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Review

IBN SINA (AVICENNA) AS A PSYCHIATRIST: A VIEW FROM TODAY'S PERSPECTIVE

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SUMMARY

Ibn Sina (Avicenna) is primarily known for his philosophy and medicine, but there is almost no scientific discipline in which this great man didn't leave a significant mark. This paper gives a brief review of his contributions to medicine, especially to psychiatry. Medical works of Ibn Sina represent a pinnacle of most important medical achievements of his time. These works contain synthesis of all Greek, Indian and Iranian medical schools, but also new breakthroughs achieved by Muslim scholars through their own experimentation and practice. Although he wrote many medical works, his most important one is El-Kanun fit-tib, which can be translated as The Canon of Medicine. It's made out of five books which systematically show everything known in the area of medicine up until that point in time. In it, Ibn Sina discusses, among other things, the structure of psychological apparatus of human being and the connection of psychological functions with the brain as well as the role of psyche in etiology of somatic diseases. He also describes certain psychiatric diseases along with the explanation of their etiology and recommended therapy. He considered psychology to be very important for medicine, so in his psychological works he discusses, in great detail, the essence of human soul, consciousness, intellect and other psychological functions.

Key words: *Ibn Sina - Avicenna - psychiatry - psychology - mental disorders - the law of medicine*

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INTRODUCTION

With the arrival of Islam in the 7th century AD, the Arabic world experienced a remarkable transformation. A new, Islamic civilization was developed, which spread to all four sides of the world and became leading in many aspects of human life for centuries to come. In that context, medicine took special place considering the tradition of Prophet Muhammed (PBUH) that God had given a cure for every disease except old age and death and that knowledge is the lost thing of a believer, so that they should seek it „even if they had to do so in China".

After the quick spread of the new Islamic Arabic state and the great blossom of Islamic culture, a need for educating professional medical workers arose as well as the need for improving medical science altogether. Prominent Arabic leaders, especially those from the Abbasid dynasty, invited scientists from all sides of the world to the newly founded capital, Baghdad. Through 150 years (750-900. AD) in that new cultural center, all of the most famous works of Greek, Roman, and Indian physicians were translated to Arabic, especially the works of Hippocrates, Galen and Dioscorides. They were translated by expert translators directly from Greek, and partly from translations to Syrian and Persian language. Towards the end of the 7th century, a certain translator school was founded in Baghdad, in which the foundations were set for medieval Arabic (Islamic) medicine. That translator school later became the Academy of sciences. Most deserving of that were the rulers of the Islamic theocratic state, who had open-handedly and tolerantly accepted and helped cooperation between Muslim, Jewish and Christian experts in medicine, philology, and other scientific and philosophical disciplines (Karamehmedović 1961).

However, they weren't only translating medical works, because even in that period we can find original medical works in the Islamic world. The number of medical authors in the classical period of Islamic medicine was huge, but the most significant ones were: Abu Bakr Muhammad ibn Zakariyya al-Razi (in the Western world known as Rhazes) (854-925), Ali ibn Abbas al-Majusi (930-994) and Abu Ali al-Ḥusayn (Ibn Sina) (980-1037). The third one is by far the greatest and the most famous of all physicians of the Islamic world. In the West, they called him Avicenna. During his life, he wrote The Canon of Medicine, the book that was the basis for studying medicine in the East and the West for multiple centuries. Aside from somatic diseases, some mental illnesses were described, even in that period of time, with their etiology, symptomatology, diagnostics, and therapy.

BIOGRAPHY OF IBN SINA

Ibn Sina, in the West known as Avicenna, also known as The Prince of Physicians, was born near the city of Bukhara (today's Uzbekistan) in the year 980. Even in his early childhood days, he was showing incredible fondness for science. When he was 10 years old he had finished studying Qur'an and grammar and then started studying logic and mathematics. Since he mastered

