

The Etiology of the Illnesses of the Psyche in the Hippocratic Texts

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Abstract

The Hippocratic Corpus played a key role to the disengagement of illness from the divine element that was believed to be to cause of all illnesses and injuries. Especially for the illnesses of the psyche (some call it “self” or “soul”), the Hippocratic physicians managed to recognize their biological origin and to create a “primitive” nosological structure. The aim of this paper is to identify the etiological factors of the illnesses of the psyche, according to the Hippocratic authors and to correlate them to modern medical observations. The Hippocratic physicians enumerated certain etiological factors for the occurrence of the illnesses of the psyche: imbalance of the humours, injuries of the head, extreme emotions, along with environmental features that were supposed to favor the appearance of such illnesses, such as the climate, the quality of the water, the winds, etc.

Keywords: Hippocratic medicine; History of medicine; history of psychiatry; psyche

Introduction

In the Homeric poems (8th century B.C.), the first written texts found in ancient Greek, everything is ruled by the will of Gods, including the human soul and body. Disease, injury or “madness” (1) is the result of the anger of some god, either due to his dissatisfaction or due to the negligence of some ceremony. The theory that emotions may cause a mental illness arises from the lyric poetry of the Archaic period (8th-6th century B.C.), but becomes more concrete in the Pre-Socratic philosophers, where a vast

discussion evolves, concerning the link between body and soul. Heraclitus (6th-5th century B.C) suggests that anger and pleasure are the main causes of the illnesses of the soul. Anger in particular, was thought to be the most difficult opponent of man and the attempt to overcome it may even lead to death (2). For Empedocles (5th century B.C.), the “passions of the psyche”, meaning the illnesses of the psyche, result from the disquietude of the soul and the symptoms are linked to its catharsis from guilt and the evil (3). The followers of Pythagoras (6th century

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B.C. and after) on the other hand, stress out the importance of continence in all aspects of life, since excesses may cause illnesses either of the body or of the psyche, or both (4), while Democritus (5th-4th century B.C.) believes that madness may be caused by a disturbance of the balance of the basic elements (fire, water, earth, air). In Praxagoras' texts (4th century B.C.), the evolution in the aetiology of the illnesses of the psyche is apparent: in the case of "phrenitis", he believed that an excess of "vital energy" existed around the heart, thus causing the illness. In the case of the "sacred disease" – epilepsy -, an excessive collection of phlegm in the area of the aorta is the cause of the illness, obstructing the movement of the "psychic pneuma" towards the heart, causing accumulation of pneuma that provokes spasms. The epileptic seizure ends when the phlegm leaves that area and the movement of the pneuma is restored (5). The term "pneuma" is used by almost all ancient philosophers and physicians, in order to describe the power that gives life to the body, which is renewed by the inhaled air in the lungs and the air that enters the body through the skin pores. After the air takes its initial form as a pneuma, it is then distributed to the liver, the heart and the brain, where it is transformed to "vital", "animal", and "psychic" pneuma respectively. The "psychic pneuma" was considered to be formed and stored in the brain, and then distributed to the rest of the body through the nerves. This type of pneuma was thought to be a basic element of the psyche and a power interfering to the activities of the nervous system.

2. Hippocratic views on the illnesses

The Hippocratic physiology and pathology are based on the belief that the human body consists of solid and fluid components that interact. The solid components are the different body parts that have a specific shape and characteristics that enable them to employ the fluids. The fluid components are the four humours (blood, phlegm, black bile and yellow

bile), along with all bodily excretions and secretions (urine, seed, milk, etc). Disease occurs when the balance of those components is disturbed, for example, when there is a larger amount of blood. Health is restored when the balance is restored, for example, by expelling the superfluous blood from the body.

