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EDITORIAL

It is our pleasure to publish April/October 2011-2012 Issues of the Journal of International Society for the History of Islamic Medicine (Journal of ISHIM). We know that the Journal of ISHIM is a scientific journal devoted to the History of Islamic Medicine and Ethics research and scholarship. Also, this issue like the earlier ones represents important studies in the History of Islamic Medicine and Medical Ethics which activate thinking and raise certain questions. So, it also tries to provide solutions to thorny and sensitive problems and the ensuing understanding helps in enlarging one's perception and intellectual horizon. The views of papers are always those of the authors, and it is important in a field like bioethics which encourages interaction and dialogue over scientific topics.

Journal of ISHIM is a leading international journal that reflects the whole field of history of Islamic Medicine. The journal seeks to promote historical reflection and conduct in scientific research. It features original, full length articles on the history of medicine, as well as brief reports, responses, editorials, and other relevant material. To ensure international relevance JISHIM has an Editorial Advisory Board from all around the world.

This issue contains some important scientific articles, in which, we can see valuable original studies on History of Islamic Medicine and Medical Ethics. These articles are from famous scientists of many countries of the world. So, this journal helps to the development of researches on the History of Islamic Medicine and Medical Ethics. Papers of this issue are seen as two types: Research and Review. After 27 papers, ISHIM news of some scientific meetings are present.

Wishing April/October 2011-2012 Issues of the Journal of ISHIM, to be beneficial to all readers and colleagues.

Editors in Chief

Dr. Aysegul Demirhan Erdemir

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'Alī b. Sahl Rabbān al-Tabarī and His Works

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Summary

As a physician, scientist and philosopher, 'Alī b. Sahl Rabbān al-□abarī was the son of Sahl Sahl Rabbān al-□abarī. 'Alī was born in the educated and intellectual Christian family. He wrote many books on philosophy, medicine and religious matters. Particularly, his *Firdaws al-□ikma* is the first ever written medical encyclopaedia which incorporates all the branches of the medical sciences. This article demonstrates how important 'Alī b. Sahl al-□abarī's contribution was significant in Muslim heritage in terms of philosophical, religious and medicinal works. A rich bibliography backs the arguments of the articles and provides a solid basis for further reading.

Key Words: 'Alī b. Sahl Rabbān al-Tabarī Author of *Firdaws al-Hikma* (Paradise of Wisdom), Indian Medicine, Greco Roman Medicine, Sahl ibn Bishr, Ptolemy, *Almagest*, Hippocrates, Galen, Dioscorides, Democritus, Aristotle, Yuhanna b. Masawayh, Hunayn b. Ishaq.

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Fig. 1: The cover page of al-Tabarī's book *Firdausu'l-Hikmat* with Arabic letters, published in Berlin in 1928 by M. Z. Siddqi.

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1. Introduction

Abū'l-□asan 'Alī ibn Sahl Rabbān (or Raban) al-□abarī, son of Sahl Rabbān al-□abarī is a notable 9th-century Muslim physician, psychologist and one of the first scholars

who studied the comparative history of religions. He also produced one of the first encyclopaedic works on medicine. He lived more than seventy years and met with important figures such as Muslim Caliphs, governors and eminent scholars. He is one of the most controversial scholars due to his family's religious background and the books he composed on the religious matters. In this study, the works of al-□abarī will be analyzed under the light of new findings about his life and works.

2. Biography

'Alī b. Sahl Rabbān al-□abarī was born in an intellectual Syriac Christian family in Marw in the region of Khurāsān (near present-day Tehran). We ignore the dates of his birth and death. His father, Sahl Rabbān al-□abarī (d. c. 845-850), was a highly placed state official; he was an educated and respected member of the Christian Syriac community. His Uncle Abū Zakkār Yahyā b. al-Nu'man was also a distinguished scholar and the leader of the society of the time.

Professionally, Ali's father Sahl was a successful scholar. He had command over the art of calligraphy too. Besides, he had a deep insight into the disciplines of astronomy, philosophy, mathematics and literature. He was also the first translator of Ptolemy's *Almagest* into Arabic (c. 800)¹. Some

¹ Sarton, George, *Introduction to the History of Science*, vol. 1, Baltimore, 1927, pp. 565.

complicated parts of the book came to be resolved by way of his intellectual expertise, translators preceding him had failed to solve. He wrote a scholarly commentary on the book, expounding some of the finer points that were not understood by previous translators.

Sahl received the title of *Rabbān* because of his vast learning and knowledge of medicine and philosophy. Since the title “Rabbān (rabbi)” was given to the Jewish religious leaders, most of the historians thought that this family was of Jewish origin. Additionally, given the different writings of the title, most of the people discommended about him. For instance, one of the oldest books of Islamic history, *The History of al-ʿabarī* of al-ʿabarī² (d. 922), while giving his name and family names as Ali b. Rabbān al-Nasrānī, Masʿūdī mentions him as “Ali b. Zayd”. For in Ibn al-Nadīm, he is called “Ali b. Sahl b. Rabbal”³, whilst Yāqūt writes about him as “Ali b. Zayn”⁴, and Ibn al-Qiftī as “Ali b. Rabbān”⁵. The erroneous knowledge about his Jewish origin most probably goes back to what Ibn al-Qiftī said about him. He wrote that “Rabbān, as a Jewish physician from Tabaristān, was very good on mathematics, astronomy, and Jewish religious law and he translated the philosophical texts from one language to the other. His son Ali was a famous physician, who went to Iraq and settled down in Samarra. The words *al-Rabbān*, *al-Rabin* and *al-Rāab* are names given to those who are the eminent Jewish theologians”⁶.

On the other hand, Ali b. Rabbān very clearly described himself as a Christian in his book *Kitāb al-Dīn wa al-Dawla*. In *Firdaws al-ʿikma*, he also explains why his father got the title *Rabbān* and the meaning of it: “My father was one of scribes of Marw, noble, intelligent, kind, very good on the books of medicine and the philosophy. The medicine, as his family field has the priority. The aim of this was the satisfaction spiritually and religiously, not the boasting and to get benefit from it. This is why he got the title *Rabbān*. The word *Rabbān* that implies “our leader, our senior person and our teacher”⁷. In his other book *Al-Radd ʿalā al-Nā*

ʿarā he says that he used to live as a Christian until his age was seventy when converted to Islam. In spite of the fact that some scholars mention him as a Jewish physician who wrote in Arabic, and some of them just a Jewish scholar, when his known treatises were published, all these claims became academically invalid.

One has to say that the dates given about his birthday and death in some modern studies are also erroneous. According to Brockelmann, for example, he was born in 192 H (808 CE), and according to Meyerhof in 193 H (809 CE). In a statement given in his *Firdaws al-ʿikma*, it was understood that he was born earlier. In this statement, he says that “when I was praying maghrib with my dad, I saw a huge fire in the sky as a column shape. Just after this event, the ruler got into trouble and lost some of his territories”. Sources such as Ibn al-Athīr and Ibn Kathīr say that this event occurred during the reign of Caliph Mahdī and that the relevant event occurred in 167 H (783-84 CE) to the ruler of Tabaristān Wandad Khurmuz. Evidently, Ali b. Rabbān was of a certain age so that he can remember the event. Therefore, most probably he was born around 778-9 CE.

ʿAlī b. Sahl Rabbān received his preliminary education from his father Sahl in medical and natural sciences, calligraphy, mathematics, philosophy and literature. Besides giving him a good education, his father taught him religion and philosophy. As one can understand through his works, apart from Arabic, Persian and Syriac, he had also mastered Hebrew and Greek languages to a high degree of proficiency. For example, he translated his own book written in Arabic *Firdaws al-ʿikma* into Syriac language.

When he was ten years old, he was taken to Tabaristān (henceforth al-ʿabarī) by his father and he spent his early youth in Tabaristān. The intellectual and pleasant atmosphere which enabled him to devote his time to the study of a range of subjects including philosophy, medicine and religious, as well as various aspects of natural sciences

After he completed his education in Tabaristān, he moved to Iraq in 813 when he was thirty years old. Since his residence in Tabaristān, he became known as al-ʿabarī. When Māzyār b. Qārin appointed as a governor of Tabaristān in 825, he back to Tabaristān and went Māzyār’s service as a scribe. During this time, he started to compose his *Firdaws al-ʿikma* there but he finalised in Samarra in 850.

His patron Māzyār revolted against the ruler in 839, but he was captured and executed. Upon the Māzyār’s unsuccessful revolt against the caliph and execution, he went to Rayy and back to his own job as a physician. But after a while, he went again Iraq and settled down in Samarra.

2 Ibn Jarīr al-Tabarī, *Tārīkh al-umam wa al-muluk*, ed. M. Abu al-Fadl Ibrahim, Dar al-Savaydan, Beirut, IX, 352.

3 Ibn al-Nadīm, *Kitāb al-Fihrist* (completed 376/987), ed. Rizā Tajaddud, Tahran 1971, pp. 296, 354.

4 Yāqūt al-Hamawī, *Muʿjam al-Udabā*, ed. Ahmad Farid Rifai, Cairo, 1936-38, VI, 429.

5 Jamāl al-Dīn al-Qiftī (d. 1248), *Tārīkh al-hukamā*, ed. Julius Lippert, Leipzig, Dietrich, 1903, pp. 31, 167, 187.

6 Zahīr al-Dīn ʿAlī Baythaqī, *Tārīkh hukamā al-Islām*, Muhammad Kurd ʿAlī edition (Damascus, 1946), 22-23; D. Thomas, “al-ʿabarī,” in *The Encyclopaedia of Islam, New Edition*, Leiden: E. J. Brill, 2000, X, 17-18.

7 Sami. K. Hamarneh, *Health Sciences in Early Islam*, ed. Munawar A. Anees, Texas: Zahra Publications, 1983, II, 353-358.

Having been highly recommended to the caliph as a man of wisdom and intellectual and administrative ability, he was summoned by the 'Abbasid Caliph al-Mu'tasim (833–842) to Baghdad to serve at the court. Ali became in short time one of the close friend of Caliph, and became his *diwān* scribe. He continued this job until Caliph's death in 842 and upon his death, he moved again to Samarra during the reign of Caliph al-Wathiq (842-847).

He back to Baghdad and continued to the court service again as a private physician and courtier under the new Caliph al-Mutawakkil (847-861). It was under his reign; however, that al- \square abari's position was promoted to that of companion to the caliph and gained his true fame during his reign. Caliph al-Mutawakkil urged and encouraged him to embrace Islam and confess his faith openly. Hence he converted to Islam around 849-850, and was given a title as "*Mawlā amīr al-mu'minīn*" by caliph. He praises the Caliph due to his conduce to convert at the end of his book *Kitāb al-Dīn wa al-Dawla*. When he converted to Islam, his cultured and highly respected uncle, Abū Zakkār Yahya b. al-Nu'man who tried repeatedly, but in vain, to persuade at- \square abari to renounce his new faith and return to Christianity.

The date of al- \square abari's death is not cited by the sources. However, as he converted to Islam when he was seventy years old, during the reign of Caliph al-Mutawakkil, and that he composed few books after that time, it can be said that he passed away after 864 in Baghdad or Samarra.

3. Al-Tabari's Works

Although few of them arrived today, Al-Tabari left twelve books. Most of them were on medicine. Besides medical science, he was also a master of philosophy, mathematics and astronomy.

3.1. *Firdaws al- \square ikma* (Paradise of Wisdom) (Arabic). (British Library Or. Arund. 41). It is also known as *al-Kun-nash al-hadrā* was a system of medicine. It was completed around 850, the third year of the reign of Al-Mutawakkil, most probably before the author converted to Islam. We will analyze the book below in section 4.

3.2. *Al-Radd 'alā al-Nā \square ārā* (Refutation of Christians), known also as *al-Radd 'alā a \square nāf al-Nā \square ārā* and as *al-Nā \square āyikh*. (Arabic) (Suleymaniye Library, Sehīd Ali Pasa, MS 1628). In the prologue of the book, the author says that he was born and used to live as a Christian and converted to Islam when he was seventy. It was written between 850 and 855. After that, he explains why he composed this book saying that his only aim to gain the Allah's consent and to warn the Christians. Due to his Christian roots, and as a

theologian on the Christianity, who can compare al-Qur'an and other divine books, hence his book has been accepted as a most successful book from the other refusal books on the Christianity. This book was divided into five chapters.

Sāfi b. Assāl, a Copt wrote two refutations, titled *al-Sahā'ih fī javābi al-Nasāikh* and *Nahj al-sabīl fī tahjīli mu-harrif al-Injīl* (published in Cairo in 1926-1927 as a one volume.). Although there is no citation, the first one was the refutation written on the book of al-Tabarī when we compare it with al- \square abari's work. *Al-Radd 'alā al-Nā \square ārā* was edited and published by I. A. Caliph and W. Kutsch. Khalil Samir, however, compared this book with Ibn Assal's Refutation in an article and found that the half of the book is missing. Khalil Samir wrote an article comparing the first book with al- \square abari's book and realized that the most part of al- \square abari's book is missing. He offers that using the Ibn Assāl's treatise, one can complete the missing parts of the book.

3.3. *Kitāb al-Dīn wa al-Dawla* (The Religion and the State/Empire) (Arabic) (John Ryland Library, MS 6131). Another book of at- \square abari, which deserves as much attention, and consideration, which is Al-Tabari's best-known treatise. Al- \square abari composed this treatise after converted to Islam around 855, to authenticate and testify that Islam is the right religion, Qur'an is the book of Allah and Prophet Muhammad is the last messenger. Since al-Mutawakkil encouraged him to compose this book, At- \square abari dedicated this book, as he did with the *Firdaws*, to caliph. In this book, at- \square abari praised the Prophet of Islam and the true message he brought from Allah. Muhammad, he affirmed, was mentioned very clearly by the ancient prophets divine book (the *Old Testament* and the *New Testament* (the Bible), 'However, their statements were concealed and wrongly interpreted.

In terms of the content and the subjects, this book is superior to his *al-Radd 'alā al-Nā \square ārā*. Ādil Nuwayhiz edited and published the book with explanations. This book divided into a prologue, ten chapters and an epilogue. Since this book sheds considerable light on the life, religious beliefs, and philosophy of at- \square abari, it seems of interest to the history of the ninth-century religious and philosophical thought in Islam, particularly in Iraq. This book of al- \square abari was not widely circulated and its contents seem to have been overlooked by the Muslim scholars and intellectuals. Tabari's polemics in this treatise shed considerable light on his life, beliefs, and philosophy, and reflect on religio-philosophical thought in ninth-century Islam

3.4. *Hifz al-sihhah* (On the Preservation of Health). It is a manuscript attributed to Tabarī, on the preservation of

health. This treatise is available in manuscript-form in the Library of Oxford University (Bodleian Library, Oxford, catalogue 1:578).

3. 5. *Kitāb al-Lu'lu'a*. It is a treatise on medicine. (Suleymaniye Library, Ayasofya MS 3724, ff. 238b-248a).

In addition to the above books, there some more books composed by Ali b. Rabbān, but none of them are extant today. Here is the list of these books:

3. 6. *Kitāb Manāfi' al-at'ima wa al-ashriba wa al-'aqākīr*, (a work on the proper use of food, drink, and medicines.)

3. 7. *Kitāb al-ādāb wa al-Amsāl wa al-Ādāb 'alā mazāhib al-Fars wa al-Rūm wa al-Arab*,

3. 8. *Nawādiru ahlu al-sharqiya wa nawādiru awsat al-nās wa nawādir al-sufla wa al-du'a* (*Translation of previous book*).

3. 9. *Kitābu Irfāq al-hayāt*,

3. 10. *Kitāb fī al-rukā*, (*Book of Magic or Amulets*)

3. 11. *Kitāb al-hajāma*, (*Treatise on Cupping*)

3. 12. *Kitāb fī tartīb al-'Agdhiyah* (*"Treatise on the Preparation of Food"*)

3. 13. *Tuhfat al-Mulūk* (*"The Kings' Present"*).

3. 14. *The Translation of Firdaws al-Hiqma in Syriac*.

3. 15. *Kitāb al-izāh min al-saman wa al-huzal wa tahayyuj al-bāh wa ibtāluhu*.

4. *Firdaws al-hikma*, the first encyclopaedia of medicine

Al-Tabari started this book almost two decades earlier after reading the available medical texts, which he found, confined to one subject each. The main cause behind his exaltation lies in this world-renowned treatise. This is the first ever-Medical encyclopaedia, which incorporates all the then available branches of medical science in its folds. The virtue of at-□abarī's book was the abstraction of essential information from these Syriac texts, as well as from Greek and Indian compendiums, and compiling all the information and abstracts into a manageable volume, which concisely embraced the whole field of medical knowledge. It is particularly known for its extensive treatment of anatomy. His work contains not only chapters on general cosmological principles and all the branches of medicine, but also a special section devoted to Indian medicine (In his quotations and discussions of Indian medicine, he refers to Indian physicians such as Susruta, Charaka, Nidana and Ashtan-gahradaya etc.). He relied on the Hippocratic corpus and the writings of Hippocrates, Galen, Dioscorides, Pythagoras, Democritus, Aristotle, Theophrastus and Ptolemy. He

also made reference to the outstanding contributions of two of his contemporary colleagues Yuhanna b. Masawayh (d. 857), the caliph's own physician, and Hunayn b. Ishaq (d. 873). At-□abarī, moreover, emphasized the strong ties between psychology and medicine and also emphasized psychotherapy and urged the physician to be smart, witty, and able to inspire and encourage his patient to feel better.

As a medical text for students of medicine and practitioners, *Firdaws* is one of the most important sources for the early Islamic medicine towards the end of the translation period. Al-Tabarī spent very long time on this work which he started to compose when he was in Marw, and completed in Samarra. However, he wrote it in Arabic but he simultaneously translated it into Syriac language.

There are seven main chapters (*Naw'ونع*), 30 sections (*makala*) and 365 parts (*bāb*). It contains much information belonging to Indian, Persian, Greek and Arabic medicine. It deals with paediatrics and child development in depth, as well as psychology and psychotherapy. Unlike earlier physicians, however, al-□abarī emphasized strong ties between psychology and medicine, and the need of psychotherapy and counselling in the therapeutic treatment of patients.

At-□abarī also devoted several chapters in *Firdaws* to discussions on embryology, gynaecology, and obstetrics – being all branches of the healing art. Some sections were also devoted to plants and their medical benefits, which is the very new in the Arabic medicine. The *Firdaws al-□ikma* is noteworthy from this point of view as are several treatises of Hunayn ibn Ishāq and during the following century Ibn Juljul and 'Alī ibn 'Abbās al-Majūsī marking the transition between the translation phase and the phase of originality of Islamic medicine started by Al Rāzī,

As a medical encyclopaedia, it quickly became a model for later physicians including al-Majūsī, then followed by original contributions from Abū Bakr al-Rāzī (H. 250-312/ AD 865-925), Ibn Sīnā and al-Bīrūnī that influenced Eastern and Western medical circles for several centuries. From the very writings of ar-Razi's it is obvious that he benefitted from the works of al-□abarī and quoted them repeatedly. Although some scholars claimed that al-Rāzī was educated by al-Tabarī, the fact that the physician al-Rāzī did not study under at-□abarī, since the latter had already been dead by the time of al-Rāzī.

Although some scholars including Ibn al-Nadīm and Ibn Al-Qiftī claimed that he has another work named *al-Kunnāsh al-Khudrā*, it is the other title of the *Firdaws al-□ikma*. Thus, in the beginning of the work he says that "the name of the *al-Kunnāsh* is *Firdaws al-□ikma*, and its nick-

name is *Bahr al-manafī wa shams al-ādāb*". It is clear that he has no other work named *al-Kunnāsh*.

Following are the details of its all seven naw' (part):

1. **Naw' one:** *Kulliyat-i Tibb*. This volume discusses contemporary knowledge of medical science. In that era, these principles formed the basis of medical science. It is the introduction to the encyclopaedia and contains some philosophical descriptions as well.
2. **Naw' two:** Elucidation of the organs of the human body, rules for keeping good health and comprehensive account of certain muscular diseases. Contains five *maqalas* and information about the care of the health (preservation of health).
3. **Naw' three:** Contains one *maqala*. Discussion and description of diet for good health and prevention of diseases.
4. **Naw' four:** Consultation (discussion) of all human diseases. In addition to information derived from ancient medicine, in this chapter he also added his own observations and interpretations. It is the largest and most significant volume, nearly half the size of the whole book, and comprises twelve sections (*maqalas*):
 - a. General causes relating to eruption of diseases.
 - b. Diseases of the head and the brain.
 - c. Diseases relating to the eye, nose, ear, mouth and the teeth.
 - d. Muscular diseases (paralysis and spasm).
 - e. Diseases of the regions of the chest, throat and the lungs.
 - f. Diseases of the abdomen.
 - g. Diseases of the liver.
 - h. Diseases of gallbladder and spleen
 - i. Intestinal diseases.
 - j. Different kinds of fever.
 - k. Miscellaneous diseases-Brief explanation of organs of the body.
 - l. Examination of pulse and urine.
5. **Naw' five:** Description of flavour, taste and colour and also relations between foods and the body.
6. **Naw' six:** descriptions on herbal medicines, drugs and poisons. Comprises six *maqalas*.
7. **Naw' seven:** Deals with miscellaneous topics. Discusses climate and astronomy. Also contains a brief mention of Indian medicine. Comprises four sections

Ethical advices of Al-Tabarī in this book take very significant place. He insisted that the conduct of practitioners should be as high as their calling. Those aspiring to practising health professions, he contended, should acquire four virtues essential in their everyday activity: gentleness, contentment, pity, and up righteousness. In serving his patient, the physician's primary objective should be helping the sick rather than seeking monetary gain.

Muhammad Zubair al-Siddiqī compared and edited the original manuscripts and published it in 1928, in Berlin under the *Firdaws al-ikma fī al-tibb*. Prior to this publication, only five of his manuscripts were to be found scattered in libraries all over the world. In his prologue, he has provided extremely useful information regarding the book and the author. Wherever necessary, explanatory notes have been added to facilitate publication of this work on modern publishing standards. Fuat Sezgin republished this book with an introduction (Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1996, *Islamic Medicine*; 29).

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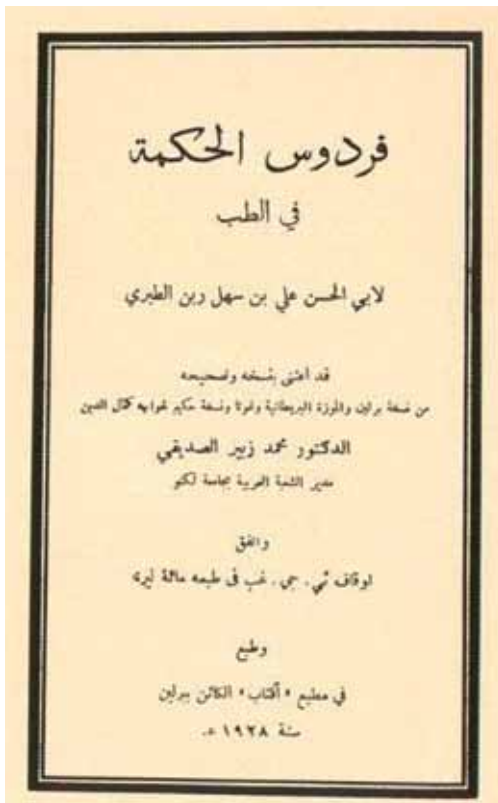


Fig. 1: The cover page of al-Tabari’s book Firdausu’l-Hikmat with Arabic letters, published in Berlin in 1928 by M. Z. Siddqi.

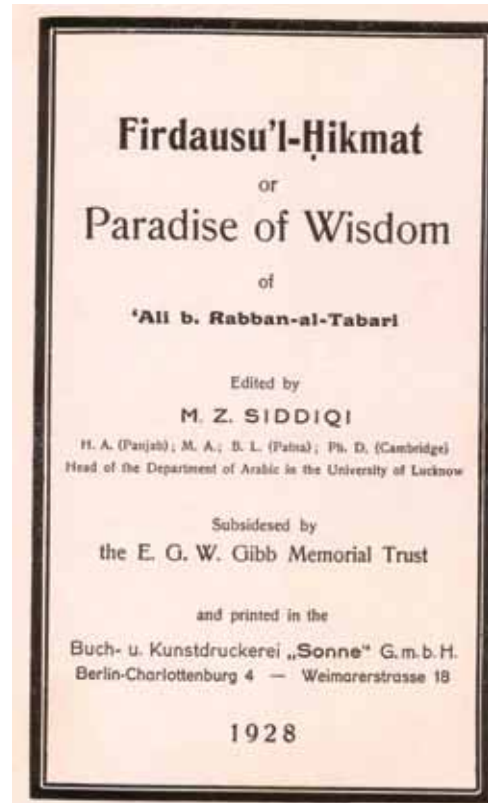


Fig. 2

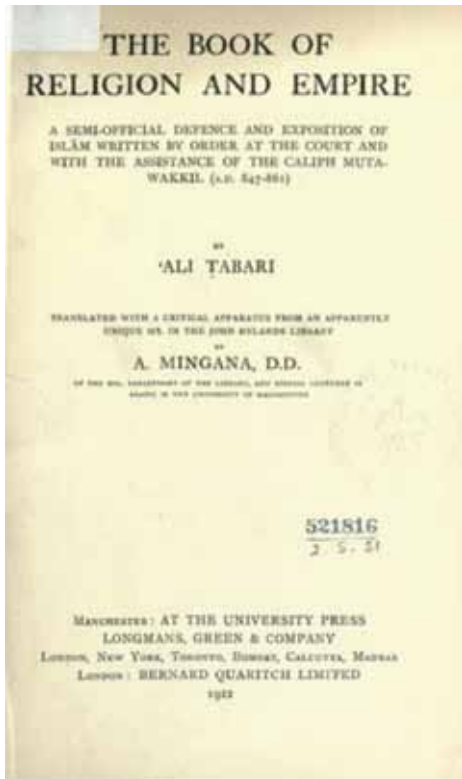


Fig. 3: The cover page of Religion and Empire (printed in 1922) of al-Tabari, ed. By. A. Mingana.

MÉLANGES DE L'UNIVERSITÉ SAINT JOSEPH
BEYROUTH (LIBAN) TOME XXXVI, FASC. 4

AR-RADD 'ALA-N-NASĀRĀ
DE 'ALĪ AṬ-ṬABARĪ

ÉDITÉ PAR

L.-A. KHALIFÉ, S.J. et W. KUTSCH, S. J.

BEYROUTH
IMPRIMERIE CATHOLIQUE
1959

Fig. 4: The cover page of the book Al-Rad 'ala al-Nasara by al-Tabari edited by Khalifa and Kutsch.

Holistic Approach of Riyazat (Exercise) in the Prevention of Non Communicable Diseases with Special Reference to Al-Qanoon Fil Tib A Review

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Summary

Our lifestyle in recent years is affecting our health. Sedentary lifestyle induces laziness in mood. Alertness or activeness of the body depends upon physical activities. Because, they improve metabolic rates, digestion, evacuation of wastes and give Latafat to Mizaj. Therefore we have to force physical activities upon us. Physical activity is any force exerted by skeletal muscles that results in energy usage above the level used when the body systems are at rest. Many activities that create health benefits such as walking, running, jogging, swimming and cycling requires little or no special skill to be performed and enjoyed. Regular physical activity has been linked to lower incidence of Life style diseases for examples, high blood pressure (hypertension), cancers of the colon and reproductive organs, bone fractures as a result of osteoporosis, Diabetes and psychological disorders such as depression and anxiety. This is the need of time to focus on different types of Riyazat mentioned by Unani Physicians to prevent NCDs. Rest will be discussed in full length paper.

Key Words: Riyazat, Non communicable diseases (NCDs), physical activities

Introduction:

According to a report recently given by United Nation, *more than three of every five people who die today will do so because of a chronic, non-communicable disease ("NCD") such as diabetes, cardiovascular disease, cancer or lung disease. NCDs account for 75 percent of health care spending globally and cause hundreds of billions of dollars in productivity losses in developing countries alone. The human and economic costs are staggering. (1)*

Non Communicable diseases are the result of an ill-relationship of people with their environment. Reduction in physical activity and exercise has also added to the scenario. Substance abuse, especially tobacco smoking and alcohol drinking may also increase the risk of certain diseases later in the life. But unlikely other diseases, lifestyle diseases can be barred, as its influence can be weakened by changing our lifestyles, improving diet and making the environment healthier. Various lifestyle diseases, now-a-days, include Alzheimer's disease, atherosclerosis, asthma, cancer, chronic liver disease or cirrhosis, chronic obstructive pulmonary disease, Type 2 diabetes, metabolic syndrome, nephritis or chronic renal failure, osteoporosis, acne, depression, obesity, heart disease and stroke.

The World Health Organization (WHO) has warned that more than 270 million people are susceptible of falling victim to diseases linked to unhealthy lifestyles. Most of these people are thought to come from China, India, Pakistan and Indonesia. China and India are the emerging economic superpowers. With prosperity have come cushy, but sedentary jobs requiring long hours of work with no time left for exercise. Added to this is the fact that the diets are becoming increasingly focused on ready-made junk food.

NCDs have silently emerged as the leading cause of death, disability and disease, the world over, including India. In India, NCDs like heart disease, diabetes, chronic obstructive lung disease, cancer and injuries have already become the dominant cause of disease burden contributing about 2/3rd of the total disease burden. The number of deaths attributed to chronic diseases was 3.78 million in 1990 (40.4% of all deaths) and is projected to reach an expected 7.63 million in 2020 (66.7% of all deaths).

Already considered the diabetes capital of the world, India now appears headed towards gaining another dubious distinction of becoming the lifestyle-related disease capital as well. A study conducted jointly by the All India Institute of Medical Sciences and Max Hospital shows the incidence of hypertension, obesity and heart disease

is increasing at an alarming rate, especially in the young, urban population.

According to doctors a sedentary lifestyle combined with an increase in the consumption of fatty food and alcohol is to blame cases of obesity, diabetes, hypertension etc.

Unani concept in the causation of NCDs

The principal to be followed for exercise and the general benefits of exercise are described in great detail in different Unani Text. Riyazat comes under Ilaj Bit-Tadbeer. Which implies by alterations or modification in Asbab-e-sitta Zarooriyah (six basic requisites of life), with the intention of assisting the defence power Tabiyat-e-Mudabbira-Badan, in eliminating the disease factor or reverting the disease process.

According to Avicena, there are three fundamentals of health preservation: Exercise, diet and sleep. Exercise stands first in these fundamentals. It can be defined as a series of voluntary movements which produce deep respirations. According to Unani concept, every living organism needs food to preserve the health. It is the fact that no article of food even if highly nutritious is completely assimilated by the body. (4)

The body system tries to eliminate the waste matter and dietary content but it seldom succeeds in clearing whole of it. Hence some amount of waste matter is always left behind, which on gradual accumulation produces, putrefactive disturbances from its decay, abnormal temperament from its excessive activity, Plethora from its excessive quantity, swelling from its accumulation and vitiation of vital force with its vapour. All of these factors results in the causation of NCDs. That's why emphasis should be done to eliminate the waste either it should be achieved by purgatives or by exercise. Hence there is a risk to eliminate the matter with the help of purgative so the exercise is the only safe guard for its elimination. (7)

In spite of that Riyazat also stimulates the innate heat and makes the body feels lighten by producing the mild heat. (8)

Prevention of Non Communicable diseases by Riyazat

Riyazat prevents the accumulation of poisonous wastes by:

- a. Dispersing
- b. Assisting the propulsion of waste matter in the channels of excretion
- c. Diverting it towards their out lets

By these three mechanisms, harmful humours can easily eliminated from the body. Hence accumulation of wastes does not occur for any considerable length of time. Thus by increasing innate heat of body, exercises strengthen the muscles and joints and increase their resistance to damage and disease. By eliminating wastes, it accelerates the absorption of food by the tissue, expends and softens the organs liquefies secretions and dilate the pores. (1)

Thus by adopting these principals NCD can be challenged and even highly non communicable diseases such as Diabetes, Arthritis, Hypertension, CAD and Carcinoma can be readily prevented.

Along with the above mention effect, Riyazat can improve quality of life, help maintain healthy body weight assist in coping with the stressors in life, and generate the energy needed to perform the activities of daily living quickly and easily. Some researchers contained that the strongest health benefit of Riyazat for young people is improved psychological health, not only for them but for the adults in their lives as well.

Among adults higher levels of physical activity have been associated with a lower risk of coronary heart disease, diabetes and osteoporosis thus resulting in lower burden of LSD. The recent surgeon general's report on physical activity and health indicated that physical activity need to be strenuous in order to achieve health benefits and the women and men of all ages benefits from a moderate amount of daily physical activity.(6)

The focus in the new millennium is on a well rounded, comprehensive approach to physical fitness, with cardio respiratory fitness, muscular fitness, flexibility and body composition as the major components.

Types of Riyazat mentioned in Unani system of medicine

Types of exercise in Unani Tib have been classified on the basis of rate, duration and intensity of exercise. The following types are described

1. Riyazat Qalila (Short duration exercise)
2. Riyazat Kaseera (Long Duration exercise)
3. Riyazat Qawiya (Vigorous exercise)
4. Riyazat Zaefa (Light exercise)
5. Riyazat Sareeaa (Quick exercise);

It is the exercise in which movement are performed rapidly.

6. Riyazat Bateeaa (Slow Exercise) is the opposite of Sareeaa.
7. Riyazat Hasheesha (Quick and vigorous exercise)
8. Riyazat Tarakhiya (Slow and light exercise)

In classical Unani literature is also found various ways to exercise, a few of which are mentioned here; Walking; Running; Swimming; mountaineering; Boat Rowing; Horse riding; Archery; Wrestling etc. Most of these above mentioned ways e.g. Horse riding, swimming, Mountaineering etc. are not possible for everyone to adopt for exercise purpose. However, alternative to this exercise can be used provided the muscles used in these exercise are known, so that almost the same desired benefits can be extracted. Most of the exercise can now be done at a single stop Gymnasium.

Duration and strength of Riyazat

Duration of exercise should be as per body strength and power. So that body should not become fatigue because, exhaustive exercise seems to increase the severity of some viral diseases. Moderate exercise can cause coincided psychological benefits. (5)

Diet and Riyazat

According to Rhazes and Galen, it is beneficial to exercise before the meal and it could be results in disease if done after meal. (2) (3)

Policy implementation steps for prevention of NCDs by WHO

- Protect people from tobacco smoke, warn and enforce bans on tobacco advertising, promotion and sponsorship
- Raise taxes on tobacco and alcohol
- Restrict access to retailed alcohol and enforcing bans on advertising
- Reduce salt intake and salt content of food
- Replace trans-fat in food with polyunsaturated fat
- Promote public awareness about diet and physical activity

Conclusion and Interpretation

On the light of above mentioned affect of Regular Harakat Badan (physical activities) it can be said that Riyazat has been linked to lower incidence of high blood pressure (hy-

pertension), cancers of the colon and reproductive organs, bone fractures (as a result of osteoporosis) and psychological disorders (such as depression and anxiety). It can be manipulated from above description that many of the risk factors for coronary artery disease, hypertension and osteoporosis first appear during childhood and adolescence if fortunately identified during childhood, adolescence or younger adulthood can be reduced through exercise and modification in diet.

Thus Riyazat is an important tool of life style disease prevention. If done regularly, it not only improves the level of health but also enhances the life span. It is the need of time to focus on the fundamentals of health given by Razes and to maintain a balance among six essentials of life that are the key factors for life style disease prevention. Emphasis should be done on different forms of Riyazat and Ghiza as mentioned by Unani physicians. In brief, besides balanced diet and clean air, daily exercise is essential to maintain health it is also as per the steps given by WHO.

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Ibn Miskaweih's Innovations in Medicine

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Summary

What a wonderful masterpiece, and innovation of this Islamic thinker of such a scientific facts about cultivation of the health of soul and body, depending on the strength of human body, his thinking, the self-power, the power of creativity and imagination and the pattern of his life and his relations to others.