these sciences quickly, he started studying physics, metaphysics, and medicine. At the age of only 16, he had mastered all of the sciences of his time. Ibn Sina's knowledge of medicine contributed to his reputation, so he became sought-after and a favorite of local rulers. Political instability in Central Asia made his life in his birthplace hard, so he had to leave Bukhara and go to Gorgan (Iran). However, when he got there he soon found out that the ruler whose protection he was seeking had passed away. He took it hard, so he spent a few years living alone in some village. Between 1014 and 1015 he goes to Ray (Iran), and from there to Hamadan (Iran) where he meets the ruler of Hamadan. As soon as he arrived in the city he was invited to help the ruler who was sick. When he healed him his reputation had grown so much that he eventually became vizier, a duty he performed for several years, until the death of the ruler. After refusing to keep performing his duties as a vizier, he was arrested. During the siege of Hamadan, he seizes the opportunity, escapes the prison, and leaves Hamadan. When he got out of those troubles, he moved to Isfahan (Iran), a big scientific center of the time. The ruler of Isfahan acknowledged him, and following 15 years he spent in piece in Isfahan. During that time he wrote a couple of significant books. He even started studying astronomy and undertook the building of an observatory. Because of the attack on Isfahan, by the same ruler because of whom he had to leave his birthplace, he went back to Hamadan where he died in the year 1037 aged 57 and where he is buried. During this attack, many of his important works have disappeared. Later, in Hamadan, he was built a mausoleum that exists even to this day. (Khan 2020, Nasr 1991, Corbin 1977)

Ibn Sina had many ups and downs in his life. As a physician, he spent most of his time serving different rulers which got him involved in the matters of state, and for a time, he himself was performing a high state duty. At the same time, he was living a very intense intellectual life, proof of which are numerous works he wrote as well as the quality of his students. Despite being that involved in social life and political problems, he had managed to set the foundation of middle age scholastic philosophy, to synthesize Hippocrates's and Galen's medical tradition, and make a great impact on Islamic science and philosophy as no one before him nor after him had done (Nasr 1991). Husejn (1987) says that he was above other physicians because he was the greatest philosopher of the middle age, and that he was above other philosophers because he was the greatest physician of his time.

IBN SINA IN MEDICINE AND SCIENCE

The Canon of Medicine

The Canon of Medicine is undoubtedly one of the biggest accomplishments in world history. It represents for medicine what Aristotle's works represent for philosophy, Euclid's works for geometry, Ptolemy's works for astronomy, and Sibawayh's works for grammar, the ultimate reach of scientific thought in a certain scientific branch (Husejn 1987). It's the biggest medical work of Ibn Sina and it's the most suitable source for comprehending the great contribution this author gave to natural sciences using, even in those times, methods of observation and experimentation. The Canon had gone through 15 different editions in Latin and Hebrew and for almost 600 years it was a fundamental medical literature in madrasas in the East, as well as in universities in the West, especially in England and Scotland. The first official recognition of The Canon of Medicine was in the 13th century in Poland (Cerić & Mehić-Basara 1997). That's the work that contains and systematically presents the complete medical science of that time. Ibn Sina in The Canon defines medicine: "Medicine is the science by which we learn the various states of the human body in health and when not in health, and the means by which health is likely to be lost and, when lost, is likely to be restored to health. In other words, it is the art whereby health is conserved and the art whereby it is restored after being lost." (Avicenna 1999). This medical encyclopedic work is made of five books in which the following crucial medical questions are discussed: description of the human body, constitution of the human body, temperaments, physical capabilities, somatic diseases, hygiene, death, description of diseases that affect the whole body instead of just one organ or location, and then the final chapter is related to pharmacology that is especially important from an experimental point of view. The Canon is the synthesis of teachings and traditions of Hippocrates, Galen, and Dioscorides, however it also contains many things that don't exist in Greek sources. It contains a lot of new discoveries that came as a result of medical experiments and conclusions of Ibn Sina himself, such as the usage of certain herbs, the discovery of antiseptic effects of alcohol, and the discoveries of brain tumors and stomach ulcer. In physiology and anatomy of the eye in his theory of eyesight Ibn Sina states that the light comes into the eye from the outside but at the same time a certain reflex emits from the eye and reaches the object. The Canon, alongside his other works, serves as a witness to Ibn Sina's great knowledge of medicine and as an argument for why he was known as The Prince of Physicians for a period of about a thousand years.

