


Figure 1. Mythological beliefs and treatment: Achilles wrapping a scar and Patroclus fighting in the Trojan War (It is the image of a cup discovered in Sosia which belongs to the sixth century BC and is currently protected in Berlin Museum)¹²

2- The Role of Human Perception in Mythical Worldview and Human Nature

Man first started examining the surrounding world with a sensory understanding and then travelled the path to fictionalization. A man with no knowledge of the world bases all his knowledge and understanding on what he sees in this path. Therefore, he tries to magnify the natural phenomena and discover the relationship between what happens and what he feels. To clarify and explain these events, he selects an approach that conceals his lack of awareness, which makes him frightened, and unveils the surrounding mysteries and secrets. He must identify the unknown phenomenon he observes to be able to relate to it. He recognizes the nature and extends his experience to the nature and the world.

The myth-centered human looks at these phenomena subjectively and searches for himself in the myths. He finds the universe in himself, and his intimate attitude to the universe enables him to explore it and think about it like a habitat. To know and understand the world, the myth-center human mingles in it inevitably. In the myth-centered approach, there is a close relationship between the identifier and the identified¹³. In general, the mythical period could be considered the childhood of perception and the period during which perception was at its most superficial yet inclusive level. The mythical human selected an actual approach because of his inability for a deep understanding and his fractional perceptions. However, he hides himself behind his own interpretations and thoughts. Therefore, perception is associated with manifestations of reality in each phase and its explorative nature is an important even on the lowest levels.

Hence, individuals living during the mythical period had a sensory worldview. Since using sensory experience is the first step in dealing with the surrounding environment, when he gains a direct understanding and becomes detached from the subject, his memory of the subject is mixed with his mentalities and leads to imagination and fractional perceptions (i.e. delusion). He selects a different language, and because of having a social life, he behaves in accordance with his understanding of the world and human beings in the context of life to meet his personal and social needs^{14, 15}.

3- Early Therapists and the Advent of Medicine in the Ancient World

Therapists have existed since the beginning of creation. They were human beings who treated patients or the wounded, or at least they took care of them in addition to doing their daily routines as sickness, injury and death have always been a part of human life. Since those days, many people have also

13- Zeymaran, 2013: 51.

14- Leclant, 2005: 1491-92.

15- Hamilton, 1978: 7.



been trying to solve these problems or prevent them. Hence, the history of medicine, i.e. the attempt made to discover, treat, and prevent diseases dates back to the creation of human being¹⁶. In each era, man has taken measures to soothe the pain and recover from diseases in response to his need for protection against diseases and pain, and some people become therapists because of their better experience or the existing necessities.

Ancient Greece, before the introduction of medicine as a science with certain practices and methods, was similar to other civilizations mixed with superstition and supernatural beliefs originated from myths. In Greek mythology, there are several symbolic medical figures, the most important of whom are Apollo, Chiron and Asclepius. In this triangle, the role of Asclepius, as a physician, is not as big as the role of Apollo. Apollo is a great god that owns health, and according to Olympus traditions, he is in charge of harmony of body and soul. Therefore, Apollo is in charge of health of soul, and Asclepius has the power to control the health of body¹⁷.

In Homer's period, Asclepius was an innocent physician who later became a god as Apollo's son. He learnt medicine from Chiron and was killed by Zeus' lightning to prevent him from immortalizing human with his art of medicine¹⁸. In fact, Asclepius' life cannot be separated from that of his father, Apollo. Although Asclepius learnt from Chiron applying medicine and healing, Apollo is known as the god of medicine in the old myths, and he is called the Healer¹⁹. In addition, there is medical information in Iliad by Homer. There are also references to two ancient physicians named Podalirius and Machaon, who were the sons of Asclepius. These findings reveal the religious origin of medical teachings²⁰⁻²³. As put by Ibn Jalal Andulusi:

“The Greek name Asclepius/Asklepios is derived from a word meaning glory and light and is considered as the origin of medicine. Moreover, no one can learn medicine and call himself a physician until he is as innocent, pious, and virtuous as Asclepius. This science should not be taught to evil human.” In his Hippocratic Oath, Hippocrates writes: “Asclepius ascends to the heavens in a column of light.”²⁴

Therefore, Asclepius had an elevated place in the medicine of ancient Greece. He enjoyed the special honors of gods in ancient Greece²⁵, and he was known and referred to with titles and nicknames, because of ancient Greeks' mental images of pain, treatment, and therapy. Hence, he is considered as a spiritual support for human beings. Greek physicians probably started their first medical research with Asclepius or his temples. As stated, Asclepius was not a god at the beginning. He was a skilled physician that later was known as a

- 16- Yount, 2001: 15.
- 17- Fatemi, 2008: 374.
- 18- Ronan, 1983: 120.
- 19- Fatemi, 2008: 368.
- 20- Sarton, 1952: 353.
- 21- Roux, 1976: 29.
- 22- Vernant, 1990: 43.
- 23- Finley, 1993: 118-119.
- 24- Andulusi, 1970: 65.
- 25- Schmidt, 1983: 23.



god and became the center of this therapeutic religion in the 3rd and 4th centuries BC²⁶. The research by Greek physicians was probably inspired by this god.