Key Words: Ibn Miskaweih , Medicine , Humanity

Introduction

Arab history is full of great names, and genius personalities who influence human life by their great creativity, and we are pleased to mention them, and be proud of their sciences, and eagerly compete to narrate their influence on humanity as a whole. Thanks to them we are now owners of an ancient civilization because of their efforts, but some of them did not get a great deal of attention as much as his important production. I have chosen this virtuous researcher, Ibn Miskaweih, Abu 'Ali Ahmad ibn Muhammad ibn Ya'qub.

What helps me to take this option, the whole of what I read about him and what others said: "He did not get his part from historians of science, but there is prejudice against his creativity and clouds hide his production, we need to remove them to tell our Arab youth and Islamic nation about the talent of prominent Ibn Miskaweih

His views on physical and moral health

Ibn Miskaweih mentioned amazing scientific facts about the physical and moral health. He insisted that causes of any disease related to both brain, and heart, and they are linked to each other.

If cause of a disease was due to primary organ which is the brain, the mind will change and loss part of the memory, it may also distract and his moral strength may depress; thus signs of weakness may appear that could lead to slowness, disorder and change the body and thereby sensual strength. That's what is called Alzheimer's disease.

Whereas if cause of the illness was other organ which is the heart as love, extreme sadness, fear, or faint-hearted,

this moral illness will lead him to change in the body, it may cause also pale, yellow skin and weakness as well as a change in mood, thus a treatment should differ accordingly.

Through our study of the sympathetic system and the parasympathetic system we can conclude that the sympathetic system works as an emergency system, when an intense emotion takes place such as extreme anger, or fear, it aids in the control of most of the body's visceral effectors, as heart, this response known as sympatho-adrenal response of the body, increase rate of heart-beats, force of contraction, and high blood pressure. In the moment of anger or fear, the sympathetic system outflow to prepare the person for actions like struggle, flight or heavy works.

The parasympathetic system controls most of visceral effectors and smooth muscle contraction, to stimulate or inhibit glandular secretion in daily circumstances. For example, it works to slow the rate of heartbeats and inhibit glandular secretion and insulin, practicing Yoga or meditation to decrease the action of sympathetic system or fight and flight syndrome.

The heart is nerved sympathetically and parasympathetically, it works under the supervision of autonomic nervous system through autonomic neurotransmitters which are chemical compounds liberated from the ends of the axons of autonomic neurons acetylcholine, epinephrine and norepinephrine. Then the parasympathetic pulse leads to the release of acetylcholine which causes decreasing in the rate of heartbeats, while the sympathetic pulse causes the release of epinephrine which increases the rate of heartbeats.

Ibn Miskaweih's Medicine of body and soul

Ibn Miskaweih is creative in his thinking in this regard, where he says: "Since the medicine of body dividing into two parts: one is preserving the health if available, and the other is to recover it, if was absent, we should divide it like that to regain our health or preserve it"

Do we understand that he gave a precise definition to the word "medicine": which is the preservation of health or recovering it."

To cultivate the moral health, Ibn Miskaweih asks person to associate with similar personalities (as himself) those who are friendly with, say good words, avoid bad behaviors and words, because that would harm the moral health, where its treatment is difficult and needs a long time, therefore such a person has to keep himself apart from this mental illness, by controlling his mind habituate his soul to hear good words and funny conversations, which are well-balanced and controlled by mind.

Ibn Miskaweih depends on using beautiful words and phrases on purpose i.e. language controlled by mind (nerve impulses), as well as the language of the senses and organs, to preserve health of soul and body. This explains the following when somebody meets a friend by saying:

...Should be met anybody with magnanimous and good-hearted, by showing your gladness in your eyes, your movements, and your lineaments when looking at you. Such movements increase the love and gratification every day and under any circumstances. One can notice also the pleasure of all your organs.

Is not this Ibn Miskaweih's approach goes in the field of science that called today "neuro-linguistic programming" ?

Yes, definitely, because NLP is the ability of the nervous system to organize and programming information our bodies, souls and brains receive throughout our daily lives (pictures, words, sounds, smells, feelings .. etc.) then the output will affect our lives internally and externally in expressions (dialogue) behaviors, thinking and performance, that enable us to reach the desired goal.

This is also called a "modern administration of mind" that has advocated by Ibn Miskaweih.

Serotonin is neurotransmitters, works to organize the various patterns of behavior as motive actions, mood, sleep and appetite, etc., its deficiency leads to depression and mania. It considers a vanguard of the hormone melatonin secreted from the pineal gland, which gives a sense of calm and tranquility.

Also to preserve the health of the body, Ibn Miskaweih finds that the basis of cultivation health is the movement and lack of laziness, i.e. sport. Sport preserve practically the soul, by isolating from apathy, laziness and stupidity.

"If you get used to laziness and opted to rest, then you are about to die because you back to animal levels, out of reality" As we know that sport release the emotional physical charges, therefore release the internal psychological charges, that comes in the context of one motto "movements generate health and bless"

Ibn Miskaweih found a dialectical relationship between the preservation of the health of body and soul through finding several factors that preserve the health of the soul and body. One of these factors is to preserve health by controlling two powers "power of sensuality and power of anger", person has not to let them controlled and mislead him, he did not know the right from the false, lost between good and evil and became rough like animals, then have to deal with his soul and his body, but calls for these two powers, the time his body needs to any of them, and not let them occur automatically at any time his needs recall them. Because when body needs those two powers, they "agitate in need" because God gave us these two powers to use them when needed not to follow them.

He explains this saying by a piece of advice to a person, he has not to remember what happened to his desires or to his soul when seeking for these two powers as a goal, he will no more distinguish between good and evil, and things mixed in the mind. He has to let those powers to do their natural function as God order them.

Duties of health keeper

Ibn Miskaweih suggests some duties on the one who preserve the health of both soul and body:

1. Has to adopt measures to save his body and soul, not to harm them by customs he used to do them, where he has to use the organs (Ibn Miskaweih says: tools of the body and soul) to maintain his health, otherwise it is as a punishment to the self with harmful things, for instance eating unhealthy food, or unable to prevent himself from eating unhealthy food, what is meant here is the health of body not pleasure of body. "The one who wants to remedy the hunger and thirst, which are two paining diseases, he has not to ask for the pleasure of body rather of the health of body"

The one who seeks for pleasure not for the health, he wouldn't get his health when the pleasure ends, and

tiredness and pains overcome him. Thus, Ibn Miskaweih asks person to take care of his food and takes only the necessary amount for his life and health without indulgence in pleasures of eating. He also has not to be lazy in preparing what is good for his health.

Here Ibn Miskaweih is talking about nutrition, digestion and absorption process that body do it to take the useful materials. Ibn Miskaweih gives an example to humans, how animals seek for food for survival not for pleasure. Some animals eats scarab beetles, which feed on animal manure, they are attracted to smells, and is pleased although it has an ugly smells, while bees escape those bad odors and are attracted to other perfumes and odors, which survive their life. In this way, human beings should take care of his food and drink.

2. Has not to surrender the self to anger, especially if it misplaced, it will bring displeasure of people around him, and he has also to avoid places of vice or sin.
3. Has to see his shortcomings try to reform them, Then soul will get used to merits, Ibn Miskaweih remember what Galen said, and the opinion of Galen is: "when a person loves itself, he wouldn't see his shortcomings, then has to choose a friend of him told him for its shortcomings to avoid". Ibn Miskaweih refused this saying because he believes that an enemy is better than a friend, the enemy mentioned the defects and exaggerate them without any courtesy. He quotes what is Kindi says: "let us be as sun, help the moon, whenever it rises, it makes the moon shines"
4. Has not to surrender for laziness, slackness and relaxation, then he will obliged to practice sport or prayer for a long time to remedy himself. He has to used to do sports to motivate his body and soul.

Diagnosing moral disease and the remedy

Ibn Miskaweih pointed out many important scientific facts in diagnosing moral diseases and how to cure them. He depicts this idea in a solid geometry, in a way shows that the soul can be cured when we treat the causes. I am going to show what Ibn Miskaweih stated by using the following graph to explain what he meant.

In this simple graph, Ibn Miskaweih compare the health of self with the virtues within cycle center (circle), wherever we go to circumference, we get close to the points of vices: excess (iveness) and negligence (abuse), these peripheral points are the defects. Thus should be treated by going back to the center of cycle to remedy the self.

Depending on this theory, Ibn Miskaweih find four virtues of health of the soul which are: courage, wisdom, chastity and justice. The result of practicing these virtues leads to the health of body.

- He has also figured out two problems (vices) to each virtue, so there are eight basic reasons (vices) for diseases: Rashness (excess) and cowardice (negligence)
- Gluttony (excess) and weakness (negligence)
- Silliness (excess) and idiocy (negligence)
- Injustice or inequality (excess) and humiliation or disorder (negligence)

Below these categories, many unlimited types can be classified .

In this figure, we can note that each virtue has two ends contradictory and limited.

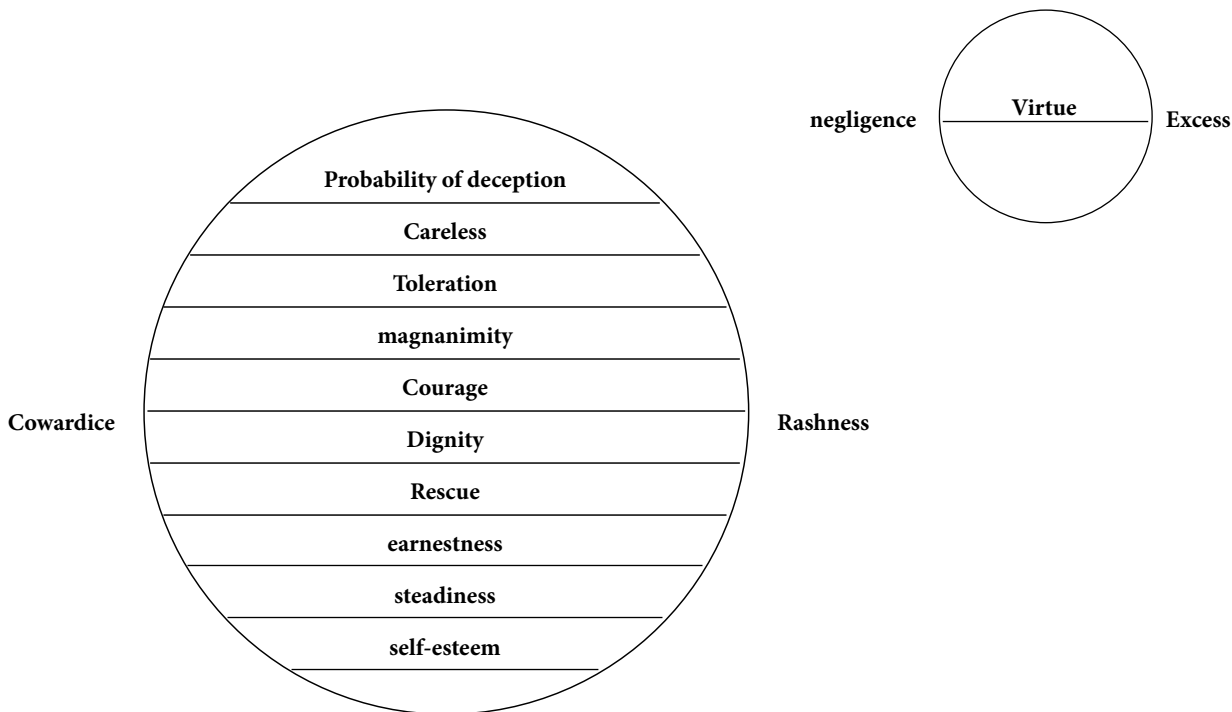
Let's start with the First cycle. Its center is virtue "courage" considers the indicator of health of soul, its ends are rashness and cowardice, they are important indicators of self defects, their causes are the power of anger, as Ibn Miskaweih describes, what happens physiologically speaking to the human being infected with extreme anger (..his blood boiling, his heart is filled with dark smoke, then mind get worse and weakens.. and it would be .. like a cave full of fire.., is difficult to treat or to stifle and all trials to put out will be a reason to increase the anger)

We can explain this description by the role of hormone Epinephrine (Adrenaline) and Norepinephrine (Noradrenaline), where their level in the blood is low in normal circumstances. Their level get up in special or abnormal circumstances such as body exposed to risks or doing excessive sport, or in cases of arterial hypotension. Here, secretion occurs rapidly for these Hormones to the blood by the adrenal gland as a result of nervating it by pulses come from sympathetic nerve fibers. The rate of heartbeats is increased with high blood pressure thus more blood reach to the skeletal muscle, which contain more sugar and more energy. So the body is ready to do an great effort (fight or flight syndrome) to enable human beings from response to emergencies, or to avoid them. (Rashness or Cowardice)

In this case of the extensive anger-power, it is difficult to treat it by sermon, it inevitably will increase the anger like fire increase with the presence of air, and wood. This anger will make people avoid him, which may generate a moral illness. Besides, cowardice is the second opposite of the virtue "courage", is the lack of anger-power, it's the tranquility when self should move and take actions. This leads to the self-humiliation.

If we go back to the first end which is excessive rashness, we can see that Ibn Miskaweih find many reasons generating this anger: wonder, pride, arrogance, mood, ridicule, treachery, injustice and those things of self-esteem.

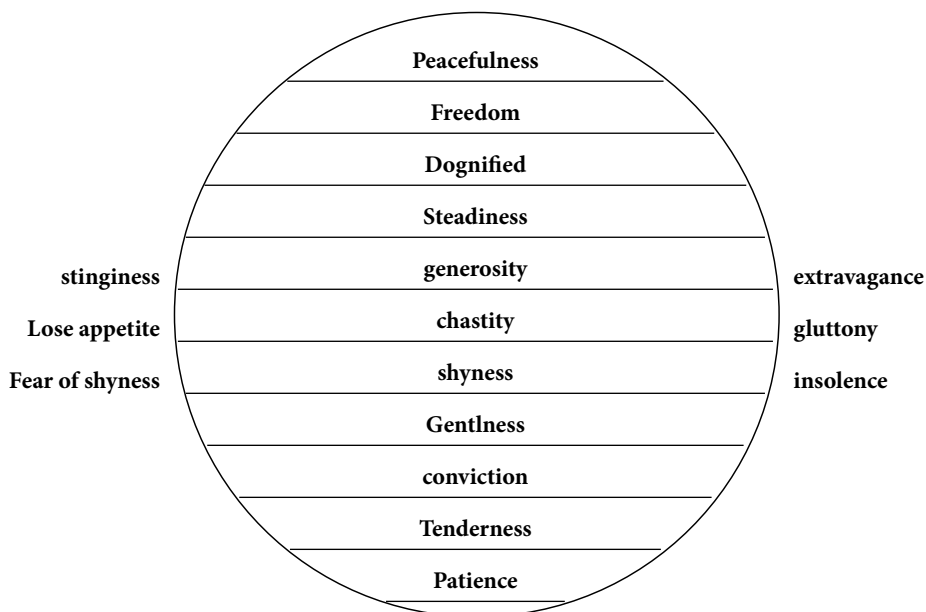
All these causes the desire of revenge and its consequences are very bad, it may lead to regret and pain. Ibn Miskaweih figured out a remedy for each of these reasons after diagnosis.



The virtue “courage” in the center of the circle and its categories (subsidiary virtues) inside the circle on the vertical axis, the opposites of this virtue (vices) at the periphery.

Magnanimity, for example, did great work
 Patience, patience in attitudes

Rescue, ask the internal power of self to stay strong
 Toleration, longanimity and not get anger easily
 Thus, virtue is the center of generating power to subsidiary virtues where the real strength centralized. the virtue “courage” is the power of self-anger, its tool is the heart.

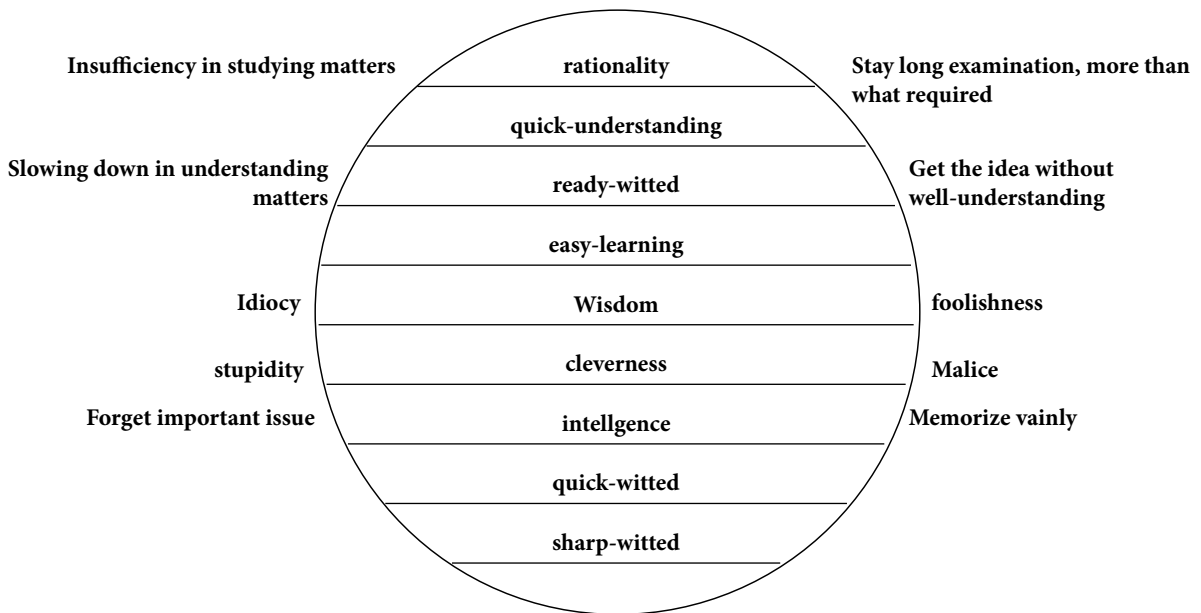


The virtue «chastity» in the center of the circle and its categories (subsidiary virtues) inside the circle on the vertical axis, the opposites of this virtue (vices) at the periphery.

The virtue «chastity» is the power of sensual self; its tool is the liver.

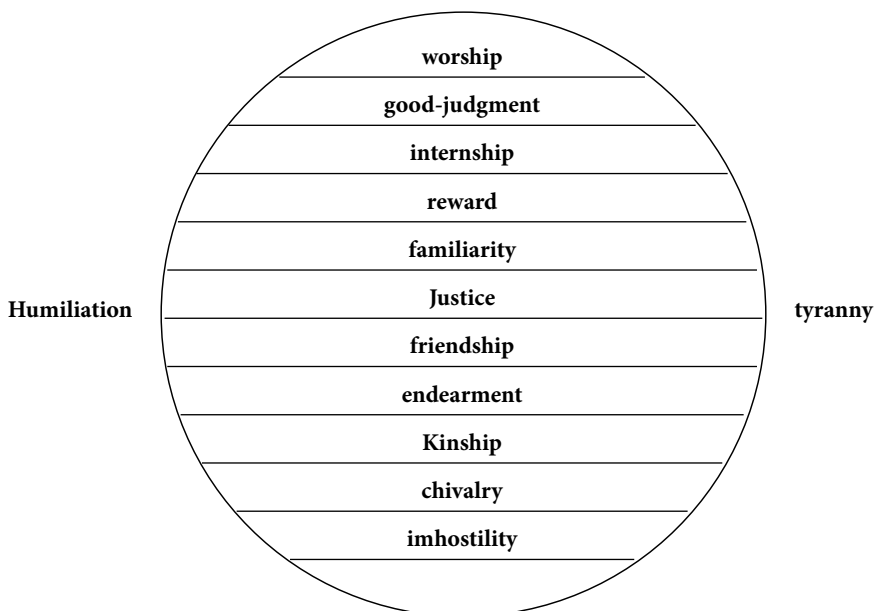
For example, shyness, fear of ill-behavior

Gentleness, beautiful soul
 Tenderness, self-control when desires appear
 Patience, in resisting desires
 Conviction, acceptable behavior in food and drink and pleasures Dignified, self-perfection when it desires



The virtue «wisdom» in the center of the circle and its categories (subsidiary virtues) inside the circle on the vertical axis, the opposites of this virtue (vices) at the periphery.

The virtue of wisdom is the power of self-speaking (Property); its tool is the brain.



The virtue “Justice” in the center of the circle and its categories (subsidiary virtues) inside the circle on the vertical axis, the opposites of this virtue (vices) at the periphery.

the virtue of justice is the power of self-gathering of three forces (anger, sensual, property). This power of three forces has to order these forces without submitting to any of them, but it has to set right the power of anger and let it take action when necessary, then it uses the power of anger to overcome the sensual power.

Therefore, the circuit of “Justice” gathers the three circuits and lead them to the perfection of soul.

All what is mentioned about reasons, it causes many diseases to the soul and body, the only way to remedy them, as Ibn Miskaweih stated, is by Justice (an overlap between two circles happened, courage circuit, and Justice circuit). The one who goes far in justifying the matters called “arbitrariness” not a courage, as other say.

For example, when man gets angry, he offends his family as if he shows his manhood to brothers, parents or others. It is not strength or a courage, but it may exceed to hit or broken glassware and no one can stop him, they may also admit guilty, that did not commit, to response to this anger.

In the opposite end of justice is a humiliation, an insult of self occurs when there is a feeling of fright, without having the sense of the anger power that lead to self-revenge. It is a depression where person have satisfaction to any obscene made by any of his friends. Next, the fear of an offense, wouldn't take place, only a mere expectation or waiting to happen, it is as the fear of getting old.

The overlapping between Justice Circuit and courage circuit occurs when there is a feeling of extreme cowardice, that leads the person to humiliation, or at his rashness will leads him to arbitrariness. In both cases, he goes far from courage virtue and justice virtue. Then, he goes far from moral health and get close to its vices. The remedy will be by going to the opposites. For example, the feeling of fright treated by enraging the internal silent power of anger, like firebrand you need to blow in order to take fire.

You need courage to overcome his fears, without getting so far, otherwise he will stay away from the health of body and soul.

By the way, many people are able to reach to this courage especially in some situation such as flight, they get used to these risks associated with this situation by let the power of anger take actions; that is the moral health.

Those who fear from getting old, the remedy is to love their senility as their love to their youth. Has to discipline

himself that senility is not an illness, but his activities will decreased and his teeth may fall down (grinding tools, as Ibn Miskaweih called it) and it bring him near to God.

Others fear from death, Ibn Miskaweih define death:

“Death is no more than soul leaving to its tools which are the organs which is called body”

If we are worried by the pain involved in dying, then it is the pain we fear, not death itself. The remedy is by showing that pain is correlated to the body that contains the soul, if soul does not exit, there is no pain or fear.

To explain what is the difference between the soul and body, Ibn Miskaweih explained accurately “The soul is immaterial essence.. unable to get damaged”

This essence will depart from this body, where the essence didn't die but its attributes may changes or removed, like water if it becomes vapors then the essence of water is still the same but its attributes has changed or removed totally. So, the remedy of fear is to believe in life and hope, and to avoid thinking in bad things.

In a beautiful way, Ibn Miskaweih connected this dialectical issue. He found that scientist and wise people leave ignorance by educating themselves, because they know that ignorance is a chronic disease. The moral health needs to remove this chronic disease.

According to the first circuit which is “Courage”, All other circuits and their centers are approached which are chastity, Wisdom, and Justice.

Conclusion

We can conclude the following:

1. Ibn Miskaweih get benefit of the Greek Culture throughout Aristotle and Galen besides his study to Islamic philosophy along with Kindi and Farabi. He also depends on The Holy Qur'an and prophetic traditions in phrasing its scientific essays. He uses a high literary style.
2. Through the moral health and physical health will reach the four virtues, which are courage, chastity, wisdom, and Justice.
3. Moral health separate two contradictory, one opposite is discovered from the other.
4. Ignorance is a chronic moral disease, it is the base of any disease.
5. All what is learned (instructions, rules, scientific bases lead to the moral and physical health) by Ibn Miskaweih are related to “neuro-Linguistic programming”.

“modern administration of mind”, “Self-Power”. He has the priority in this field

Training, trials, and learning are the way to reach to the virtues of Ibn Miskaweih, it is a useful investment process (self-investment) not less than financial or technological investments.

It imitates the cycles of excellence, which increase production and improve the society as a whole by self-control in order to overcome life pressures, it also spreads positive thinking and take advantage of moral energies.

For example, Control anger and stress leads to avoid disease and in turns leads to the provision of medicine and bring health and happiness, and wonderful life begins from development of mental capacity and raises the level of education and skills, thinking and creativity

6. One condition to reach virtues is to live with members of the community and communicate and mix with them, because virtues and vices appear at communicating with people and their participation in all fields of life. Otherwise, how can a person be patient to harm people or overcome the strength of anger- power, or how a coward can be overcome and resisted his vice and trained himself to become brave, and preserve the health of body and soul?

It is also a condition of neuro-Linguistic programming, modern administration of mind, and Self-Power

Recommendations

1. Necessity of listing a manual of “History of science of Arab and Islam” in science foundation and university, and it is very essential to learn our upcoming generation the virtue of Arab scientists and their role in the human civilization. This is, with no doubt, will participate in educate a responsible generation.

2. To work at establishing an Arab and international associations concerned with the history of Arab and Islamic science more than what is available today.
3. To work on finding teamwork and workshops concerned about Arab Islamic Civilization.

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Al-Jaldakī 'S Views About What the Doctor Needs, in the Lights of the Science of the Balance

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Summary

In this study, we will present a scientific and a historical study on the relation between Medicine and the Science of the Balance of Ali Aydamir Al-Jaldakī; who is renowned as one of the most important Arab and Muslim chemists in the 8th H. / 14th A.D. century.

In his book: 'alburhan fi asrar elm almizan', which is still in the form of a manuscript and not edited or studied yet, he presented the procedures that the doctors must do whilst their examining patients through their diagnosis and in giving prescriptions depending on the Science of the Balance and its properties.

Key Words: Medical History, Muslim Chemists, Al-Jaldakī

Introduction

The Science of the Balance is defined as the science that studies the proportions of the elements of the mass. This science is defined as the Law of the Definite Proportions, and is first made by J. Proust (1754- 1826). It states that:

"The chemical compound always contains exactly the same proportion of elements by mass." [1]

Arab chemists specifically defined this science as the Science of the Balance. Then, they stated its basics and rules, and wrote about it. For example, 'almizan al sagheer' by Jābir ibn Hayyān (120- 200 H./ 737-816 A.D.), 'alawzan fi elm almizan' by Elmejrāiti (339-397 H./ 950- 1007 A.D.), 'alburhan fi asrar elm almizan' by Al-Jaldakī (d. 743H./ 1342 A.D.), and others.

The purpose of the research

This research aims to shed lights on the correlational relation between Medicine and the Science of the Balance of Al-Jaldakī; who is one of the most important Arab and Muslim chemists at his age.

Al-Jaldakī , Ali ibn Aydamir

His Life:

Izz al-Dīn, Ali ibn Muhammad, Aydamir ibn Ali al-Jaldakī was born in Jaldak, a district of Khurasan about 2 leagues from Mashhad al Rida in Iran. He studied the Basic sciences in his village, and then he moved to Cairo where he devoted his life to study chemistry.

He studied the history of Chemistry, focused on civilizations that precede the Islamic one. Also, he studied every chemical book at that time and commented on it.

During his life, he claimed to concentrate on studying the chemical works of Jābir ibn Hayyān, Khālid ibn Yazīd, Abū Bakr al Rāzī, and other Muslim scientists. Besides, he was known for his scientific explanations and comments on some vague opinions. He spent his life in travelling for the purpose of discussing certain points in chemistry with his rivals. Most of his travels were to Damascus. Thus, he travelled a lot between Damascus and Cairo.

He was known of being a man of experience, who did the experiment by himself and not just relying on theoretic-

cal knowledge. These experiments led him to different explorations, attributed to him through history.

Al-Jaldakī described in details the various ways of distillation, and explained the ways used nowadays like Extractive distillation, Steam Distillation, and Binary distillation. Through his explanations, he explained every single property of the elements. So, he was the first who explained that each mass turns to different color when burned. He concluded that interaction between chemical elements will not happen unless there are definite measures of these elements. And he was the first who used masks during the chemical interactions for the purpose of precaution of inhalational gases.

Besides his study of chemistry, he moved to study Medicine, and Physics. So, in his book '*Al-borhan fi asrar elm al meezaan*', he studied audio and water waves, Echo, and other physical phenomena.

Al-Jaldakī died either in (743 H. / 1342 A.D.) or in (750 H. / 1351 A.D.), and left a huge amount of books and letters most of them in Chemistry.

His Writings

Al-Jaldakī wrote in various sciences like Medicine and Chemistry in which he explained different symbols especially those related to chemistry. His writings were very long; each book usually has many volumes, each volume has many articles, each article has different chapters, each chapter has different units, and so on. We will mention his most important writings, focusing on the one that he discussed Medicine. For example:

- The Proofs in the Science of Balance '*Al-borhan fi asrar elm al meezaan*'
- The Approximation in Synthesis '*al takreeb fi asrar al tarkeeb*'
- The Diver's Pearl and the treasure of specification '*durrat al ghawwas wa kanzul ikhtisas*'

The definition of the science of the Balance by Al-Jaldakī

Al-Jaldakī defines the science of Balance as:

"It is when the doctors see the defects and needs of certain subjects as well as the needs of combinations, using certain scales. These scales go back to the astronomical proportions mentioned in talismans. Besides, Al-Jaldakī used certain elements that led to interaction in the balance of elements in quantity and quality. Thus, if scientists exactly

followed that, then –with the assistance of God- they will get the requested results by modifying the negative subjects to become whole ones.

From the previous definition, we see that Al-Jaldakī claimed that the science of Balance is the science in which the doctors (physicians) know the results that led to the illness of the body (that led to the deficiency). Then, he specified the amount of that imperfection in quality or quantity. Thus, if the doctor specifically defines the amount of decrease or increase depending on the science of Balance, then he will be able to treat the deficit body –with the assistance of God- to become again healthy and perfect.

The Relation between Medicine and the Science of Balance

Al-Jaldakī pointed out that Medicine is a type of the science of Balance, justifying that claim by various issues:

1. The science of Balance studies all of the upper and lower elements, the balance of the high effects, celestial bodies, and spirituals; whereas Medicine studies animal bodies specifically.
2. The doctors' diagnosis is built on the difference of the nature scales (the difference in seasons, air, temperature, humidity, and others), thus, Medicine is a branch of Astrology and a branch of the science of Balance.
3. The proficient doctor is the one who knows the origins of Astrology and the secrets of the science of Balance. Thus, Medicine requires the science of Balance in knowing the quality and quantity of the forms of drugs used in different countries since these forms differ from one country to another.

From the previous points, we conclude that Medicine needs the science of Balance in the sense that it helps doctors to diagnose the illness by defining the deficit in the balance of temperature, humidity, dryness, cold, and other factors. Also, the science of Balance allows specifying the quantity of suitable drugs, thus, each deficit would lead to negative results.

What the doctors need, according to Al-Jaldakī

Al-Jaldakī mentioned in his book '*al-Insan*' that it is important for doctors to diagnose illness before advising the suitable medicine. This book '*al-Insan*' is the first book

of the third article taken from the fourth volume of "Al-borhan fi asrar elm al meezaan". We summarize the diagnosis process mentioned by Al-Jaldakī by the followings:

The first step:

The doctor starts by measuring the greatest balance which is the balance of the pulses. This is done by feeling the patient's pulses.

The second step:

In this step, the doctor measures the patient's balance in movements and silence.

The third step:

The doctor measures the balance of the patient's mind, perception, illusion, imagination, comprehension, and the signs of safety.

The fourth step:

The doctor examines the patient's wastes. Thus, the doctor needs to know the balance of substances discharged through the patient's mouth such as vomit or saliva. Wastes from the patient's body like sweats are also considered, for example, the sweats' characteristics, smell, structure, quantity, balance, turbidity, and color. Other wastes from eyes, nose, or discharged through the urethra are studied. For example, the doctor examines the color of the urine, clarity, gravity, mucus, and crystals.

The fifth step:

In order to diagnose the illness, the doctor needs to define the reasons that caused the disease. This reason could be a stroke, a sniff, retardation in connection, a tumor, risks to some organs, psychological reasons, or a mingling between these reasons.

The sixth Step:

The doctor states the balance of a sole medicine, by choosing the available drug and the easiest to be used.

Thus, ordering a suitable amount of medicine enhances the instinctive protection of the body against the illness, and purifies the body of impurity.

Al-Jaldakī concentrated on the importance of prescriptions because any disorder not only would cease the effect of the medicine, but also it might terminate the instinctive protection and kill the patient.

Al-Jaldakī says that:

"We say that Medicine editing is the doctor's knowledge and experience in diagnosing the disease. If the doctor accurately diagnoses the disease, then he will be able to treat patients with a sole medicine, or pharmacopoeia depending on the natural balance of the illness, patient's age, country, traditions, and mood. Thus, if the doctor knows these factors, he will be able to cure the patient with the assistance of God. On the other hand, neglecting these factors affect not only the diagnosis of the illness and treatment, but also might kill the patient. This is because the doctor might mistake in giving the accurate balance of medicine, the thing that might strengthen the illness, and thus, kill the patient. For this reason, the doctor should be a man of knowledge of medicine, treatment, and the science of balance. A last advice is that if the doctor was a believer in God, and failed in knowing the disease, then he should not start treatment.

In the medical examination nowadays, the doctor follows these steps:

1. Asking the patient to point to the hurt to diagnose whether the disease is psychological or organic.
2. Asking the patient of the foods and drinks that he has taken and the places that he has moved through.
3. Measuring the patient's pulses and temperature to diagnose the disease.
4. Ordering some medical analyses to make sure of the diagnosis.
5. Ordering the suitable prescriptions.

The previous steps of medical examination completely correspond with what Al-Jaldakī had mentioned the thing that shows the objectivity of that scientist and his wide knowledge.

هذه قاعدة كلية فيما يحتاج اليه الطبيب

اعلان او ما يحتاج اليه الطبيب ان يتخصص العلة
وكتفها قبل ان يصف الدواء حتى يتحقق به ميزان
القوة التي هو موطن الحرارة الخريزية من القلب الذي
هو رمي بمكانة الانسان وموطن صوته وحركه وتصرفه
فاذا عرف الطبيب ميزان هذه القوة فلذا لا يخطئ
ان يعرف ما بعد هذه القوة وما دونها من القوى
والفرق بينهما التي هو للانسان ومقادير قواها في الاصل
ويعد عرض العرق من يعرف ذلك من مزاج العليل
في حاله صحتهم من اعراض العليل من مبد العلة ثم الى
توسطها ثم الى اخطاها بالباشرة والنظر في المبررات
الاكبر الذي هو ميزان النبض المتفرق موازين بحيث
يدن الطير في ساير يديه واطرافه وموازين حركاته
وسكونه واتقائه وقلة احتماله في موازين عقله وادراكه
وهوسه وخياله وحسن فهمه او خياله والعلمامات
الذاتية على الهبات او حدتها بالانظر في موازين البهرات
ومذراتها وطوال مبادئها وتفرع المعرفة بعلماماتها
وما يتخصص من خبر نضبات هيئاتها والنظر في لحوال

Figure 1: Page 142 taken from Al-Jaldaki's manuscript: 'Al-borhan fi asrar elm al meezan'. 4th volume. 3rd article. 1st book No.1324, in which Al- Jaldakī presented the physician needs in the lights of the science of the balance.

على التصديق في كل ما كان عليه من اثارها وما يتخصص
ورمات طابعها في رتبها الا رجحانها ودرجاتها في
الميزان الطبيب الذي هو موازين الميزان الطبيعى
الواحد فاذا كان على ما ذكره سواه لم يدر في موازين
ويعبر عن ميزان الطبيب الذي هو موازين الميزان الطبيعى
المتأثر بالاشياء الخارجية والداخلية من الازدحام
ما بين اثاره العلة التي هي في القوة التي العلة
الفرقية وصيغته التي هي في موازين الموازين العرفية
المعروف من الموازين المتفرقة والموازين من جميع
البدن وغيرها الموازين التي هي في موازين الموازين
واوتاه من الموازين التي هي في موازين الموازين
ولم يتكلم في الموازين الطبية بدوا في موازين الموازين
التي هي في موازين الموازين المتفرقة والموازين من جميع
البدن وغيرها الموازين التي هي في موازين الموازين
والفرق بينهما التي هي للانسان ومقادير قواها في الاصل
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Figure 2: Page 143 taken from Al-Jaldaki's manuscript: 'Al-borhan fi asrar elm al meezan'. 4th volume. 3rd article. 1st book No.1324, in which Al- Jaldakī presented the physician needs in the lights of the science of the balance.