Ibn Sina had shown great skill in observation and experiment. He set the rules for experimenting and therefore was the first one who founded the contemporary scientific method (El-Ehvani 1984). His methods of analysis and observation, with adequate use of logic and reason, his strict determinism and insistence on controlled experiment, had the medicine be recognized as a natural science (Mašić et al. 2010). This is best seen in his medical works where he, while discussing a diagnosis of a disease and the effect of certain

pharmaceuticals in its therapy, usually talks about his personal experience in work with patients. With the classification of general and specific diseases, Ibn Sina explained the way of identification of a disease and the way of treating each affected organ. Using his original experimental methods, Ibn Sina had found the cure for many a disease. He was the first one to correctly describe inflammation of meninges, meningitis, and tell the difference between meningitis and other similar diseases. He invented the administration of remedy by injection needle and was the first one to use anesthesia during surgical operations (El-Ehvani 1984). Ibn Sina discussed anesthetic agents as well as the diet for patients needing surgery. He cited 43 plants and their blends as mukhaddar (anesthetics) and taskin (pain relievers) applied before surgery by oral, nasal, or rectal route of administration. Papaver somniferum var. album, Mandragora officinarum, Conium maculatum, Cannabis sativa, Cannabis indica, Lactuca virosa, Solanum nigrum, Fumaria officinalis, Vitex agnuscastus, Lolium persicum, Datura metel, and Commiphora myrrha are some examples. Current findings show that many of his suggested analgesics or anesthetic agents have important pharmacological properties (Ahmed S & Zargaran A 2020). He was one of the first who recognized psychological influence in the origin of somatic diseases. For example, he considered there to be two different causes of dyspepsia. The first one is mental, which leads to certain disorders, and the second one is organic, due to which, the ulcer actually appears on the stomach (Mašić et al. 2010). Besides that, his clinical observations often discuss psychology, which is according to him, and according to other Islamic physicians, tightly connected to medicine (Nasr 1991).

About psychology

The main text in which Ibn Sina discusses psychology can be found in the 6th chapter of his Kitab al-Shifa (The Book of Healing) called „Natural sciences". In Kitab al-Najat (The Book of Salvation) and Al-Isharat wal-tanbihat (The Book of Directives and Remarks), as well as in some shorter writings, he discusses psychology in different ways. Ibn Sina's psychology is fundamentally Aristotelian but in his psychology, he surpasses Aristotle's paradigm. The first question that comes to his attention is the question of proving the existence of the soul. We encounter organisms that feed, grow and reproduce. These activities aren't caused by their physicality, so there has to be something else that exists within them. The origin of mentioned activities controlled by willpower is called the soul (nafs). This word isn't just the name for that phenomenon regarding its essence, but regarding its relation to those activities. This clearly shows that the soul isn't the body, but it's that aspect of a being that can be considered its form or perfection (Bodžnurdi 2011).

His evidence of the soul's existence within man Ibn Sina bases on the thesis of man's self-consciousness, therefore he can be considered Descartes's predecessor. We know how this famous French philosopher from the seventeenth century (so 6 centuries later) in his famous statement: „I think, therefore I am/Cogito ergo sum", had in a way summed up Ibn Sina's demonstration of proof of the human soul's existence. Namely, Ibn Sina had already said that in a somewhat different way: „My awareness of myself is my own being/my own existence" (Bodžnurdi 2011).

The evidence of soul's existence through man's self-consciousness Ibn Sina in a different place gives concisely and clearly: „If you think correctly, you will see that your pointing to yourself when you say 'I' has a different meaning which isn't the same as the meaning when you say 'it' because when you say 'I' you are pointing to your own being, but if you want to point out any of your organs or a part of your body you will say 'it', and by doing that you are pointing at something that is outside of the 'I', it's not the 'I' itself nor a part of it, because the 'I' isn't made of group of identities because the essence of individual parts isn't the same as the essence of the entirety they make. Therefore, when you say 'I' you should be thinking about something that isn't your body nor any of its parts. That something is 'the soul' and the essence of every human is exactly that substance we point to when we say 'I', or what others think of when they say 'you'" (Ibn Sina 2013, Bodžnurdi 2011).

The following thesis Ibn Sina tries to prove is the spirituality of man's soul, or its independence from physical matter. He says: „There is no doubt that there is something within a man, a substance that perceives concepts (intelligible). This substance that perceives concepts isn't the body nor does it depend on it, rather it's the special kind of strength within it. Soul isn't imprinted in the body nor does it exist by it" (Rizvi 2020, Ibn Sina 2013, Bodžnurdi 2011).

Soul is immaterial according to Ibn Sina. His predecessors have been proving the immateriality of the soul by logical evidence. Ibn Sina was the first one who was proving this by mental experience: „Let's imagine a man, created without eyesight, so that he can't see any of his skin; his limbs are separated so none of his body parts touch each other; let's say he is floating in empty space, where there is no air so he can't feel or hear anything. Won't this man be completely unaware of his body? Won't he be able to understand only one thing, and that is the existence of his soul, the existence of 'he'. Therefore, the existence of the soul is immaterial and unrelated to the body" (Rizvi 2020, Handžić 1999).