4- Methods of Treatment in Temples

In the ancient world, diseases were attributed to the anger of some gods, who were asked for help to treat diseases²⁷. In ancient Greece, the magical force involved in the treatment of disease was attributed to Asclepius, and patients were taken to his temple²⁸. However, since human had no idea of the causes, factors and nature of disease, this attitude of ancient Greeks was normal and natural. Therefore, he was rightful to attribute events that he had no control over to a being that was more powerful than him and was his support.

The temples were visited by pilgrims who went to those places to ask for help and have their diseases cured. Some of the therapeutic temples documented the steps of treatment and kept the documents in somewhere safe²⁹. Certain methods and rituals were held in Asclepius' temple for the treatment of illnesses. After performing a special form of ablution, the patient would reside in the temple and describe his dreams to the priests who helped him cure his disease. All the wise temple workers and priests tried to improve the quality of the stay of the patient in the temple and to ensure the patient's peace of mind, trust, and complete reliance in god. The morning after the night of the stay in the temple, the patient would talk about his nightly experiments and the extraordinary incidents he had witnessed in the sacred place. The most important event was the dream the patient had, and the priests would interpret the dream to gain a better understanding of the patient's needs. However, the details of this method varied by region, and its efficiency depended on people's duty in these temples³⁰.

The methods practiced in some temples were completely superstitious, but some temples used scientific methods. It is evident since the rituals of residence in the temples were performed satisfactorily, the outcomes were great. The rituals included suggestion and indoctrination³¹. As mentioned, suggestion was highly valued in treatment methods used in temples. In other words, by fully trusting and believing the temple and the priests, the patient would become certain about recovery, and the resulting mental peace would improve his physical status. In addition, since they considered the god as the only and the most certain factor of treatment, they would stay in the temple with complete trust in gods. In addition, the belief in power of gods to control life and death was another factor involved in treatment. Hence, even if the method failed or the patient died, they would attribute

26- Lindberg, 1992: 154.

27- In this regard see the valuable work of Claude Mossé called "Politique et société en Grèce ancienne, Le «modèle athénien»" and the work of the Egyptian, Serge Sauneron titled "Les prêtres de l'ancienne Egypte" who described the behavior of Greeks and Egyptians in respecting their gods. Of the classic and ancient Greek works, the book by Plutarque of Chronea, the first and second century historian, and his important essay titled "Sur les oracles de la Pythie" must be taken into account.

28- Hull, 1965: 94.

29- Golchin, 2014: 261.

30- Glotz, 1968: 307.

31- Sarton, 1952: 354.



it to the person's vices and the anger of gods. As a result, the beliefs of other people were not questioned, and the public would remain faithful.³²

The main concern of these temples was mental treatment, and the factor securing the mental harmony and physical health manifested as a mythical yet divine or evil symbol to reflect the spiritual relationship between the art of medicine and the soul. Hence, this expression of the physical and mental health in the form of symptoms and signs is spiritual and symbolic. The interpretation of the Asclepius myth explains the major issue of treatment of body and soul³³.

However, the type of medicine in ancient world has also been studied in this paper with regard to mythology because aside from the patient's subconscious and the mental dimensions of his treatment, other treatment methods were also adopted in temples. As put by George Sarton, medical methods varied by region, and thus they were sometimes superstitious and sometimes quasi-scientific. However, there is no evidence of the medical works of priests in temples, and these individuals were only the mediators connecting patients to gods³⁴.

They did not act as therapists in the temples and as it was stated, they would conduct religious rituals and record the phases of treatment. These records and notes revealed information on the patient's condition and the observations. Since the first step in treatment is observing the patient's condition, the researchers or physicians think of this act as a means of understanding and discovering patient's history and treatment methods. These observations and understandings led to the formation of non-spiritual medicine over time because consecutive experiences result in a holistic mindset. In any case, every tradition and event in the history of science had consequences, which may not be essential to the science but contribute to it and open a window to a different horizon.

The main process of treatment in temples was centered on sleep therapy or dream therapy because they assumed the patient was a pilgrim in a special place and has special dreams or receives instructions that eventually led to his treatment. For instance, the pilgrims of Asclepius' temple were expected to bathe, pray, make sacrifices, take laxative medicine, eat cautiously, exercise, and relax. They also had to appreciate the gods by bringing gifts to the temples³⁵. Evidently, although the natural methods were the introduction to treatment in the temples, these methods were the basis and core of treatments.