وبقدر تقصيره ويكون ايضا تصرف في الطلوع والادوية
وربما يوجب التصديق في الموازين المتفرقة والموازين من جميع
البدن وغيرها الموازين التي هي في موازين الموازين
والفرق بينهما التي هي للانسان ومقادير قواها في الاصل
ويعد عرض العرق من يعرف ذلك من مزاج العليل
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ومذراتها وطوال مبادئها وتفرع المعرفة بعلماماتها
وما يتخصص من خبر نضبات هيئاتها والنظر في لحوال

فيصوب عن مقام التيقن في اخراج المادة الردية
التي هي من بدن العليل ويعد الموازين المتفرقة والموازين من جميع
البدن وغيرها الموازين التي هي في موازين الموازين
والفرق بينهما التي هي للانسان ومقادير قواها في الاصل
ويعد عرض العرق من يعرف ذلك من مزاج العليل
في حاله صحتهم من اعراض العليل من مبد العلة ثم الى
توسطها ثم الى اخطاها بالباشرة والنظر في المبررات
الاكبر الذي هو ميزان النبض المتفرق موازين بحيث
يدن الطير في ساير يديه واطرافه وموازين حركاته
وسكونه واتقائه وقلة احتماله في موازين عقله وادراكه
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Figure 3: Page 144 taken from Al-Jaldaki's manuscript: 'Al-borhan fi asrar elm al meezan'. 4th volume. 3rd article. 1st book No.1324, in which Al- Jaldakī presented the physician needs in the lights of the science of the balance.

Conclusion

Depending on the previously mentioned, we conclude the followings:

1. Medicine Depending on the science of balance is a must for Al-Jaldakī, especially through the diagnosis processes and ordering prescriptions.
2. The infinite accuracy mentioned by Al-Jaldakī in both of diagnosing illness and prescribing medicine reflects his genius not only in Chemistry but also in Medicine and other sciences.
3. Al-Jaldakī's 'Al-borhan fi asrar elm al meezan' is one of the greatest books in the Islamic Arabic civilization which studies the relation between the science of balance and Medicine on various fields, analyzing that relation, and knowing its significance on everything, for example; water, air, creatures, human-beings, animals, plants, stones, minerals, and others.

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Hamмам an Excellent Way of Disease Prevention and Cure with Special Reference to Kulliate Nafeesi

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Introduction and Historical Back Ground

In Unani system of medicine the term Hammam refers to bath, it is aimed not only to clean the body but also to obtain the beneficial effect for skin and different organs and prevention from humoural diseases.

Unani physicians were very much skilled in the use of medicated bath for the treatment of different diseases. Syrians built Hammam about 2000 years ago in Syria, royal places were facilitated with Hammam. According to historic sources the tradition of Hammam was present in the valley of river, Nile and Syria, centuries before the Roman develops Hammam.

Concept of Islamic Hammam

In Islamic period Hammam were built In Syria first. Hammam Qusair Umrah was the first Hammam of Islamic period which was built in damishq in period of Hasham Bin Abdul Malik (723-744) it was a big Hammam, situated in the north of palace. The Cagaloglu hammam, built in the 1500s, is the oldest functioning hammam in Istanbul. This 19th century drawing shows the Harara (hot room) where the bather sweats washes and is massaged. (Illustration from Sweat, copyright Mikkel Aaland)

Muhammad(Peace upon him), believed that the heat of the hammam (which in Arabic means “spreader of warmth”) enhanced fertility, and the followers of the faith should multiply. Until the hammam caught Muhammed’s

fancy, the Arabs used only cold water and never bathed in tubs, which was considered as bathing in one’s own filth. But when the conquering Arabs encountered Roman and Greek baths in Syria, holy men immediately adopted the pleasure of hot air bathing (perhaps to compensate for the joys of alcohol forbidden by their faith). When Turk reached Anatolia they brought the tradition of Hammam with them.

In Roman period the number of Hammam increases some roman emperor manage to construct Hammam e.g. Hammam of anti choch (Anatolia). The tradition of Turkish bath is very old

According to Sheikh in Kulliat Nafeesi

Hammam consists of three rooms, Masalakh (which works as dressing room) is excluded from the Hammam, and temperature of Masaslakh is equal to the temperature of external environment.

First Room

This room is attached with Masalakh, its air is cold and moist, its temperature is not high because it is far from the furnace, it is warmer than masalakh.

Second room

This room is relatively closer to the furnace, its air is warm, which makes the body warm and the water used in this room made the body moist.

Third Room

This room is hot and dry because this room has furnace. The heat of this room resolve the body fluids so much that the water used in this room does not neutralize the dryness produced by heat of this room.

Mijaz of First room

The first room of Hammam is Mubrid and Muratab. It produces Barudat and Ratubat.

Mijaz of second room

The second room of Hammam is Musakhin and Muratab. It produces heat in the body, due to its air and moist due to its water.

Mijaz of third room

The third room of Hammam is musakhin and Mujafif.

Effect of Hammam

The natural effect of Hammam is that the hot air warms the body and water adds to the moisture.

- Excessive dissipation of innate heat (vitality caused by the hot air of the bath house produces cold and excessive dispersion of natural secretion lead to dryness of tissues.
- Water produces heat as well as cold in the body, it produces heat when it is warm but when tepid it produces cold and moisture.

Preventive Aspect of Hammam

For the prevention of health a physically matured adult person a bath with sweet water (Aab-e-Shireen) of moderate heat is beneficial such person does not require a bath which induces resolution because his body is inwardly pure. He needs Hammam only to drive gentle warmth and a moderate amount of moisture from it.

- A bath taken immediately after digestion i.e. when the food has fully digested but stomach is not yet completely empty produces moderate increase of weight and is generally beneficial.
- For the prevention of obesity steam bath (Hammam Muariq) on empty stomach is beneficial because it induces resolution of effect substances & fat (Repletion of connective tissues spaces with side or mucoid change in the fluid may produced obesity.

- Hammam reduces the dryness of skin and provide gentle warmth and moderate amount of moisture.
- Hammam prevents skin diseases by removing that sebaceous material and microbes from the skin.
- Hammam reduces repletion by excretion of effete & superfluous matter thus prevents the body from diseases like disease of intemperament, obstruction, spasm, stiffness etc.
- Hammam induces sleep.
- Hammam increases peripheral circulations and draws nutrient to the surfaces of the skin.

Curative aspect of Hammam

Unani physician are very much skilled in use of therapeutic (medicated) Hammam modifies certain pathological process which correct the body system to bring back the physiological processes.

- In case of obesity Hammam accelerates metabolic rate and increase the consumption of stored calories and elimination of certain toxic substances with excessive amount of water by activating the sweat glands in this way the body get rid off excess amount of fat, electrolytes and water accumulated in the body.
- Ascites and generalized oedema are the disease of excessive accumulation of fluid in the interstitial spaces, Hammam excretes the excess fluid by sweating and thus relative the disease like ascitis, generalized oedema.
- Gout is a metabolic disorder it is characterized by hyper uricemia (increased level of uric acid in blood) and deposition of urate crystals in the interphalanel joint. Hammam excessive amount of uric acid with sweat,
- According to Unani physician the use of Sulphur water in Hammam is beneficial for the treatment of scabies, eczema, modern scientist have examined and formed that sulphur kills the causative organisms of scabies and eczema by arresting their survival & growth.
- Sulphur water soothes & warm the nerves and relive pain, lassitude & convulsion. Sulphur water also cleans the surfaces of the skin from furuncles & bad ulcers. Sulphur water is also beneficial in pannus & vitiligo lepra.
- Copper containing water (iron containing water) for facial paralysis, paralysis of uvula, and ptosis.
- Use of ferruginous water (Iron containing water) copper containing water and saline water for bath are beneficial for disease depending on cold coldness & moisture, head and chest when humours are constantly flow-

- ing into them, for dropsy, for swelling left after disease, and for collection, of phlegm, for pain in joints.
- Use of decoction of *Prunus laurocerasus* (Habbul Ghar) has demulcent & emollient effects.
 - Alum water benefits cases of haemoptysis, melaena, menorrhagia, procidentia ani or uteri, undue sweating, because they have cooling and drying effect.
 - To gain weight, the bath taken after meal may help, but this bath may predispose to obstruction.
 - Those desirous of taking a bath for its moistening effect, for example phthisis should continue the both as long as there is no debility. In order to prevent the loss of moisture observed in the body, the bath should be followed by massage with some suitable oil so as to gain more moisture & to hold what has been observed.

Precautions

1. The better should enter the hot room (third room) of hammam gradually from Masalakh and similarly leave the hammam.
2. Long stay in the hot room of Hammam can cause unconsciousness, restlessness, palpitation and syncope.

3. The person should enter the Hammam before meal and after exercise.
4. Healthy person just for prevention of health should go to Hammam after three house of meal.

Conclusion

This method is implementing since thousands of years for prevention and cure of many diseases. Now a days there are very few colleges practising Hammam, therefore it is advised to construct Hammam in every Unani hospital, If it is private or government institute. It is the need of time to apply the therapeutics effect of Hammam and scientific validation can be done. The protocol for the construction of Hammam should be prepared according to the suggestion of Unanni scholars.

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Extra-Nuclear Genetics, Sex Chromosomes, Sex Determination and their Applications in Holy Qur'an and the Honorable Hadith (Sayings of Prophet Mohammad (PBUH))

سن جلا دي دحتو ةيسن جلا تاموس وموركل او ةي مزال بوت يسل ا قثارول
قفرش ملا ةي وبنلا ةنسل او ميريكل ا نارقلا يف اهتاق يبطتو

بيريغ دم حأ دم حأ لال ب. D

ةي كيرمألا ةي برعل ا ةم ا جلا

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Summary

The Islamic scientific miracles (Ijaz) in Holy text of Qur'an and the Traditions of the Prophet (Hadith) are screened for relevant links with genetics. Interesting findings are explored in the genetics domains of extra-nuclear genetics, sex chromosomes and determination of the offspring's sex. In addition to the pregnancy, labor, birth, breastfeeding, weaning and extra care received from the mother, genetically, we owe more to our mothers than to fathers as our cytoplasmic DNA comes exclusively from the mother. For sex determination, it is demonstrated that the father is genetically responsible for determining sex while environmental factors (e.g. pH level and even the nutrition of the mother...) play also a role. Evidently, both parents notably mothers are fully worthy of beneficence through life:

And We have enjoined man in respect of his parents his mother bears him with faintings upon faintings and his weaning takes two years saying: Be grateful to Me and to both your parents; to Me is the eventual coming (Luqman, Qur'an Chapter 31, verse 14).

(31: 14) ريصل ملا يلا لكي دل اولو يل ركشأ نأ ني ماع يف ملا صفو نو ملع انو مة هل ملح هي دل اوب ناسنالا اني صوو

At the time of revelation, it was not known whether the fetus comes from the father or the mother or both! The Islamic knowledge that predates the recent discoveries with some 1400 years was put in service of establishing a strong social status with a considerable impact (e.g. beneficence to parents...). Such reconciliation of religious text with scientific discoveries strengthens the religion of Islam as it demonstrates its power inspired from its authenticity and divine source. It opens also new horizons for the religious texts to be investigated by scientific methods and techniques. This paper will be ended by conclusions and recommendations.

Key Words: Holy Qur'an, Honorable Hadith (the Sayings of Prophet Mohammad), Ijaz (scientific miracles in religious texts), genetics, extra-nuclear genetics, sex chromosomes, sex determination.

لكلذ لاشم، قزمطلا ةي وبنلا ةنسل او ميريكل ا نارقلا نم ةمهلتمس م يثارولا يجلعلا زاجعلا نم يحاون شحبل اذه يف فشكتمس ت: ةي برعل ا ةغللاب صرغ لم ماطفل او اعاضرل او ةدالول او ضاخمل ا مال او لم جلا قاشم نلم حنتي شاهمالا نأ مول عملنا نم. دولوملا سنج دي دحتو ةيسن جلا تاموس وموركل او يمزال بوت يسل aDNA ةنس نلابو. مال نم اي رص ح شوروم يمزال بوت يسل aDNA الاف ان ايبال نم رشكأ ان تاممال ايثارو نونيدم ان اناف، ابا عا نم ركذ ام لك يلا قفاضر. ةي اعزل او يتحو قضموملا ةجردك ةيل خادل ا اهتاي يبري ثات لال خ نم الشم يئيبلا مال رودل قفاضر، يثارول بال ا رود شحبل اذه يف ني بتي، دولوملا سنج دي دحتل ملا صفو نو ملع انو مة هل ملح هي دل اوب ناسنالا اني صوو: ناسنالا او انصرعلا ناقحتمسي نيوبال ا لك نأ اذا يجلعلا نم. رخال ملع سنج حيرت ملع اهتاي ذغت (31: 14) ريصل ملا يلا لكي دل اولو يل ركشأ نأ ني ماع يف

لصأ يلا دعب لصوتت مل قفرعمل ا دودح تنك موي ققيقد تاراشاب ضموتو، نامزلنا نم انرق ةعبرا وحنب ةيمعمل ا شوحبل ا ةيمسال ا صوصنلا قبست يني دلا جزامتلا اذه نأ. مال قضاخو، امل ناسنالا او ني دل اولو ا رُب قفرعمل ا هذمو يجلعلا زاجعلا اذه قمالا ةي عامتجلا ناسنالا ناسنالا نم نأ! مال ا مة بال ا وُءا نين جلا ةي ني دلا صوصنلا ملع ةين بمل ا شوحبل ا او موع ةي ملعلا شوحبل ا افا حتفتي، يهل ا ني دك ةي عيرشنتلا يلا نابل ا ةي قفرعمل ا مال سال ا ةع ن م رظني يجلعلا شاي صوتو، بتاج انتساب شحبل ا متخ يو. اصوصخ ةي حصرلا

سن جلا دي دحتو ةيسن جلا تاموس وموركل او يمزال بوت يسل ا قثارول، قثارو، زاجع، قفريشلا ةي وبنلا ةنسل، ميريكل ا نارقلا: هل ادلا تاملكل

Introduction

Genetics is the branch of biology that studies heredity and variation in organisms or the means by which traits are passed from parents to offspring (Glanze, 1996). Even if ancient people had practical understanding of genetics and transmission of genes, it was an empirical knowledge not scientifically formulated. They practiced plant and animal selection for breeding in the next seasons. They evidently practiced human genetic selection upon choosing their mates! However, only relatively recently, the precise statistical and molecular basis of genetics were discovered (e.g. Mendel's first and second laws of inheritance, the gene idea, the double helical structure of DNA, central dogma of the information flow in the cell from DNA to RNA to final product like proteins, different species of RNA,...). Actually, Gregor Mendel (1822-1884), an Austrian Augustinian priest and scientist, found out spectacular and fundamental laws named after him (Mendel's Laws: the first law of segregation of alleles upon meiotic cell division and Mendel's second law of independent assortment of the alleles of different loci upon independent assortment in gametes). Mendel is therefore, considered the "Father of modern genetics".

In Holy Qur'an and the Sayings of the Prophet of Islam, Mohammad, peace be upon him (PBUH), spectacular relevant indications with genetics are found. In this paper, extra-nuclear genetics, sex chromosomes and sex determination are explored with important social conclusions (e.g. beneficence to parents...) and theological (e.g. the authenticity of Islam with its texts) as well as scientific conclusions (conducting research based on authentic religious texts). Details are presented in the following sections (Extra-Nuclear Genetics, Sex Chromosomes, Sex Determination and their Applications in Holy Qur'an and the Honorable Hadith).

And say: Praise be to Allah, He will show you His signs so that you shall recognize them; nor is your Lord heedless of what you do (AL-Naml, The Ant, The Ants, Qur'an Chapter 27, Verse 93)

كثير اموه انوفرعرتف متاي مكيري س لدا دمحل لقو
(93 لمنل) نولمعت امع لفاغب

Important consequences can be extracted in our social life especially kindness with parents and close relatives and caring for them:

هذو نمحرلا انأى لاعت لدا لوقي لدا لوسر لوق
نمو، متلصو اهلصو نمف يهسا نم امسا اهل تققش محزل
مكاحل او حي حص ثيدح لاقو يذمرتلا هاور) متعطق اءعطق
الكزلا يف دواد وبأو؛ 1680 مقرب دمحل هاورو هحصو 4/157
(1694 مقرب)

اهلصو نمف، من جش محرلا لاق لدا لوسر نأ قشئاع نع
(5989 يراخبلا حي حص) متعطق اءعطق نمو، متلصو

The scientific inquiry is a religious duty to fear and get closer to God as Those truly fear Allah, among His Servants, who have knowledge!

And of men and beasts and cattle are various species of it likewise; those of His servants only who are possessed of knowledge fear Allah; surely Allah is Mighty, Forgiving (Fatir, The Angels, Originator, Qur'an Chapter 35, Verse 28).

هنا اول اقل تخم ماعن اول و باو دل او س انلا نمو
هلل ان اءامل عل اءدابع نمو هللا يشخي امن ا كل ذلك
(35: 28 رطاف) روفغ زي زع

Methodology

All the relevant texts (verses from the Holy Qur'an, the Sayings Mohammad's Mohammad's or Hadith of Mohammad, PBUH) were taken into consideration to screen for genetic knowledge. The focus is made in this paper on extra-nuclear genetics, sex chromosomes, sex determination and their applications in Holy Qur'an and the Honorable Hadith. Screening and exploration of links were conducted in both senses: religious texts were projected on modern genetics and vice versa. In some cases holy texts were read in order to find links with genetics. In others, modern genetics were screened in order to find links with the holy texts. In addition to the Qur'an verses, Hadiths of authentic order only were considered.

Extra-Nuclear Genetics and Sex Chromosomes in Qur'an and the Sayings of Prophet Mohammad (PBUH)

When most people think of DNA, they think of it as stored in chromosomes that reside and perform their functions like replication inside the nucleus. Extra nuclear inheritance is the transmission of genes that occur outside the nucleus. It is found in most eukaryotes and is commonly known to occur in cytoplasmic organelles such as mitochondria and chloroplasts (Birky *et al.*, 1994).

Sex chromosomes are represented by a pair of chromosomes, usually designated X or Y, in the germ cells of most animals and some plants, that combine to determine the sex and sex-linked characteristics of an individual, with XX resulting in a female and XY in a male in mammals. The opposite is true in birds (where the designations ZW for female and ZZ for male are often used). Sex chromosomes carry the genes that control the development of reproduc-

tive organs and secondary sex characteristics. In some organisms, sex is determined by environmental conditions such as temperature influencing the sex eggs of crocodiles upon hatching. In some organisms like honeybees, the ploidy (number of haploid sets of chromosomes) status determines the sex. Haploids (1n chromosomes) are males and diploids (2n chromosomes) are females!

In an illuminating Saying of the Prophet, he indicated that the mother has to be given three-fold respect as the father. Actually, this has a vital importance in our social life, let us recall that women in general live more than men do and they need more service from their children. A woman's care for her kid is incomparable to any thing else and is irreplaceable (pregnancy, labor, birth, breast-feeding, weaning, care throughout life...).

لاق؟ يتباحصن من حسب من انزلن انا ح انم ﴿﴾ طلالا لوسر لئس
 ؟نم حث :لاق كذا حث لاق ؟نم حث :لاق كذا حث لاق ؟نم حث لاق كذا حث لاق
 (2548 ملسم و 5971 يراخبل ااور) كئوب حث لاق

In addition, genetically speaking, a woman gives her child more than what he or she receives from his or her father. This can easily be demonstrated in case of boys who receive their sex chromosome X from the mother and the other sex chromosome Y from the father. The X chromosome is much longer (154,913,754 bp) and carries 1,846 genes, much more genes than Y (57,741,652 bp with 454 genes). This is not, however, the case in girls, but still they take more from their mother than they do from fathers. Indeed, the cytoplasm (the part of a cell that is enclosed within the cell membrane) of the zygote (formed from the union of two gametes by a fertilization event to compose the first single diploid cell) comes exclusively from the cytoplasm of the oocyte (the maternal inheritance). Cytoplasm contains the mitochondria, which harbors 37 genes in humans, which come ultimately from our mothers and grandmothers. Genetically speaking, we owe more to our mothers than to our fathers! Upon teaching genetics for several years, the results of a class discussion questionnaire, students especially boys tend to believe that they resemble more their maternal uncles than their paternal ones. That is clear in the phenotype especially in boys where they might resemble their maternal uncles more than their paternal uncles (اداخا دلت نأ ءارملا دالكث) (اهابأ و).

This imbalance resemblance in favor of maternal uncles is remarked in the popular traditions and inscribed in many proverbs like «ملاخ دلولا نيثلث».

Nevertheless, both parents are worthy of respect and care and whatever we do, we cannot compensate except for a tiny part of our debts!

And make yourself submissively gentle to them with compassion, and say: O my Lord! have compassion on them, as they brought me up (when I was) little (Al-Isra', The Israelites, Qur'an Chapter 17, Verse 24)

(17: 24 ءارسالا) ءَمَحَّرَلَا نِم لُذَلَا حَ اَن ج اَمُه ل ض ف خَا و

Disobedient impious is one of worst sins in Islam:

لاق ﴿﴾ مللا لوسر نأ ثراحلا نب عيفن تركب يبا نع
 لاق، مللا لوسر اي يلب: انلق؟ رءابكل ريبكأب مكئبن ال
 ال لاق ف سل جف ائكتم نكو، نيديل اولاقوق عو، مللاب كارش ال
 امف. روزلا تدهشو، روزلا لوقو ال، روزلا تدهشو، روزلا لوقو
 (5976 يراخبل) تنكسي ال: بتلق يتح، املوقي لاز

؟رءابكل ريبكأب مكئبن ال لاق ﴿﴾ مللا لوسر نع انك
 لوق و روزلا تدهشو. نيديل اولاقوق عو. مللاب كارش ال (اثالث)
 سل جف ائكتم ملسو هيلع مللا يلع مللا لوسر نكو روزلا
 (87 ملسم) تنكس هتيل: انلق يتح امركي لاز امف

رظني ال ثثالث ﴿﴾ مللا لوسر لاق لاق ﴿﴾ رمع نبا نع
 نانملاو، رمخلا ندمو، هيدل اول قاعلا قمايقل ا هوي مهيل مللا
 ، ثويلاو، هيدل اول قاعلا: قنجال نول خدي ال ثثالثو. دءاطع
 و منسحو 2511 بي غرتلا حي حص يف ينابل ال (لجرجل او
 (دحصص).

هب حاصل يلاعت مللا لججعي نأ رداج بنذ نم ام ﴿﴾ لاق
 يغبلا نم فرخالا يف مل مرخدي ام عم ايندلا يف تبوقع ال
 ينابل ال ححصو دواذ يبا حي حصو دمأ) مرحلا ءع يطقو
 4902).

And We have enjoined man in respect of his parents-- his mother bears him with faintings upon faintings and his weaning takes two years-- saying: Be grateful to Me and to both your parents; to Me is the eventual coming (Luqman, Qur'an Chapter 31, verse 14).

مل اصفو نو يلع ان هو همأ متلمح هيدل او ب ناسن ال ان يصر و
 (31: 14 نامقل) ريصملا يلا كئيدل اولو يلا ركشا نأ نيماع يف

When Qur'an recommends Muslims to take care for their parents, it reminds them of the pregnancy and labor fatigue as well as breast-feeding, weaning and continuous care throughout life. Almost all these tasks are accomplished by the mother who merits as much three-fold honoring as the father! The Qur'an verses focus on the mother more than the father. In this respect, an important recommendation is given in these verses to wean after two years of breast-feeding:

And We have enjoined on man doing of good to his parents; with trouble did his mother bear him and with trouble did she bring him forth; and the bearing of him and the weaning of him was thirty months; until when he attains his maturity and reaches forty years, he says: My Lord! grant me that I may give thanks for Thy favor which Thou

hast bestowed on me and on my parents, and that I may do good which pleases Thee and do good to me in respect of my offspring; surely I turn to Thee, and surely I am of those who submit (Al-Ahqaf, The Wind-Curved Sandhills, The Dunes, Qur'an Chapter 46, verse 15)

هُمُّ أُوْتَلِّمَ حَاحِ انَّاسٍ حِرَّهٖ دِلَّ اَوْ بِنَاسٍ اِلَّا اَنْ يُّصَوِّوْ
نَوْتَالَتْ هُوَ لَصَفَوْ هُوَ لَمْ حَوَّ اَهُرُكْ هُوَتْ عَضَوَّوْ اَهُرُكْ
لَا قَ نَسَ نَيِّعَ بَرَّ اَغْلَبَوْ هَدُشْ اَغْلَبَ اِذْ اِيَّتَ اِحْرَهْ شِ
يَلَّ عَ تَمَّ عَنَّا يَتَلَّا كَتَمَّ عَن رَاكُشْ اَنْ اِيْنَعَزَوَّوْ اَبَرَّ
يَلَّ حُلَّصَّ اَوْ هَاضِرَّتْ اِحْلَا صَ لَمْ عَ اَنْ اَوْ يُّدَلَّ اَوْ يَلَّ عَوَّ
نَيِّمَلَّ سُمَّ اَنْ مَ يُّنَّ اَوْ كَيَّ لَّ اِتَّبَتَّ يُّنَّ اِيَّتَّ يُّرُذَّ يُّفَّ
(46: 15) فاق حال

Beneficence to parents is an invaluable duty in Islam. What ever done to parents, it compensates but for a tiny part of our debts to our parents and what they gave us voluntarily. A companion of the Prophet carried his mother on his back and performed the tasks of pilgrimage while carrying his mother. He asked Ibn Omar (the great companion of the Prophet), did I compensate my mother, Ibn Omar responded, never, even for just a cry of labor!

يُضْرَقُوْ ، مَرَّظَ يَلَّعَ يُوْ قَكَمَّ يَلَّ اِسَارَخَ نَمَّ هَا مَبَّ اِجَ لَجْرَ اَذَهْ
لَهْ ، مَرَّظَ يَلَّعَ يُوْ كَلَّذَ رِيَّغَ يَلَّ اِيَّعَسُوْ فَاوِطَّ نَمَّ كَسَّ اِنَّمَلَّ اَهَبْ
عَمُوْ ؟ مَذَهْ نَمَّ مَظَحَّ اَمَّ حِرَّ لَّ اَوْ رِبَلَلَّ قَرُوصَ نَوَمَلَّ سَمَلَّ اَهِيَّ اَنْوَرْتْ
مَلَّ اَسْرَفَ رَمَّعَ نَبَّ مَلَّ اَدْبَعَّ لِيَّ لَجَلَّ اِيَّ بَا حَصَلَّ لَجْرَلَّ اَذَهْ اِيَّ اَرْ كَلَّذْ
اَهَبْ تِيَّضَقَّ يَحَّ نَمَّ اِسَارَخَ نَمَّ يَتَّبَقَّرَ يَلَّعَ يَمَّا تَلَّمَّحَ : مَلَّ لَاقُوْ
نَكَلُّوْ ، اَمَّا تَلَّ لَطَنَ مَقُولَ طَلُوْ ، اَلَّ : لَاقُ ، اَمَّا تِيَّزَجَّ يِنَّ اَرْتَا ، كَسَّ اِنَّمَلَّ ا
اَرِيَّ شَكَّ لِيَّ لَقَلَّ اِيَّ لَّعَ مَلَّ اَلَّ كَبَّ يِيَّ ثِيَّسُوْ تَنَّ سَحَّ ا

رُيَسِّيْ هَيِّدَلْ اَذَهْ اِيَّ كَرِيَّ شَكَّ
رِيَّ فِزْرُوْ عَنَّا اَوَّجَ نَمَّ اَهَلْ
رُيَطِيَّ دَاوْفَلَّ اِنَّمَّ صَرَّصَّغَ نَمَّ فَّ
رِيَّ رَسَّ كَيِّدَلَّ اِلَّا اَمْرَجَّ اَمُوْ
رُيَمِيْنَّ كَيِّدَلَّ بَرَّشَّ اَهِيَّ ثَ نَمُوْ
رِيَّ غُصَّ نَتَّ اَوْ اَقَّ اَفْشَّ اَوْ اِنَّ اَنَّ حَ
رُيَّ صَرَّقَ وَهُوَ رَمَّ اَلَّ كَيِّدَلَّ لَاطُوْ
رُيَّ صَبَّ وَهُوَ مَلَّقَلَّ اِيَّ مَعَّ اَلَّ هَا اَوْ
رِيَّ قَفَّ هَيِّ اَمَّوَعْتَّ اَمَلَّ تَنَّ اَفَّ

رُيَسِّيْ هَيِّدَلْ اَذَهْ اِيَّ كَرِيَّ شَكَّ
رِيَّ فِزْرُوْ عَنَّا اَوَّجَ نَمَّ اَهَلْ
رُيَطِيَّ دَاوْفَلَّ اِنَّمَّ صَرَّصَّغَ نَمَّ فَّ
رِيَّ رَسَّ كَيِّدَلَّ اِلَّا اَمْرَجَّ اَمُوْ
رُيَمِيْنَّ كَيِّدَلَّ بَرَّشَّ اَهِيَّ ثَ نَمُوْ
رِيَّ غُصَّ نَتَّ اَوْ اَقَّ اَفْشَّ اَوْ اِنَّ اَنَّ حَ
رُيَّ صَرَّقَ وَهُوَ رَمَّ اَلَّ كَيِّدَلَّ لَاطُوْ
رُيَّ صَبَّ وَهُوَ مَلَّقَلَّ اِيَّ مَعَّ اَلَّ هَا اَوْ
رِيَّ قَفَّ هَيِّ اَمَّوَعْتَّ اَمَلَّ تَنَّ اَفَّ

God places beneficence to parents, goodness and obeying them just after His worshipping and serving:

And your Lord has commanded that you shall not serve (any) but Him, and goodness to your parents. If either or both of them reach old age with you, say not to them (so much as) "Ugh" nor chide them, and speak to them a generous word * And make yourself submissively gentle to them with compassion, and say: O my Lord! have compassion on them, as they brought me up (when I was) little (Isra', The Night Journey, Children Of Israel, Qur'an Chapter 17: 23-24)

اِمَّا اِنَّ اِسْحَ اِنَّ يَدَلَّ اَوْلَا اَبُوْ هَا اِيَّ اِلَّا وَدَبَّ عَتَّ اَلَّ كَبِيْرَ يُّضْرَقُوْ
اَلُوْ فَا اَمَلَّ لَقَتَّ اَلَّ اَمَّ اَلَّ كَ وَا اَمَّ دَحَّ رِبَكَلَّ اَلَّ كَدَنَّ عَ نَغْلَبِيْ
نَمَّ لَذَلَّ اِحَّ اَجَّ اَمَلَّ ضَرَّفَخَّ اَوْ * اَمِيْرَكَّ اَلُوْقَ اَمَلَّ لَقُوْ اَمَّرَهْ نَتَّ
اَسَّ اِسَّ اِلَّا قَرُوسَ اَرِيَّ غُصَّ يِنَّ اِيَّ بَرَّ اَمَّ اَمَّ حِرَّ اِيَّ بَرَّ لَقُوْ قَمَّ حِرَّ لَّ
17: 23 -24).

In this respect, Muslims are instructed to name children after their biological rather than their adoptive parents. This is highly important as it side steps social (e.g. very close relative marriages...) and legal (e.g. heritage conflicts...) problems based on misleading genealogies.

Allah has not made for any man two hearts in his (one) body: nor has He made your wives whom ye divorce by Zihar your mothers: nor has He made your adopted sons your sons. Such is (only) your (manner of) speech by your mouths. But Allah tells (you) the Truth, and He shows the (right) Way * Proclaim their real parentage (fathers). That will be more equitable in the sight of Allah. And if ye know not their fathers, then (they are) your brethren in the faith, and your clients. And there is no sin for you in the mistakes that ye make unintentionally, but what your hearts purpose (that will be a sin for you). Allah is ever Forgiving, Merciful (Al-Ahzab, The Clans, The Coalition, Qur'an Chapter 33, verses 4- 5).

مَّ كَلَّ لَوْ قَ مَّ كَلَّ ذَ مَّ كَلَّ عَا نَبَّ اَمَّ مَّ كَلَّ عَا يَّ عَدَّ اَلَّ عَ اَجَّ اَمَّ و...
* لِيَّ بَسَّلَّ اِيَّ دَهَّ يَّ وَهَّ وَ قَحَّ لَّ اَلَّ لَوْ قَ يَّ هُوَّ لَّ اَوْ مَّ كَلَّ هَا وَ فَّ اَبَّ
(4-5) 33: با زح اال) . هَلَّ اَلَّ دَنَّ عَ طَسَّ قَ اَوْ هُوَّ مَّ يَّ اَبَّ اَلَّ مَّ هُوَّ عَدَّ ا

Sex Determination in Qur'an and the Sayings of Prophet Mohammad (PBUH)

Old Hypothesis on the Origin of Fetus:

In the ancient times, it was not clear whether males or females were responsible for the determination of sex. Two hypotheses about the origin of creatures including man were prevailing since the ancient times until the middle age. In one hypothesis, it was believed that a miniature child exists in the male semen and just grows in the uterus. In the other, it was hypothesized that a child originates uniquely from the mother's fluids, which just coagulate to form a child upon fertilization. The man and woman's attitudes were inscribed in a beautiful ancient poetry where every partner considers that the other as the only responsible for determining the sex of children:

اِسْنِيَّ اَيَّ اَلَّ تَزَمَّحَ يَبَّ اَلَّ اَمَّ
اِسْنِيَّ بِلَّ دَلَّنَّ اَلَّ اَسْبِضَّغَ
اِسْنِيَّ عَرَّ اَزَلَّ ضَرَّ اَلَّ كَ نَحَّ نُوْ

اِنِّيَّ لِيَّ يَذَلَّ تِيَّ بِلَّ اِيَّ لَطِيَّ
اِسْنِيَّ دِيَّ اِيَّ كَلَّذَ اِسْمَ مَلَّلَاتَّ
اِنِّيَّ هُوَّ رُذَّبَ دَقَّ اِسْمَ تَبَّعَنَّ

The social life however, based abominable practices on false conclusions regarding females that is feeling shameful when begetting girls and horribly, burying them alive!

He hides himself from the people because of the evil of that which is announced to him * Shall he keep it with disgrace or bury it (alive) in the dust? Now surely evil is what they judge (An-Nahl, The Bee, Qur'an Chapter 16 verses 58-59).

أَدْوَسُ مُمْهُوجٍ وَ لَظَى ثَنُ الْإِبِ مُمْهُدَحٍ أَرَشُبُ أَدَاوِ
رَشُبُ أَمْعَوْسُ نَمِ مَوْقَلَا نَمِ يَرَاوَتِي * مُمْيظَكَ وَهُوَ
نَوْمِكِ حِيَامِ عَسِ الْإِبَارْتَلَا يَفِ مَسْدِي مَأْنُوهُ يَلْعَ هَكْسِ مِيَأْ هَبِ
(الحنل 16: 58-59).

More often, women (the socially alienated, historically) were considered responsible for the sex of their offspring especially in case of girls (the less desired by parents, traditionally!). A woman begetting just females could have been easily accused, abandoned or divorced!