"Passions" (πάθη) play a key role in the Hippocratic theory on illnesses of the psyche. For the Hippocratic physicians "passions" are all emotions in an excessive form. There is a bidirectional relation between passions and illness of the soul: while a passion may be the cause of an illness, the illness may also be the cause of a passion (6). Passions though, are not the only etiological factor of an illness of the soul. A pre-existing disease, an injury of the head and the disturbance of the humoral balance may also cause such an illness, while the winds, the temperature, the water, the age, etc. are additional etiological factors for the occurrence of an illness of the psyche. The excess of humours produces more heat, humidity, dryness or coldness in the brain, turning it unstable. In specific, a sudden increase of yellow bile in the brain brings unpleasant dreams and a sense of agony to the person, while black bile induces "melancholy" (deriving from the Greek words "μέλανα χολή", meaning black bile) and the prevalence of heat and humidity brings uncontrolled euphoria (7). As for the injuries of the head, the Hippocratic texts offer the first systematic approach to this subject, and in some cases, it seems that such injuries may provoke alterations in the mentality of a person: "loss of senses or delirium are bad symptoms" after an injury of the head, in the case of an open fracture of the skull, delirium occurs only if a vacuum has arisen (8), while in the case of a creviced fracture, "mania occurs, since the crevice is narrow and the serum may come in, but not come out" (9). It is important to note that the Hippocratic physicians used the term "delirium" (παραλήρημα) in order to describe a condition



where there is absence of coherence in the speech. The geographic position of the place of residence also seems to affect the mentality of a person. If a city is built in an area exposed to warm winds and protected by the cold ones and if the water is plentiful and brackish, the children are affected by spasms and dyspnoeas, symptoms that are believed to cause epilepsy (10). Furthermore, when north winds blow and dryness exists, the weather is considered to be favorable for the phlegmatic and humid organisms and for the women, while it is harmful for those being bilious, because they are “dried up” in excess and they are afflicted by xerophthalmia, by acute and long fevers, and in some cases, by “melancholy”, which was supposed to be a diseased biological and psychological condition caused by an excess of black bile. Certain seasons of the year favor some illnesses of the soul: in spring, manias, melancholies and epilepsies occur, while in autumn, epilepsies and apoplexies (8). Finally, people are affected by such illnesses depending on their age. For instance, young people are usually afflicted by epilepsy, while those having passed puberty suffer from phrenitis and the elderly from apoplexies (8).

2.1. Etiology of epilepsy

In order for the pathogenesis of the illness to be understood, the author of the treatise *On sacred disease* mentions some of his views concerning anatomy and physiology: the two large veins are the respiration organs of the body. They draw air in them, they distribute it throughout the organism “cooling” it and then, they let the air escape the body. The air constantly moves upwards and downwards and if it finds an obstacle in some point, it accumulates them and this point loses its powers. The reason for this, was considered to be the excessive phlegm in the brain that could block the veins, and could thus cool the blood, making it immobile, having as a final result, the disruption of respiration (7).

According to the Hippocratic physicians, the disease mainly affects those being in puberty and rarely occurs after the 20th year of age (7, 8). The reason why age plays such a key role in the appearance of the disease is because the size of the veins changes depending on the age, along with the quantity and the quality of blood.

The element of inheritance as an etiological factor of any illness, appears for the first time in the literature. The Hippocratic physicians believed that sperm carried the illness to the descendants and epilepsy could not be an exception from that rule (11).

Finally, many other etiological factors for the occurrence of epilepsy are mentioned, such as environmental conditions (7), the place of residence (10), the seasons (7), emotional and psychological conditions (7), injuries of the head (12-15), and gynecological problems (14), all of which were thought to be able to alter the predisposition of a person, in such a degree so as to be affected by epilepsy.

2.2. The etiology of “phrenitis”

“Phrenitis” (deriving from the Greek word “phrenes”, which is the area now identified as the diaphragm) was thought to be an inflammation of the brain accompanied by delirium and fever that was believed to be an acute condition (16). The Hippocratic texts are quite clear concerning the aetiology of phrenitis, through anatomical structures and the physiology of their function:

“Phrenitis occurs like this: the blood plays the most important role in intelligence; some even say that it is its most definitive factor. So, when the bile moves towards the veins and penetrates the blood, it disturbs the movement of the blood, it alters its composition, making it watery and induces elevation of its temperature; when blood heats, it heats the rest of the body as well; in this case, the person suffers from delirium and is unaware of himself, due to high fever



and to the alteration of the movement of the blood. Those suffering from phrenitis resemble to those who suffer from dementia when afflicted by melancholy; because the latter, when their blood is altered by bile and phlegm and melancholy occurs, they become delirious and some also develop mania. This also happens in phrenitis, and the less the influence of the bile, the lighter are the symptoms of paroxysm and dementia” (17).