Ibn Sina dedicated a special chapter to the question of mental faculties (strengths, functions, drives) classifying them based on their qualitative characteristics by which they differ, emphasizing the necessity of a single integrative bond between them. He claims that vege-

tative and perceptive faculties in a man are specifically different from those in plants and animals considering the fact that man is gifted with reason which permeates and changes the nature of these faculties. Principle that ties all of these faculties he calls the mind.

Animal soul has besides physical senses (five of them: sight, sound, smell, taste, and touch), the interior senses. Some of these perceive shapes, and others perceive meanings of sensations. Among these abilities of perception, there are some that can perceive and act, while some of them can only perceive; some can perceive only shapes, and others can perceive only meanings. The difference between these two is that shape can be perceived by both, interior senses of the soul and external, physical senses. It's first perceived by an external sense which then transfers it to the soul. On the other hand, meaning is something that the soul perceives from the object without it previously being perceived by an external sense. According to Ibn Sina, the most important interior sense is the 'common sense' or the 'composite drive' (his al-muštarak/sensus communis). Within us, there is a power that gathers sensations of external senses, while within the external senses there is no such thing that would gather so many sensations. Sometimes we perceive something yellowish and we can immediately tell that it's honey, which is sweet, of a beautiful smell, and is fluid, without even tasting, smelling, or touching it. We can discern that thanks to the already mentioned faculty (sensus communis – common sense). Therefore, within us, there is an integrative faculty whose function is to gather all of the sensations and make them into one shape, one single image. That is an imaginative faculty, also called common sense, and according to Ibn Sina's classification of interior senses, it is the primary (first), faculty. Its place is in the frontal part of the brain and it perceives all information through the senses. Second, or secondary faculty is pictorial or formative faculty. Its function consists of preserving what was perceived by common sense, sensus communis through external senses. The third faculty with regard to the animal soul is called imaginative, and with regard to the human soul, cogitative. Its function is to select, combine and separate what was kept by formative faculty. Following faculty is a judgment that perceives meanings that cannot be perceived by external senses such as love, hate, usefulness, harmfulness in material objects and it represents the basis of our character, whether it's under the influence of reason or not. The final faculty is memory, which is located in the posterior part of the brain, and its function is to retain what was processed by the faculty of imagination or thinking. These are interior faculties. All of them have their own centers in the brain and with them, they represent a tool, an instrumentarium (organon) which is used to carry out orders of the soul. According to this, all of the faculties perceive through the brain except the rational soul, which is inherent only to man. It perceives without intermediation of the brain, e.g. man's perception of his own existence or the ego feeling. It's done not by the brain rather by direct cognition (Rizvi 2020, Ibn Sina 2013, Bodžnurdi 2011, Eydi 2010, Corbin 2009, Avicenna 2005, Avicenna 1999, Cerić & Mehić-Basara 1997, Rahman 1988, Husejn 1987).

IBN SINA AS A PSYCHIATRIST

In Ibn al-Nafis's Mujaz al-Qanun (The Summary of Canon) which represents a synopsis of Ibn Sina's Canon, symptoms and treatment of the following psychiatric disorders are described: in the chapter about head diseases intellectual disability, dementia, forgetfulness, mania, melancholia, lethargy, insomnia and nightmares, and in the chapter about diseases of genitalia, impotence, erectile dysfunction and problems with ejection of semen and hysteria in women. As for Ibn Sina's practice as far as mental disorders are concerned, many interesting cases were described and narrations of some of them were carried on orally and in writing from generation to generation, until this day. In this paper, we will illustrate descriptions of symptoms and treatment of depression, mania, hysteria, and dementia along with some links to today's psychiatric theory and practice and case reports of psychotic disorder and reactive depression (love melancholia). Before we do that, we should understand that Ibn Sina's approach is fundamentally integrative because it starts with basic elements human organism is built of, constitution (genetic predisposition) which determines its assembly and factors (epigenetic) which can stabilize or disrupt the inner balance of the organism (homeostasis) on which depends how healthy or how ill the organism will be.