The Origin of Fetus in Islam and Science:

Scientifically, it is well established that both the father and the mother participate by their gametes to compose the first cell of the embryo, the zygote. The Holy Qur'an confirmed that both the male and female play an important role in the creation of the offspring:

O you men! surely We have created you of a male and a female, and made you tribes and families that you may know each other; surely the most honorable of you with Allah is the one among you most careful (of his duty); surely Allah is Knowing, Aware (Al-Hujurah, the Private Apartments, Qur'an Chapter 49: verse 13)

يَثْنُ أَوْ يَرْكَذَ نَمِ مُمْكَانَقَلَخِ أَيْنَا سَأْنَا أَهُيَ أَيْ
مُمْكَمْرَكَ أَيْنَا أَوْفَرَاعَتَلِ لِيَأَبَقِ وَأَبُو عَشِ مُمْكَانَلَعَجِ وَ
تَارِحَلِ قَرُوسِ) رِيْبَخِ مُمْيَلَعِ هَلَلَا نَمِ مُمْكَاقْتَأْ هَلَلَا دَنْعِ
49: 13).

Determination of Offspring's Sex in Islam and Science:


Each human cell (except gametes) contains 23 pairs of chromosomes in its nucleus (Diploid cells). Chromosomes are the carriers of hereditary characters, genes. Of these, both chromosomes in each pair are similar (homologous chromosomes) in 22 pairs. It is not so in the 23rd pair which determines the sex of the embryo or fetus. Cells of females have two similar chromosomes (XX) whereas those of males have two different chromosomes (XY). The gametes are called sex or haploid cells and contain half the number of chromosomes (i.e. sperm and ova). The cell divi-

sion leading to formation of such haploid cells is called meiosis (a halving division). The mother's meiosis gives an X-bearing ovum by default but the father's meiosis gives either an X or a Y bearing chromosome. If the mother's ovum is fertilized with an X bearing gametes coming from the father, then, there will be female, otherwise, there will be a boy. During conception, the female cell (egg) bearing X-chromosome fuses with male cell (sperm) bearing X or Y chromosome.

The father genetically determines the sex of the embryo. Actually, his sex chromosomes X and Y segregate into gametes. Formation of zygote bearing XY chromosomes would result in a male offspring, and that bearing XX chromosomes would result in a female offspring. The limiting factor is therefore, the Y chromosome, more precisely, the SRY (Sex-determining Region Y) gene within the short arm of the chromosome in the placental mammals and marsupials called the therians (Wallis, 2008). This intron-less gene encodes a transcription factor that is a member of the high mobility group (HMG)-box family of DNA-binding proteins. This protein is the testis determining factor (TDF), also referred to as the SRY protein, which initiates male sex determination. Mutations in this gene give rise to XY females with gonadal dysgenesis, Swyer syndrome (Stoicanescu *et al.*, 2006). Translocation of part of the Y chromosome containing this gene to the X chromosome causes XX male syndrome. Whenever a functional SRY exists, it determines a male. Humans with one Y chromosome and multiple X chromosomes (XXY, XXXY etc.) are usually males. Individuals with a male phenotype and an XX (female) genotype have been observed; these males have the SRY gene in one or both X chromosomes, moved there by chromosomal translocation. (However, these males are infertile). Similarly, there are females with an XXY or XY genotype. These females have no SRY gene in their Y chromosome, or the SRY gene exists but is defective or mutated or another mutated gene. Experiments in human cells suggest that the mutations in CBX2 shut off SRY (Callaway, 2009; Isidor *et al.*, 2009)

During gestation, the cells of the primordial gonad that lie along the urogenital ridge are in a bipotential state, meaning they possess the ability to become either male cells (Sertoli and Leydig cells) or female cells (follicle cells and Theca cells). SRY initiates testis differentiation by activating male-specific transcription factors that allow these bi-potential cells to differentiate and proliferate. SRY accomplishes this by up-regulating SOX9, a transcription factor with a DNA-binding site very similar to SRY's. SOX9 in turn up-regulates fibroblast growth factor 9 (Fgf9), which is necessary for proper Sertoli cell differentiation and pos-

sibly will stimulate the production of male hormones. Fgf9 then feeds back and up-regulates SOX9. SOX9 can also up-regulate itself by binding to its own enhancer region. This is known as a feed-forward loop, where a gene product can feed back and increase its own expression. Once proper SOX9 levels are reached, the bi-potential cells of the gonad begin to differentiate into Sertoli cells. Additionally, cells expressing SRY will continue to proliferate to form the primordial testis. Otherwise, the embryo will develop into a female via mechanisms that are not fully understood. While this constitutes the basic series of events, this brief review should be taken with caution since there are many more factors that influence sex differentiation (Moniot *et al.*, 2009; Clarkson and Harley, 2002). The father is considered (in the religious texts and in science as well) an important player in sex determination of the child and from the very beginning of conception. However, we find in the authentic Sayings of the Prophet that Allah, God (The All Mighty) determines to create the sex after 40 (Or 45) nights: From Hudhayfa in Al-Bukhari and Muslim state: "The angel is sent to the sperm and ovum drop after it has settled in the uterus for 40 or 45 nights and says, "Lord! Is it to be wretched or happy?" Then this is inscribed. Then he says, "Lord! Is it to be male or female?" Then this is inscribed..." (Muslim: Book 33: Hadith 6392).

لخدي لاق  يبئنا نأ يرافعغلا ديسأ نب قف يذح نع
،ني عبرأب محرلا يف رقتست امدعب قفطنلا ىلع كئلما
؟ديعس وأ يقشأ! بر اي لوقيف قليل ني عبرأو قس مخ وأ
بتك ي و نابتك يف؟ يئثنا وأ ركذأ! بر اي لوقيف نابتك يف
الو اديف دازي الف فحصلال يوطت مث قزرو مل جأو مرثأو مل مع
2644) ملسم حي حصص (صقني

The previous Hadith describes a kind of knowing and determination of the sex of the fetus. Reconciling this piece of information with what is known in science (e.g. determination of the sex since the first moment, which is the formation of the zygote) needs more investigation. In Islamic faith, the information about the future of the fetus, like death, deeds, sustenance, livelihood are also in the knowledge of God. It can be hypothesized that the Angel just knows the sex at 40 or 45 nights even though it was determined from the beginning! The Hadith might intend to state the time at which the knowledge is revealed to angel. So, simply and possibly, it does not necessarily mean that sex of fetus is determined at this time. Besides, although the sex genetics of an embryo is determined at fertilization by the kind of sperm that fertilizes the ovum, there is no morphological indication of a sex difference until the seventh week, when the gonads (future ovaries and testicles) begin to acquire sexual characteristics (Moore, 1998) and Hadith might mean the crucial male

and female phenotypes that are evident in the second half of week six (around 40 days).

The question, who is (or are) responsible(s) for the *total* determination of the sex? Qur'an seems to talk about creation of the male and female offspring from the father's semen:

And that He created pairs, the male and the female * From a drop (of seed) when it is poured forth (An-Najm, The Star, Qur'an Chapter 53, verses 45-46)

ةَفَطْنُنْ نِم * ىِثْنُ أَلْأَوْ رَكَدَلَا نِي جَوْزَلَا قَلْخُ هُنْ أَوْ
إِذَا (53: 45-46) مَجْنَلَا

One might understand that (ةَفَطْنُنْ) is the semen of the father; however, by focusing on another verses, we realize that the meaning of this word is the zygote:

And certainly We created man of an extract of clay * Then We made him a small seed in a firm resting-place * Then We made the seed a clot, then We made the clot a lump of flesh, then We made (in) the lump of flesh bones, then We clothed the bones with flesh, then We caused it to grow into another creation, so blessed be Allah, the best of the creators (al-Mo'minon, The Believers, Qur'an Chapter 23, Verses 12-14)

مُثْ * نِي بِيظْ نِمَّ قَلَالَسْ نِم ناسنإلا انقلخ دقل
ةَفَطْنُنْ لَانَقْلَخُ مُثْ * نِي كَم رَارَقِ يَفَ ةَفَطْنُنْ هَانَلْ عَج
ةَغَضْمُلَا انقلخ فةَغَضْمُ ةَقْلَعْلَا انقلخ فةَقْلَع
رَخْ اَقْلَخُ هَانْ أَشْنَأْ مُثْ اَمَّ حَلْ مَاطْعَلَا انْ وَسْ كَفْ اِمَاطْع
12-14: 23) نونوملا * نِي قَلْ اِخْلَا نُسْ حَأْ هَلْ لَكْ رَابَتْ فَ

Consequently, as can be understood from Qur'an, both father and mother seem to participate in determining the sex of their children.

Participation of Mother in Sex Determination of Her Child:

In the light of the explanation in the previous section concerning the determination of sex notably the role of SRY on the Y chromosome, the question whether the father is the only player in the child's sex determination is not fully answered yet. As we realized at the end of the previous section, it seems that the mother plays also a role beside the father. The internal environment of the vagina for example the level of acidity can play a role as a sorting office of X-bearing gametes or Y-bearing gametes. Such factors must also be appropriate for the following genetic and biochemical pathway leading to the formation of testicle or ovaries. This needs further investigations to reveals the effect of the internal maternal environment on this cascade.

If the acidic environment characteristic of the woman's vaginal and uterine liquids dominates the basic environment characteristic of the man's seminal liquid, the baby would be a girl. On the contrary, a boy would be more probable (if the basic environment of the male's semen dominates the acidic environment of the female's environment like the vaginal fluids). Actually, the normal pH of vaginal fluid is between 3.8 and 4.5 (Moses, 2000; anonymous 1) whereas the pH of the male semen is typically basic, between 7.2 and 8.0 (anonymous 2). It seems, therefore, that the acidic environment of the internal environment (vagina, uterus...) of the woman enhances conception of girls in contrast to the basic environment of male, which enhances conception of boys. This needs more thorough investigation and in case of validation, again, it is an extra evidence that women also share along with men the determination of the sex of baby.

The authentic Sayings of the Prophet, Mohammad (PBUH), dictate that both male and female play a role in the determination of the sex of the offspring. If the male environment (e.g. basic) dominates over the female environment (e.g. acidic), there will be a boy and vice versa:

دنع أمئاق تنك: لاق ﴿﴾ مللا لوسر يلوم زابوٲ نع
 مالسلال لاقف دوهيلا رابحاً نم ربأ عاجف ﴿﴾ مللا لوسر
 مل لاقف ،انم عرصي داك عفد متعفد ،دمحم اي لكيل ع
 يدهويلا لاقف! ﴿﴾ مللا لوسر اي لوقت ال تللقف ؟ينعفدت
 ن! ﴿﴾ مللا لوسر لاقف ،لهأ هب هأمس يذلا ممساب موعدن امن!
 ،كلأسأ تئج يدهويلا لاقف يلهأ هب وينأمس يذلا دمحم يمسا
 عمسأ لاق ؟كفتشدح ن! عيش كعفنني ﴿﴾ مللا لوسر مل لاقف
 لاقف .لس لاقف هعم دوعب ﴿﴾ مللا لوسر تنك ن ف .ينذاب
 ضرال ريغ ضرال ل دبت هوي سانلا نوكي ني يدهويلا
 .رسجل نود قملظلا يف هه ﴿﴾ مللا لوسر لاقف ؟تاوامسلالو
 يدهويلا لاق نيرجاملال عارقف لاق ؟زاج! سانلا لو نمف لاق
 لاق .نونل .دبك قدايز لاق ؟فنجل نولخدي نيح مهتفح ت امف
 لكأي ناك يذلا فنجل روت مهل رحني لاق ؟امرث! يلع موزاغ امف
 يمست اهيف نيح نم لاق ؟هيلع مهبارش امف لاق .امفارطاً نم
 مهلعي ال عيش نع كلأسأ تئج و لاق .تقدص لاق .ال ييسلس
 ن! كعفنني لاق .نالجر و لجر و ايبن ال ضرال لهأ نم دحأ
 :لاق ؟دلولا نع كلأسأ تئج :لاق ،ينذاب عمسأ لاق ؟كفتشدح
 .ينم لاق ع اعمتجا اذلف رفصأ ءارجلال عام و ضيب لجرال عام
 .ينم لاق ع اذلو ،مللا نذاب اركذا ءارجلال .ينم لجرال
 .يبنل كن او تقدص ،دقل يدهويلا لاق .مللا نذاب اثن لجرال
 نع اذه ينلأس دقل ﴿﴾ مللا لوسر لاقف ،بذف فرصنا مٲ
 هب مللا يناتأ يتح نم عيشب ملع يلما و هنع ينلأس يذلا
 (315). ضيحل باتك يف ملسم حيحص

It seems strongly that women effectively have a role in the sex determinations of their babies. In a study conducted on 740 women who first-time mothers, fifty-six percent of the women in the group with the highest energy intake had


sons, compared to 45 per cent in the least well fed cohort. Besides, the group of women who produced more males were also more likely to have eaten a wider range of nutrients, including potassium, calcium and vitamins C, E and B12 and astonishingly at least one bowl of cereal breakfast daily compared with those who ate less than or equal to one bowl a week! These surprising findings are consistent with a very gradual shift in favor of girls over the last four decades in the sex ratio of newborns. Actually, there is a reduction in the average energy uptake in advanced economies since the mid-1900s. The number of adults who skip breakfast has also increased substantially. While the mechanism is not yet understood, it is known from *in vitro* fertilization (IVF) research that higher levels of glucose, or sugar, encourage the growth and development of male embryos while inhibiting female embryos (Mathews, 2008). Therefore, the Sayings of Prophet Mohammad (PBUH) predates these findings with some 14 centuries; mothers "have their word to say" in the determinations of their offspring's sex!




This concept is reported also in other Sayings of the Prophet, where it is clear that the determination of the sex is a matter of competition of the father's seminal and the mother vaginal and uterine fluids:

يف ىرت ءارملا نع ﴿﴾ مللا يبن تلأس امنأ ميسل م نع
 ءارملا كلذ تار اذ! ﴿﴾ مللا لوسر لاقف لجرال عري ام امنم
 لمو تللق كلذ نم تنيحيحتساو ميسل م تللق لسبتعتل
 ن! مبلشلا نوكي ني نمف معن ﴿﴾ مللا يبن لاقف ؟اذه نوكي
 ،الع امهي نمف رفصأ قيقر ءارملا عامو ضيبا ظيلغ لجرال عام
 (311 مقر ملسم حيحص) مبلشلا نم نوكي ،قبس و

عاسلا طارش لو أم لاق ﴿﴾ مللا لوسر نأ كلأم نب سنأ نع
 أمو ،برغملا يل سانلا رشحتف ؛ قرشمل نم جرخت رانف
 هاب دلولا مبلش أمو ؛ توحل دبك قدايز فنجل لهأ لكأي ام لو
 قبس اذلو ،دلولا هيل عزن ءارملا عام لجرال عام قبس اذلف ؛ أمو
 حيحص يف هحصو ينابلال) هيل عزن لجرال عام ءارملا عام
 (1349 مقر عمجلال)

دنع أمئاق تنك: لاق ﴿﴾ مللا لوسر يلوم زابوٲ نع
 لكيل مالسلال لاقف دوهيلا رابحاً نم ربأ عاجف ﴿﴾ مللا لوسر
 ؟ينعفدت مل لاقف ،انم عرصي داك عفد متعفد ،دمحم اي
 موعدن امن! يدهويلا لاقف! ﴿﴾ مللا لوسر اي لوقت ال تللقف
 دمحم يمسا ن! ﴿﴾ مللا لوسر لاقف ،لهأ هب هأمس يذلا ممساب
 مل لاقف ،كلأسأ تئج يدهويلا لاقف يلهأ هب وينأمس يذلا
 .ينذاب عمسأ لاق ؟كفتشدح ن! عيش كعفنني ﴿﴾ مللا لوسر
 يدهويلا لاقف .لس لاقف هعم دوعب ﴿﴾ مللا لوسر تنك ن ف
 ؟تاوامسلالو ضرال ريغ ضرال ل دبت هوي سانلا نوكي ني
 لو نمف لاق .رسجل نود قملظلا يف هه ﴿﴾ مللا لوسر لاقف
 مهتفح ت امف يدهويلا لاق نيرجاملال عارقف لاق ؟زاج! سانلا
 يلع موزاغ امف لاق .نونل .دبك قدايز لاق ؟فنجل نولخدي نيح
 لاق .امفارطاً نم لكأي ناك يذلا فنجل روت مهل رحني لاق ؟امرث!
 لاق .ال ييسلس يمست اهيف نيح نم لاق ؟هيلع مهبارش امف

ضرراً له أن دم دحا مملع ي ال عيش نع لكل أسأ تئج و لاق بتقصد
عمسأ لاق؟ كفتتدح ن! كعفنني لاق نالجر وأ لجر وأ يبن ال
و ضيبأ لجرلا ام لاق: دلولا نع لكل أسأ تئج: لاق، ينذاب
قارملا يُنم لجرلا يُنم ال عتج اذاف رقصأ قارملا ام
نذاب اثنا لجرلا يُنم قارملا يُنم ال ع اذو، مللا نذاب اركذا
، بهذف فرصنا م. يبزل كنوا تقصد دة ل يدوهيلا لاق. بللا
يلام و منع ينلأس يذلا نع اذه ينلأس دقل  مللا لوسر لاقف
باتك يف ملسم حي حص) هب مللا يناتأ ىتح هنم عيشب ملع
ضيحل (315).

نهب ينربأ: لاق من  يبزل نع لكلام نب سنأ نع
هبشلا ام  مللا لوسر لاقف دوهيلا ودع لكل ذل لاق افن ال يربج
قارملا ام قبس اذو هبشلاب بهذ قارملا ام لجرلا ام قبس اذو
نم عيجت ران سانلا رشحي عيش لوأو هبشلاب تبذل لجرلا ام
لهأ لكأي عيش لوأو برغملا ىلا سانلا رشحتف قرشملا لبق
مئللا لوسر كنأ دشأ لاقو ندمآف توح دبكو روث سار قنجل
ينام ياب اوعمس ن! منو تهب موق دوهيلا ن! مللا لوسر اي لاق
ينع مهلسو مهيل! ثعباو ينأب خاف يف او عقوقو ينوت هب كئب
، انديس نباو انديس اولاق؟ ملس نب مللا دبج ام لاقف، او اعجف
مللا لوسر لاقف، انريخ نباو انريخو، انملاع نباو انملاعو
لعفني ن! مللا مذاع اولاقف! نونم لستأ! ملسأ ن! مديأرأ 
مهيل! جرخف، ملس نبا اي جرخا لاقف لعفيل ناك ام! لكل ذ
اولاقف، مللا لوسر ادمحم ن! دشأو، مللا ال! مللا ن! دشأ لاقف
كربخأ مل لاقف، انلهاج نباو انلهاجو، انرش نباو انرش وه لب
حيحص يف هححصو ينابلأ!؟ تهب موق من مللا لوسر اي
مقر دراوملا (1908)

Another hypothesis can be postulated concerning the interpretation of the previous Hadith. In case the fluid of man dominates the fluid of the women (ال عتج اذاف) Y chromosome (characteristic of male) fertilizes the ovum and there will be a boy. In the contrary case, when the fluid of woman dominates (مللا نذاب اثنا لجرلا يُنم قارملا يُنم ال ع اذو)، it is the gamete carrying X (characteristic of female) that will fertilize and there will be a girl. This hypothesis, however, does not exclude the influence of environmental factors (e.g. pH...) on the sex of offspring.

Nevertheless, an old study conducted on rabbits failed to establish a clear correlation between the pH of the seminal fluid and the sex determination of offspring (Muehleis and Long, 1976). Further investigations on this issue are needed to rule on.

As both parents participate in determining the sex of children, Qur'an degrades the abominable attitude of girls begetting prevailing and still -to some extent- in the Arabic and generally in the less developed countries. Actually, girls begetting was considered a shame to be hidden and sometimes lead to horribly burying them alive!

He hides himself from the people because of the evil of that which is announced to him * Shall he keep it with dis-

grace or bury it (alive) in the dust? Now surely evil is what they judge (An-Nahl, The Bee, Qur'an Chapter 16 verses 58-59).

أدوسم ههجو و لظ ىثنأ اب م دحأ رشب اذو
رشب ام عوس نم موق لآ نم ىراوتى * ميطك وه و
نومكحي ام اس ال بارتلا يف مسدي ما نوه ىلع مكسميا هب
(16: 58-59 لحنلا).

In this respect, it should be notified that the scientific evidences and texts especially from Holy Qur'an and authentic Saying of the Prophet (PBUH) should be considered collectively in order to avoid misconceptions. The issue of determination of the sex of offspring is demonstrative. We saw that in the light of some scientific evidences (an X is taken by default from the mother and it is the father's sex chromosome that determines the sex, Y for a boy and X for a girl) and religious texts, the father determines the sex of the child, in the light of other texts, the father and mother compete to determine the sex of their child. Taking the whole texts altogether demonstrates that both the father and mother have a role; the father gives genetically the male or the female gamete, the mother, however, sorts by its internal environment (pH, nutrition...) male and female gametes and favors one over the other depending on parameters of the internal environment to be investigated furthermore. In conclusion, it seems evidently that both the father and the mother play a role in the determination of the sex of their children.

Conclusions and Perspectives:

In this paper, convincing links between different aspects and concepts in Holy Qur'an and Honorable Hadith are made with the scientific discoveries in the field of genetics (extra-nuclear genetics, sex chromosomes and sex determination). Such links in genetics and other domains of sciences should be the focus of both religion scholars and scientists.

As also in your own selves: Will ye not then see? (Athariyat, The Winnowing Winds, Qur'an Chapter 51, Verse 21)

(51: 21 تاي راذلا (نورصبنت ال فأم كسفنأ يف و

Religion provides a divine source of knowledge. It is interesting to look for science in religion and it must be equally interesting to base scientific research on authentic religious texts (e.g. Holy Qur'an and authentic Sayings of the Prophet, Sahih). Some further investigations in this respect can be followed up as for example more details on the sex determination of the human offspring and the mother's internal environment influencing the sex of children.

It is worthy to notice here that the holy texts should be considered collectively in an integrated procedure. We should not take scientific evidence and project it on just one text without considering the other texts. Actually, the determination of sex fall in this misleading manner. For long time and still many, think that only the father determines the sex of the human offspring. They based that on the scientific evidence that maleness-determining chromosome comes exclusively from the father. They conjugated this piece of scientific evidence with partial texts like:

And that He created pairs, the male and the female * From the small seed when it is adapted (An-Najm, The Star, Qur'an Chapter 53, Verses 45-46)

عَفْطُنْ نِم * يَنْتُنْ أَلْ أَوْ رَكَدْلَا نِي جُوزْلَا قَلْ خُ هُنْ أَوْ
(53: 45-46 م جزل) يَنْمُتْ إِذَا

Where the word (عَفْطُنْ) was interpreted as the male semen. Nevertheless when another text is examined, we realize that this word means the zygote rather than the male semen. It is this (عَفْطُنْ), that differentiates into the organs and systems of the organism (The human embryo) as depicted from the following verse:

And certainly We created man of an extract of clay * Then We made him a small seed in a firm resting-place * Then We made the seed a clot, then We made the clot a lump of flesh, then We made (in) the lump of flesh bones, then We clothed the bones with flesh, then We caused it to grow into another creation, so blessed be Allah, the best of the creators (al-Mo'minin, The Believers, Qur'an Chapter 23, Verses 12-14)

مُتْ * نِي ط نِمْ قَلْ لَسْ نِمْ نَاسِنَا اَلْ اَنْقَلْ خُ دَقَلْ وَ
عَفْطُنْ اَلْ اَنْقَلْ خُ مُتْ * نِي كَم رَارَقْ يَفْ عَفْطُنْ هَا نَلْ عَج
عَفْطُنْ اَلْ اَنْقَلْ خُ فْ غَضْمُ عَقَلْ عَا اَنْقَلْ خُ فْ عَقَلْ ع
رَخَا اَقَلْ خُ هَا نَ اَشْنَا مُتْ اَمْ حَلْ مَاطْرَعَا اَنْوَسْ كَفْ اَمَاطْرَع
(12-14: 23 نون مؤمل) * نِي قَلْ اَخْلَا اَنْوَسْ حَا هَلْ كَرَابَتْ تَف

Other texts explain that it is a matter of competition between the reproductive fluids of both father and mother that determines the sex of the child:

يَفْ يَرْتْ عَارْمَلَا نِعْ لَلَا يَبِنْ تَلْ اَسْ اَمَا مِيْلَسْ اَمَا نِعْ
عَارْمَلَا كَلْ ذَتْ اَرَا اِذَا لَلَا لَوَسْرْ لَاقِفْ لَجْرَلَا يَرِي اَم اَمَامْ نِم
لَو تَلْ اَقْ كَلْ ذْ نِم تَيِي حَتْ سَاو دِيْلَسْ اَمَا تَلْ اَقِفْ لَسْتْ غَتْلَفْ
نَا مِبْشَلَا نَوَكِي نِيَا نِمْفْ مَعْنْ لَلَا يَبِنْ لَاقِفْ اِذْه نَوَكِي
اَلْ عَا مِيَا نِمْفْ رَفْصَا قِي قَرْ عَارْمَلَا اَمَاوْ ضِيْبَا ظِيْلِغْ لَجْرَلَا اَمَا
(311 مقرر ملسم حي حص) مِبْشَلَا مَن نَوَكِي، قَبِسْ وَا

عَا سَلَا طَارِشَا لَوَا اَمَا لَاقِ لَلَا لَوَسْرْ نَا كَلْ اَم نَب سِنَا نِعْ
اَمَاوْ، بَرِغْمَلَا يَلَا سَا نَلَا رَشْحَتْ تَفْ؛ قَرِشْمَلَا نِم جَرِخْتْ رَا نِفْ
هَابَا دَلْوَلَا مِبْشَلَا اَمَاوْ؛ تَوَحْلَا دَبِكْ تَدَايِزْفْ فَنَجَلَا لَدَا لَكَايَا اَم لَوَا
قَبِسْ اِذَاوْ، دَلْوَلَا يَلَا عَزْنْ عَارْمَلَا اَمَا لَجْرَلَا اَمَا قَبِسْ اِذَافْ؛ مَمَاوْ

حِي حَصْ يَفْ هَحْ حَصْوْ يِنَا بِلَا اَلَا اِهِيَا عَزْنْ لَجْرَلَا اَمَا عَارْمَلَا اَمَا
(1349 مقرر عم ارجل)

نِعْ اَمَا يَاقْ تَنَكْ لَاقِ لَلَا لَوَسْرْ يَلْوَمْ زَا بَوْتْ نِعْ
مَالَسَلَا لَاقِفْ دَوَهِيَا رَابِحَا نِم رِبَا حَا عَا جَفْ لَلَا لَوَسْرْ
مَلْ لَاقِفْ، اَمَنِمْ عَرِصِي دَاكْ عَفْدْ مَتْ عَفْدَفْ، دَمْحَمْ اِي كَيْلِعْ
يَدُوَهِيَا لَاقِفْ اِذَاوْ؟ لَلَا لَوَسْرْ اِي لَوَقْتْ اَلَا تَلْقَفْ؟ يِنَا عَفْدَتْ
نَا لَلَا لَوَسْرْ لَاقِفْ، هَلْ هَا بَبْ هَا مَسْ يِذَا مَسَا بْ مَوَعْدِنْ اَمِنَا
، كَلْ اَسَا تَنِيْجْ يَدُوَهِيَا لَاقِفْ يِلْ هَا بَبْ يِنَا مَسْ يِذَا دَمْحَمْ يِمَسَا
عَمَسَا لَاقِ؟ كَتْتَشْدَحْ نَا اِيْشْ كَعَفْنِيَا لَلَا لَوَسْرْ مَلْ لَاقِفْ
لَاقِفْ لَسْ لَاقِفْ هَمْ دَوْعَبْ لَلَا لَوَسْرْ تَنَكْ نَفْ يِنَا ذَابْ
ضِرْ اَلَا رِيْغْ ضِرْ اَلَا لَدَبَتْ هَوِي سَا نَلَا نَوَكِي نِيَا يَدُوَهِيَا
رَسْ جَلَا نَوْدْ قَمَلْ ظَلَا يَفْ هَمْ لَلَا لَوَسْرْ لَاقِفْ؟ تَاوَا مَسَلَاوْ
يَدُوَهِيَا لَاقِ نِيْرَجَا مَلَا اَرَقِفْ لَاقِ؟ تَزَا جَا سَا نَلَا لَوَا نِمْفْ لَاقِ
لَاقِ نَوْنَلَا دَبَكْ تَدَايِزْ لَاقِ؟ فَنَجَلَا نَوَلْ خَدِي نِيْحْ مَهْتَفْحَتْ اَمْفْ
لَكَايَا نَاكْ يِذَا فَنَجَلَا رَوْتْ مَلْ رَحْنِي لَاقِ؟ اَمْرَثَا يَلْعْ مَهْوَا ذِغْ اَمْفْ
يَمَسْتْ اَمِيْفْ نِيْعْ نِم لَاقِ؟ هَمِيْلِعْ مَهَبَا رِشْ اَمْفْ لَاقِ اِمْفَا رَاطَا نِم
مَلْعِي اَلْ اِيْشْ نِعْ كَلْ اَسَا تَنِيْجْ وَا لَاقِ بَتَقِدْصْ لَاقِ اَلْ اِيْبَسْ لَسَلْ
نَا كَعَفْنِي لَاقِ نَا لَجْرْ وَا لَجْرْ وَا يَبِنْ اَلْ ضِرْ اَلَا لَهَا نِم دَحَا
يَلَاقِ؟ دَلْوَلَا نِعْ كَلْ اَسَا تَنِيْجْ لَاقِ، يِنَا ذَابْ عَمَسَا لَاقِ؟ كَتْتَشْدَحْ
يِنَا اَلْ عَا مَتْ جَا اِذَافْ رَفْصَا عَارْمَلَا اَمَا وَا ضِيْبَا لَجْرَلَا اَمَا
يِنَا عَارْمَلَا يِنَا اَلْ عَا اِذَاوْ، لَلَا نَذَابْ اَرَكْ ذَا عَارْمَلَا يِنَا لَجْرَلَا
يَبِنَلْ كَنَاوْ تَقِدْصْ دَقَلْ يَدُوَهِيَا لَاقِ لَلَا نَذَابْ اِشْنَا لَجْرَلَا
نِعْ اِذَا يِنَا اَسْ دَقَلْ لَلَا لَوَسْرْ لَاقِفْ، بَهْدَفْ فَرِصِنَا مَثْ
هَبْ لَلَا يِنَا اَتَا يَتْحْ مَن مِشْبَلْ عَا يَلَا مَ وَا نِعْ يِنَا اَسْ يِذَا
(315). ضِيْحَلَا بَا تَاكْ يَفْ مَلْ سَمْ حِي حَصْ

Briefly, taking texts collectively lead to concluding that the father determines genetically the sex of the child while the environmental conditions including the internal environment of the mother and her nutrition play a role in sorting the gametes coming from the father (maleness gametes or those that carry Y chromosome from femaleness gametes or those that carry X chromosome). The internal parameters of the mother that play a role in sorting the male and female gametes need further investigations (e.g. pH, nutrition...).

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Contribution of Unani Physicians in Child Health Care with Special Reference to Al Qanoon Fil Tib

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Summary

Infants constitute 2.92 percent of the total population in India. Of the 140 million children born each year in the world, 90 percent are in the third world. From the time of birth, 20 to 30 percent of babies are under weight. That makes them vulnerable to infection and disease. About 50 percent of total infant mortality occurs in the first month of life. The first week of life is the most crucial period in the life of an infant. In India, 50 to 60 percent of all infant death occurs within the first month of life. Of these, more than half may die during the first week of birth. This is because the new born has to adopt itself rapidly and successfully to an alien external environment. Unani physicians described in detail about the child health care, Avicena in Al Qanoon Fil Tib described regimens for infant from birth to the time they begin to stand he also told about the regimens for lactation and weaning. Abu Bakar Bin Zakria Razi in Kitabul Mansoori described the different procedures about the neonatal care and post natal care. He also described about different procedures for easy and safe delivery. In kitabul Mukhtarat there is also a good detail about child health care. There are a lot of Children's diseases like Diarrhoea, Constipation, Anaemia, Stomatitis etc which can be easily treated by our physicians. This is the need of time to focus the attention on child health care along with the recommendation given by our physicians. Rest will be discussed in full length paper.

Key Words: Child health Care, Unani, Avicena

Introduction

Child Health is an important issue and it is the basic need of the community. This section focuses on children in the age group 0-14 years. This is the most important age group in all societies, not because they constitute about 40 percent of the total population, but because there is a renewed awareness that the determinants of chronic disease in later life and health behaviour are laid down at this stage. Family influences and education are the highest importance, and these experiences ultimately, the pattern of their life- styles, occupational skills, and even political attitudes and leadership. The childhood period is also a vital period because of the so called socialization process, that is, transmission of attitudes, customs and behaviours. In addition, of course, they are vulnerable to disease, death and disability. (1)

It is customary to divide the child hood into the following age-period Infancy (up to one year)

1. Preschool age
2. School age

Infancy further classified into Neonatal period (first 28 days of life) and Post natal period (28th days to 1 year).

Management of Infancy

Infants constitute 2.92 percent of the total population in India. Of the 140 million children born each year in the world, 90 percent are in the third world. From the time of birth, 20 to 30 percent of babies are under weight. That makes them vulnerable to infection and disease. About 50 percent of total infant mortality occurs in the first month of life. The first week of life is the most crucial period in the life of an infant. In India, 50 to 60 percent of all Infant death occurs within the first month of life. Of these, more than half may die during the first week of birth. This is because the new born has to adapt itself rapidly and successfully to an alien external environment. (2)

Unani physicians described in detail about the child health care, Avicena in Al Qanoon Fil Tib described regimens for infant from birth to the time they begin to stand

he also told about the regimens for lactation and weaning. Abu Bakar Bin Zakria Razi in Kitabul Mansoori described the different procedures about the neonatal care and post natal care. He also described about different methods for easy and safe delivery. (5) In kitabul Mukhtarat there is also a good detail about child health care. According to the Author of Kamil-us-sana good songs have soothing affect on children same as on adults and provide relief to the minor pains due to physical activity as well as induced the sleep. (7)

According to Avicena and Jurjani, when an infant of equable temperament is born the umbilical cord should be cut, leaving the distance of four fingers from the umbilicus and it should be tied with a soft, clean and lightly twined woolen thread so as not to hurt baby, and that a piece of cloth soaked in olive oil should be placed upon it. (8)

He also advised the physicians to dust the umbilicus with a fine powder made of equal part of turmeric, dragon's blood, sarcocolla, cumin, rock moss, and myrrh.

Eye should be wiped regularly with material like silk. The bladder should be pressed to facilitate the voidance of urine, after these, hands should be stretched out as to meet the knees. The head should be covered with a turban or a properly fitting cap. The sleeping arrangement for the infant is must be made in a room which is moderately airy but not cold. During sleep the head should be at higher level than the rest of the body. And care should take that there is no twisting of neck, extremities and the back.

Bathing care of infant

While giving bath, the nurse should hold the infant in the right hand by placing its chest and not its belly over her left arm and its back should be gently and softly supported by the palm of the two hands and its head by the two legs. In summer, the infant should bath with water of moderate temperature and in winter with moderately warm water. The best time for bathing of infant is after a long sleep. It should be advised to take bath two to three times a day and care should be taken to prevent water from getting into the ears.

Care of skin

The face and skin of the baby should be cleansed as early as possible with saline water so as to tone up the skin and set the features in order to improve the astringency of saline. Care should be taken to prevent the saline entering into the baby nose and mouth. The skin needs hardening

because the body of a newly born baby is warm and delicate and anything which comes in contact with it feels cold and rough. (9) The nostrils should be cleansed with the tip of little finger, the nail of which has been properly trimmed. A little of olive oil should also be dropped in eyes.

In order to dilate the anus the little finger should be used. Special care should be taken to protect the baby from chills. When the cord separates as is generally the case in three four days, the navel should be dusted with the ashes of oyster shell, burnt tendon of calf's heel or burnt zinc dissolved in alcohol.

Instruction of Infant Feeding

Infant feeding is an important factor for the maintenance of Child health. Breast feeding is the most suitable, economic, nutritious, sterile food for infants and possesses anti infective property. Breast milk can constitute a complete diet for a child during 0-6 month of age.