2.3. Aetiology of hysteria

“Hysteria” (deriving from the Greek word “υστέρα”, meaning “uterus”) was thought to be a disease that affects exclusively women and is related to the mobility of the uterus. This belief is obviously influenced by the general social attitude of the era. In Greek antiquity, the basic role of any woman was attached to the family. The woman was obliged to have sexual intercourse with her husband, and intercourse was a symbol of complete union. Denial to the desires of the husband and any sign of disobedience was an expression of an unnatural instinct, because nature was supposed to demand the union of the man and the woman, so that the latter fulfils her actual role in society, to become a mother. The female reproductive organs were believed to be made in such a way as to fulfil her instincts and to lead in the creation of a new living organism. Anything obstructing this fulfilment allegedly created negative feelings of the man towards the uterus, which, in turn, was not fecundated by the male sperm (18). Therefore, virgins and widows were believed to live contrary to their basic biological role.

“These symptoms [of hysteria] break out suddenly and usually in virgins of older age and in widows that widowed young, after having born children” (19).

The uterus, as an organ depending also on the humoral balance, was thought to become unstable, since all alterations are attached to sexual life and to motherhood as well. The

humoral imbalance alters the uterus that loses its natural humidity and in order to replace it, moves within the body, creating edemas or increasing its size.

2.4. Etiology of mania

The Hippocratic physicians refer to mania (μανία) when the patient has a generalized violent behavior with seizures and sudden movements, while they believe that it is a very dangerous illness of the brain. Mania, as melancholy, was believed to be caused by the disturbance of the humoral balance due to black bile (8). The main etiological factor thus, is considered to be the excessive humidity of the brain that is the seat of all mental functions. “We act like maniacs, as I also said in my book on the sacred disease, because of humidity of the brain” (6). Furthermore, the consumption of certain medicaments, like the “juice of mandragoras”, may cause manic seizures (9; *Des crises*, 1861). Other etiological factors are hereditary, the consumption of alcohol and bread and the exposure to extreme cold or heat (21).

2.5. Etiology of melancholy

In the first treatises of the *Hippocratic Corpus*, i.e. *On the nature of man*, melancholy is referred to as the characteristic of the person whose predominant humour is the black bile. There are numerous references in the *Corpus* on this illness, without though having an extensive description. It is related to other illnesses of analogous etiology, such as epilepsy, while mania and phrenitis are often mentioned, without though explaining adequately their relation to melancholy.

“When blood is altered because of bile and phlegm, melancholy occurs, [the patients] become delirious and some are taken by mania” (7).

Elsewhere we read:

“Those being melancholic usually become epileptic and the epileptics become



melancholic. The evolution of the illness defines which of the two is going to happen. If [the bile] goes to the body, they become epileptic, while if it goes to the mind, they become melancholic" (22).

"If the emotions of fear or sadness extend for a long time, then we face melancholy" (8).

In general, the illness occurs during autumn and it mainly affects people aging between the 25th and the 45th year (8; 22).

3. Discussion

The Hippocratic texts record the beginnings of a primitive classification of illnesses of the soul; the authors distinguish, for instance, "phrenitis" from "melancholy", taking into account the different symptoms appearing in the patients (23).

In the Hippocratic texts, the body and the soul is a unified entity, which does not exist in the Homeric poems, for instance. The soul (psyche) is a life-giving principle that leaves the body at death. The brain mediates between the messages from the outside, transmitted through the air and the actions of the body, attributing to the brain the privilege of being the source of mental activity (24). In case an injury of the brain occurs, the movement of air is obstructed or disrupted, and mental disturbances occur.

Numerous comments may be made concerning the Hippocratic etiological factors of the illnesses of the psyche. First of all, it was believed that "epilepsy" and "mania" could be inherited by the parents, due to "diseased sperm". According to the Hippocratic theory on heredity, sperm is produced in both men and women and derives from all their body parts. The sperm "which is weak is derived from weak parts, that which is strong from strong parts, and the fetus will correspond to the quality of the semen". If the semen of one part comes in greater quantity from the male than from the female, this part will resemble more closely the

father, and the other way around. (10). Especially for epilepsy, the Hippocratic physicians explain its hereditary nature as follows: "Its origin is hereditary, like that of other diseases; for if a phlegmatic person be born of a phlegmatic, and a bilious of a bilious, and a phthisical of a phthisical, and one having spleen diseases of another having diseases of the spleen, what is to hinder it from happening that where the father and mother were subject to this disease certain of their offspring should be so affected also? As the semen comes from all parts of the body, healthy particles will come from healthy parts, and unhealthy from unhealthy parts" (7). The hereditary nature of "epilepsy" and "mania" challenges the modern researcher to think of the hereditary nature of the modern epilepsy and bipolar disorder.