Biological basis of psychiatric disorders according to Ibn Sina

Ibn Sina's interpretation of psychiatric (as well as somatic) disorders relies on postulates of antic medieval physiology which is based upon the teachings of four basic elements material world is made of, the whole of nature (fire, air, water, earth) and their properties (hot, cold, dry and wet) and four bodily fluids (blood, phlegm, bile and black bile). Fire is hot and dry, the air is hot and wet, water is cold and wet, and the earth is cold and dry. Analogously, blood is naturally hot and wet, phlegm is cold and wet, bile is hot and dry, and black bile is cold and dry. Based on that Ibn Sina differentiates nine constitutional types: moderate constitution which is an ideal construct and doesn't exist in the real world, and immoderate constitution which can be simple (hot, cold, dry and wet) and complex (hot-dry, hot-wet, cold-dry and cold-wet) (Avicenna 1999; Ibn al-Nefis 1961).

No matter how much or how little credit we gave to this philosophical concept, it is important to point out that we are talking about a biological model of interpretation of psychiatric disorders that will, through translations of The Canon to Latin and other European languages, become the basis for developing modern medicine and psychiatry. Ibn Sina researched causes of mental illnesses, experimented with new diagnostic methods, and invented new methods of their treatment. Without instruments and tools that today's medicine possesses, he would sometimes reach discoveries and truths that were only later confirmed by experiment (Handžić 1999). Findings of modern neurophysiology and psychophysiology are not taking us further away from the theory of four bodily humors, as a matter of fact, it seems like the time will come when we will understand them differently.

Impact of the mind on bodily functions

From his medical experience Ibn Sina tells us that a physically ill man can become healthy purely through his willpower and, just as well, a healthy man can become truly ill if his mind is burdened with constant thinking about the disease. It happens because he envisions the possibility of becoming ill so intensely that the natural power of his body cannot resist it. Strong emotions, for example, can disturb the natural balance of the organism in such a way that it results in its death through its effect on vegetative functions. What happens when the judgment happens within the soul; judgment by itself is pure belief and as such doesn't affect the body but coupled with strong emotions such as pleasure or sadness, it can have an impact on the function of the body. Furthermore, nothing affecting the soul may leave its mark on the body. Imagination doesn't have to have an impact on the body but it can lead to changes in some of the organs, e.g. enlargement of sexual organs through the influence of imagination. In fact, when the idea is firmly established in imagination, it necessarily seeks change in nature. The idea of health in a physician's mind causes true health inpatients, and equally so, the soul affects the body; the only difference is that physician heals using instruments, the soul does it without them. If the soul is strong enough it can heal and make sick even another body directly, without instruments (Ibn Sina 2000, Avicenna 1999, Rahman 1988).

DESCRIPTION AND INTERPRETATION OF SOME PSYCHIATRIC DISORDERS

Melancholia (Depressive disorder)

"Melancholia is a disarray of thoughts that gravitate towards a disorder and a feeling of fear. Disease primarily manifests as sudden outbursts of anger, a tendency towards solitude, and fear of things that one usually shouldn't be afraid of. When disease settles in, these symptoms become stronger. A man disposed to this disease is one with a warm heart, an abundance of hair on his chest, and the body, one with a lot of humidity in the brain and with fat lips. This disease is most often seen in men, but is heavier in nature in women" (Avicenna 1999, Ibn al-Nefis 1961).

He saw it, first of all, as affecting both the psychological and somatic spheres, and he divided melancholia into early phase and chronic phase. Symptoms of early phase melancholia include suspicions of evil, fear without cause, quick anger, involuntary muscle movements, dizziness, and tinnitus. Chronic melancholia symptoms include moaning, suspicion, sadness, restlessness, and abnormal fear, such as „that the sky may fall on one's head" or „being swallowed by the earth." These fears certainly sound like delusions, thus suggesting psychotic features in chronic melancholia. This description sorts out into 5 main clusters: encompassing anxious/depressive, manic, psychotic, cognitive, and somatic features (Pies 2020).

Even though the exact term "depression" doesn't exist in Ibn Sina's works, a link between depression in modern medicine and his melancholia can be made. His descriptions of melancholia match the criteria for diagnosis of major depressive disorder (MDD) in DSM-V in many points (increased appetite, weight loss, restlessness, weakness, and frequent thoughts about death and suicide attempt). Therefore, MDD is the disease in modern medicine closest to his melancholia (Khodaei et al. 2017).