According to Avicena and other Unani Physicians baby should fed as far as possible on mother's milk as it is nearest to the blood from which the baby has grown up. The blood in mother's breast is converted into milk. This is beneficial to the baby and more acceptable to its constitution. (3) (4)

Breastfeeding in the binging should be given only two or three times a day and large feeds avoided especially during first few days. It would be better to give the baby a little pure honey before the initial feed. (3)(6)

Unani physicians also tell about the qualifications for a good wet nurse. They also give the method of testing the quality of breast feed milk and also told about the different method of improving the quality of milk.

Contribution in the treatment of diseases

In the treatment of infants the first consideration should be to the management of the wet nurse. Thus if the nurse is suspected of plethora, cupping or venesection should be carried out. When there is a predominance of some humour in the blood, appropriate measure should be taken to eliminate it. Constipation, diarrhoea, ascent of vapour to the head, disturbances of respiratory system and abnormalities of temperament should be corrected by regulating the food and drinks of the woman suckling the baby. If it is desired to give the purgative or emetics then baby should be nourished that day by some other woman.

There are a lot of Children's diseases like Diarrhoea, Constipation, Anaemia, Stomatitis, teething, constipation,

Gingivitis, convulsions, rigidity, coughs, Dyspnea, Stomatitis, discharging ears, Ears ache, Meningitis, Hydrocephalus, Corneal ulcer, Fevers, Colic, Excessive sneezing, Multiple boils, Umbilical hernia, Inflammation of the navel, Insomnia, Hiccup, Excessive vomiting, Nightmares, Inflammation of throat, Weak digestion, Abnormal snoring, Infantile convulsions, Prolapsed Ani, Intestinal Worms, Intertrigo etc These diseases if cured by the recommendation given by Unani physician which have the lesser side effect and provide the more protection to the children. It reduces the infant mortality rate and boosts the immunity level of children

Conclusion

The recommendation given by our physicians about the antenatal, postnatal and infant care plays a pivotal role in the child health care. It reduces the infant mortality and maternal mortality and thus helpful in the maintenance of health status of community. Unani physicians also told about the qualifications for a good wet nurse. They have also given the method of testing the quality of breast feed milk and told about the different method of improving the

quality of milk. Thus there is a great contribution of Unani physicians in the child health care system.

It is the need of time to focus the attention on child health care along with the recommendation given by Islamic physicians.

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Subconjunctival Hemorrhage in the Most Famous Eye Islamic Medical Books

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Summary

Subconjunctival hemorrhage is one of the most important disease affecting the conjunctiva, which occur as a result of eye trauma or any other reason leading to high pressure within the conjunctival vessels, bleeding under the conjunctiva which may include the entire conjunctiva.

The objective of this research is to highlight the most important achievements and knowledge of the ancient Arab physicians about this disease, and the diagnosis of this disease and accurate description in addition to the knowledge of its causes, predisposing factors, and techniques of treatment. **Key words:** Child health Care, Unani, Avicena

Key Words: Subconjunctival Hemorrhage, History of Ophthalmology, Ophthalmology in Islamic Medicine

Introduction

Subconjunctival hemorrhage is considered to be one of the most famous diseases of the anterior segment of the eye, which affects the conjunctiva. We will talk about this disease depending on the most famous eye Medicine books in the Arab medical heritage and Islamic, Arab and Muslim physicians gave an accurate description of signs and symptoms of this disease depending on the patient complaint to what he feels, and through observation of changes that occur in the eye. They were excelled in the treatment of this disease, either pharmacological and surgical treatments, or both.

Symptoms and Signs:

Hunain Ibn Ishaq mentions in his book of the ten articles about eye the symptom of the Subconjunctival hemorrhage is the blood in the conjunctiva, saying: (It is blood which pours out in the conjunctiva and caused by veins rupture that is in it and more than that can only be caused by a hit) (1).

Thus he explains that trauma is a reason of Subconjunctival hemorrhage that leads to rupture of veins and inflow of blood in the conjunctiva.

But at-Tabari attributes Subconjunctival hemorrhage reason to the inflow of blood to the conjunctiva caused by swelling of blood vessels. In his book, Fardoos Al Hekmah he says: (Subconjunctival hemorrhage is blood that pours out in the conjunctiva caused by veins bulge) (2).

Then he mentions three reasons for the Subconjunctival hemorrhage, saying: (This flush is caused by one of three reasons, 1) a blow or shock or stone that rupture fine veins in the conjunctiva, and cause running out of blood to the surface of the conjunctiva and stays under the membrane on the layer. 2) The second reason is the blood running from the head or from other organs to the eye then this reddishness appears in the conjunctiva. 3) The third reason is the reticular layer throwing of blood from some veins which are in it to conjunctival layer and that will be from common veins among them) (3).

On the other hand al-Rhazes mentions in his book «AL-Hawi», two reasons lead to Subconjunctival hemorrhage: conjunctiva perforation with the vessel, or rupture of blood vessels says: (it is blood which pours out in the conjunctiva and then rupture the veins in it, it is two kinds, one ruptures the conjunctiva with it, and other doesn't rupture it indeed but some veins, which caused by hit or something like that) (4).

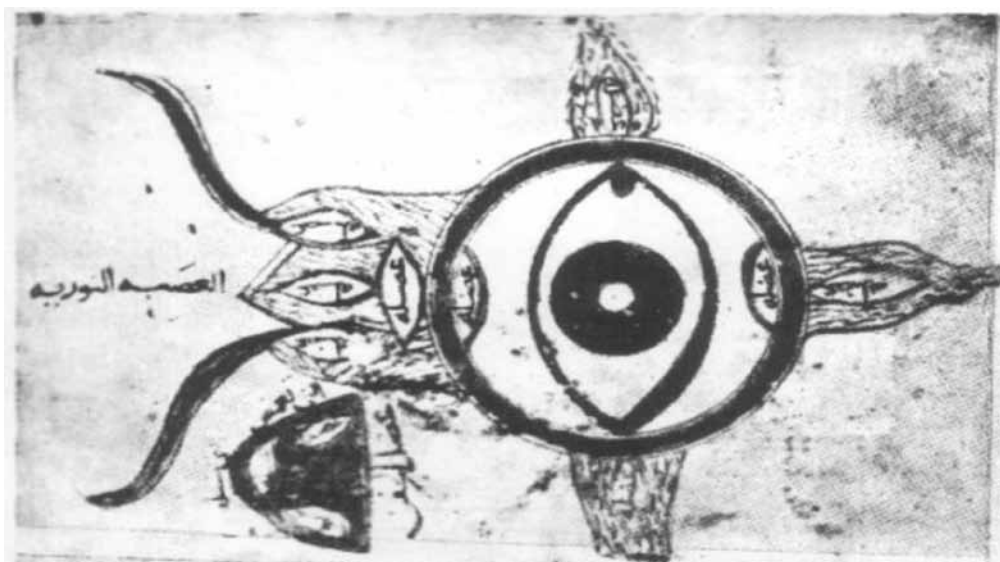
But Ghaafiqi explains the Subconjunctival hemorrhage causes more than the others and adds, saying: (the third occurs without any reason suddenly, and this is caused by the warm blood that pours out into conjunctiva, and perhaps it occurs as a result of a severe ejaculation or cough, or may be severe in the individual from the abscess) (5).

Concerning signs and symptoms Khalifa ibn Abi Al mahasen Al halabi mentions in his book Al-Kafi fi Al-kuhl as follow: (sign is : you see a spot of soft red blood or black old seen in the conjunctiva, may be caused by some of the

for-mentioned reasons, it may be non-pain, no tears in the eye, and may be followed by that, and may presents suddenly) (6).

And about the reason he says: (it happens as a result of some clear reasons or from a severe ejaculation or after difficult birth, or the boiling of blood in the veins, may occur from the explosion of outlying or severe cough) (7).

While Al-Qaisi in his book "Result of Thinking" sums up the symptoms and signs saying: (its signs: you see a congested blood in the eye) (8).



ANATOMY OF EYE.(1). Hunain Ibn Ishaq mentions in his book of the ten articles.



ANATOMY OF EYE.(2). Hunain Ibn Ishaq mentions in his book of the ten articles.

Treatment

Hunain Ibn Ishaq suggests medication in his book of ten articles as follows: (dropping in the eye with hot culver blood or pigeon blood, hot woman milk, with powder frankincense or salted water, and poultice eye by water cooked with dry oregano and hyssop, if there is tumor in the eye, band it with bandage taken from raisins Persians skim mixed with honey water or vinegar, if the tumor doesn't decompose, mix with it powder radish, if it doesn't decompose, mix with it pigeons rubbish) (9). By that he mentions group of items of plant and animal medicines.

While at-Tabari in his book Fardos Alhekma says: (to treat Subconjunctival hemorrhage by dropping of pigeon's blood at its slaughter with a bit of Frankincense) (10).

But al- Mawsili's medication for Subconjunctival hemorrhage is related to its symptoms, signs and reasons, he says: (Eye should be initiated and instilled by hot pigeon's blood, and stretching it with bandages, and if you do that it is enough, if the problem progressed and the eye got some pain, bleed its place and start to open cephalic, and scraping red arsenic with woman milk, and distill from it three drops in the eye in morning and in evening. If there is rupture it should be treated by egg yolk with rose oil, and don't loose the bandages on the eye, and tell the patient to avoid shouting, carrying heavy objects, and easier to nature, this is convincing. And not need him to something else) (11).

In this way al-Mawsili has placed tips and instructions for patients injured during the Subconjunctival hemorrhage of the eye taken for treatment so that speeds up recovery.

While Ibn Sina separates regarding medication between primary Subconjunctival hemorrhage and advanced Subconjunctival hemorrhage at a late time Here. he says: (dropping pigeons blood upon it, or turtledoves, or wild doves, in particular under the feathers, if it was in the starting mixed with something, such as clay, known Bakimulya, and Armenian mud. while at its end, it should mix with analysts even arsenic with sealed mud, it may treat with woman milk mix with Frankincense, and salt water..) (12).

Al- Ghafiqi links the treatment with occurrence of tumor or not, says: (The remedy for that if you are cautious of a tumor that it should start to open cephalic vein, and drip in the eye healthy woman milk, if reddish, swelling, and blood are excess, then drip in the eye albumin and band with protective thing. If the tumor doesn't have impact, then it must be dripped in the eye at beginning woman milk, or blood of chicks getting of small feathers which grow under the wing) (13).

Here is the Khalifa Ibn Abi Almahasen al-Halabi mentions the following pharmaceutical vocabularies: (Fenu-greek, cumin, Frankincense, sour pomegranate juice, women milk, whichever as dripping, milk cheese as bandages, Parsley Alofsntin if crushed, and screwed in linen cloth and immersed in boiling water, and used as poultice of the eye, the blood come out and becomes in that rag even if it was squeezed the blood will run off, al-khelaf fruit and its water as bandage, purslane with honey a bandage) (14).

While Al-Qaisi in his book "Result of thinking" mentions most of the above-mentioned pharmaceutical vocabularies, but at the beginning of treatment he puts alternative to bleed if patient's age did not help that is the cupping, and he says: (if you afraid of tumor that you bleed it when patient's age help, otherwise you should cup him, and drip in the eye albumin, and band it from outside to prevent tumor..) (15).

Results

Through this research (Subconjunctival Hemorrhage in the most famous eye Medicine books in the Arab &Islam medical heritage) we conclude the following results:

1. The Arab and Muslim scientists spoke about Subconjunctival hemorrhage that occurs as a result of tearing or breaking contact conjunctiva caused by a trauma and this is what we found in modern medical literature and the same expression (16).
2. They mentioned also that Subconjunctival hemorrhage may be brackish due to difficult childbirth or severe coughing, and the explanation is the high pressure inside the blood vessels in the conjunctiva, which may bleed as a result of this, and this is also true and supported by modern medical literature (17).
3. Ghafiqi mentioned that The Subconjunctival hemorrhage may occur without reason and this is also true there may be bleeding under the conjunctiva alone and without any convincing reason.

Conclusion

The above mentioned about subconjunctival hemorrhage in the ophthalmology Arabic Islamic medical books was correct and accurate from the point of view causes, symptoms, signs and treatment.

It is a disease which might happens without a definit cause, or due to high pressure inside the conjunctival blood vessels or conjunctival trauma, and the management is to treat the cause of subconjunctival hemorrhage and the hemorrhage it self to make hemorrhage resolving and disappearing.

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Oral Hygiene and Miswak: in the Light of Graeco- Islamic Medicine

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Summary

Healthy set of teeth is an indicator of good health because oral cavity is the mirror, which reflects general health. General health and oral health are inseparable. Poor oral health can have profound effects on the quality of life and general health can be affected by the infections around the teeth. Eating Pan and Gutkha or other tobacco preparations, excessive alcohol intake, smoking use and poor dietary practices are the common social custom nowadays. They immensely affect the oral health. Therefore, cleaning of mouth is very essential for Hifzan-e-Sehat (preservation of health).

Key Words: Oral Hygiene, Miswak, Graeco (Unani)-Islamic Medicine.

Introduction

Healthy teeth are the responsible of health and they be-tify the personality as well [1]. According to Tabri, There are many advantages which can't be achieved without teeth. For example, when the teeth are fallen, the tongue slips out of limits, the saliva begins to flow out with automation and the words cannot be pronounced properly when someone talks. If the molar teeth are fallen out, the roundness of face is defaced, cheeks became squeezed and the hurdle begins to grow during talking especially in case of hastily talk [2].

Usually mouth harbors millions of microorganisms that, under favorable conditions, can cause infection in oral cavity and surrounding areas. Oral hygiene is highly efficient for the protection health. Poor oral hygiene results in a bad breath which hampers health and personality. Therefore, one should be punctual in using his Miswak. There are a variety of basic norms and principles in the Tib (Unani Medicine) as well as in the Islamic literature, which may be exercised easily by common people to maintain a high standard of oral hygiene. In present paper, we have reviewed the importance of oral hygiene, causes and solution of bad breath, Islamic concept of oral hygiene, role and advantages of Miswak in maintenance of oral hygiene, Different Types and timings of Miswak

and few other important norms for teeth/oral cavity which prop up the oral hygiene.

Oral Hygiene

Oral hygiene means more than good health. It is integral to general health and essential for wellbeing [3]. Eating Pan leaves smeared with lime and with or without tobacco is a common social custom [4]. General health risk factors such as excessive alcohol intake, smoking or other tobacco use and poor dietary practices also affect oral health [3].

After eating food the surface of teeth becomes covered with a layer of sugar in which harmful bacteria grow and multiply. This layer is called plaque. [5] Regular brushing of the teeth, twice a day and flossing will prevent the deposition of plaque [6]. The bacteria produce substances, which rot the teeth and infect the gums [5]. Dirtiness and decay of teeth results in indigestion which spawns many maladies [7]. This could be avoided by brushing teeth regularly after meal [5].

Bad Breath

Usually the bed smell of mouth is the result of poor hygienic condition of teeth and constipation [6,8]. Smoking

makes this worse [9]. Bad breath can be caused by disease or infections of teeth, gums and mouth. Most people have bad breath in the morning because, saliva got no exchange during sleep [10]. Spicy foods [6] such as garlic and onion can cause bad breath [10]. Oral care and proper brushing of teeth remove bad breath [9]. The teeth should be cleaned after taking meal. If teeth are not cleaned properly, food particles in between teeth and gums get spoiled. Therefore, particles should be removed by Khilal (tooth picking). The rinse must be done properly and the teeth should be rubbed by finger [11-13].

Fried cheese in olive oil, fried lentils and chewing of fresh or dried coriander remove the bad smell developed due to eating of garlic and onion [14]. Use of vinegar and chewing of cardamom, leaves of basil, dry cumin seeds, mint and liquorices are effectual in the removal of bad breath [8,14]. Mouthwash, mouth sprays and flavoured chewing gum can make the breath odour better for a while [10]. Cleaning the teeth regularly is a good way to help prevent tooth decay and bad breath [15].

Islamic Concept of Oral hygiene

The Holy Quran proclaims, "verily Allah (SWT) love those who turn unto Him and love those who have a care for cleanliness" [16]. The Prophet Mohammad (ﷺ) has further clarified to the above by saying "cleanliness is half-faith" [17]. Prophet Mohammad (ﷺ) also has taught about oral hygiene. He said:

- I. "When you perform ablution, rinse your mouth" [18].
- II. "Rinse your mouth after drinking milk, because it contains fat" [18-19].

دِيلَ وَالْأَنْثَى يُقَشِّمُ دَلَا مِي هَارِبًا نَبِ نَحْرًا دَبْعَ انْتَدَحِ
نَبِ هَلَّلَا دِي بَعْنَعِ يِرْهَزْلَا نَعِ يِرْغَزْ وَأَلَا انْتِ مَلْسُ مِ نَبِ
هَلَّلَا يِلْصِ يَبْنَلَا نَأَسَابَعِ نَبِ نَعِ عَابْتُ عِ نَبِ هَلَّلَا دَبْعِ
أَمْسَدَلِ نَأَفِ نَبَلَّلَا نَمِ أَوْضَمُضَمِ لَأَقِ مَلْسُو هِيْلَعِ

- III. "Clean your gums from food and brush your teeth" [18].
- IV. "Purification of one's mouth is an act that is pleasing to the Lord" [18,20].

يِلْعَالَا دَبْعِ نَبِ دَمِّ حَمِّ وَوَدَعَسَمِ نَبِ دِي مِ حِ انْرِبْحِ
يِبَا نَبِ نَحْرًا دَبْعِ يِنْتَدَحِ لَأَقِ عِي رَزْ نَبِ وَوَدِي زِي نَعِ
يَبْنَلَا نَعِ عَشِي عِ تَعَسِ لَأَقِ يِبَا يِنْتَدَحِ لَأَقِ قِي تَعِ
عَاضْرَمِ مَفَلَّلَا عَرَهْطَمِ كَأَوْسَلَا لَأَقِ مَلْسُو هِيْلَعِ مَلَّلَا يِلْصِ
بَرَّلِ

- V. Prophet Mohammad (ﷺ) said, "I were not afraid to burden my Ummah (Muslim com-

munity), would make Miswak an obligation before each Namaz" [21].

يِبَا نَعِ كَلَامِ انْرِبْحِ لَأَقِ فَسُوِي نَبِ هَلَّلَا دَبْعِ انْتَدَحِ
نَأَهْنَعِ هَلَّلَا يِضْرَ عَرِي رَهْ يِبَا نَعِ جَزْعِ أَلَا نَعِ دَانْزَلَا
قَشِشْ أَنْ أَلْأَوَّلِ لَأَقِ مَلْسُو هِيْلَعِ هَلَّلَا لَوْسَرِ
لَكَ عَمِ كَأَوْسَلَا بُمُ هَتْزَمِ أَلَا سَانَلَا يِلْعِ وَأَيْتَمُّ أَيْلَعِ
عَالِصِ

Miswak and Tooth Brush

Importance of Miswak/brushing of teeth is well known nowadays. Indians are very particular about oral hygiene. Many people in the countryside use twigs of Neem tree (*Azadirachta indica*) as a toothbrush [4]. Brushing or cleaning teeth, at least once a day maintains good hygiene [9].

Apart from spirituality, Miswak also helps in keeping the mouth clean. According to American scientists Tooth Brush (Miswak) kills 80% bacteria after a single use [18,22]. World Health Organization (WHO) recommended use of Miswak in 1986 [23]. Miswak should be done at morning. Soft Miswak of Neem (*Azadirachta indica*) or Babool (*Acacia arabica*) is more beneficial [12]. Miswak wood should be a little bit bitter in taste and a balance is required to be maintained in the process. Using Miswak in balanced way provides Jila (shining and cleaning), Quwat (strength) to the teeth and gums, freshness in mouth, light headedness, lightness in Fam-e-Meda (cardiac end of stomach) and teeth never become carious. Exercise, Miswak, gargle and periodic use of water are helpful in clearance of Fuzlate Badan (morbid material) [14]. Rinse mouth and tooth brush thoroughly after brushing and place brush where it will get air to dry [15]. Cleaning of mouth is very essential for Hifzan-e- Sehat (preservation of health). Therefore, one should be punctual in using his Miswak [24]. It is better to use fresh Miswak every day.

Advantages of the Miswak

- a) One Hadith exhorted that Miswak cure every malady except death [25].
- b) Miswak cleans mouth [25-28], strengthens the gums [25-26,28] and prevents tooth decay.
- c) It assists in eliminating toothaches [26] and prevents further increase of decay which has already set in.
- d) Use of Miswak creates a fragrance in the mouth [25-26,28].
- e) Punctuality in Miswak eliminates bad odors and improves the sense of taste.

- f) Miswak sharpens the memory [26,28-29] and strengthens the eyesight [25-28].
- g) It cures headaches/migraine [25-26,28] and toothache [25] and calms brain [26].
- h) Miswak creates Noor (glossiness) on the face of the one who continually uses it [26].
- i) It helps teeth to glow [25-26,28].
- j) Miswak assists in digestion [26,28].
- k) It eliminates balgham (phlegm) [25,29]
- l) Use of Miswak clears the voice [26,28].
- m) It delays senescence [25,28].
- n) It cures body ache and back ache and upholds general health [28].
- o) The greatest benefit of using Miswak is gaining the pleasure of Allah (SWT) [26].

Timings of Miswak

1. After entering in home [30].
2. For the recitation of the Qur'an [25,31].
3. During Wazoo (ablution) and before Salat (prayer) [25].
4. When the mouth emits bad odour [25,32].
5. Before joining any good gathering [25].
6. At the time of hunger [31].
7. Before taking meal [31,33].
8. After eating food [33] especially which produces bad breath [29].
9. During journey [33].
10. When teeth became yellowish [25,32].
11. Before sleeping [33].
12. Upon awakening [25,32-33].
13. In morning and evening [28].

Types of Miswak

Twigs or root of following are best to use as a Miswak.

- 1) Peelu (*Salvadora persica*) [7,13,23,28-29,32-33]
- 2) Zaitoon/Olive (*Olea europaea*) [25,33]
- 3) Date palm (*Phoenix dactylifera*) [33]
- 4) Babool (*Acacia arabica*) [7,12,34]
- 5) Neem (*Azadirachta indica*) [7,12,31,34]
- 6) Khulanjan (*Alpinia galangal*) [13,34]
- 7) Walnut tree (*Juglans regia*) [34-35]

- 8) Chirchita / rough chaff (*Achyranthes aspera*) [36]
- 9) Any wood having Qabiz (constipating astringent) and slight bitter taste [13-14,29,32-33].

Few important norms for teeth/oral cavity

1. After drinking milk, teeth should be washed up by lukewarm water [13].
2. Sweet things are unsafe for the teeth [12].
3. For the safety of teeth, neither be soft matter like milk-cake chewed and any hard matters nor be crushed by them [13].
4. Drinking of cold water after meal especially sweets is destructive for the teeth [12-13].
5. Frequent vomiting is also harmful for the teeth [13].
6. Clean the tongue thoroughly while brushing the teeth or using the Miswak [7].
7. Gutkha, cigarettes and tobacco chewing are highly deleterious to the oral cavity [34].
8. Gargling with honey and vinegar strengthens gums and teeth, prevents swelling of oral cavity and provides shining to the teeth by dissolving the plaque around the teeth. Only honey may be used as a tooth paste [13,34-36].
9. Alum, honey and turmeric give fruitful result in oral cavity/teeth disorders [14,34].
10. Binding of unfastened tooth with healthy teeth provides the strength to the slack tooth [14].
11. Frequent gargling and rinsing of mouth during ablution for Salat (prayer) is a natural way to keep the oral cavity clean.

Conclusion

Oral cavity is the mirror, which reflects general health. From all that have been discussed above, one can understand the importance of oral hygiene and can implement easily the basic norms in the light of the Graeco-Islamic Medicine.

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A Review of Some Drugs Mentioned in the Texts of Islamic Scriptures (Holy Quran and Ahadith)

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Summary

An important period in the history of science is the Arabian period. The Arabs inherited the Greek culture and Greek scientific thought. After the advent of Islam, Unani System of Medicine got enriched also by imbibing what was mentioned in the Holy Quran and Ahadith.

(Ahadith: plural of Hadith, the traditions relating to the life and teachings of Prophet Mohammad صلى الله عليه وسلم PBUH)

The Quran however, is not a book of science but a book of 'signs' Ayats. There are more than six thousand 'signs' in The Quran of which more than a thousand deal with science. It is impossible for a man gifted with limited approach to cover the infinite knowledge present in Glorious Quran and Traditions of last messenger of God (Prophet Mohammad صلى الله عليه وسلم).

However some of the fantastic, scientifically substantiated discoveries regarding the medical science derived from these scriptures. There are innumerable scientific facts present in the Quran and Hadith.

Many branches of Medical Sciences can be procured from Quran and Ahadith, for example, مانافع الازمان (Physiology), نينجلا علم (Immun-Nafs), سفنلا علم (Psychiatry), حيودالا علم (Ilmul-Advia (Pharmacology)), تاجل اعام (Embryology), Moalejat (Therapeutics), تحصن اظفح (Preventive and Social medicine), حيفزانه-سهات (Ilmul-Janeen (Embryology)).

Main emphasis is given in this article on Ilmul-Advia (Pharmacology) therefore some drugs of the Unani Materia Medica described in the texts of Holy Quran and Ahadith has been discussed in this article. Only authentic Ahadith confirmed by its reputed scholars are referred to make the paper more genuine, in this regard Arabic main texts from Holy Quran and Ahadith also have been quoted.

Key Words: Ilmul Advia, Scripture, Holy Quran, Ahadith.

Introduction

History bears ample testimony to the far reaching significance and influence which the early Muslims have impressed on the scientific thought. Our early scientists brought to bear on the stream of human thought and progress, observations, experiments and traditions which broke an altogether new ground which is not at all surprising. The Glorious Quran and Hadith liberated the human mind from the shackles of superstitions and taboos. Inhabitant of the terra firma, they regarded the sky as the limit. Inspired by the commandments of Almighty God and the teachings of the Holy Prophet they became transformed mentally and spiritually, human history has yet to see such a transformation.

Holy Prophet made it compulsory for every Muslim male or female to seek knowledge 'فضل يرف مل علابلط' and also said 'من مؤملا فلاض قمكحلأ', 'quest for knowledge and wisdom is the birth right of every Muslim.

Allah (صلى الله عليه وسلم) says 'تؤي ن م و' 'who was blessed Hik-

mah 'wisdom', blessed the very righteous thing in the universe' (Al-Quran, 2:269, it indicates chapter no. 02 and verse 269. the same notation is followed throughout the paper),

Quran says 'Allah (صلى الله عليه وسلم) taught the human being what he did not know' (Al-Quran, 96:5).

Allah (صلى الله عليه وسلم) instructed human beings 'نؤم ل علمت ال م تنك ن ر. ك ذل ل ه أ ل و ل - س ف' 'ask the learned men if you do not have knowledge' (Al-Quran, 16:43).

The human reason, logic and science are given primacy in present age. Any scripture claiming to be a divine revelation must also be acceptable on the strength of its own reason and logic. Noble Prize winner Albert Einstein says "Science without religion is lame, Religion without science is blind".⁹ Analysis of the Quran and Hadith is going on and important information of modern sciences have been derived from Quran like astronomy, physics, geography, geology, oceanology, biology, botany, zoology, medical sciences, general sciences etc.

علم دواء واداء Ilmul-Advia (Pharmacology)

The environment, vegetables, animals and minerals mentioned in Holy Quran and *Ahadith* are also the source for Unani Materia Medica. As Allah (سبحانه و تعاليه) says

نَزَّلْنَا رُقًى لَّكُم مِّنَ السَّمَاءِ نَزْلًا مُّزِينًا ﴿١٧٢﴾ (Al-Quran: 17:82)

‘We send down of the Quran that is healing ‘*Shifa*’ and mercy for the believers’

Some of these plants and drugs have been described here. ^{1,3,4,5,6,7,8,9,11,13,14,15}

1. Qiththa عائق

Cucumber, (Cucumis melo)

Qiththa (cucumber), *foom* (garlic), *adas* (lentil), and *basl* (onion) are mentioned together in this verse.

Text:

تَبَّانُتْ اَمِّم اَنْل جْر خِي كَبَّر اَنْل عِدْفِ اَسْ دَعَو اَمُوف وَاَه اَثَق وَاَهْل قَب اَنْمُض رَأْل اَلْ اَدْل صَب وَاَدْل صَب وَاَدْل صَب وَاَدْل صَب

‘...call upon your lord to bring forth for us from the earth its green herbs, its *Qiththa* (cucumber), its *foom* (garlic), its *adas* (lentil), and its *basl* (onion)’. (Al-Quran, 2:61)

Qiththa (cucumber) is extensively cultivated in gardens as well as in the sandy basins of rivers.

Actions: (*Qiththa*) is useful in dyspepsia, cucumber’s pulp and juices are nutritious, demulcent and diuretic. It contains carbohydrate.

Nature: cold and moist.

Unani formulation: *Sharabat Bazuri*

2. Foom موف

Thaum, Lehsun, Garlic (Allium sativum)

Parts used: Bulb and oil.

Nature: hot and dry.⁷

Action and uses: stimulant, carminative, emmenagogue, anti-rheumatic, anthelmintic, anti-septic, anti-spasmodic. It lowers blood pressure and reduces cholesterol which is main cause of heart attack and paralysis. It is used in colic, peptic ulcer and externally applied to a painful area. Its enema is beneficial in sciatica because it expels the causative humors.⁷

Chemical constituent: carbohydrate, protein, vitamin C, mucilage, albumin, oil, allyl disulphide.

Unani formulation: *Majun Seer Alvi Khan*.

3. Adas دَعَس

Masur, Lentil, (Lens esculenta)

It is grown in most parts of India as food pulse.

Uses: Lentils are used as a strengthening and stimulating article of food. It is mild aperients, laxative, and diuretic useful in dysurea. Externally it is applied as poultice to foul and indolent ulcer.

Nature: Galen said Hot and Dry⁷

Chemical constituents: It contains water, legumin, nitrogen, starch, oil, fiber, ash, potassium and phosphorus.

4. Basl لَصَب

Onion, (Allium cepa)

Parts used: bulb and seeds.

Nature is hot and dry, may be hot and moist.⁷

Actions: It is stimulant, diuretic, expectorant, emmenagogue and aphrodisiac, externally rubefacient رَمَح. Useful in sun-stroke, piles, dyspepsia, jaundice,⁷ applied in inflammatory swelling. Raw onion scent is unpleasant but it has anti-septic value. It contains acrid volatile oil, albumin, Vitamin C and B.

5. Atraj جرتال

Citron, (Citrus medica)

It is a garden plant chiefly cultivated for its valuable fruits.

Parts used: rind, pulp, juice, oil

Nature: rind is hot dry, Pulp is hot and moist

Actions: Fruit is an expellant of poisons. Pulp is aromatic, tonic, exhilarant and stomachic. its oil is beneficial for paralysis and palpitation

Chemical constituents: It contains vitamin C, citrine, cymene.

Text: Holy prophet said

بِي طَاهِم عَط: جرتال لثمك، نأرق ل عرق يذلا نموملا لثمك،
«بِي طَاهِم عَط»

“The believer who recites Quran resembles to *Atraj* (citron) which has a delicious taste and good flavor’ (Bukhari, Muslim)

6. *Khamt* مَخَم

Toothbrush tree, *Salvadora persica*^{3,4}

Khamat and *Athal* both are mentioned in one verse.

Text:

يَتَأْوَدْنَ يَتَنَجِّمْنَ يَتَنَجِّبْنَ مَهْمَنَ لَدَبَّوْ
لِيلِي لَقِرْدِسْ نَمَّءِ يَشْوَلْ ثَأْوِطْمَخْلُأُ
(١٦)

‘We replaced their two gardens with gardens of *Khamat* and *Athal*’ (Al-Quran, 34:16)

Khamt bark is used as tooth brush to strengthen the teeth and gum. Bark decoction act as stimulant and tonic in amenorrhea. Leaves are applied in rheumatism. Decoction of leaves used in asthma and cough.

It contains salt and resin which act as antiseptic, anthelmintic and shining to teeth and also sugar, fat, phosphorus and vitamin K.

7. *Athl* لَثَأ

Tamarisk, (*Tamarix gallica*)

Any shrub or small tree of the genus *Tamarix* having small scalelike or needle-shaped leaves and feathery racemes of small white or pinkish flowers; of mostly coastal areas with saline soil. *Tamarix gallica* is also named to *Tarafa* افراط.

Astringent, laxative, powdered bark is aphrodisiac.⁴ It contains tannic acid, used in the form of pessaries and ointment for piles.

8. *Asl* لَسَع

Honey

Text:

فَلَتَخُمُّ بَارِشَ اَهْنُوْطُبْ نَمَّجُرْخِي
سَأَلَّ اَفْشِ هِيْفْ هُنَّوَلْأُ

‘There emerges from their bellies a drink, varying in colors, in which there is healing for people (Al-Quran; 16:69).

مُهَلَّوْ يَفْصُمُ لَسَعِ نَمَّ رُ-نَأُو
تَرْمَثَلْ لَكْ نَمَّ اِيْفْ

‘Rivers of purified *Asl* (in heaven) in which they will have from all kind of fruits’ (Al-Quran, 47:15). A whole chapter of Glorious Quran is named after ‘*Nahal*’ honey bee. It tells the importance of honey.

Honey is a sweet food made by bees using nectar from flowers. The variety produced by honey bees (the genus *Apis*) is the one most commonly referred to and consumed by humans. Honey bee assimilates juices of various kinds of flowers and fruits and forms the honey within its body which it stores in its cells of wax. Only a couple of centuries ago, man came to know that honey comes from the belly of the bee. This fact was mentioned in the Qur’an 1400 years ago in the verse.

Actions and uses: *Shahad* (Honey) has a healing and mild antiseptic property, detergent and tonic. The Russians used honey to cover their wounds in World War II. The wound might retain moisture and would leave very little scar tissue. Due the density of honey no fungus or bacteria would grow in the wound. Holy Prophet used honey repeatedly in a person suffering with diarrhea.

A person suffering from an allergy of a particular plant may be given honey from that plant so that the person develops resistance to that allergy. The knowledge contained in the Qur’an regarding honey its origin and properties were far ahead of the time it was revealed.

Nature: Hot and dry

Composition: Honey is mainly fructose (about 38.5%) and glucose (about 31.0%). Honey’s remaining carbohydrates include maltose, sucrose, and other complex carbohydrates. Honey is mostly sugars and contains only trace amounts of vitamins or minerals. Honey also contains tiny amounts of several compounds thought to function as antioxidants, including chrysin, pinobanksin, vitamin C, catalase, and pinocembrin. Honey is rich in fructose and vitamin K.

Unani Formulation: honey makes an important ingredient of preparing major compounds like *Majun* and *Jawarish* etc.

9. *Bateekh* خَيْطَب

Watermelon, (*Citrullus vulgaris*)

Text:

اذه درب اذه رح عفدي لوقي، بطرلاب خي طبل لكاي ناك من

‘The prophet used to eat watermelon with fresh date, saying, heat of the first repulses coldness of the other.’ (*Tirmidi, Abu-Dawood*)

It is large oblong or roundish melon with a hard green rind and sweet watery red or occasionally yellowish pulp.

Parts used: seeds, juice, pulp of the fruit.

Actions: Seeds are cooling, demulcent, diuretic, vermifuge, nutritive, refreshing. Flesh of the fruit is pink to red, soft,

watery and sweet. Fruit juice is used to clinch thirst, in affection of urinary organs, fever and hepatic congestion.

Unani formulation: *Lauq Aab Tarbuzwala*.

Chemical constituent: fixed oil, citrullin.

10. Ethmed دَمَثْ اِب Antimony sulphide

Text: The Prophet said 'ر ص ب ل اول ج ي ه ن ا ف د م ث ا ل ا ب م ك ي ل ع' 'Resort to *Ethmed*, as it purifies the sight and makes the eye lashes grow' (*Ibn-Maja*).

Best *Ethmed* is from Asfahan (Iran)

Nature: Hot and Dry⁷

Actions: Detergent and eye tonic, drying agent without any harm ف ف ج م, healing agent in ulcer and wounds.

11. Enab ب ن ع Grape (Vitis vinifera)

Grapes are largely cultivated in India.

