

Effect of astronomy on treatment of diseases; narrative review

Efecto de la astronomía en el tratamiento de enfermedades; revisión narrativa

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Abstract

Introduction: According to ancient hypothesis, location of stars in the sky can determine different events in the earth. The present survey was done to assess the effects of astronomy on the treatment of diseases.

Methods: A comprehensive searches were done on different databases such as Pubmed, Scopus, ScienceDirect, Directory of Open Access Journals (DOAJ) and ... to find relevant researches about the effect of astronomy on treatment of diseases. Collected data were analyzed and categorized to write this paper.

Results: According to the results, the location of stars in space can lead to a series of meta-mental effects on Earth, which in turn can lead to or prevent the occurrence of some diseases. Among these, the most superficial effects of mental illness have been identified. Also, the use of some types of drugs at certain times and hours leads to better therapeutic results, all of which are affected by the position of the stars in space and their interaction with each other.

Conclusion: Unfortunately, very few studies have been done in this field and the role of stars in the treatment of diseases is not well understood. But it seems that more and more detailed studies can effectively determine the role of this science in the treatment of a wide range of diseases.

Key words: Effect, astronomy, treatment, medicine, diseases.

Resumen

Introducción: Según las antiguas hipótesis, la ubicación de las estrellas en el cielo puede determinar diferentes acontecimientos en la tierra. El presente estudio se realizó para evaluar los efectos de la astronomía en el tratamiento de las enfermedades.

Métodos: Se realizó una búsqueda exhaustiva en diferentes bases de datos como Pubmed, Scopus, ScienceDirect, Directory of Open Access Journals (DOAJ) y ... para encontrar investigaciones relevantes sobre el efecto de la astronomía en el tratamiento de enfermedades. Los datos recogidos se analizaron y clasificaron para escribir este artículo.

Resultados: Según los resultados, la ubicación de las estrellas en el espacio puede provocar una serie de efectos meta-mentales en la Tierra, que a su vez pueden provocar o prevenir la aparición de algunas enfermedades. Entre ellas, se han identificado los efectos más superficiales de las enfermedades mentales. Asimismo, el uso de algunos tipos de medicamentos en determinados momentos y horas conduce a mejores resultados terapéuticos, todo ello afectado por la posición de los astros en el espacio y su interacción entre ellos.

Conclusión: Desgraciadamente, se han realizado muy pocos estudios en este campo y no se conoce bien el papel de los astros en el tratamiento de las enfermedades. Sin embargo, parece que estudios más detallados pueden determinar efectivamente el papel de esta ciencia en el tratamiento de una amplia gama de enfermedades.

Palabras clave: Efecto, astronomía, tratamiento, medicina, enfermedades.

Introduction

Throughout history, humans have looked to the sky to navigate the vast oceans, to decide when to plant their crops and to answer questions of where we came from and how we got here. It is a discipline that opens our eyes, gives context to our place in the universe and that can reshape how we see the world. Astronomy is a natural science that studies celestial objects and phenomena and also locations of stars in the sky. It uses mathematics, physics, and chemistry in order to explain their origin and evolution. Stars, moons, planets, galaxies, nebulae, and comets are the main subjects in this science. More generally, astronomy studies everything that originates beyond Earth's atmosphere. Cosmology is a branch of astronomy that studies the universe as a whole¹.

Astronomy has so many applications in different sciences, such as physics, chemistry, earth sciences, climate and etc. Its applications are in different parts of the human life, such as industry, technology, aerospace sector, energy sector, international collaboration, and even medicine². However, rare considerations were focused on the applications of astronomy in medical sciences.

For a long time astronomers and other scientists supposed that the position of their work was evident to society. But in these difficult days of financial severity, even the most obvious benefits of science have to undergo careful scrutiny. So, now more than ever is the time to highlight the importance of astronomy as a field in terms of its contributions to our technology, our mind sets and our lives. It is clear that astronomy and its related fields are at the forefront of science and technology; answering fundamental questions and driving innovation. The importance of this contribution to science and to society has been highlighted here and the sheer breadth of what astronomy has to offer will ensure that it continues to be of great importance to the scientific community³.

Astronomy and medicine in ancient world

Astronomy has numerous characters to play in ancient medicine. There were two words "astronomy" and "astrology". Astronomy, measured and recorded celestial bodies and events scientifically and astrology means the application of astronomy in the human life to predict future events.

Hellenistic physicians rely on both astronomical and astrological information. In Mesopotamia, celestial events were correlated with human events in the practice of medicine and even more generally. The same was true in the Greco-Roman world. Neither Babylonian nor Greek medical practice depended only on astronomy/astrology,

but both were an important component of medicine in both civilizations. Although this chapter will focus primarily on astronomy and astrology in Greco-Roman medicine, the Babylonian material provides an important precursor and counterpart to the Greek material and, thus, will also be treated here⁴.

The natural cycle of the seasons due to the Sun's apparent annual motion and the natural phenomena due to its apparent daily motion (such as day/ night) and the Moon's motion (such as the month) all influenced earthly life. The courses of the planets, as well as celestial phenomena such as eclipses and meteorological phenomena such as the formation of clouds, rain, and comets (understood as sublunary phenomena) were influential as well. In an ancient medicine, Greek physicians employed the doctrine of humors (blood, phlegm, bile, and black bile), which could also be correlated with seasonal cycles and the planets, as well as the elements (earth, air, fire, and water) and qualities (hot, cold, wet, and dry). The application of astrological doctrines and principles was found previously, which tended to be applied in an individual way to a particular patient. These could include the casting of horoscopes to interpret the cause, progress, and resolution of disease —a practice called *decumbiture* (*decubitus*) and the use of astrological techniques in prescribing a therapeutic regimen⁵.