He noted that women and the elderly are at higher risk for depression, and he pointed out a significant connection between depression and other diseases. He thought that different combinations of bodily fluids can cause depression and other mental disorders which could be accordant to neurotransmitter mechanisms in the etiology of depression. Ibn Sina attributed melancholia to an abnormal increase in "black bile" concentration in the brain. Based on what we know about the etiology of depression today, the link between bodily fluids Ibn Sina talks about and the origin of depression could be found in metabolism and the effect of serotonin and localization of serotonin receptors in the gastrointestinal, circulatory, and central nervous system. He also links depression with problems related to the heart. Some clinical findings have proved the connection between depression and heart disease even though heart diseases haven't really been considered a factor in the etiology of depression (Khodaei et al. 2017).

As far as his recommendations for treatment of depression go, he thinks that change in the way of sleep is required as well as a diet and physical activity. According to Ibn Sina physical activity improves mood and gives the feeling of well-being. Recent studies confirm the important role of nutrition and physical activity in depression, something he had talked about 1000 years ago. Besides this, eating food high in energy,

sweet and fatty food which supplies humidity of the body, according to him, is necessary for healing depression. Things that should be avoided are beans, bacon, lentil, and cabbage, concentrated wine and salty, spicy and sour food. Herb medication, music therapy, aromatherapy, massage, improvement of social and communication within the family, change of lifestyle, and the accent on early start of treatment are also common points between contemporary and Ibn Sina's recommendations in the treatment of depression (Khodaei et al. 2017).

Diagnostics and treatment of love melancholia

There is another type of melancholia called love melancholia. The cause of it is a strong mental focus on idealizing a person and his/her characteristics. Sometimes, it's not about one seeking physical contact at all. Symptoms of this disorder are: eyes retracted into the eye sockets and lack of humidity in the eyes except when the patient is crying, swelled eyelids due to insomnia and many gasses that rise to the eyelids even though the eyes look like they're smiling, as if the patient is looking at something pleasant. Furthermore, the patient still suffers from insomnia, he is thin, is constantly taking a deep breath, and is volatile. The object of love can be found by checking the pulse of the patient while speaking the names and traits of people. When there is a change in the pulse and the patient changes the color of his face, it means that we've come across the face of a person the lover longs for. (Avicenna 1999, Ibn al-Nefis 1961).

Treatment: Most efficient cure is to enable the lover a life with his beloved. If that isn't achievable legally, then elderly women should be engaged who will strive to make the lover hate beloved by belittling and telling ugly stories, along with using the drugs for treatment of melancholia. If the lover is smart, the advice, warnings, belittling, and ridicule of his beloved, as well as presenting his case as a sort of madness or a delusion will be useful. Hunting, engaging in speculative sciences, talking to other people, frequent sexual intercourse, dancing, and listening to music meant for fun, such as a fantasy song; songs that talk about leaving and parting ways act unfavorably.

Mania and hypomania

Ibn Sina describes mania as separate from depression. He differentiates two kinds of mania, which, based on his descriptions, could be linked to some criteria for hypomania and mania in DSM-V, for bipolar affective disorder type 1 and type 2, looked from the perspective of today's findings about cyclic alternation of depression (melancholia), mania and hypomania. In mania, as Ibn Sina describes it, and whose origin he links directly to "black bile", the patient is restless, aggressive, speaks fast, and when excited, can't be calmed, which could be identified as a manic episode as it is described today. In mania caused by "black bile made out of yellow bile", the patient is less talkative and can be calmed down, which could be characterized as a hypomanic episode. (Khodaei 2017, Avicenna 1999, Ibn al-Nefis 1961).

Hysteria – description and treatment

This disorder is similar to epilepsy and losing consciousness. Its cause is an abundance of "female semen" or its retention in the place of its making, so it loses its natural heat and becomes poisonous which causes the uterus to contract, causing it to cramp, and from it a poisonous gas spreads all the way to the heart and brain, causing this disorder. It can be caused by menstrual delay, when menstruation is prolonged and when secretion accumulates in the uterus. This has the same consequences as the retention of semen. This disease comes periodically and has its manifestations. Symptoms before the onset consist of a woman's mind being blurred, with heaviness and weakness in lower legs, face going white and eyes filled with moisture. Sometimes a woman feels something rising from her lower abdomen reaching her heart, then her mind gets blurry and she loses consciousness, stops feeling sensations and her voice falls silent. The difference between this disease and epilepsy is that in hysteria the patient doesn't lose her consciousness totally, and once she regains it, she is able to talk about many things that had happened during the attack unless it was a strong one. Besides that, there is no foam on her lips which is seen in an epileptic (Avicenna 1999, Ibn al-Nefis 1961).