Nature: Rind is cold and dry, pulp is hot and moist and seeds are cold and dry.⁷

Actions and uses: It is nutritive, demulcent, refrigerant, diuretic and cooling. Dried one is laxative, expectorant and blood purifier. *Enab* is used as medicament in various ailments such as in anemia, dyspepsia, dysuria, hemorrhage, chronic bronchitis, epilepsy and in scorpion sting.

It contains sugar, gum, citric acid, potassium, sodium, magnesium, iron, albumin, oil, fat and vitamin P.

Text: *Enab* is described eleven places in Quran, indicates its importance.

ا ب ح ه ه ن م ج ر خ ن ا ر ض خ ه ن م ا ن ج ر خ آ ف
ن ا و ن ق ا م ع ل ل ط ن م ل خ ن ل ن م و ا ب ا ر ت م
ن و ت ي ز ل و ا ب ا ن ع ا ن م ا ت ن ج و ا ي ن ا د
و ب ا ش ت م ر ي غ و ا م ب ت ش م ن ا م ر ل و

We bring forth green stalks, from which We bring forth thick clustered grain and out of the date-palm and its spathe come forth clusters of dates hanging low and near, and We produce gardens of grapevine and olives and pomegranate, each similar (in kind) yet different (in variety and taste). (Al-Quran, 6: 99)

12. Fizzah قَضَف

Silver, Argentum

A soft white precious univalent metallic element having the highest electrical and thermal conductivity of any metal; occurs in argentite and in free form.

It is included after purification in the ointment to cure scabies, ulcer and wounds. Silver leaves used for decoration of dessert.

Silver leaves are Cardio tonic, stomachic, cerebral tonic.

Nature: cold and dry.⁷

Unani formulation: *Maul-Fizza*.

Text: *Fizza* is mentioned more than once in Holy Quran.

ء ا س ن ل ن م ي ت و ه ن ل ل ن ي ز
ن م ر ط ن ق م ل ل ر ي ط ن ق ل ل و ن ي ن ب ل ل و
ة م و س م ل ل ل ي خ ل ل و ة ض ف ل ل و ب ه ن ل ل
و ي ت ر ح ل ل و م ع ن ا ل ل و

'Beautified for the people the lust of which they desire from women and sons, heaped up sums of gold and silver, fine branded horses and cattle, and tilted land' (Al-Quran, 3:14).

13. Habbat-us-Sauda ء ا د و س ل ا ق ب ح

Shoneez, Kalonii, Black Cumin, (Nigella sativa)

It is Herb of the Mediterranean region having pungent seeds used like those of caraway. **Nature:** hot and dry.⁷

Actions and uses: It is anti-inflammatory, carminative, stomachic, expectorant, emmenagogue, anthelmintic, nervine tonic, analgesic. It is used in flatulence, dyspepsia, colic pain, arthritis, paralysis, asthma, and amenorrhoea. Useful in asthma if taken with natrium.⁷ *Kalonii* oil is used in vitiligo, eczema, pimples and other skin diseases. It is also useful in diabetes mellitus. It contains tannin, resin, protein, volatile oil, gum.

Unani formulation: ن ا ل ك ن خ و ر , ي ت ل ح ب ح

Text: The Prophet said 'ء ا د و س ل ا ق ب ح ل ا ه ذ ب م ك ي ل ع' 'دم اس ل ا ا ا د ل ل ك ن م ا ف ش ا د ي ف

'Use this *Habbatus-Sauda*, as it is the panacea that cures all diseases except death' (*Bukhari, Muslim*).

14. Hareer ر ي ر ح

Abresham, Silk cocoon (Bombyx mori)

Raw silk cocoon are coverings spun by a group of silk moths during their metamorphosis.

‘From both of the ocean, emerge *luloo* (pearl) and *marjan* (coral)’. (Al-Quran, 55:22).

كُنَّا نُنْزِلُ الْوَيْقُونَ وَالْمَرْجَانَ (٥٨) (Al-Quran, 55:58)

‘As if they were *Yaqoot* (Rubies) and *Marjan* (coral)’

24. Musk مِسْكٌ

Moschus moschiferus

Musk producing animal (Musk deer) is found generally in china, Russia, Assam. Musk proper is an inspissated and dried secretion from the perpetual follicle of the male musk deer.

Musk has a powerful odor, acts as stimulant, anodyne, anti-spasmodic, cardio-tonic, expectorant, diaphoretic, laxative, anti-septic, aphrodisiac, *muqawwi aaza- raisa*, and anti-dote to epidemic, nervine tonic. It is used in paralysis, general debility, impotence, palpitation and cardiac disease. Musk contains ammonia, cholesterol, fat, wax, gelatinous matter, albumin, potassium, sodium, calcium, volatile oil.

Nature: Hot and dry

Unani formulation: *Dawaul-Misk Motadil*.

Text:

هُمُومٌ مِّنْ سَمِئَةٍ مِّنْ نَّوْمٍ وَوَقَّاسِي (٢٥) (Al-Quran, 83:26)

‘They are provided with a drink of pure beverage which was sealed with Musk’.

The Prophet said ‘كسمل بيظلا بيظا’ ‘The best perfume is Musk’ (*Muslim*).

25. Mann مَنَّانٌ

Tamarix mannifera, Alhagi maurorum

Many scholars say that *Mann* was a natural delicious diet obtained from the plant, called *Turanjabeen*. It was gifted to Israelites. It acts as laxative, diuretic, expectorant, aphrodisiac and nutritious. Mann contains monosaccharide, fructose and carbohydrate.

Text:

أَنْزَلْنَا سَلْوًا وَمَنَّانًا وَمِنْ ثَمَرَاتِ النَّخْلِ وَمِنْ ثَمَرَاتِ الْأَيْمَانِ وَوَقَّاسِي (٢٥) (Al-Quran, 83:26)

‘And we shaded you with clouds and sent down to you *Mann* and *Salwa* (Quails); eat from the good thing which we provided you, (Al-Quran, 02:57).

26. Nakhl نخلة

Tamar, Rotab, Balah, Basr, Date (Phoenix dactylifera)

It is main and complete diet of Arabs.

Actions: Dates are nutritious, expectorant, aphrodisiac, tonic, demulcent, laxative, and diuretic.

Chemical Constituents: inert sugar, sucrose, pectin, tannin, cellulose, starch, protein, fat, Vitamin A,B,C, sodium, calcium, sulphur, chlorine, phosphorus, iron.

Text: *Nakhl* is described in Holy Quran about 28 places. It is also mentioned in Bible.

لَعَجَّ دَقَّ يَنْزَحَاتِ أَلْأَحَاتِ نِمَاهِ دَانَفٍ عَزَجِبْ كَيْلِ إِيْزُهُ وَ (٢٤) إِيْرَسْ كَاتِ حَاتِ كُبْرٍ (٢٥) إِيْنَجِ أَبْطَرِ كَيْلِ عَطِقِ سَتِ رَخَلِ (٢٥) إِيْنَجِ يَرْقُو وَيَبْرَشِ وَ يَلْكَفِ

‘The Angel called Mary (PBUH), do not grieve, your Lord has provided beneath you a stream, and shake toward you the trunk of the *Nakhl* (palm tree), it will drop upon you ripe, fresh dates, so eat and drink and be glad’. (Al-Quran, 19:25)

27. Qitr رطق, Nuhas ساجن

Copper, Cuprum, Brass

It is a composition of several medicine used for heart disease, skin disease, gout, rheumatism. Owing to its anti-septic qualities ancient Indians preserved water in bright copper vessels. Copper is an element found in human body naturally.

Action: astringent, sedative, anti-spasmodic, ant-septic. Modern researchers have shown colloidal copper to be useful in cancer. It diminishes pain and produces marked improvement in vision.⁷

Nature: Hot and dry⁷

Unani Formulation: *Kushta Tanba*.

Text: *Qitr* and *Nuhas* bothe are mentioned in Holy Quran in following verses.

رَطَقٌ هِ يَلْعَ غَرْفًا يَنْوْتَاءَ لَأَقِ (٩٦) (Al-Quran, 18:96)

he said: «Bring me molten copper to pour over them.»
‘Wa-asalna رَطَقٌ لِّلْأَيْعِ هِ لَأَنْ لَسْ أَوْ لَاهُ اِينَالِ-قِترِ’ (Al-Quran, 34:12)

We made flow for him a fountain of *Qitr* (molten brass or liquid copper).

سَاحُنْ وَ رَائِنْ مِ ظَاوُشِ أَمْكُ يَلْعَ لَسْ رُيْ (٣٥) (Al-Quran, 55:35)

There will be sent against you both, smokeless flames of fire and (molten) brass, and you will not be able to defend yourselves.

28. *Qust Bahri* یرحبل ا طسقل

Costus Root, (*Saussurea lappa*, Maritime Costus)

It is a root of a plant. Nature is hot and dry. its three kinds described by Dioscorides one is white from Arab second is black from India and third is from Syria.⁷

Nature: Hot and dry.⁷

Action: *Muqawwi aaza- raisa* (tonic to vital organs), expectorant, anti-spasmodic, analgesic, carminative, anthal-mintic, diuretic, anti-pyretic, resolvent, aphrodisiac, blood purifier and anti-septic. It is useful in arthritis, paralysis, cough, asthma, ascitis and splenomegaly. It is applied locally on ulcer, wounds and in pain, inflammation and skin diseases. It contains volatile oil, sausserine, glycoside, potassium nitrate, manganese.

Unani formulation: *Roghan Qust, Jawarish Jalinus*.

Text:

The prophet said 'طسقل او قماجل اب متي وادت ام ريخ' یرحبل ا "Your best remedies are the *Hajama* (cupping) and *Qust Bahri*. (*Bukhari, Muslim*)

29. *Raihan* ن احي ر

Sweet Basil, (*Ocimum basilicum*)

It is small annual shrub or herb is cultivated in gardens of India.

Parts used: Herb, leave, seeds.

Action: anti-septic, diaphoretic, stimulant, demulcent, carminative, aphrodisiac and diuretic. It is useful in cough, diarrhea, gastric ulcer, piles, inflammation, spermatorrhea and dysentery. It is used in aroma therapy. Leaves are fragrant and aromatic. Root is febrifuge and antidote to snake poison. It is planted near temple for sanctity and disinfection. Herb basil (sweet basil), classified as *Ocimum basilicum*, are popular as an alternative to standard Western allopathic medicine for a variety of problems, including cleansing the blood, tension as well as lowering blood pressure.

***Ocimum basilicum* benefits:** lowering blood pressure, anti spasmodic, easing tension, general detoxifier, cleansing the blood, lowering blood sugar levels, lowering stress levels, anti inflammatory, lowering cholesterol, can be used as an "adaptogen".

Nature: Seeds cold and dry, leaves hot and dry

Chemical constituents: It contains mucilage, terpen, thymol, Eugene, essential oil.

Unani formulation: *Arq-Chobcheeni, Arq-Amber*.

Text: *Raihan* is mentioned at two places in Quran.

(۱۲) ن احي ر ي ر ل و ف ص ع ل ل و ذ ب ح ل ل و

'For him (in heaven) is a garden of pleasure and *Raihan* (scented plant)' (Al-Quran, 55:12).

(۸۹) ا م ي ع ن ت ن ج و ن ا ح ي ر و ح و ر ف (Al-Quran, 56:189)

Prophet Mohammad (PBUH) said

في فخ ناف: هدري الف ن احي ر هيلع ضرع نم عحي ارلا بي ط ل مل

'The one, who is offered *Raihan*, should not return it as it is light and perfumed'. (*Bukhari, Muslim*)

30. *Rumman* ن ا م ر

Pomegranate, (*Punica granatum*)

Rumman is used in dyspepsia, nausea, dysentery, anemia, jaundice, arthritis, bilious disease, febrile illness. it is Cardio tonic, astringent, cooling and delicious, refreshing, anthal-mintic. It contains tannin, sugar, pectin, iron, vitamin C and B.

Unani Formulation: *Jawarish Anarain*.

Text: *Rumman* is described more than once in Glorious Quran.

(۶۸) ن ا م ر و ل خ ن و ة ه ك ف ا م ي ف

"In heaven there are fruit, palm trees and pomegranates". (Al-Quran, 55:68)

31. *Senna* يك م ا ن س

(*Cassia angustifolia*)

Actions: laxative, deobstructive (*mufatteh sudad*), blood purifier, anthal-mintic. It is used in constipation, fever, arthritis, asthma.

It contains cathartic acid, emodine, Ca oxalate.

Unani formulation: *Itrifal usto khuddos*

Text: The prophet has said;

لك نم افش اهي ف ناف ناف, تون سل او ان سل اب مكيلع 'ماسل ال اء

'Resort to *Senna* and *Sanut* because here is a healing from every disease except death'. (*Ibn-Maja*)

32. Sidr ڍڍس

Cedar (*Cedrus libani*)

Sidr mountain tree from the Mediterranean Sea belongs to the species *Taxus*, one of the large trees and the wood is solid and strong and is said to be resistant to insect pests and termites.

It is used in fever, flatulence, dropsy, rheumatism, piles, and diarrhea and in snake bite. It contains gum, essential oil.

Text: *Sidr* is mentioned in Quran at four places.

ن.ي.م.ي.ل. ڍڍ-ڍڍح-ڍڍص.ا.م. ن.ي.م.ي.ل. ڍڍ-ڍڍب-ڍڍح-ڍڍص.ا.و.
(Al-Quran, 56:28) (28) ڍڍدو.ض.ڍڍخ.م. ڍڍر.ڍڍد.س.ي.ف. (27)

‘The companions of Right will be among *Sidra* trees with thorns removed.’

33. Teen ڍڍن.ي.ت.ل

Fig (*Ficus carica*)

The best fruit is white then red and then black.⁷

Actions: Avicenna described Teen in detail.⁷ It is used in sore throat, ulcer, gout, piles. Fig is easy for digestion and drug of choice for habitual constipation. It acts as emollient, cooling, laxative, demulcent, aphrodisiac and nutritive.

It contains protease, amino acid, tyrosine, sugar, gum, fat, and enzyme. Figs have been found to be brimming with minerals like magnesium, manganese and zinc and also Vitamin E. All of them can do wonders to spice up sex life.

Nature: Hot and moist.⁷

Unani E: *Majun Injeer*

Text: (1) ن.و.ت.ڍڍي.ز.ل. ڍڍو. ن.ي.ت.ل. ڍڍو.

Allah swears by *Teen* and *Zaitun* (Al-Quran, 95:1). A chapter is named after *Teen* because of its advantage and benefits.

34. Wood Hindi ڍڍد.ن.ه.د.و.ع

Eagle Wood, (*Aquilaria agallocha*)

Actions: nerve and brain tonic, anti-septic, expectorant, cardio tonic, stomachic, appetizer, digestive, mouth freshener, aphrodisiac. *Agar* is used in dyspepsia, loss of appetite, nausea, vomiting, diarrhea, ascitis, spermatorrhea, premature ejaculation. It contains volatile and fixed oil, resin. It is burnt to repel the worms and for disinfection.

Nature: hot and dry.

Unani formulation: *Jawarish wood sheeri*.

Text: Umm Qais narrated that prophet said

امنم ذيفشأ ةعبس هيف ناف، يدنللا دوعلا اذهب مكيلع
ڍڍبن.جل.ا.تا.ذ

‘Resort to the Indian Wood as it encloses seven remedies, among which the cure of pleurisy’ (*Musnad Ahmad*). *Abdullah bin Umar* used to perfume himself by burning the *Agar* in a brazier mixed with camphor and he said ‘in this way The Prophet used to perfume himself. (*Muslim*)

35. Warss ڍڍس.رو

(A plant resembling sesame, peculiar to Arabia, of which a wash for the face is prepared)

Avicenna described that it is a red substance resembles to Saffron and procured from Yemen.⁷

Nature: Hot and dry in 2nd grade⁷

Action and uses: astringent, used for cosmetics, beneficial in scabies, alopecia itching, swelling, papules, *Quba*, *Kalf o Namash* (Freckle: A small brownish spot (of the pigment melanin) on the skin)

Text: *Tirmidi* mentioned

ناك من املسو هيلع لدا يلص يبنلا نع مقرا نب ديز
ڍڍبن.جل.ا.تا.ذ نم سرول او تيزلا تعنت

‘The prophet prescribed the oil and the *Warss* (Ceylon cornel) against pleurisy’

36. Yaqoot ڍڍوق.اي

Ruby

Yaqut is a mineral origin drug. It is used as general tonic, cardio tonic, aphrodisiac and anti-dote to the poisons.

Nature: Hot and dry

Unani formulation is *Yaqooti*.

Text:

(58) ن.ا.ج.ر.م.ل. ڍڍو.ت.وق.اي.ل. ڍڍن.ن.ا.ك

‘As if they were *Yaqoot* (Rubies) and *Marjan* (Al-Quran, 55:56)

37. Yaqteen ڍڍن.ي.ط.ق.ي

White Pumpkin, Gourel, *Lagenaria vulgaris*

It is good vegetable, seeds are diuretic, nutritive. Oil is cooling, emollient and used in headache.

Parts used: seed, seed oil, pulp of the fruit. Chemical constituents: albumin, carbohydrate, fiber, saponin, pec-

tin, calcium, potassium, iron, iodine, phosphorus, vitamin B and C.

Text:

(١٤٦) إِنِّي طَبَّقْتُ لِي نَمِّمَةً رَجَشَةً يَلْعَانُ تَبَّانُ أَوْ

‘And we caused to grow over him a tree of *Yaqteen*’ (Al-Quran, 37:146).

Prophet Yunus (PBUH) was blessed with tree of *Yaqteen*, which is known to give cooling shade and to be a repellent of flies.

38. Zanjabeel زنجبيل

Ginger, Zingiber officinalis

Zanjabeel is cultivated in many parts of India and is described by Dioscorides.⁷

Nature: Hot and Dry.⁷

Actions: It is aromatic, carminative, digestive, rubefacient, aphrodisiac, expectorant and stimulant to G.I.T. It has a lot of benefit, used in neuralgic pain and productive cough. We Indians are fortunate that purely Indian origin plant has found a place in Holy Quran.

It is the classic medicine for dealing with many digestive disorders. Ginger promotes Haraarate Gharazi (digestive and metabolic fire), thus promoting digestive heat burning toxins and removing and lowering cholesterol deposits. Ginger is a pungent herb par excellence; we may call ginger as being stimulating carminative for digestion.

It contains volatile oil, resin, starch and gingerin.

Unani formulation: *Jawarish Zanjabeel*.

Text:

أَهْجَازِمَ نَأَكُ السُّؤْكَ أَيْفَ نَوَقَّ سُوِيَّوْ (١٧) أَلَيْبَجَنْزَ

‘They will be given to drink a cup which flavor is of *Zanjabeel*’. (Al-Quran, 76:17)

39. Zareera زريز

Charaeta (Swertia chirata)

Nature: hot and dry.

Action and uses: It is bitter, blood purifier, anti-pyretic, diaphoretic, tonic to stomach and liver, appetizer, carminative, anthelmintic. Its decoction is useful in skin disease, scabies, flatulence, loss of appetite, dyspepsia, diarrhea, and fever. *Zareera* is useful for swelling of stomach, intestine and liver and ascitis.⁷

It contains chiritine, rofalic acid, bitter substances, and carbonates.

Zareera زريز is also said to be *Acorus calamus* which is used for cosmetic purpose on skin also.

Texts: *Ummul momineen Ayesha* (امنع هللا يضر) narrated
‘قرير ذبى ديب ملسو هيلع هللا يلص هللا لوسر تببيط’
‘هم ارجا و ملح يف عاد ول لاةج ح يف’

‘I applied *Zareera* as a perfume to the Prophet during his last pilgrimage at the time of putting on *Ehram* and out of it’ (*Bukhari, Muslim*).

40. Zahab ذهب

Gold, Aurum

A soft yellow malleable ductile (trivalent and univalent) metallic element; occurs mainly as nuggets in rocks and alluvial deposits; does not react with most chemicals but is attacked by chlorine and aqua regia. Gold is the ornament of life, the talisman of the existence, the cheering of soul and Almighty’s secret on earth.

Action: مسيەر ءاضعا يوقم، يزيرغ ترارج كرحم (*Muqawwi Aaza- Raisa and Moharrik Hararat Ghareezia*). Ibn Sina mentioned that it is included in the drugs used for Daul Hayya and Daul Thalab (Alopecia), eye diseases, heart and palpitation.⁷ A lot of research has shown that gold has an adaptogenic and nootropic activity.

Nature: Lateef Motadil.⁷

Unani formulation: *Mauz-Zahab*.

Text: is mentioned more than once in Holy Quran.

إِبَآوْ كَأُوْ رِبَآذَنَّمْ إِفَآحْ صَبْمَ يَلْعَافَاطِيْ
نُيْ عَآلْ ذُلَّتْ وَ سُنْ أَلْ هِيَهَتْ شَتَّ آمَ هِيَفْ وَ
(Al-Quran, 43:71)

Trays of gold and cups will be passed round them, (there will be) therein all that the inner-selves could desire, and all that the eyes could delight in,

ءَآسُنْ نَمِ تْ وَ شَلْ بُحْ سَآنْ لَلْ نُّيْ زْ
نَمِ رَظَنِّ قُمْ لَلْ رِيْطَ نَقَّ لَلْ وَ نِيْنَبْ لَلْ وَ
ةَمْ وَ سُمْ لَلْ لَلْ يَخْ لَلْ وَ رَضَفْ لَلْ وَ بَءَذَلْ
لَلْ رَآحْ لَلْ وَ مَ عَآنْ لَلْ وَ

‘Beautified for the people the lust of which they desire from women and sons, heaped up sums of gold and silver, fine branded horses and cattle, and tilted land’ (Al-Quran, 3:14).

41. Zaqqum موقز

Euphorbia resinifera⁴

It acts as strong purgative, of bile and phlegm, causes abortion in women. It is poisonous plant.

Zaqqum contains resin, euphorbol, mucilage, starch.

Text:

It is described at three places in Quran as the food of sinful persons in hell.

(٦٢) مَوْقُزْلٍ مَّوْرَجٍ شَمَامٍ أَلْزُنُّرِ يَخِ كَلِّ ذَا
(Al-Quran, 37:62)

42. زيتون *Zaitun*

Olive, *Olea europaea*

Nature: hot and wet. It is useful in peptic ulcer, epistaxis, cold and cough. Oil massage gives strength to the muscles and relieves pain in arthritis, gout, sciatica and paralysis.

Unani formulation is *Roghan Shifa*. Olive is a small growing ever green tree. Ripe fruit contains largest amount of oil. It contains arachidic acid, olein and fatty acid.

Text: *Zaitun* is mentioned at six places in Quran.

نَوْتِ يَزْلُ وَ عَرَزْلُ وَ هَبْ مَكَلُّ تَبْنِي
نَّ! بَتْرَمْتَلُّ لُّ نَمَوْبَن-عَأَلُّ وَ لِيخَنَلُّ وَ
(١١) نَوْرُ فَتَي مَوْقَلُّ عَيْ أَل كَلُّ ذِي ف

(Allah) He causes to grow for you the crops, the olives, the date-palms, the grapes, and every kind of fruit. Verily! In this is indeed an evident proof and a manifest sign for people who give thought. (Al-Quran, 16:11)

بَت-شورُعَم بَت-نَجْ أَشْنَأَ يذَلُّ وَ هَوُ
عَرَزْلُ وَ لَخَنَلُّ وَ بَت-شورُعَم رَيَغُ وَ
نَأْمُرَلُّ وَ نَوْتِ يَزْلُ وَ هَلُّ أْ أَفَلَّتْ خُمُ
بَب-شَتْمُ رَيَغُ وَ بَب-شَتْمُ

And it is He Who produces gardens trellised and untrellised, and date-palms, and crops of different shape and taste (their fruits and their seeds) and olives, and pomegranates, similar (in kind) and different (in taste). (Al-Quran, 06:141)

43. سمك *Samak*

Fish

Abdullah ibn Umer narrated that prophet has said

‘لأحطل أو دبكل أو دارجل أو كمس لا نامد و نانت ييم انل تلحأ’

‘Two dead animals and two bloods are legalized to eat for us: the Fish and *Jarad* (Locust), the Liver and the spleen.’ (Ibn Maja, Ahmad)

Nature: Cold and moist but some fish are hot in nature.⁷

Actions: creates phlegm, useful in *wajaul-warak* (hip joint pain), clears voice and cleanses trachea, prevents haemipytosis.⁷

Heart: Fish is thought to protect the heart because eating less saturated fat and more Omega-3 can help to lower the amount of cholesterol and triglycerides in the blood – two fats that, in excess, increase the risk of heart disease. Omega-3 fats also have natural built-in anti-oxidants, which are thought to stop the thickening and damaging of artery walls. Regularly eating fish oils is also thought to reduce the risk of arrhythmia – irregular electrical activity in the heart which increases the risk of sudden heart attacks.

Brain functionality: 10-12% of the human brain is composed of lipids including the Omega-3 fat DHA. Recent studies suggest that older people can boost their brain power by eating more oily fish, with regular consumers being able to remember better and think faster than those who don't consume at all. Other research has also suggested that adding more DHA to the diet of children with attention-deficit hyperactivity disorder can reduce their behavioral problems and improve their reading skills, while there have also been links suggested between DHA and better concentration. Separate studies have suggested that older people who eat fish at least once a week could also have a lower chance of developing dementia and Alzheimer's disease.

Joint benefits: Including fish as a regular part of a balanced diet has been shown to help the symptoms of rheumatoid arthritis – a painful condition that causes joints to swell up, reducing strength and mobility. Studies also show that sufferers feel less stiff and sore in the morning if they keep their fish oil intake topped up.

Recent research has also found a link between Omega-3 fats and a slowing down in the wearing of cartilage that leads to osteoarthritis, opening the door for more research into whether eating more fish could help prevent the disease.

Minerals: Fish is high in minerals such as iodine and selenium, which keep the body running smoothly. Iodine is essential for the thyroid gland, which controls growth and metabolism, while selenium is used to make enzymes that protect cell walls from cancer-causing free radicals, and helps prevent DNA damage caused by radiation and some chemicals. Fish is also an excellent source of vitamin A, which is needed for healthy skin and eyes, and vitamin D, which is needed to help the body absorb calcium to strengthen teeth and bones.

CONCLUSION

Al-Quran, the main source of the Islamic faith, is a book believed by Muslims, to be of completely Divine origin. It contains Divine guidance for all humankind.

The Quran invites all humans to reflect on the creation of this universe in the verse:

بِضْرَاقٍ لَّوْلُؤٍ وَبِتَوَاتُرٍ مَّسْلُوقٍ لَّخِيفٍ نَّارٍ
يَلْوَأُ لِبَتِّهَا لِيَأْلُ رَأْيَ نَلِّ وَ لِيَأْلُ فَلَخٍ وَ
هَلَّلَ نَوْرُكَ ذِي نِيذَلِّ (١٩٠) بِبَلِّ لَأَلِّ
نَوْرًا فَتَيِّوْ مَهْبُونُجٍ لَعَوِّ دَوْعُوقٍ وَمُوقٍ
أَمَّ أَنْبَارٍ بَضْرَاقٍ لَّوْلُؤٍ وَبِتَوَاتُرٍ مَّسْلُوقٍ لَّخِيفٍ
بَادَّعٍ أَنْقَافِ لَكَنْ حَبُّسٍ لَطَبِّ أَبِاذِّهِ تَقَلِّخِ
(١٩١) رَأْنَلِّ

“Indeed in the creation of the heavens and the earth, and the alternation of night and day there are signs for the people of understanding, who remember Allah while

standing, sitting and lying on their sides and contemplate about the creation of the heavens and the earth, saying, our Lord you did not create these aimlessly, Exalted are you, then protect us from the fire of Hell” (Al-Quran 3:190).

The scientific evidences of the Quran clearly prove its Divine origin. No human could have produced a book, fourteen hundred years ago, that would contain profound scientific facts, to be discovered by humankind centuries later.

Scientists of various disciplines and research scholars may utilize the knowledge of different branches of medical sciences cited in the texts.

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Editing and Study Adwiyat Harf al-Thal from Taqwīm al-adwiyah al-mufrada Manuscript (Table of Simple Drugs) Written by Ibrāhīm b. Abī Sa`īd b. Ibrāhīm al-Mağribī al-Alā`ī (Lived in 547H/1152 A.D)

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Summary

The author of this book “Taqwīm al-adwiyah al-mufrada” is Ibrāhīm b. Abī Sa`īd b. Ibrāhīm al-Mağribī al-Alā`ī, he is unknown doctor at his time, so we don't know the date of his birth or death, but we know that he wrote three books on simple drugs, these books are Albadaliyat, Alalwah and Al-taqwīm (this book). He dedicated his book to the sultan of Malatia city Al'amiyr Alaa' Aldiyn 'Abi Shujaa Thul-qarnayn Bin Ain Aldawla Bin Ghazi who ruled at the period 547-557H/ 1152-1162 A.D.

The author began his book with a long introduction which consists of basic knowledge of simple drugs, such as the conditions of testing drugs, examinations methods, and characteristics of various drugs.

Three tables kinds of tables were included, the first is an index to the second tables, the second kind of table contains detailed tables which form most of the book, each table of which consists of 16 columns under the following titles: Name, Description, Type, Experimental, Humors, Strength, Use in Head Diseases, Use in Respiratory Diseases, Use in Digestive Diseases, Use in the body as a whole, Method of administration, Dose, Contraindications, Antidotes, Substitutes, and number. The third kind of tables is eight-pages addendum which contains 230 entries, and is entitled “Medications that have two or three names”.

Key Words: Simple Drugs, Islamic Medicine, Islamic Pharmacy, al-Alā`ī al-Mağribi, Medical History.

Introduction

Simple Drugs Science is a very important branch in Islamic Medicine, and Tabular Form books –in this branch– is a worthwhile phenomenon that hasn't been studied well.

The author of this book Ibrāhīm b. Abī Sa`īd b. Ibrāhīm al-Mağribī al-Alā`ī is one of the most important physicians in this field, and so is his book. In spite of this fact, his book hasn't been yet edited or studied as desired. This research aims to edit and study this book partially, and to be as an introduction for doing this.

In our study the linguistic origin of drug's idioms is determined, in addition to the recent scientific names of the drug and their botanical families, finally the therapeutic uses in complementary and homeopathic medicine were identified.

The book contains 409 medications of plant origin, 80 medications of animal origin, and 61 medications of non-organic origin.

The Used Manuscripts

In order to obtain the most precise version of the author's text, three manuscripts have been used and compared to each other, these manuscripts are:

1. Egyptian Bookstore “Dar al-Kotob” Manuscript, No. Tibb 43, 136 foliate, written in 1096 H.(1)
2. Mecca Haram Library Manuscript, No. 3595 Tibb, 139 foliate, written in 1276 H.(2)(3)
3. Royal Library of Denmark Manuscript, No. 114, 121 foliate, bought from Cairo in 1761 a.d, this means that it has been written before this time.(4)

The first manuscript will be considered as the origin, the other two manuscripts will be compared with it. The first manuscript will be D, the second will be H, and the third A.

Use in Respiratory Diseases	Use in Diseases of the Head	Strength	Humors	Experimental	Type	Description	Name
The fruit is useful for croup ¹	The humidity of its bells shines vision	Astringent, shining	Hot in the first, dry in the second	The soft	One	It's Bug ² tree	Tharthar ³ (Elm)
Stop bloody expectoration	Strengthen weak gum, and fix teeth	Astringent	Cold in the first, dry in the second ⁴	The complete	One	Kinks complicated with interfering kinks, and at the kinks there is a thing like horse tail	Thanab al-khail (horsetail)
the swarf strengthens the heart, and cures heart pain	Useful for halitosis if caught in mouth, make vision more powerful, useful for alopecia as a paint	smooth	Moderate	Pure gold powder	One	Known	Thahab (Gold)
	Useful for alopecia, enhances hair growth, shines vision, useful for fistula. Green Cantharides with honey cure freckle	Putrefactive, burning	Hot and dry in the second	Golden	Species	A fly like hornet, spotted in black	Tharareeh (Cantharides)
	Useful for eye pains, eyelash dissemination, and hair in eyes, its ash with honey is useful for alopecia	Laxative	Hot and wet	Anyone ⁵	One	Known	Thubab (Fly)

¹D: "palpitation" instead of "croup".

²A and H: "Nabk" instead of "Bug".

³The author wrote it so: "Tharthar", and this is repeated in all of the book, but all of medicine, plant, and linguists have written it: "dardar", maybe it's oversight from the author.

⁴(Cold in the first, dry in the second): missing in A.

⁵(Anyone): missing in A.

Number	Substitutes	Antidotes	Contraindications	Dose	Method of administration	Use in the body as a whole	Use in Digestive Diseases
534	Plane	currant	For spleen	Two Derhams	Enteral and topical	Soft Elm with vinegar are useful for skin peeling, cure wounds, strengthen weak bones as a bandage.	The thick peel is phlegm laxative. The fruit is aphrodisiac
535	Cistanche	Lawzeenage	For throat	Two Derhams	Cooked	Dry without irritation, cure ulcers and wounds, useful for humeral injuries as a bandage, even if it was severe ⁶ .	Useful for tumors of stomach and liver, constipate, stop bleeding, for organ swelling as a bandage.
536	Twice of it from silver	Honey and musk	For bladder	Carat	In Kohl with antimony	Best cauterization and quickest curing that made by gold, as cauterization by gold is useful for swelled legs.	
537	Marsh nut	Milk and rose oil	Cause bladder ulcers	Give a very little amount	Topically	Take off warts and bad nails, useful for albinism, eczema, and scabies, cure carcinoma, useful for sciatica.	Abortifacient, diuretic, emmenagogue, break up calculus, useful for piles in pomades.
538	For alopecia mouse feces	Vinegar and Armenian clay	Indicate to air moldiness	Without estimation	Topically	Useful for hornet stings by massage, and it's said that it's used to reverse poisons harm.	

Recent studies:**Drugs determination⁷ :**

Number	References	French	Family	Scientific- Latin	English	Arabic Name
534	(5) (6) (7) (8)	Orme	Urticaceae	Ulmus campestris L. Fraxinus excelsior L. ⁷	Elm	Dardar (Tharthar)
535	(5) (6) (7) (8)	Prele des champs	Equisetaceae	Equisetum arvense L.	Horsetail	Thanab al-khail
537	(9)	Cantáridas		Cantharis vesicatoria	Cantharides	Tharareeh

⁶H: "recent" instead of "severe".⁷ Flies aren't used in therapies in modern medicine, and Gold is known, so I didn't care of determining them.⁸ These two genera are called Dardar, the first genus also called "Bug tree", and the second also called "Lesan al-Ufour", and the author wanted to indicate to each of them, because he described Dardar with the first, and in the name "Lesan al-Ufour" he described it with: "Dardar fruit". For further explanation look in the listed references.



Mecca Haram Library Manuscript, No. 3595 Tibb

The Drugs in Complementary and Homeopathic Medicine:

Dardar (Tharthar) (10)

COMPOUNDS: Mucilage: yielding mainly D-galactose, L-rhamnose, D-galacturonic acid after hydrolysis. Tannins (3%). Caffeic acid derivatives: chlorogenic acid. Sterols: including, among others, beta-sitosterol, stigmasterol.

EFFECTS, INDICATIONS AND USAGE: The drug has diuretic and astringent properties.

Unproven Uses: Internally, the drug is used for digestive disorders and severe cases of diarrhea. Externally, it is used to treat open wounds.

CONTRAINDICATIONS, PRECAUTIONS AND ADVERSE REACTIONS: No health hazards or side effects are known in conjunction with the proper administration of designated therapeutic dosages.

MODE OF ADMINISTRATION AND PREPARATION: Elm bark is used both internally and externally in various preparations.

The ground bark is used for infusions. A decoction from the bark can be prepared using 2 teaspoons of the drug per cup of water. Externally, a 20% decoction is used, which is diluted 1:1 with water.

DAILY DOSE: The dosage of the decoction prepared from the bark is 1 cup 2 to 3 times daily. In powder form, a dose of 2 to 5 gm may be taken daily.