Since human body always continues a predetermined path, and since this world has an inherent system and structure, treatment is considered as a contribution to the survival of

32- Classic Greek and Roman historians have used deep descriptions to explain the attitude to gods, specially in ancient Greece, in connection with medicine, politics, and political relationships among Greek government states, and the conclusion of fights between the governments and cities that would result in the defeat of one side. For instance, in his "Bibliothèque Historique", Diodore de Sicile, the historian of the first century BC, states that Sparta was defeated by Athens, "Sparta committed unforgiven sins and was punished." see: Diodore de Sicile, 2005, book 15.

33- Fatemi, 2008: 374-375.

34- Hull, 1965: 95.

35- Lindberg, 1992: 154.



the body. Therefore, treatments in temples explicitly involved methods of prevention, and thus the treatments were effective because of their preventive nature. In fact, they used methods of physical treatment, which explains the quasi-scientific methods of temples.

5- Superstition and Magic in Medicine and Pharmaceutical Treatment

Superstitious practices were also evident in the performance of temples. Superstition is an action based on a partial perception of the environment, which gives a vague image of the environment and future or present events by simulating and integrating mental notions into the vague reality. This image results in special behaviors in an attempt to link the real objective world to the subjective world. Superstition is, in fact, a manifestation of real world fear, and magic is a means of confronting this vague fear.

Magic is an action taken by humans and has given the link between the man and nature, the magician or the subject of the magic is invited to say certain words and perform special rituals to attain the desired goals. Therefore, magic functions along with the unknown rule governing the world³⁶. Magic was considered to reflect the views of all beings on the nature. This world was considered the one full of hidden forces and spirits governing and ruling human beings. The magician was in charge of taming these forces and making the spirits cooperate with the individual. Magicians would say words, cast spells, and make ointments because they perceived the world as the world of empathy and sympathy. Magic was the world of links and connections rather than the world of independent objects and bodies. This world was based on human mutual relationship with his life and the surrounding environment. In this world, forces were personified and had power³⁷. A magician was capable of deep understanding of general natural relationships. His tricks were sometimes wrong but would give an empirical understanding of impossible events. For example, the constituents and ingredients of the ointments were first selected because of their magical significances, but their failure or success would prove their effectiveness or ineffectiveness. A collection of knowledge was formed overtime and was expanded with further human experiences³⁸.

Magic can be explained by the influence of spiritual concepts and notions on ancient traditions, which was aimed to fight mental and physical diseases. In fact, a disease was considered to be the physical punishments for a soul. For example, the treatment of the soul by body, which was controlled by Asclepius, is a symbol that suggests that the god of medi-

36- Golchin, 2014: 223.

37- Ronan, 1983: 14.

38- Ronan, 1983: 15.



cine cures the physical punishment resulted from vices³⁹. On the other hand, Greek physicians used herbs, and individuals known as the followers of rhizotomy⁴⁰ (the collectors of roots) were preparing the herbs for centuries. They would collect the plants for medical and magical purposes. Therefore, considerable information and knowledge of properties of the plants had been collected in different periods⁴¹. Those who practiced pharmacology and botany tested many plants to discover their properties and forces. However, they were not capable of providing rational reasons for the properties of these plants, and thus, their knowledge was mixed with magic and spells. For instance, they would take superstitious actions to cut and collect the plants. They also had to cut the plants by saying special words, performing spells, using certain instruments, and performing certain rituals. In general, it could be stated that each step of the process of collecting herbs was mixed with a magical belief⁴².

Conclusion

Medicine is one of the manifestations of human social life, which is eternally connected to the public mindset. The bases of every profession are first of all personal and social needs and then the intellectual and cultural mindsets governing the society at a special time and place. The factors allowing for the formation of a science or profession are the links between different components of a social need. Since the need for medicine is undeniable for human beings, the related manifestations and principles are in line with the public mentality and beliefs. In ancient Greece, the myths governed the lives of human beings, and human belief in myths enabled him to link his imaginations to reality. This is because man had no sanctum other than the mythical gods and inevitably had to imagine gods in the form of natural and earthly beings to seek for their help. Temple-based medicinal practices, which were accompanied by religious rituals and magic explained the relationship between reality and public mentality in the context of the unique mythical worldview. When man chooses non-empirical treatment methods to soothe his physical pain, it is thought that the mythical mentality and mindsets are superior to realism, and other dimensions of life are manifested as a result. When human mind was governed by myths, the life of the soul depended on physical health, and the harmony of desires for understanding and knowing human organs and health conditions enabled the science of medicine to take basic treatment actions to treat human body. This double argument explains the necessity of physical and mental interpretations of medical myths.

Medicine is a profession that is centered on treating physi-

39- Fatemi, 2008: 375.