Treatment: During the attack, hysteria is treated with the same means as the loss of consciousness, except smelling a fragrance, because, in this disease, the patient should be given to smell stinky substances, such as beaver's fur, soapwort (Saponaria officinalis), tinder fungus, naphtha and other, because these things dissolve and dilute cold vapor causing the uterus to fall down, because in its nature it avoids stinky smell and leans towards pleasant smell. Uterus should be smeared by hot fragrant oils that contain musk and amber. Perfume Galia moschata (a mix of musk and amber) should be put into the uterus because that is an unrivaled cure for this purpose. Feet and lower legs should be massaged. The patient should be yelled at in her ear and pulled by her hair. When the attack is over, she should be given a mild beverage which dilutes matter, fed with mild food and her uterus should be opened with appropriate medication. The midwife will put a fragrance on the opening of the uterus, because it extracts moisture from it, which helps the patient. In the case of this disease being caused by the absence of menstruation, it should be treated with medicine for initiating menstruation, described in the chapter about that disease. If a widow suffers from this disease, the best treatment is marriage (Avicenna 1999; Ibn al-Nefis 1961).

When we look at this purely biologically oriented approach to explaining and treating hysteria, we cannot help but think how modern psychiatry has rejected this concept of understanding hysteria uncritically and with underestimation, and in its place has offered a very unclear and complicated concept of conversion and dissociation, something that should be written about in a separate scientific work. We should note that connecting hysteria to the retention of "semen" (which is by all accounts, a female ejaculate analogous to men's seminal fluid) on one side and absence of menstruation on the other, takes us to the field of women's sexuality, orgasm, and ejaculation, questions not properly answered even by a modern medical sexology. If we also note the recommendation to give the patient stinky things to smell (psychiatrists had, not so long ago, put under the nose of an acutely hysteric patient a cotton wool soaked in ammoniac) and massaging the uterus with fragrant oils (aromatherapy), then we should rethink, from the ground up today's psychodynamic concept of understanding and treating hysteria and give it a biological basis Ibn Sina suggests, as well as his predecessors. In doing so, we should remember that it represents an important, missing link between biology and psychodynamics of sexuality and gives more sense to each of those theoretical paradigms.

Dementia and intellectual insufficiency

Dementia and intellectual insufficiency represent a disability, or a disorder in thinking caused by coldness or dryness in bodily fluids, or both of them together. According to the Canon of Medicine, patients of this group have problems of dreaming and imagining. They dream rarely and if so, they forget the dreams rapidly. Sometimes they see or imagine something that is not really such as people, animals, fire, and water. Avicenna believed that it could be the consequence of brain atrophy (Taheri-Targhi et al. 2019). Good remedies for this disease, among others are: incense, ginger (Zingiber officinale), and sugar, as well as a lot of thinking, especially in speculative disciplines. Mutual discussions also strengthen and sharpen the mind (Avicenna 1999, Ibn al-Nefis 1961).

Whether or not had modern pharmacology questioned and discovered medicinal properties of incense, ginger and sugar, is a separate question, one that surpasses the frames of this work, but this approach to treatment and prevention of dementia is completely accordant to contemporary findings and recommendations in prevention and treatment of that disease. That fact by itself gives enough to think about.

CASE REPORTS

Psychotic disorder

This case from Ibn Sina's practice is about one of the princes of the House of Buya, rulers of the provinces of today's Iran in the 10th century AD. He fell ill with a then-unknown psychiatric disease. The first signs of this disease were that the patient had refused to take any sort of food, and later, he imagined himself to have been transformed into a cow, so he started imitating it with his voice and by walking on all fours. He had expressed the wish to be sacrificed, and the poor to be fed with his meat. Many physicians had tried and failed to diagnose and treat this dangerous disease. In the end, Ibn Sina was summoned to come to the palace and figure out what it's all about. When he came close, he heard someone trying to imitate the sound of a cow. He took out two knives and said: "Where is that cow you want me to sacrifice?". A young man responded to his call, coming out to the yard walking on all fours, roaring. Then Ibn Sina ordered that his arms and legs be tied, and that he be laid on the ground. He started stinging him with the points of his knives saying: "This cow isn't fit to be sacrificed, it's slim and it's meat isn't good enough. It needs to gain weight, then I will sacrifice it." After hearing that, the patient started taking food, and in it were medications Ibn Sina had prescribed. From day to day his condition was getting better, and after two months he looked like a completely normal young man. This is the example of one of the first takes of medicine to discover and try to treat severe mental illness. Even then, Ibn Sina had talked about mental illnesses actually being deranged pictures in the mind of the patient of himself and of the world around him (Omerbašić 1980).