Thanab al-khail (10) (11) (12)

COMPOUNDS: Flavonoids: (0.6 to 0-9%): apigenin-5-0-glucoside, genkwanin-5-O-glucoside, aempferol-3,7-di-0-glucoside, kaempferol-3-0-(6'-0-malonyl-glucoside)-7-0-glucoside, kaempferol-3-O-sophoroside, luteolin-5-

O-glucoside, quercetin- 3-O-glucoside. Caffeic acid ester (up to 1%): including chlorogenic acid, dicoffeoyl-meso-tartaric acid. Silicic acid (5 to 7.7%): to some extent water-soluble.

Pyridine alkaloids: nicotine (traces), palustrine (in the gamatophytes and in the rhizome styrolpyrone glucosides, including equisetumpyrone).

EFFECTS, INDICATIONS AND USAGE: Horsetail has a mild diuretic and spasmolytic action in animal tests. The flavonoids and silicic acid contribute to the astringent effect. Indications Approved by Commission E: Infections of the urinary tract, Kidney and bladder stones, Wounds and burns. Internal preparations are used for post-traumatic and static edema, flushing-out therapy for bacterial and inflammatory diseases of the lower urinary tract and renal stones. It is used externally as a supportive treatment for poorly healing wounds.

Unproven Uses: In folk medicine, Equisetum arvense is used for tuberculosis, as a catarrh in the kidney and bladder regions, as a hemastatic for profuse menstruation, nasal, pulmonary and gastric hemorrhages, for brittle fingernails and loss of hair, for rheumatic diseases, gout, poorly healing wounds and ulcers, swelling and fractures and for frostbite.

CONTRAINDICATIONS, PRECAUTIONS AND ADVERSE REACTIONS: Horsetail is contraindicated in patients who have edema due to impaired heart and kidney function. Health risks or side effects following the proper administration of designated therapeutic dosages are not recorded. A doctor should be consulted when the drug is utilized as a bath additive in cases of major skin lesions, acute skin lesions of unknown origin, major feverish and infectious diseases, cardiac insufficiency and hypertonia.

MODE OF ADMINISTRATION AND PREPARATION: Comminuted herb for infusions and other galenic preparations are available for oral administration. Comminuted herb for decoctions and other galenic preparations are used externally. To make a tea, pour 200 ml boiling water over 2 to 3 gm drug and boil for 5 minutes. Strain after 10 to 15 minutes. To make an infusion, use 1.5 gm drug per 1 cup water. A liquid extract is prepared in a 1:1 ratio in 25% alcohol.

DAILY DOSE: 6 g drug. The drug should be administered with plenty of fluids. The internal dosages are as follows: Infusion — 2 to 4 g. Liquid extract — 1 to 4 ml 3 times daily. Tea — 2-3 g per cup repeatedly during the day between mealtimes. External use: Compresses: 10 g drug to 1 liter. Homeopathic Dosage: 5 drops, 1 tablet or 10 globules every 30 to 60 minutes (acute) or 1 to 3 times a day (chronic); parenterally: 1 to 2 ml 3 times daily.

Tharareeh (9)

COMPOUNDS: containing not less than 0.6% of cantharidin. Cantharidin is: Hexahydro-3 α ,7 α -dimethyl-4 β ,7 β -epoxysobenzofuran- 1,3-dione. C₁₀H₁₂O₄.

EFFECTS, INDICATIONS AND USAGE: externally as rubefacients, counter-irritants, and vesicants. They should not be taken internally or applied over large surfaces owing to the risk of absorption. The use of cantharides in cosmetic products is prohibited in the UK by law.

CONTRAINDICATIONS, PRECAUTIONS AND ADVERSE REACTIONS: After ingestion of cantharides there is burning pain in the throat and stomach, difficulty in swallowing, nausea, vomiting, haematemesis, abdominal pain, bloody diarrhoea, tenesmus, renal pain, frequent micturition, haematuria, uraemia, severe hypotension, and circulatory failure. Oral doses of cantharidin of less than 65 mg have been lethal. A dose of 1 mg or contact with one insect can produce distressing symptoms. Skin contact results in blisters.

MODE OF ADMINISTRATION AND PREPARATION: Externally and Internally.

DAILY DOSE: A solution of 0.7% in flexible collodion is applied for the removal of warts and molluscum contagiosum.

Gold (9)

COMPOUNDS: Gold salts or metallic gold.

EFFECTS, INDICATIONS AND USAGE: The main use of metallic gold in health care is now in dentistry. Gold may also be used as a colouring agent for some foodstuffs. In the treatment of rheumatoid arthritis, gold is used in the form of compounds such as auranofin aurothioglucose, and sodium aurothiomalate. The radionuclide gold-198 is used in radiopharmaceuticals.

CONTRAINDICATIONS, PRECAUTIONS AND ADVERSE REACTIONS: There have been rare reports of hypersensitivity reactions to metallic gold.

MODE OF ADMINISTRATION AND PREPARATION: Externally and Internally, metallic and salt.

DAILY DOSE: Due to the compound.

Conclusions

The author explained five drugs in this chapter "BAB Adwiyah Harf al-Thal", two of the drugs are of plant origin, two of them are of animal origin, the last is of non-organic origin.

The drugs of plant origin belong to various genus and families, the families are Urticaceae and Equisetaceae.

All of the drugs mentioned have various indications and benefits which one can find in recent references.

Complementary and homeopathic references cited various effects of the 550 drugs, and regardless of being agreed with the effects cited by al-Alaai or not, these drugs have valuable usefulness.

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A Study of a Persian Manuscript 'Ilajul Atfal' written by a Deccan Physician 'Syed Fazl Ali Shifai Khan' and its Translation into English

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Summary

Ilajul Atfal is a Persian manuscript written on the topic of pediatrics by Syed Fazl Ali Shifai Khan. Copies of the manuscript are available in different libraries of the world.

Unfortunately Ilajul Atfal has not been published nor translated into any language so far. Therefore keeping in view the importance of this manuscript, I took a project from government of India to edit and translate it into English. Now the original Persian text of Ilajul Atfal is going first time to be published along with English translation from National National Institute of Indian Medical Heritage (C.C.R.A.S.), 3rd Floor, Osmania Medical College building, Putlibowli, Hyderabad-500095, India. The details of study and contents of the manuscript are pointed out in this paper.

Key Words: Ilajul Atfal, Pediatrics, Manuscript

Introduction:

- **Name of the Mss:** *Ilajul Atfal*
- **Author** : Syed Fazl Ali Shifai Khan (d. 1841 AD)
- **Period** : 1836 AD (Paper Mss)
- **Language** : Persian
- **Script** : Persian
- **Source** : NIIMH, Library, Hyderabad and GNTC Library, Hyderabad
- **Subject** : Pediatrics
- **Pages** : 300
- **Chapters** : 70
- **Collated, Edited and Translated into English by:** Dr. Ashfaque Ahmad

Ilajul Atfal (Pediatrics) is in Persian language written in 1836 by a distinguished *Tabeeb* Syed Fazl Ali Shifai Khan for his patron Maharaja Chandu Lal. It is great honor for the author that the book was written on this subject (diseases of children) when pediatrics as a subject was not yet developed (till the mid 1800s). The manuscript under study has not been published so far which has a historical value. In view of the importance, utility and world wide interest in pediatrics we thought it necessary to collate and edit this Persian treasure and to translate it into English. Another

source of inspiration was our endeavor to bring out the scientific and medial masterpieces of Indian *Tabeebs* into light.

Hakim Syed Fazl Ali Shifai Khan was a learned physician with a number of works to his credit. He was a native of Shahjahanpur (U.P.) India. Shifai Khan went to Madras to receive medical knowledge from Hakim Ahmadulla Khan a much knowledgeable physician. He stayed there for sometime and attained perfection in *Tib*.

He migrated to Hyderabad and joined the court of Maharaja Chandu Lal (Prime Minister of Hyderabad) who was a great patron of learned men. He also served as personal physician of Nawab Sikander Jah (Asif Jah III, 1829) and Nawab Nasiruddaula (Asif Jah IV, 1829-1856). The title of *Motamadul-Mulook* was conferred on him. Among his pupil was Hakim Mir Inayat Ali Khan a skillful physician of Hyderabad whose family was very well known on account of its medical services and held place of distinction in Hyderabad Deccan. Syed Fazl Ali Shifai Khan authored many books like *Ilajul Atfal*, *Risala Quwat La Yamut*, *Risala Chobchini*, *Moalijat Chandulal* etc. He gave a great impetus to the promotion of the Unani healing art in South India. Due to the royal patronage of the ruler of Deccan, distinguished physicians from other Indian cities migrated to Hyderabad to settle there.

The manuscript under study has not been published so far, neither translated in any language. Unfortunately there is lot of Arabic and Persian manuscripts in Unani Medicine destined to this fate awaiting their beneficiaries who can care, study and translate it in other languages so that the valuable prescriptions can come into light.

Before taking up the translation of this work I had prepared its final edition after collation with the manuscripts extant in different libraries.

Copies of Ilajul Atfal are preserved in National Institute of Indian Medical Heritage (CCRAS), Hyderabad, Government Nizamia Tibbi College Library, Hyderabad, A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad, Ibn Sina Academy Aligarh, Maulana Azad Library Muslim University Aligarh and National Museum of Pakistan, Karachi.

I came across six copies of this manuscript:

1. 1st copy with Accession no. 439 at National Institute of Indian Medical Heritage (CCRAS), Hyderabad has diameter of 5.5" x 8.5" and contains 313 pages with 12 lines on each page and 10 letters in each line. The script is ordinary, the green fish made holes here and there, though it is complete and bound it is difficult in some places to read due to the tear and worm eating. Important points and headlines are marked by red inks. Date of scribe given in the colophon is *Zee Qada* 1265 Hijri (1848 AD)
2. 2nd copy with Accession no. 792 available at Government Nizamia Tibbi College Library, Hyderabad, contains 364 pages with 13 lines in each page and 10 letters in each line. Date of scribe given in the colophon is *Rabiul Awwal* 1252 Hijri (1836 AD).
3. 3rd copy with Accession no. 2197/1392 available at Government Nizamia Tibbi College Library, Hyderabad, contains 197 pages with 17 lines in each page and 13 letters in each line. Date of scribe given in the colophon is *Safar* 1257 Hijri (1841 AD). This mss is complete but script is not good, very difficult to read
4. 4th copy with Accession no. 951 available at Government Nizamia Tibbi College Library, Hyderabad, contains 43 pages with 23 lines in each page and 27 letters in each line. Date of scribe given in the colophon is 7 *Rajab* 1249 Hijri (1833 AD). Major portion of this Mss is absent especially initial three chapters were not found.
5. 5th copy with Accession no. 3250/2396 available at Government Nizamia Tibbi College Library, Hyderabad, contains 120 pages with 17 lines in each page and 19 letters in each line. Date of scribe is not given. Major parts of chapter one are missing, remaining parts are in good condition.

6. 6th copy with Accession No. 9022 available at A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad. It contains 226 pages having 15 lines in each page with 13 letters in each line. Date of scribe given in the colophon is 9 *Rabiul Awwal* 1249 Hijri (1833 AD).

I have made 5th copy with Accession no. 3250/2396 of Government Nizamia Tibbi College Library, Hyderabad my base manuscript because it is nearly complete, script is excellent, easy to read and error is minimal.

The text has been compared and collated with the other four copies to find out the right words in case of torn, missing and faded folios and differences are clarified in foot notes of the Persian texts. Persons concerned in editing manuscripts know fully well that the variations in different copies however appear well in the footnotes and also point to the effort and endeavor of the editor to clarify the differences but the degree of satisfaction achieved after the different copies help each other in reading the complete text and removing the difficulty, none other than the editor can perceive it.

The translation is aimed to the persons who are unaware of Persian language and want to access the experiences and findings of learned Unani physicians who compiled their treasures in that language. Many parts of the Persian text were ambiguous so an effort has been done in the translation to make it nearer to the author's meaning.

This book contains following 70 chapters and mere looking the names of the chapters it gives the impression how detailed description of each kind of diseases in children is carried out.

1. *Tadbeer Hamila wa Nufasa* (Management of pregnancy and Puerperium)
2. *Tadabeer Kullia Atfal* (General Care of the Child)
3. *Reehus Sibyan* (Infantile Convulsion)
4. *Atas Mutwatir* (Continuous Sneezing)
5. *Atash* (Thirst)
6. *Ijtima Aab dar Ras* (Accumulation of fluid inside the skull)
7. *Waram kharij Qahaf* (Swelling out side skull)
8. *Sarsam* (Meningitis)
9. *Tashannuj wa Kazaz* (Convulsion and Tetanus)
10. *Girya Tifl Wa Sahr* (Crying of child and insomnia)
11. *Al-Faza fin Naum* (Fear during sleep)
12. *Al-Faza fil Yaqza* (Fear during awakening)
13. *Dard Gosh* (Earache, Otalgia)
14. *Kharish dar Gosh* (Itching in the ear)
15. *Sailanul Uzun* (Otorrhea)
16. *Insibab Mawad Raddia* (Suppuration in the ear)

17. *Intifakh Ain* (Swelling in the Eye lids)
18. *Ramad* (Conjunctivitis)
19. *Bayaz Ahdaq* (Whiteness of the pupil)
20. *Sulaq* (Blepharitis, Tarsitis)
21. *Iltisaqul Jafan* (Sticking of eye lids)
22. *Kabudi Chashm* (Blueness of the eye)
23. *Ehtibas dar Anaf* (Obstruction in nostril)
24. *Laza Liththa* (Irritation of the gum)
25. *Awram Liththa* (Swelling of the gum)
26. *Awram Halaq* (Pharyngitis)
27. *Waram Lauzatain* (Tonsillitis)
28. *Istirkha Luhath* (Elongation of uvula)
29. *Surfa* (Cough)
30. *Zukam Wa Nazla* (Cold and Coryza)
31. *Waram Shash* (Pneumonia)
32. *Qula* (Stomatitis)
33. *Su-e-Tanaffus* (Dyspnoea)
34. *Kharkhara Seena* (Snoring in the chest)
35. *Fawaq* (Hiccup)
36. *Qai ba Ifrat* (Vomiting)
37. *Zof Meda* (Stomach weakness)
38. *Tajabbun Laban* (Caseation of milk inside stomach)
39. *Takassur Laban* (Excessive milk production)
40. *Haiza* (Cholera)
41. *Ishal* (Diarrhea)
42. *Eteqal* (Intussusceptions)
43. *Maghs* (Cramp)
44. *Su Ul Qinya* (Anemia)
45. *Aam Bad* (Paleness)
46. *Nutu us Surra* (Umbilical Hernia)
47. *Fataq Wa Qeel* (Hernia and Hydrocele)
48. *Zaheer* (Dysentery)
49. *Deedan* (Worm infestations)
50. *Khurujuj Maqad* (Anal Prolapse)
51. *Hurqatul Baul* (Burning micturition)
52. *Baul Fil Farash* (Bed wetting, Enuresis)
53. *Usrul Baul* (Painful or difficult urination)
54. *Ehtibasul Baul* (Retention of Urine)
55. *Advia Mudirrah* (Diuretic drugs)
56. *Judri wa Hasba* (Small pox and measles)
57. *Hummiat* (Fever)
58. *Bathur* (Papules eruption)
59. *Safa* (Favus, Mycosis)
60. *Sahjul Fakhaz* (Excoriation of the thigh)
61. *Thulul* (Warts)
62. *Quba* (Ring worm)
63. *Ghudud Unuq* (Mumps)
64. *Khanazir* (Scrofula)
65. *Surkh Bada* (Erysipelas)
66. *Shara* (Urticaria)

67. *Awram* (Swellings)
68. *Jarb* (Scabies)
69. *Harqun Nar* (Burn)
70. *Marz Jild* (Chronic Skin Disease)

There are several interesting findings in this text which need systematic exploration and scientific validation, some of them are cited here for example:

'A scorpion is taken and burnt with sting, and its ash is preserved. This ash is applied to the palate and uvula of the infant by finger just after birth. The treated child will not be affected by scorpion sting.'

Use of *Majun Hafizul Ajinna* for first forty days of pregnancy gives immunity to the infant from *Ummus Sibyan*. It is written '*Majun Hafizul Ajinna* was given to a woman at the time she conceived and continued for 40 days then all her children born healthy and never acquired the disease'. Also a live scorpion is killed and poured in the oil of a lamp, the lamp is placed before the child, the scorpion with oil remains in the lamp for six days. This act also gives immunity to the scorpion sting.

The author writes his experience:

A person told *Hakim Nawab Alvi Khan* that his children used to acquire infantile convulsion at the age of 2-3 years. He was advised for *Majun Hafizul Ajinna* to be given to his wife at the time she conceives and to be continued for 40 days. After ingestion of this drug all her children were born healthy and never acquired the disease. This *Majun* was given to many patients and was everywhere successful. Dose: it should be given for forty days in 1st trimester, for forty days in 2nd trimester and for forty days in 3rd trimester.

Ingredients of *Majun Hafizul Ajinna*:

1. *Marwareed* (Pearl) Unpierced 10 gm
2. *Kaharba Shamai* (*Vateria indica*, yellow amber) 10 gm
3. *Busud* (Coral) burnt and washed 10 gm
4. White and red Sandal 10 gm
5. *Tabasheer* (*Bambusa arundinacea*) 10 gm
6. *Mazu, Afis* (*Quercus infectoria*, Oak Galls) un perforated, 10 gm.
7. *Darunj Aqrabi* (*Doronicum hookeri*) 10 gm
8. *Wood Saleeb* (*Paeonia emodi*) 10 gm
9. *Abresham* (Silk Cocoon) 10 gm
10. Root of *Enjibar* (*Polygonum bistorta*) 10 gm
11. *Gil Armani* (*Arminina Bole*) 10 gm
12. Seeds of *Handuana* (Water melon) 25 gm
13. Seeds of *Khurfa* (*Portulaca oleracea*, Parselane) 25 gm
14. Silver leaves 20 pieces
15. Gold leaves 20 pieces

16. Amber Ash-hab (Ambergris) 1 gm
17. Syrup of *Ghorah* (sour grapes) 750 ml
18. Sugar 1500 gm
19. Pure Honey 500 gm

In the Chapter of Management of the pregnant and puerperal women (*Tadbeer Hamila O Nufasa* تادبير امح ريبيدت (ءاسفنون) the author has enumerated the precautions that can prevent the miscarriage during pregnancy, for example he has written:

The woman should avoid all factors which can aggravate the miscarriage such as:

1. Trauma or falling,
2. Excessive coitus against normal position,
3. Venesection and purging during 1st and 3rd trimester,
4. Shock, fear, anxiety, anger,
5. Lifting of heavy weight,
6. Insertion of any drug inside the womb,
7. Exposure to excessive heat or cold,
8. Eating of sour, pungent and bitter things,
9. Congestion and overfilling of the stomach
10. Ingestion of toxic and bitter medication
11. Excessive enema or diuresis
12. Excessive hunger or thirst
13. Severe pain, fever, illness or uterus disease.

The author has also mentioned the treatment of children for frightening during sleep and awakening as he writes:

Some children wake up from a frightening dream and start crying. One of these conditions is that child has seen some frightening thing during wakefulness and the shape of that thing fixed to the mind, during sleep it reappeared in the mind and caused frightening.

Treatment: Frightening object should be ascertained and the fear is removed from the mind of the child. He should be made brave and familiar to that frightening object and should be engaged with some types of sports.

Formulation: Initially pure and fine rice is soaked in the water, a little of this rice water is given to child. The bone of the crab is burnt into ash and mixed with the sugar is also useful.

Another Formulation:

1. Roasted dried coriander
2. *Chashm Sartan* (Crab's eye)
3. *Tabasheer* (*Bambusa arundinacea*)
4. *Zahr Mohra Khatai* (Benzoar stone)
5. *Fad Zahr Buzzi* (Goat antidote)

All these drugs are powdered, added with sugar and given to the child.

Another formulation:

1. Peeled dried coriander,
2. *Maghz tukhm kaddu shiri* (Pumpkin seeds)
3. *Tabasheer* (*Bambusa arundinacea*)
4. White Sandal (*Santalum album*)
5. *Gaozaban* (*Borago officinalis*) flower
6. *Abresham* (Silk Cocoon)
7. Pearl imperforated
8. *Zahr Mohra Khatai* (Benzoar stone)
9. Milk of *Amla*
10. *Post bairun Pista* (Pistachio nut shell)
11. *Post Zard Atraj* (Citron shell)

All these drugs are crushed, powdered and added with sugar equal amount of all drugs and given to the child. In case of infants the drug should be given to the mother. Efforts are made for strengthening of the stomach of the mother and child such as Unani formulations like *Jawarish Mastagi* and *Jawarish Uod Shiri* should be given to the mother earlier. Thick vapors due to indigestion ascend to the brains which lead to discomfort of the stomach and fear during sleep.

Conclusion:

I hope the researchers in the subject of pediatrics will get benefits from Unani prescriptions of this book and new compounds will come into light by working on the exploration and research of Unani drugs mentioned in this book which will contribute for reduction of many diseases in children. We should try to be more productive, focused, intuitive, analytical and creative.

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Diagnosis of Mizaj مزاج - a Unique Tool for Treatment in Unani Medicine

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Summary

Health care practitioners are aware of general guidelines for the use of medication in patients, whether young or old male or female of different body masses and so on. Ancient physicians worked on the theory of Mizaj مزاج (temperament) most assiduously and finally established it as a principle or norm of treatment. With their penetration, they succeeded in locating the relationship between disease, various humours and the disturbance of temperament. They emphasized that the true objective of treatment was the rectification of this disturbance of Mizaj مزاج (temperament).

Unani Tibb طب (Medicine) provides a great emphasis on prescribing Medicine as Unani system not treat the disease only but also the root cause must be kept in mind. For this we not only consider the Mizaj مزاج of drug but also the Mizaj مزاج of individual is considered. This is the reason we treat at sometimes with ilaj bil zid علاج بزيادة (allopathic) and sometimes with ilaj bil misl علاج بمثل (analogue) depending upon the involvement of abnormal qualities or matters.

Key Words: Mizaj, Humour, Unani Tibb, Ilaj bil zid

Introduction

The Arab physicians described the concept of *Mizaj* مزاج in a universal manner as compared to the modern concept of temperament that is limited to the psycho – somatic behaviour only. Therefore, the word temperament does not hold the same meaning as *Mizaj* مزاج meant in Greeco Arab medicine rather *Mizaj* مزاج has broader meaning and application.

In this regard, Grunner says, “the word temperament is not satisfactory for the Arabic word *Mizaj* مزاج which contains the idea of mixture so the medieval translators used the word “commixtio” or “complexio” which carry the idea of mixing or blending and weaving. But neither words fit in with modern usage. The word constitution is more meaningful to layman as referring to the makeup of physical body temperament as applies to the mental makeup. The word constitution carries the idea of something stationary and unchanging. One has therefore to use the word temperament in a psychological sense and in the medical sense; it should imply a blend of humours, since all four are present in every individual.”¹

Azmi explains further saying, “there is another word constitution which is used as an equivalent of *Mizaj* مزاج.

This word means the natural condition of the body and mind and when it is used in chemistry, it denotes not only kinds and number of atoms but also the way they are linked. This meaning is fully in accordance with the elemental concept of temperament which I hold correct.”²

But, Shah has a different opinion, he says, “in modern medicine the terms “constitution” and “temperament” are often used synonymously but not so in the cannon of Avicenna. Constitution is *tabiyat* طبیعت comprised of seven physical factors *al umur al tabaiyah*, احوال of which temperament (*mizaj*) مزاج is one.”³

This concept of temperament was originally introduced by Hippocrates when he stated that:

“It is more important to know what sort of person has a disease than to know what sort of disease a person has”. Later Galen (131-210 AD) described this concept as “Temperament”.

The temperament of an individual is not an incidental phenomenon. One attains temperament while in the womb by hereditary from parents and intrauterine and after birth by extra uterine environment. Once a temperament is established during foetal life it will be modified by ambient environmental factor alone.⁴

Uniqueness of Mizaj حازم:

Out of many fundamentals the most important one of Unani medicine is that it recognizes the uniqueness of an individual. Narain says:

“it is a matter of daily observation that scarcely two persons can be found, not even twins, who are exactly alike in body and mind, so that they cannot be distinguish from each other”.

Even in one family we observe that one child is strong and muscular, another weak and slender. One is sharp another dull; one is excitable another calm. They are brought up under same regimen and diet even then it so happens that in one large amount of fat accumulates beneath the skin and the abdomen (belly) becomes prominent, while in the other, the muscle get firm. These differences in humans are attributed to certain constitutional peculiarities which are called as temperaments.⁵

The humoral doctrine explains health as the result of the harmonious balance and blending of the four humors. An excess of one of the humors results in a dyscrasia, or abnormal mixture. Particular temperaments were associated with a relative abundance of each humor. The sanguine, phlegmatic, choleric (or bilious), and melancholic temperaments are roughly equivalent to different personality types, and suggest vulnerability to characteristic disorders.⁶ According to Avicenna, Allah has made all kinds of people as well as all kinds of beasts and they can be roughly categorized into four types. In fact, Hippocrates idea that people could be categorized according to “types” was very popular and was used as key to health care and maintenance. Hippocrates, and later Avicenna, taught how each type could live a healthier and happier.⁷

Central to the practice of *Tibb* بظ is the concept of *Mizaj* حازم and its importance as part of the total diagnosis procedure. As such, *Tibb* بظ attaches considerable importance to assessing a patient’s authentic *Mizaj* حازم as a precursor to a therapeutic approach based on his or her uniqueness.

Objective of Diagnosis

- The objectives of the *Tibb* بظ diagnosis are:
- To determine the temperament of the patient
- The qualitative frame the disorder falls into
- The nature of the humoral imbalance
- The body tissues or organs affected by the disorder
- The Pathway that the patient’s disorder is following

Method of diagnosis

Disease is an abnormal state of the human body which, primarily and independently but not secondarily, disturbs normal functions. Disease may, thus, be a disorder of temperament or structure.⁸

Causes of disease in Unani system are the same as in the Allopathic system, as internal and external corresponding to “*Asbabe-Dakhila*” اسباب داخلة and “*Asbabe-Kharjia*” اسباب خارجة exciting and predisposing causes corresponding to “*Asbabe Wasil*” اسباب واسطه and “*Asbabe Moid*”, اسباب مؤبدة heredity corresponding to “*Tawarus*”, اسباب ثراوت mechanical and physical causes to “*Asbabe Taffarrukhia*” اسباب تفارقت اسباب and “*Asbabe Mizajia*”, اسباب مزاجية chemical causes to “*Asbabe Sammiya*” اسباب سمية and indigenous causes to “*Asbabe Khiltiah*”. اسباب اصيله No cause is left out and even parasitic causes find place through not dealt in detail with individual parasites. Hence Unani is as scientific as Allopathy. Methods of diagnosis and treatment in Unani are also parallel. In Unani the symptoms are divided (i) *Alamat-e-Munzir* علامت مزاحم corresponding to precursory symptoms, (ii) *Alamat-e-zahirya* علامت ظاهر corresponding to direct or endopathic symptoms, (iii) *Alamat-e-Shirkiya* علامت شريك corresponding to sympathetic symptoms, (iv) *Alamat-e-Makamiya* علامت محام corresponding to local symptoms, (v) *Alamat-e-Badaniya* علامت بدني corresponding to constitutional symptoms, (vi) *Alamat-e-Shakhsia* علامت شخصي corresponding to subjective symptoms, (vii) *Alamat-e-Tabeya* علامت تبوي corresponding to objective symptoms or physical signs, (viii) *Alamat-e-Mushakhhisa* علامت مشخص corresponding to pathognomic symptoms and many others peculiar to Unani.⁹ Any changes in the temperament bring about in the persons state of health. Thus disease is an expression of imbalance of humours. Human temperament is determined by the four humours found in the individual body and thus there are four types of temperament in all human beings.

Bhika and Haq observed that central to practice of Unani medicine is the diagnosis of temperament, rather than individual disease. It is the art of identifying an individual’s authentic temperament and then serving their physic, in the process of preserving their peculiar ideal state of health.¹⁰ Although the number of possible temperaments is virtually infinite, for practical reasons, *Tibb* بظ has narrowed them down to the four temperamental types as hypothesized by Galen: sanguineous, phlegmatic, melancholic and bilious, with each person having a dominant plus a sub-dominant temperament practice, a patient’s dominant and subdominant temperament is identified by the response to a battery of empirically-derived questions.

Encompassing the biological, psychological, emotional and social dimensions. These assess a number of the patient's personal, constitutional and lifestyle factors:

There are ten parameters upon which a person is tested. Therefore, the signs and symptoms by which the temperament is diagnosed are classified into following ten divisions.

1. *Malmas* (تلمس) (tactile sensation)
2. *Lahm-wa-shahm* (لحم و شحم) (flesh and fats)
3. *Ashar* (اعشا) (Texture of hair)
4. *Laun-e-badan* (نوبان) (colour of the body)
5. *Hay'at-al-a'za* (حالات اعضاء) (stature of the organ)
6. *Kaifiyat-al-infi'al* (کیفیت الاعضا) (quality of passiveness of the organs)
7. *Naum-wo-yaqzah* (نوم و یاقظ) (sleep and wakefulness)
8. *Afal al-a'za* (اعمال الاعضا) (bodily functions)
9. *Fadhlal al-badan* (فضائل البدن) (excreta of the body)
10. *Infi'alat nafsaniyah* (انفصالات نفسانی) (psychic reactions)^{11,12}

Principle of treatment

In Unani system of Medicine the principle of treatment is quite different from that of the modern system of medicine. *Tibb* adopts a holistic approach to diagnosis, linking a number of empirical, time proven traditional techniques, so arriving at an accurate identification of the nature and cause of the disorder, within the context of the temperamental and humoral theory. Once this is achieved, the practitioner is in a position to understand the disorder, and adopt the appropriate healing strategies.

A lot was done and developed by Hippocrates and Galen, but the Arabs worked on the theory of temperament most assiduously and finally established it as a principle or norm of treatment. With their penetration, they succeeded in locating the relationship between disease, various humours and the disturbance of temperament. They emphasized that the true objective of treatment was the rectification of this disturbance of temperament.¹³ Therapy in Unani medicine is based on the understanding that a particular illness has developed in the patient due to a disharmony in his/her temperament, which has deviated from ideal. Treatment is therefore aimed directly at restoring balance to patient's temperament or humours. Ranges of disease are specific to the particular *Mizaj* (چازم) person and a particular *Mizaj* (چازم) person has more tendencies to develop *amraze haar* (اضرار) (rash, *shara*) (شیرش) (*zood hassasiyat*, تیز حساسیت) (sensitivity) and *amraze jild* (اضرار دجل) (*amraze meda wa ama*, دماغی اضرار) (etc.). Similarly *barid Mizaj* (دراب) (per-

son are more prone to *amraze barida* (دراب ضارم) (*waja'ul mafasil*, مفاصل اعضاء) (*simne muftrat*, نهمه) (*nazlae barid*, نزل دراب) (etc.).

If a person having *Barid Mizaj* (چازم دراب) (cold temperament) adopts cold things like cold diet, cold weather, surely he/she fall ill and when he/she reaches *Sinn-e-Kuhooolat* (متوسط سن) (middle age) and *Sinn-e-Shaikhookhat* (سن چاهوش) (old age), he/she will not feel better as that of the persons having *Har Mizaj* (چازم راح) (hot temperament). Similarly, if a person having *Ratab Mizaj* (چازم بطر) (moist temperament) and use *Ratab Tadabeer* (ریبادت بطر) (moist regimen), he will frequently feel discomfort in comparison of the person having *Yabis Mizaj* (چازم سبای) (dry temperament).¹⁴

So by knowing their *Mizaj* (چازم) we can easily design their life style, dietary habits and other regimens according to their needs to keep them healthy. *Mizaj* (چازم) of a person is greatly influenced by *asbabe sittah zarooriya* (باب اسب) (six essential factors), occupation and environment etc. So if we succeed to make equilibrium between adaptation of healthy measures and avoiding harmful measures in respect to factors influencing *Mizaj* (چازم) we can easily avoid the forthcoming health consequences.

The principle of treatment is to treat the disease with drugs of opposites. There are degrees prescribed to assess the quantum of the disease and there are similar methods to assess the quality of medicine.⁹

Therapeutics

In Unani system of medicine diseases are treated by prescribing anti-temperament drugs. As human beings are endowed with different temperament drugs also have their own temperament or combination of temperament ranging from 1st to 4th degree. Therefore, a drug may be hot, old, moist or dry.¹⁵ The disease can be cured by administering a drug having a temperament that is exactly opposite to the pathological shift in the *Mizaj* (چازم) to bring its normal position. This is a notion of great importance to clinician both from point of physiology and psychology as well as the diagnosis and treatment.

Choice of drug of specific quality depends upon the nature and type of the disease. The proper drug is that which is contrary to the nature and qualitative pattern of the disease. The treatment of disease is, thus '*Bilzid*' (دضلاب) (allopathic), where as health is preserved by '*Bilshakal*' (لکشلاب) (analogue). If the normal and original temperament of the affected organ is known, it is easy for the physician to determine the extent of abnormality and

the proper dosage for its cure. Thus, if the affected organ is primarily of cold temperament but the disease is hot, it is a sign of gross abnormality necessitating strong cooling doses. When however the original temperament is hot and the disease is also of the same quality mild cooling doses will suffice. ⁸

Conclusion

Mizaj مزاج of a person and their tendencies to develop particular diseases may be a better and latest tool to tackle the various diseases prior to their onset hence to reduce the ever increasing mental and economical loads on medical fraternity and the health care system respectively. Proper and correct diagnosis of *Mizaj* مزاج of disease and correct selection of medicines which may lead to rational approach in the treatment of diseases and maintenance of health too, with least damage to human body.

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Graeco-Arabic Concept of Narfarsi (Eczema)

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Summary

Narfarsi is a Persian term used to describe Eczema. The word "eczema" is derived from a Greek word "Ekzeim" which means to boil out. Eczema is an inflammatory condition of skin, a form of dermatitis, marked by dryness, rashes, itching, the blister formation, and exudation of fluid.

Key Words: Narfarsi (Eczema), Graeco (Unani)-Islamic Medicine.

Introduction

Narfarsi (Eczema) is a major health care problem and one of the most common skin disorders that affects a large chunk of population in today's world. Due to lack of availability of wholesome and safe medicine in the treatment of eczema, it has continuously been the thrust area for the researchers of different system of medicine. Unani system of medicine is a treasure trove for effective and innocuous drugs. Ancient Unani scholars have described the disease and recommended many drugs for its effective treatment in their respective manuscripts. In present paper, we have reviewed the Graeco-Arabic history of *Narfarsi*, definitions of *Narfarsi* by ancient scholars, pathogenesis of *Narfarsi* in Graeco-Arabic literature, etiology of *Narfarsi* in the light of Graeco-Arab Medicine, classification, principles of management and finally conclusion.

Graeco-Arabic history of Narfarsi

There is much evidence that the skin diseases were recognized and therapeutic efforts were attended even when the first social structure of human evolved. The skin diseases have been documented in the mummies of ancient Egypt dating 5000 years ago. The Eber's and Edwin Smith's papyri of over 3000 years showed a lot of treatment of skin diseases including eczema. The Hebrew Bible, had described dermatological diseases and their therapy some 2700 years ago [1]. Zakaria Razi (850-923AD) an eminent Unani phy-

sician has described *Narfarsi* as a skin disease in which there is vesicles formation associated with intense itching and burning [2]. Ibne Sina (980-1037AD) a legendary Unani physician and author of famous book "*Al-Qanoon-Fit-Tib*" has given the detail description of the disease under the heading of *Jamra* and *Narfarsi*.