40- The followers of rhizotomy were in charge of collecting herbs and cutting roots. They did this by performing rituals and cutting plants that would be based on a special viewpoint rooted in mythical thoughts and thinking. For instance, they had to say words and cast spells while cutting the plants and had to perform special rituals (Sarton, 1952: 335).

41- Ronan, 1983: 120.

42- Sarton, 1952: 355.



cal diseases, but when the traces of religious or supernatural factors are observed in medicine, we have to discuss the effects of the predominant public mindset on its physical and material manifestations. We have to realize that medicine is deeply rooted in the cultural layers of society. In any case, in ancient medicine, specially the ancient Greek medicine, myths had a significant role in treatment. This relationship was the result of the necessity of adapting the real world to the unknown causes, and defining these causes enable human beings to understand certain concepts with objective manifestations.

Historical research suggests although the ancient Greek medicine cannot be separated from mythical elements, the traces of experience and concern for reality were also evident. In other words, if they only had used magic and performed religious and superstitious rituals, they would have not been able to properly meet human needs. Therefore, by referring to the practices of medicine at that time, it can be implied that those practices were beyond myths and were also centered on human relationship with surrounding world with an approach, other than the public approach.

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References

- Andulusi S. [*Tarikh al-Hokama*]. Translated by Seyyed Muhammad Kazem Imam. Tehran: University of Tehran Press, 1970. [in Persian]
- Azkayi P. *Medicine in Ancient Iran*. Tehran: Moala publisher, 2012.
- Bultmann RK. *Jesus Christ and mythology*. New Jersey: Prentice Hall, 1977.
- Capasso L. [*La Médecine dans l'antiquité*]. Paris: Edition Atlas, 1986. [in French]
- Cassirer E. *The philosophy of symbolic forms*. New Haven: Yale University Press, 1953.
- Diodore de Sicile. [*Bibliothèque Historique, traduit et annoté en persan par E. Sangari & H. Bikas Shourkaei*]. Vol. 15. Translated by E. Sangari and H. Bikas Shourkaei. Tehran: Jami Publisher, 2005. [in Persian]
- Elgood CL. *A Medical History of Persia and the Eastern Caliphate: from the earliest times until the year A.D 1932*. Cambridge: Cambridge University Press, 2010.
- Fatemi S. *Greek and Roman myths or the myth of gods*. Vol. 1. Tehran: Tehran University Press, 2008.
- Finley MI. [*Les anciens Grecs*]. Paris : Edition Points, 1993. [in French]
- Flacelière R. [*La vie quotidienne en Grèce au siècle de Périclès*]. Paris : Edition Hachette, 1959. [in French]



- Glottz G. [*La Cité Grecque*]. Paris: Edition Albin Michel, 1998. [in French]
- Golchin P. *The battle between reason and myths in the ancient Greece*. Tehran: Negah-e Moaser, 2014.
- Hamilton E. [*La mythologie, ses dieux, ses héros, ses légendes*]. Paris: Editions Marabout & Verviers, 1978. [in French]
- Hull LWH. *History and philosophy of science, an introduction*. London: Longman Green et al London publisher, 1965.
- Leclant J. [*Dictionnaire de l'Antiquité, sous la direction de J. Leclant*]. Paris : Presses Universitaires de France, 2005. [in French]
- Lindberg DC. *The Beginnings of Western Science: The European Scientific Tradition in Philosophical, Religious, and Institutional Context, 600 B.C. to A.D. 1450*. Chicago: University of Chicago Press, 1992.
- Mossé Cl. [*Politique et société en Grèce ancienne, Le «modèle athénien»*]. Paris: Edition Aubier, 1995. [in French]
- Plutarque. [*Sur les oracles de la Pythie, Texte établi et traduit par Robert Flacelière*]. Paris: Les Belles Lettres, 2007. [in French]
- Robin L. [*La pensée grecque et les origines de l'esprit scientifique*]. Paris: Edition Albin Michel: 1973. [in French]
- Ronan CA. *Cambridge history world's science*. Cambridge: Cambridge University Press, 1983.
- Roux G. [*Delphes ses oracles et ses dieux*]. Paris: Les belles lettres, 1976. [in French]
- Sarton G. *A History of Science. Ancient science through the Golden Age of Greece*. Cambridge, Mass: Harvard University Press, 1952.
- Sauneron S. [*Les prêtres de l'ancienne Egypte*]. Paris: Edition Points, 1998. [in French]
- Schmidt J. *Larousse Greek and Roman mythology*. New York: Mcgraw-Hill publisher, 1983.
- Vernant JP. [*Mythe et religion en Grèce ancienne*]. Paris: Edition Points, 1990. [in French]
- Yount L. *The History of medicine*. Delhi: Lucent Publisher, 2001.
- Zeymaran M. *A transition from mythology to philosophy*. Tehran: Hermes Publication, 2013.