From the standpoint of modern psychiatry, differential diagnosis of this case could include personality transformation, as a symptom of a disorder from the schizophrenic specter, dysmorphophobia, dissociative psychosis, or anorexia nervosa, but regardless of our conclusion, this is an example of a deep understanding of mental experience of a patient and a brilliant psychotherapeutic intervention that resulted in a change in patient's behavior, removal of life-threatening food rejection, bringing the patient back to reality and gradual recovery, until he was fully healed. We can find elements of this intuitive approach in psychoanalysis, depth psychology, logotherapy, and cognitive-behavioral psychotherapy, which once again witnesses to the greatness and genius of Ibn Sina as a physician, psychiatrist, and an expert of man's psychic life.

Reactive depressive episode (love melancholia)

There is a case in the literature of a young man of a distorted mind who withdrew into himself and refused to communicate with anyone. Ibn Sina was intrigued by his refusal to talk to anyone and he wondered what could have caused such behavior. He inquired with his parents about his life, trying to get some valuable information. They told him that the young man is a caravan's guide and that he travels a lot. Approaching the patient tactically and in a nice way, he got him to talk, during which he carefully observed his emotional expression and was feeling his pulse. While reciting

aloud to him the names of towns he traveled through he noticed his excitement and a change in his pulse when a certain town located in today's Afghanistan was mentioned. After a more detailed questioning, he found out that the young man had fallen in love with a girl in that town. After that, he easily diagnosed the problem and suggested to his parents to marry him to that girl, because that was the only way to cure him (Chamsi-Pasha & Chamsi-Pasha 2014, Omerbašić 1980, Rumi 1917).

This method of developing a relationship based on trust with the patient and gradual discovery of intrapsychic conflict, and a recommendation of an appropriate treatment based on that was a common practice of Ibn Sina. Scientists will later recognize a method of psychoanalysis in it, which was only recently introduced to the work with patients by S. Freud. This case had inspired the great Sufi scholar, philosopher and poet Jalal ad-Din Rumi to write about it in a slightly different fashion, enriched with many metaphors, in the very beginning of his famous Mathnavi in a story called The Emperor and a Girl, where he calls upon the reader in the very first distich to "listen to the story carefully because it is the psychoanalysis of ourselves" (Bodžnurdi 2011, Rumi 1917).

Psychoanalysis had its own place in Ibn Sina's treatment of mental disorders and as such he paid much attention to it. Because of his psychoanalytic views and standpoints, he reached great fame. Ibn Sina was the first one who determined that consciousness and subconsciousness exist and that the hardest task of a physician is to find the cause of a disease in subconsciousness and bring it to consciousness, with the end goal of this being to relieve the man's soul of pressure, to set it free it from that emotional state. Ibn Sina noticed how some of the emotional states such as fear, sadness, depression, feeling dejected and happiness affect the physical state of the body and because of these findings he resorted to treating the mental condition of a patient first and then treating everything else. In this lies the answer to the question of why did Ibn Sina use music in treating certain mental illnesses. That was the main reason he dedicated himself to studying music (Shafii 2014, Omerbašić 1980).

CONCLUSION

Ibn Sina's whole scientific and philosophic legacy, especially psychological and medical theory and practice, had had such an impact on the development of medicine in the East and the West for five centuries, that there are theories that even the word medicine was derived from the name Avicenna, the name they called him in the West. Starting from the thesis that psychology and medicine are tightly connected, in his Psychology Ibn Sina discusses the question of man's being, proving the existence of the human soul, describing mental faculties and intellect, and discussing questions of human happiness and longing. He links man's mental faculties to corresponding centers in the brain and notes that emotional states can have a direct impact on somatic functions which can be seen from his discussions about pathogenesis of dyspepsia, stomach ulcer, and colitis. At the time when mentally ill patients were completely neglected, and mental disorders attributed to supernatural causes, Ibn Sina takes a different, more humane, personalized approach to the mentally ill, gives a classification of mental illnesses, and describes their etiology and methods of their treatment. All of these witnesses to the greatness of Ibn Sina, the Prince of Physicians, who had even at that time, applying experimental methods, reached significant breakthroughs in the field of medicine and psychiatry, many of them completely in line with findings and recommendations of modern medicine.

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