In Iranian folk medicine^{7,8}, the times and locations of the stars and even the planets had a great impact on the healing of diseases. The position of the Sun, Saturn, Jupiter, Mercury and Venus in the sky leads to their gravitational and supernatural forces on each other, which results in a series of supernatural events on Earth. Also, with the change of seasons, many changes are made in human temperament which affect human diseases. During the day and night, the secretion of melatonin, which is due to the presence of light during the day or its absence at night from the enigmatic pineal gland can have a great impact on the effectiveness of drugs and health measures in improving and treating diseases. Astronomers were aware of this but did not know its main mechanism.

Astronomy and medicine in modern world

Astronomy has so many applications in the modern medicine. In this regard, several classifications, including radio astronomy, infrared astronomy, optical astronomy, ultraviolet astronomy, X-ray astronomy, Gamma-ray astronomy, and astrobiology, have been developed in the medical astronomy. Astronomy helps medical practitioners to diagnose and treat several types of cancer cells using several newly developed X-ray and Gamma-ray⁹.

Astronomers struggle continually to see objects that are ever dimmer and further away. Medicine struggles with similar issues: to see things that are obscured within the human body. Both disciplines require high-resolution, accurate and detailed images. Perhaps the most notable example of knowledge transfer between these two studies is the technique of aperture synthesis, developed by the radio astronomer and Nobel Laureate, Martin Ryle (Royal Swedish Academy of Sciences, 1974). This technology is used in computerized tomography (also known as CT or CAT scanners), magnetic resonance imaging, positron emission tomography (PET) and many other medical imaging tools.

Along with these imaging techniques, astronomy has developed many programming languages that make image processing much easier, specifically IDL and IRAF. These languages are widely used for medical applications¹⁰. Another important example of how astronomical research has contributed to the medical world is in the development of clean working areas. The manufacture of space-based telescopes requires an extremely clean environment to prevent dust or particles that might obscure or obstruct the mirrors or instruments on the telescopes (such as in NASA's STEREO mission)¹¹. The cleanroom protocols, air filters, and bunny suits that were developed to achieve this are now also used in hospitals and pharmaceutical labs¹².

Additionally, several modern applications have in medical sciences have been developed using the astrology. Radio astronomers developed a method that is now used as a non-invasive way to detect tumors. Small thermal sensors initially developed to control telescope instrument temperatures are now used to control heating in neonatology units - units for the care of newborn babies¹³. A low-energy X-ray scanner developed by NASA is currently used for outpatient surgery, sports injuries, and in third world clinics. It has also been used by the US Food and Drugs Administration (FDA) to study whether certain pills were contaminated¹³. Software for processing satellite pictures taken from space is now helping medical researchers to establish a simple method to implement wide-scale screening for Alzheimer's disease¹⁴. Looking through the fluid-filled, constantly moving eye of a living person is not that different from trying to observe astronomical objects through the turbulent atmosphere, and the same fundamental approach seems to work for both. Adaptive optics used in astronomy can be used

for retinal imaging in living patients to study diseases such as macular degeneration and retinitis pigmentosa in their early stages¹⁵.

Effects of astronomy on the treatment of diseases

One of the well-known aspects of the effect of astrology in treatment of diseases is its effects on humors and temperament. Temperament is a "commixture" (synkrisis) of the qualities of hot, cold, wet, and dry in every person, which affect its life and moods and also people resistance or sensitive against some diseases¹⁶.

Ptolemy assigned planets one or more qualities based on their intrinsic nature, or their orientality or occidentality. The seasons, solstices and equinoxes, angles of the chart, and moon phases were also given qualities, as in the table above (Table I).

Ptolemy's instructions is used for delineating temperament from the birthchart, using the Ascendant (the sign rising on the eastern horizon at the time of birth), planets in the Ascendant sign and their rulers, and the Moon for the shape of the body. Fixed stars rising with the Ascendant were also incorporated to a lesser degree¹⁸. Other astrologers of Late Antiquity also assigned qualities and elements to the planets and zodiac signs, but except for Hephaestio (who quoted Ptolemy extensively), the use of astrological temperament was not discussed. Nevertheless, the importance given to temperament in medicine by such renowned physicians as Galen, coupled with the use of astrology in medical practice, led to further development of humors, elements and qualities in astrology, primarily under Arabic-language astrologers of the early Medieval period. By the end of the Middle Ages, astrologers began to incorporate astrological formulae for temperament into their work.

Conclusion

According to this study the movement and location of stars and planets relative to Earth can affect many factors related to human health. In this regard, the main role is played by human nature, which can change with the change of seasons. Also, being exposed day and night due to the effect of melatonin can strengthen or weaken the treatments performed against some diseases.

Table I: Ptolemy's assignment of qualities¹⁷.

| Angles | Solstice/equinox | Moon phase | Planet phase | Planets | Seasons | |
|--------|------------------|------------------|---------------|---------------------------------|--|----------------|
| Cold | Imum Coeli | Winter solstice | New moon | Conjunction | Saturn | Autumn, winter |
| Hot | Midheaven | Summer solstice | Full moon | Opposition | Sun, Venus, Mars, Jupiter, Moon (slightly) | Spring, summer |
| Dry | Ascendant | Autumnal equinox | Last quarter | 2 nd station/ square | Sun, Mars, Saturn | Summer, autumn |
| Wet | Descendant | Vernal equinox | First quarter | 1 st station/ square | Moon, Venus, Jupiter | Winter, spring |

The influence of planets and stars may play a role in the treatment of diseases through their effect on the melatonin gland. But achieving this goal requires more extensive studies.

Conflict of Interest

The author declare that he have no conflict of interest.

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