Another comment should be made on the Hippocratic reference that alcohol may be an etiological factor for the appearance of "mania". In 1990, an Epidemiologic Catchment Area (ECA) study, which involved over 20,000 structured interviews, revealed that people with a diagnosis of schizophrenia were three times more likely to be alcohol abusers and generally 37% of people with alcohol disorders suffer from comorbid psychiatric conditions (25). It is amazing, thus, how the Hippocratic physicians, using only observation as a diagnostic tool, managed to link an illness of the psyche with alcohol.

Seasons also seem to play a key role in the Hippocratic etiology of illnesses of the psyche. Autumn and spring are the seasons during which "mania" and "melancholy" occur, though "mania" may rarely appear also during winter. Especially for the appearance of "melancholy" in autumn, a quick look at some symptoms of the illness, adds to the suspicion that there may be some link to Seasonal Affective Disorder. For example, in *Aphorisms* we read "If the emotions of fear or sorrow last for a long time, then we face melancholy" (8). And "when blood is altered by the bile and the phlegm,



melancholy occurs [the patients] go mad and some of them are taken by mania” (7). In modern literature it is accepted that “Seasonal affective disorder (SAD) is a syndrome in which depression developed during the autumn or winter and remitted in the spring or summer for at least 2 successive years. In addition, patients with SAD had to show a history of major depressive or bipolar disorder” (26). Comparing the ancient and the modern references, one may easily identify the criteria of diagnosing a seasonal affective disorder in the Hippocratic “melancholy”.

The first step for the rationalization of the illnesses of the psyche was made by the Pre-Socratic philosophers who understood the body-soul liaison, the effect of extreme emotions in the psyche and some of them, even accepted that the brain was the centre of movement, emotions and logic. The Hippocratic physicians used the valuable legacy they received from their predecessors. They managed to correlate the symptoms of these illnesses with the brain and understand their biological nature, even forming a primitive nosological structure. The beliefs of the Hippocratic physicians were accepted by later philosophers and doctors, such as Aristotle and Galen. The study of their texts reveals common elements that resulted from the emergence of rationalization after the Hippocratic era. In general, illnesses of the psyche occur due to the excess of phlegm or black bile, and rarely of yellow bile and blood. In most cases, the affected body part is the brain, but there are cases, such as in “phrenitis” and “hysteria”, where the affected part is different. Another common aspect in the Hippocratic, Aristotelian and Galenic texts is age, as an etiological factor of illnesses of the soul: “epilepsy” mainly attacks children and “melancholy” attacks people after puberty. Furthermore, all texts mention that such illnesses occur mainly in spring and autumn, while alcohol consumption

is an invidious factor for “mania”, “epilepsy” and “melancholy” (27).

The legacy of the ancient Greek and Greco-Roman physicians and philosophers on the etiology of the illnesses of the psyche will unfortunately be forgotten over the next centuries. During the Middle Ages and the Renaissance, as Christianity spread in Europe, the Homeric theory that Gods were responsible for these illnesses returned. This time, it is the divine rage that provokes mental illnesses; exorcisms and casting outs were the therapeutic “methods” used for freeing the body from evil spirits. The demonology will continue until the 16th and the 17th century, when a few brave voices will begin stating that mental illnesses have biological etiological basis, such as R. Burton in his *The anatomy of melancholy* (1621), where the hereditary nature of melancholy is proposed. Also, in 1618, Ch. Lepois argues that epilepsy has its roots in the brain, an argument that Th. Willis, in 1670 and Th. Sydenham, in 1682 will affirm. It is not until 1797 that Ph. Pinel, in an article in the *Encyclopédie méthodique*, initiates the replacement of the term “insane” with the term “alienated” (“insané-aliéné”), demonstrating thus the humanistic elements of a moral relationship between the patient and the physician, setting the first standards of modern psychiatry (28).

Undoubtedly the Hippocratic medicine brought new light to medicine, attempting to rationalize biological events. It should be noted that the physicians of the era based their knowledge and practice in observation and experience; such a method though, might be considered easier for body illnesses than for illnesses of the mind. We can only thus admire the fact that they managed to correlate the symptoms of these illnesses with the brain and understand their biological nature, even forming a primitive nosological structure.



Conflicts of interest

The authors declare that they have no conflict of interest.

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