نامسا ناذه كلذ ريغو ةيسرافلا رانلاو ميچلاب ةرمجلا
فشيركشخلل شدحم قرخم طفنم لالكأ رثب لك ىلع اقلطأ امبر
نم ةيسرافلا رانلا مسا قلطأ امبرو يكلاو قرخلا شادح
طفنم قرخم لالكأ ةلمنلا سنج نم رثب كانه ناك ام ىلع كلذ
ءادوسلا ليلق ةداملا يوارفص نوكيو تبوطرو يحس هيف
كانه ناك ةريغص قريبك روثب عم نوكيو ريغو ةقتلا ليلق
ام ىلع ةرمجلا مسا قلطو رثبلاو نايغل ريغك داح طلخ
ريغك نوكيو تبوطر ريغ نم وضعلا محفوي نالكما دوسي
امبرو يسمرت مچلا ريغك ليلق مرثبو اصئاغ ةيواوسلا
عيمجو ةرمج لوالا يف تادتب لب ةتبل رثب كانه نكي مل
ةيسرافلا رانلا طفنتي دقو برجلالك ةكحب ءىدتبي كلذ
يوكي قرخم يواكلم ناع ليسي امك ءيش نم ليسي رمجلاو
نوكيو ايصاصر ناك امبرو دوسا منول يف يدامر عرضوملا
ىلا ليم عم لب ةرمج قديم ريغ نم هب افيم ديدشلا بيللا
(ءادوسلا) بطلا يف نوناقلا «

Ibne Sina described "*Jamra* and *Narfarsi* sometimes used commonly for any blister having itching, irritation and burning. The burning of the lesion is as severe as the burning of fire. It is sometime used for a blister which is corrosive, burning and irritative that may spread with *Damvi Madda* (sanguineous substance) and very rarely with *Sawdavi Madda* (black bilious substance). It is usu-

ally caused by *Khilte Haad* which is bilious in nature” [3].

Similar description is present in the manuscripts of renowned Unani physician, like Abul Mansoorul Hasan Qamri (990AD) quoted:

يف ضرعت بيملو فلك امناف يسرافلا رانلا امأو
اقيقر عام قئلتمم تاخافن ادعب تدحي قرحل اديدش ااضعال
(ىمن ىنغ) «متدحو مدلا ترثك ميبسو

“Narfarsi is a *Waram* (inflammation) associated with *Khujli* (itching) and *Sozish* (burning) on touching” [4].

Ahmad Al Hasan Jurjani (1200AD), Ibne Hubul Baghdadi (1234AD) and Ibnul Qaf Maseehi (1233AD), had also described the disease in their manuscripts [5,6,7].

Nafees Bin Auz Al Kirmani (1448AD), described the disease as:

لك لاقى نافدارتم نامسا امن! في يسرافلا رانلا او قرحمجل
ببسب قش يركشخلل تدحم قرحم طقنم لكالا رثب امهم
سنج نم رثب هم ناك امب يسرافلا رانلا تصخ امبرو قرحل
نفعتل اذليلق ويوارفص قدام نم طيقنتو يعس هي ف تلنل
(يسيفن تاجلام) «ءادوسلا ذليلقو

“*Jamra* and *Narfarsi* are often used as synonymous terms. The corrosive substance is supposed to cause itching and burning and hence it is termed as *Narfarsi*. Sometime there is formation of blisters which slowly spread and cause irritation. It is believed that there is involvement of such a *Safravi Madda* (bilious substance) that does not get infected” [8].

As quoted by Dawood Antaki (1541-1599AD):

نالو سرفلا يف مترثكل لكذب يمس: يسراف ران
قرح رانلا قرح هبشت هي ف قنئال روثبل او راشتنال
رظو لكأت و انايح ا رادتسا و اطوطخ لاطتسا امبرو ابلتو
قركدت) «قيقر مد ريس ي عم يوارفص طلخ متدامو. عرسب
(بابلال يلو

“The name *Narfarsi* is given to this disease because it is more prevalent in Faras, and there is intense itching and burning in the lesion” [9]

Akbar Arzani (1721AD), Haider Ali Khan (1294Hijri) and Mohammad Azam Khan (1813-1902AD) also described the disease in their valuable texts [10,11,12].

Going through the manuscripts of the period after Ibne Sina, it can be inferred that most of the Unani physicians of the later period has followed the path of Ibne Sina and described the disease merely with little language difference.

Definitions of Narfarsi by ancient scholars

The word “Eczema” is derived from a Greek Word “Ekzein” which means to boil out [13-15]. In Unani system of medicine, the eczema is known as “*Narfarsi*,” “*Chajan*” and “*Akota*” [16].

Abul Mansoorul Hasan Qamri (990AD), author of “*Ghina Muna*” describes that Narfarsi is a *Waram* (inflammation) associated with *Khujli* (itching) and *Sozish* (burning) on touching” [4].

Ahmad Al Hasan Jurjani (1200AD), author of “*Zakhi-rae Khawarizm Shahi*” describes, that *Narfarsi* are the vesicles associated with intense burning and itching [5].

According to Abul Hasan Ahmad Bin Mohammad Tabri, Narfarsi is the disease in which large blisters are formed accompanied with severe burning and pain. In this disease, skin becomes *Ghaleez* (thick), disease does not spread itself in skin, rather it spreads locally at its own place. ‘*Raqeeq Khilt*’ that is responsible for the causation of the disease becomes dissolve (*Tahleel*) and ‘*Ghaleez Khilt*’ remain in the body [16].

Akbar Arzani, and Ahmad Al Hasan Jurjani, renowned Unani scholars described in their respective manuscripts that *Narfarsi* is a skin disease characterized by the appearance of vesicles formation associated with itching and burning [17].

Ghulam Jilani, defines *Narfarsi* (eczema) as a type of skin disease in which, there is burning sensation on the lesion as it is burning of fire [18]

Pathogenesis of Narfarsi in Graeco-Arabic literature

There are so many pores in the skin through which dissolution occurs; therefore, whenever *Tabiyat* fails to find any normal route for elimination of wastes, it disposes the wastes towards the skin. Thus, the wastes appear in various forms, mostly in blisters and abscesses. Hence, the skin is a major organ to receive the wastes from muscles and vessels [19,20].

Narfarsi is a humoral disease in which “*Lateef Safravi Mavad*” are disposed of towards the skin which appear in the form of yellowish blisters with severe burning and itching. The itching and burning is due to “*Laze aur Ha-d* nature of *Safra*”; along with *Safra*, some ‘*Ghaleez Mavad*’ are also accumulated. Being *Lateef Safra* usually dissolute with ease leaving behind the ‘*Ghaleez Mavad*’ which are responsible for its chronicity and infectivity. Further ‘*Lateef Mavad*’ are thrown out more superficially, where as ‘*Ghaleez Mavad*’ are not thrown so superficial thus they stay in deeper parts of skin and disease process is continued. Putrefaction seldom occurs in the lesions of *Narfarsi* [3,8,13].

Etiology of Narfarsi in the light of Graeco-Arab Medicine

Eminent Unani physicians gave detail description of etiology of the disease in their valuable texts. They have narrated the following causative agents for this disease.

Ibne Sina (980-1037AD), a legendary Unani physician and the author of the famous book, “*Al Qanoon Fit Tib*” has narrated that Narfarsi is caused by “*Khilte Haad*” which is *Safravi* (bilious) in nature [3].

Abul Mansoorul Hasan Qamri (990AD), the author of “*Ghina Muna*” describes that *Narfarsi* results from “*Hiddat* and excess of *Dam* (blood)” [4].

Ibne Hubul Baghdadi (1243AD), a well-known Unani scholar and author of “*Kitabul Mukhtarat Fit Tib*” describes that *Narfarsi* is caused by “*Raqeeq Khilt*” [6].

Another eminent Unani physician Ibnul Qaf Maseehi (1233-1286AD), stated in his book “*Kitabul Umda Fil Jarahat*” that *Narfarsi* is caused by the intermingling of abnormal *Safra* and *Sawda*, with dominance of *Safra* in *Narfarsi* [7].

Ghulam Jilani the author of “*Makhzane Hikmat*” has described the following predisposing factors which may be responsible to cause disease [18].

1. Zoafe Aam
2. Zoafe Aa’sab
3. Less excretion of waste metabolic products
4. Fasade Dam
5. Deedane Ama’a
6. Certain diseases like Niqras, Wajaul Mafasil etc.
7. Zamanae Hamal
8. Dentition Period

Classification

The classification of eczema is difficult not only because nomenclature is controversial, but also because in many cases the precise cause is unknown. Multiple factors play the role in the etiology; however eczemas are classified as follows.

Unani physicians have classified eczema (*Narfarsi*) according to the characteristic features of eruption i.e. shape of rashes and presence or absence of fluid in them. Several types are described here [3,8,16].

1. According to appearance:

- Aabledar
- Yabis

2. According to colour:

- Siyah
- Rasasi

3. According to severity:

- Haad
- Muzmin

Principles of Management

In Unani system of medicine, the management of eczema is quite effective. The eminent physicians like Abu Bakar Mohammad Bin Zakaria Razi, Ibne Sina, Akbar Arzani,

Ismail Jurjani, and many other legendary physicians have described the basic principles of treatment for *Narfarsi* (eczema) under the following headings [2,3,5,7].

1. Istifragh: It is the method of elimination of the ‘*Akhlate Fasida*’ from the body. These ‘*Akhlate Fasida*’ are harmful for body, and enhance the disease process if remain stagnant in the body. So there is the need of the elimination of these ‘*Akhlate Fasida*’ from the body. ‘*Nuzj*’ must be given before elimination by administering ‘*Munzije Safra or Sauda*’ as the case needed. After the appearance of features of ‘*Nuzj*’ in the respective ‘*Khilt*’, any of the following methods may be used for *Istifragh* in *Narfarsi*.

- a) Fas’d
- b) Hijamat
- c) Irsale Alaq

2. Tabreed wa Tadeel: ‘*Tabreed*’ is mainly required for ‘*Khilt*’ which, is present in interstices and below the skin and responsible for ‘*Sozish and Laza*’ (burning and irritation). By ‘*Mubarridat*’ like Roghane gul and Kafoor breaks the ‘*Hiddat*’ of causative ‘*Khilt*’ and minimizes the symptoms arising from ‘*Hiddat and Laza*’. Similarly ‘*Tadeel*’ is practiced with the objectives of normalizing the qualities of ‘*Safra*’. Infact ‘*Tadeel*’ means to bring back the ‘*Mizaj of Khilt*’ towards normal and since in this disease, ‘*Haad and Laze Safra*’ is causative with excess ‘*Mizaji Hararat*’ so that excess ‘*Hararat*’ should be returned to normalcy. It is usually done to neutralize the small amount of ‘*Akhlate Fasida*’ that remains within the body after *Istifragh*. Here ‘*Tadeel wa Tabreed*’ are almost synonymous. And for this purpose various drugs have been mentioned in Unani text. Some of them are as under.

- Gule Surkh (*Rosa damascena*)
- Kafoor (*Cinnamomum camphora*)
- Chiraita (*Swertia chirata*)
- Chobchini (*Smilax china*)
- Sirka (*Vinegar*)

3. Commonly used single Unani drugs

- a) Ushba (*Smilax ornata*)
- b) Shahtara (*Fumaria parviflora*)
- c) Unnab (*Zizyphus sativa*)
- d) Mundi (*Sphaeranthus indicus*)
- e) Sarpfoka (*Tefrosia purpurea*)
- f) Neem (*Azadirachta indica*)
- g) Hina (*Lawsonia inermis*)
- h) Chobchini (*Smilax china*)
- i) Afsanteen (*Artemisia absinthium*)
- j) Red rose (*Rosa damascena*)

4. Commonly used compound formulations

- a) Arqe Mundi
- b) Arqe Chiraita
- c) Arqe Shahtara
- d) Sharbate Musaffi
- e) Nuqoo Shahtara
- f) Sharbate Unnab
- g) Majoon Chobchini
- h) Habbe Musaffi
- i) Joshanda Musaffi
- j) Itrifal Shahtara

5. Local Application of *Murakkhi* and *Muhallil* drugs

Many of Unani physicians emphasized the application of *Murakkhi* and *Muhallil* drugs locally over the lesions frequently either in the form of ointment or oil for early healing. For this purpose following drugs may be used.

- a) Roghane Gul (*Oil of Rosa damascene*)
- b) Roghane Kamela (*Oil of Mallotus philippinensis*)
- c) Roghane Kunjad (*Oil of Sesamum indicum*)
- d) Roghane Zaitoon (*Oil of Olea europea*)
- e) Sufoofe Qooba (ingredients: Phitkiri birya, Suhaga birya)
- f) Sufoofe Hikka (ingredients: Barge Hina, Maghze Badam talkh, Kamela, Khashkhash, Gule Surkh, Nar mushk, Sange jarahat)
- g) Sufoofe Bars (ingredients: Babchi, Mundi, Sarphoka, Halaila siyah, Barge hina, Barge Neem)
- h) Sufoofe Zimad (ingredients: Suhaga biryan)
- i) Marhame sada (ingredients: Bees wax, Coconut oil, Suhaga biryan)

Moreover, they stressed to avoid food like sour, sweet, reddish in the diet of the patient.

CONCLUSION

The clinical study on *Narfarsi* (Eczema) and review of literature presented in this dissertation provide certain im-

portant and fruitful information regarding the usefulness of Unani formulation in the management of *Narfarsi*.

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The Tangiers School of Medicine and its Physicians: A Forgotten Initiative of Medical Education Reform in Morocco (1886-1904)(x)

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Summary

In 1886, the Spanish army medical officer Felipe Óvilo Canales (1850-1909) opened up a school of medicine in the Moroccan city of Tangiers. This school was originally sponsored by the Spanish government and intended to provide a number of Spanish Franciscan priests and young upper-class Moroccans a basic education in Western medicine. Later, with support from Sultan Hassan I, it was transformed into a training centre for Muslim military doctors for the Moroccan army. My paper will try to present a brief perspective of the creation and teaching method of the School, as well as of its first graduating class of physicians, in an attempt to rescue a forgotten initiative of medical education reform in Morocco.

Key Words: Spanish-Moroccan relationships, late 19th century, medical education reform, Tangiers School of Medicine, Dr. Felipe Óvilo Canales, Moroccan physicians.

Introduction

On the 15th June 1886, the Spanish army medical officer Felipe Óvilo Canales (1850-1909) was appointed to a post in the Spanish diplomatic Legation in the Moroccan port city of Tangiers to start up what was officially designated as a “school of medicine”¹.

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This school was initially sponsored by the Spanish government and intended to provide a number of Spanish Catholic missionaries and those young Moroccans “who demand it” an “elementary and practical” education in Western medicine². A cherished initiative of Spain’s late 19th century “Africanism”, the School also owed much to the general impulse of administrative, economic, military or educational reforms promoted by Sultan Hassan I (1873-1894) in the country³.

In relation to this, from 1890 on, the School became an institution mainly devoted to the training of physicians for the Army and thus similar to the Schools of Military Medicine of Cairo (*Abu Zabal*, 1827), Istanbul (*Mekteb-i*

Tibbiye-i Adliye-i Şahane, 1827-1839) and Teheran (*Dâr al-Fonun*, 1851)⁴. In this paper, I will briefly outline the creation and teaching method of the School, as well as the identity and trajectory of its first graduating class of physicians in an attempt to recover a forgotten initiative of medical education reform in late 19th century Morocco.

OPENING, METHOD AND EVOLUTION OF THE TANGIERS SCHOOL OF MEDICINE

Shortly after arriving at Tangiers, on the 3rd September 1886, Dr. Felipe Óvilo received the teaching material, the medical and laboratory instruments, the drugs and the furniture he had asked the Spanish ministries of War and Foreign Affairs for the School. With them, he set up the lecture room and the little dispensary which his project needed⁵. Before the end of October 1886, he had managed to install everything in the former Girls’ School run by the Spanish Franciscan missionaries, which served as provisional premises for two years. The School was officially opened on the 23rd November and Óvilo started his classes with two Franciscans (Anselmo González and Daniel Devesa) and a Spanish civilian as students⁶. In a report he sent to the Min-

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istry of Foreign Affairs a year and a half later, he commented how he also had “let it be known with the greatest discretion” that those young Muslim Moroccans who showed interest in “acquiring some medical knowledge” would be accepted at the new institution⁷. As a result, a number of them “with or without talent” applied and six of them were taken in between December 1886 and June 1887⁸.

The School’s method always had a strong focus on a practical teaching of medicine. A student’s notebook which has been preserved shows how Óvilo gave very condensed theoretical lessons using a method of short questions and answers⁹. For example, the fourth lesson, on the spine, started like this: “What is the spine? It is a bony stalk composed of 24 bones”; “How are those bones called?” Vertebrae”; “How many parts is the spine composed of? Three parts. The cervical spine with seven vertebrae, the dorsal spine with twelve, and the lumbar spine with five”, and so on¹⁰. Óvilo combined this basic conceptual teaching on anatomy, physiology and therapeutics with the use of wax models, two skeletons (bones and muscles), wallpapers (plants, minerals, animals, body parts), a Zeiss microscope, autopsy instruments and laboratory equipment¹¹. Besides, students were quickly integrated in the clinical and surgical work of the dispensary¹². We have not been able to fix how many years this training was supposed to last, but around 1890 its first students were already being referred to as doctors in the press and publications, as will be shown later.

A general account of the School’s method was directly given by Óvilo in an interview for the journal *Archivo Político-diplomático de España* in 1888:

“The teaching method followed by Mr. Óvilo, the School Director, is, as it has been said, practical; his disciples learn from patients while the unavoidable theoretical lessons are supported by posters, models, instruments, etc., which make oral explanation easier. With this method, which was followed in Arab schools of the 10th century, but with the most modern knowledge of science, the students of the Tangiers School of Medicine learn all subjects at the same time but in a progressive manner; general ideas in the beginning, specific details later and a thorough study in the end, when they are ready and prepared for it. Such is the plan we have heard from Mr. Óvilo and it must not be mistaken since Professors from the Faculty of Medicine and from the Military Hospital of Madrid, who have had the chance to listen to the [Moroccan] students with more competence than ourselves, have publicly and warmly praised the state of their education”¹³.

This might not seem a proper medical education anyway and would confirm the views of those who have described the School as a place for the training of “medics”, “nurses” or “aux-

iliaries”¹⁴. However, its unconventional teaching method was derived from the valid experience of Óvilo himself. Shortly after beginning his medical studies, the Queen Isabel II was ousted from Spain and a revolutionary republican period developed between September 1868 and December 1874. During those years, a profound transformation of higher education took place which, in the field of medicine, was characterised by a rise in the number of cities which offered medical studies and by the creation of “Free Medical Schools” that replaced the traditional Faculties of Medicine¹⁵. In those schools, great emphasis was given to clinical and experimental practice and to disciplines hitherto absent or undervalued in the syllabus, such as physiology, histology, hygiene or toxicology. Teaching and learning had to take place in the dissection theatre, the laboratory, the museum and the hospital and should last one or two years less than usual. Óvilo was essentially trained as a doctor in the Free Medical School of Madrid, located in the Provincial Hospital of Spain’s capital city, and graduated in October 1870 when he was only 20 years old, a fact that did not prevent him from attaining a solid prestige as physician and hygienist¹⁶. In my opinion, he successful.

A first substantial change took place in the Tangiers School in 1888. The relevance attributed by the minister of Foreign Affairs, Segismundo Moret, to Spanish activities in Morocco led to the creation of a new Spanish Hospital in Tangiers (opened on the 25th November 1888), designed and administered by the Franciscan missionaries, but staffed by military doctors¹⁷. The School moved there and benefited from better facilities and more resources. Another important change occurred in 1889-1890. In the first year, Óvilo had an audience with Hassan I in Tangiers during the visit of the sultan to the city in September-October¹⁸. He informed Hassan I about the School and as a result the sultan publicly expressed his wish that the institution became a place for training military doctors for his army¹⁹. Some months later, in May 1890, Óvilo travelled to Fez to remind the sultan of his promise and, after another personal audience, Hassan I decided to send six new students to the School to be trained as military doctors²⁰. In the following years and until its closure, most if not all students of the centre were Muslim Moroccans who received “accommodation and a suit” from the Sherifian government during their studies and were expected to serve in the *askar* (modern army) units after their training²¹.

The last years of existence of the School, between 1896 and 1904, are uncertain. Its founder and director, doctor Óvilo, was sent to Cuba on the 14th December 1896 to take part in the last war of Cuban independence that ended with the defeat of Spain by the United States in 1898²². He was so disappointed at this decision, which ignored and interrupt-

ed his manifold activities in Morocco at a crucial moment, that immediately after returning to Spain because of a disease he resigned from the army and never took up his post in Tangiers again²³. After his departure, the School was directed in succession by Óvilo's former colleagues in the city Ramón Fiol Jiménez, Severo Cenarro Cubero and Joaquín Cortés Bayona and kept a seemingly sombre existence until at least 1904²⁴. In a report dated 14th October 1899, the Spanish Minister in Tangiers Emilio de Ojeda spoke about "three or four students who languish in its deserted rooms" and the "absenteeism and insubordination" they usually showed towards the School and their teachers²⁵.

THE FIRST MOROCCAN PHYSICIANS OF THE TANGIERS SCHOOL OF MEDICINE: IDENTITY, FAMILY BACKGROUND, MEDICAL EDUCATION, PROFESSIONAL PRACTICE

We have not yet been able to identify all the young Moroccans that studied medicine in Óvilo's school in Tangiers. In any case, there existed two groups for sure, the classes of 1886-1887 and 1890-1891, each one of them composed of six students²⁶. Óvilo himself wrote down the names of the first six in a report: Mustapha al-Zaudi, Mohammed Dukkali, Hamed Romani, Hamed ibn al-Hasmi, Mohammed al-Awami and Hamed Ahardan²⁷. Not all of them completed their studies. For example, al-Awami died in October 1887, to Óvilo's despair because he thought that "due to his spirit and perseverance, he would have honoured the institution most"²⁸. Ahardan "did not show enough skills" and left the school very soon, while al-Hasmi could not regularly attend classes in some periods due to family affairs, though he probably resumed his studies later²⁹. Zaudi, Dukkali and Romani were the most regular and diligent students and they were usually referred to as Óvilo's "disciples"³⁰.

These first six students belonged to the upper or upper-middle class of Tangiers or Northern Morocco in general. For instance, the Ahardans were considered part of the "Muslim aristocracy of Tangiers" and one of the richest families of the city, where there even existed a neighbourhood named after them³¹. Mohammed Ahardan was the son of Abdesselam Ahardan, "agent" of Sultan Hassan I in the city, *amin* (secretary, administrator) of the port customs and closely allied to the Abdessadaq family which occupied the posts of *bascha* of Tangiers and *kaid* of the Riff several times during the 19th and early 20th century³². The Dukkalis were also a traditional Tangerine family, though its influence spread throughout Morocco. The grandfather, Musta-

pha ibn Djilali Dukkali, had been granted by sultan Mulay Abderrahman ibn Hicham (1822-1859) the monopoly of animal skins commerce in the country and also the right of exploitation of an important antimony mine located in the *qabila* (tribe) of Andjera, between Tangiers and the Spanish enclave of Ceuta³³. His son, Mohammed Dukkali became an important government official and also an Italian *protégée*, escorting the Italian embassy to Fez in 1873 as shown in the book *Morocco* first published by the famous Italian writer Edmundo de Amicis in 1876. Despite this, he was closely associated later to Spanish activities in Tangiers, as member of the Board of the Spanish Chamber of Commerce (1887) and by giving the Spanish government the land where the new Spanish hospital was built in 1888, sometimes known as the "hospital of Ducali [sic]" or the "hospital of Ducali's [sic] orchard"³⁴.

The Zaudi were not a family as rich and powerful as the former two, but they were genuinely Tangerine, as their last surname *Tandjoui* indicated (the Ahardan and Abdessadaq originally came from the Riffian *qabila* of Temsamam; the Dukkali from the Atlantic region of Dukkala). Mustapha al Zaudi was the son of the *fqih* (expert in Islamic law) Si Abdesselam al-Zaudi and his older brother had become the *amin* of Sidi Mohammed Torres, representative of the sultan in Tangiers to deal with foreign consuls (this post was called *naib* and his office, the *Dar al-Niaba*)³⁵. Finally, we have managed to find some uncertain data about the families of al-Hasmi and al-Awami. The first could have been the son of an important army general, Mohammed ibn al-Hasmi, whom the Spanish military engineer and explorer Julio Cervera Baviera considered a very influential man within the *Makhzen* (power elite)³⁶. In 1891, the general took part of the embassy sent to Spain and was described as being the commander of the army units at the Sus, the southernmost province/kingdom of Morocco³⁷. But Óvilo's student could have also been a member of one of the several relevant families of that name that lived in *dchoûr* (villages) around Tangiers³⁸. The name al-Awami could also be found in similar villages around the city³⁹.

Going back to medical education, the three "disciples" of Óvilo, Zaudi, Dukkali and Romani, soon embarked on an initiative that was never again to be repeated in the short history of the Tangiers School of Medicine. In the beginning of 1888, Óvilo asked and was given permission by the Spanish Legation and Ministry of Foreign Affairs to take the three of them to a study trip in Spain⁴⁰. Between March and April, they travelled via Cádiz and Sevilla to Madrid, where they visited some of the most important medical, hygienic and intellectual institutions of the city, with which Óvilo himself had been closely involved before being appointed

to Morocco. They included the Provincial Hospital, the Military Hospital, the Spanish Society of Hygiene and the *Ateneo* of Madrid. The students took some exams at Madrid's Faculty of Medicine, which they passed "with the best results", and showed their skill to physicians of the Military Hospital, as seen in the interview to Óvilo we mentioned before⁴¹. They were even given a reception by Spain's Regent Queen, María Cristina of Habsburg, at the Royal Palace⁴². This was not their first royal audience, at least for Zaudi, who had met Hassan I in 1887, during a Spanish embassy to Rabat, and in 1889, during the visit of the sultan to Tangiers, on both occasions in the company of Óvilo⁴³.

As we said before, it was from 1890 onwards that these three students probably started working as doctors. That year, Romani was supposedly allowed to work on a ship of Moroccan pilgrims travelling to Mecca, on a trip organised by a member of Tangiers' upper class⁴⁴. In 1892, the three doctors were involved in their first military medical work outside Tangiers. A harsh conflict had arisen at that time between Andjera tribesmen and the Moroccan regular army, which caused a substantial number of casualties among both parties. The Spanish dispensary provided medical care to everyone diseased or injured while Óvilo and his disciples also travelled to the regular army main camp to assess its sanitary condition and assist those who needed it⁴⁵. The following year, two of the three Moroccan physicians probably joined doctor Severo Cenarro in a hurried trip to the Mogador Island lazaretto (in front of the city of Mogador, nowadays Essaouira), where he had to supervise the organisation of a quarantine for several thousand pilgrims returning from Mecca that were suspected of being affected by cholera⁴⁶. The Sanitary Council of Tangiers (in operation since 1840 and similar to those of Istanbul, Alexandria or Tunis) had ordered the pilgrims to be sent there with two Spanish civil doctors, Gustavo Prieto and Sotero García de Mayoral. But following the news of a small cholera outbreak, the Council decided to send its *medico de sanidad* or *medico consultor* (medical consultant) himself, doctor Cenarro, in order to avoid the spread of the epidemic throughout the country, as what happened for the last time in 1878 (Óvilo had been the medical consultant at that moment but his suggestions had been rejected)⁴⁷.

We do not know for certain, even if we consider it highly possible, that the three Moroccan physicians helped in the assistance of choleric patients and in the display of sanitary measures against the cholera epidemic that affected Tangiers in 1895. Dr. Cenarro, as head of the Tangiers Hygiene Commission (founded in 1888) and medical consultant of the Sanitary Council, as well as Dr. Óvilo, in that occasion acting as commissioner appointed by the Spanish govern-

ment to study the epidemic, led the fight against cholera in the city and it would have been normal that the Moroccan physicians took part in it in one way or another⁴⁸. After that date, we have found only scarce data about Zaudi, Dukkali and Romani, who were never mentioned by their names (actually, they could have been other late students of Óvilo). In 1899, the French doctor based in Algeria Louis Raynaud, in a mission of the Sanitary Council of Tangiers to assess the condition of the Mogador Island lazaretto, found in that city one of the Moroccan physicians whom he could never assess his medical knowledge as he was always "drunk with wine and absinthe and intoxicated with *kif* (hashish)"⁴⁹. On the contrary, Raynaud had heard of three "very reliable" of his colleagues who worked as military doctors in "Tangiers or Marrakech" where they "practised their science with proficiency"⁵⁰. In 1902, in a guide of Tangiers, reference was made within the city's medical corps to "three Arab physicians, old students of doctor Óvilo"⁵¹.

CONCLUSION

The growing weakness of the Moroccan government, the disorientation of Spanish initiatives in Morocco after the loss of Cuba and the Philippines in 1898, the French ascendant on Morocco after the Algeciras Conference of 1906 and the uncertainty surrounding the destiny of Tangiers after the establishment of the French and Spanish Protectorates in Morocco in 1912, all these circumstances contributed to make the future uncertain for the first Moroccan modern physicians trained at the Tangiers School of Medicine. As an example, the Spanish physicians who followed Óvilo in the Tangiers Legation forgot about the School and seemed not to count on the existing Moroccan physicians for any help in the competition to colonise the country⁵². On the other hand, the French authorities issued a *dahir* (decree) on the 12th April 1916 which actually limited the exercise of modern medicine in French Morocco to French doctors or to those trained in European universities, while accepting the right of "natives" to practise "Arabic medicine, save for vaccine procedures"⁵³. Following this *dahir*, the *Direction Générale du Service de Santé du Maroc* (French Morocco's Central Board of Health Services) affirmed in 1919 that a diploma of the Tangiers School had nothing but "the value of a certificate issued to a nurse"⁵⁴.

It is not unusual then that most of the first six modern Moroccan physicians trained at the Tangiers School did not continue practising medicine. The exception was probably the least expected, Hamed ibn al-Hasmi, whom we have found as a local informant of the Spanish army pharmacist Joaquín Mas-Guindal in the Atlantic town of Larache

(within the Spanish Protectorate) at the end of the 1920s. However, Mas-Guindal did not give any information about the profession of al-Hasmi at that time and just included him among the “Hebrew and Muslim element” which provided him with precious data about Moroccan pharmacology and botany⁵⁵. Apart from this, we have just found a mention to Mohammed Dukkali in 1916 in the Spanish newspaper *La Época*, where he was said to have studied medicine with Óvilo and to have become an Italian national, as his father had been⁵⁶. Nothing was said about his profession too. Finally, a 1921 French publication on Tangiers mentioned Mustafa al-Zaudi and affirmed that he had studied medicine in Tangiers “but has never practised”⁵⁷.

The last comment exemplarily shows how the evolution of historical circumstances in Morocco had a lasting negative impact on the historical account of the Tangiers School of Medicine, its first class of physicians and Óvilo himself. Even such an exhaustive study of military reform in 19th century Morocco as that of the American historian Wilfrid J. Rollman did not say a word about any of them⁵⁸. The prestigious French historian Jean-Louis Miège included a picture of Óvilo in his classic multi-volume opus *Le Maroc et l'Europe* but made no reference to him or to his activities. For the Moroccan historian Abdelhak el Merini, “in 1889, a Spanish medical mission arrived at the country but it lacked any use, apart from some health care provided [to the population] by the physician in charge”⁵⁹. And the rigorous Spanish historian (recently deceased) Ramón Lourido attached most of the merit for the School’s opening to the Franciscan missionary José Lerchundi⁶⁰. I hope that this brief paper helps begin to put an end to the oblivion and distortion which have surrounded the history of this important initiative of medical education reform in late 19th century Morocco.

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Image 1. A portrait of Dr. Felipe Óvilo Canales dressed in Moroccan fashion.
Source: *La Ilustración Española y Americana*, XXXVIII (1894), IX.



Image 2. Photograph of the lecture room of the Tangiers School of Medicine (1892)
Source: Archivo de la Misión franciscana en Tánger

Islamic Medicine and Future Western Biomedicine: Potential Areas of Integration

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Summary

While the evolution and growth of Western biomedicine has been influenced by Islamic medicine, Islamic medicine in the West is still viewed as an artefact of a former golden Islamic age. Islamic medicine is a holistic system which views the human being as comprising biological, psychological and spiritual elements. Any healing must consider these human dimensions. My paper explores the historical and theoretical elements of Islamic medicine and potential areas of integration with future Western biomedicine.

Key Words: Medicine, Western Biomedicine, Integration

Introduction

Over the last two decades there has been increasing interest in Islamic medicine (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14). Many of these authors examine the historical, philosophical and sociological elements of Islamic medicine as a significant branch of Islamic science. Islamic medicine is a body of medical knowledge and practice which began in the 8th century within and which is currently being practiced by Muslim physicians in Islamic and Western countries. Elkadi states that Islamic medicine is “The most up-to-date medical science and technology combined and conforming with the Divine teachings of Islam” (15). Islamic medicine incorporates modern medical technologies and techniques in the service of healing. While Islamic medicine provides a holistic medical system, Muslim physicians acknowledge that the ultimate cure for all disease comes from Allah (16). As I will show, Islamic medicine developed into a body of medical knowledge over centuries. However, it must not be conflated with Prophetic medicine which (Tibb an-nabawi), which was developed during the life time of the Prophet Muhammad and which discusses dietary and hygiene practices, herbal lore and exercise regimes.

As a healing science Islamic medicine offers peculiar insights into the human condition and its relationship to health and illness. While Islamic medicine is still being practiced in the Muslim world it is tempting to wonder to

what extent Islamic medicine may inform future Western biomedicine. This is an important question due to the advent of new diseases in the 21st century and increasing vectors and deleterious bacteria as a consequence of climate change that will have major public health impacts (17) (18) (19) (20). Although, the philosophical tenets of Islamic medicine and Western biomedicine differ, I argue, that there are common points of meeting between the two systems which may lead to their possible integration in the future. I also contend that the unique religious tenets which ground Islamic medicine such as the Tawhid (Divine Unity), may act to further refine the scope of future Western biomedicine.

This paper is organised in three sections. The first section provides a historical overview of Islamic medicine, its development in the Islamic world, and some of its noted adherents. The second section discusses the notion of Tawhid as a central concept for understanding the theoretical underpinnings of Islamic medicine. Tawhid promotes an understanding of the human body as a miniature of the cosmos. With this understanding Islamic medicine views the human being as a composite of psycho-physical-spiritual elements. The third section will examine possible areas of future integration between Islamic medicine and Western biomedicine. It will also present a case for the viability of non-local mind techniques which are part of the Islamic medical therapy.

Historical Overview of Islamic Medicine

The rudiments of Islamic medicine began in 7th Arabia with the inception of Islam. Both the Qur'an and the Prophetic traditions encouraged hygiene, health and public health. The Prophet Muhammad promoted the use of prayer and diet to improve and maintain health. Knowledge of medicine was particularly encouraged by the Prophet as it fostered physical and spiritual well-being. The Qur'an was viewed as a text par excellence for healing as illustrated in the following Quranic verses.

O mankind! There has come to you a good advice from your Lord (i.e. the Qur'an), and a healing for that which is in your hearts (Qur'an 10:57).

And We send down from the Qur'an that which is a healing and a mercy to those who believe... (Qur'an 17:82).

The use of special Quranic verses and prayers eventually became amalgamated into Prophetic medicine (Tibban-nabawi), that is still used throughout the Muslim world. Muslim onus in pursuing medicine is encapsulated by the famous saying attributed to the Prophet Muhammad where he states:

Allah has not sent any disease without sending a cure for it (al-Bukhari).

Sayings like this fostered in early Muslims an attitude towards learning the medical sciences since it was believed that all illnesses except death could be cured. The Prophet also informed Muslims how to eat in order to maintain health. He taught Muslims the correct dimensions of satiation, that is, the stomach should be filled with food by one-third, water by one third, and air by one third. Comensality was also encouraged in order to check against over-eating. The Prophet also recommended the use of the mishwak (a twig from *Salvadora persica* tree) to clean the teeth. The Prophet also discussed the benefits of exercise such as swimming, archery and horse riding. According to the prophetic traditions (hadith) the Prophet liked walking and manual labour. The hadith also state that the Prophet advised Muslims to eat wholesome foods and how to combine certain foods. For example, the Prophet forbade mixing unripe dates with dried dates, and never combined milk with fish. The Qur'an and hadith mention the use of dates, honey, olive oil, black seeds and vinegar as medicinal treat-

ments. In addition, the Qur'an recognised the importance of logical thinking and describes the use of various techniques for accessing knowledge of the natural world and the psychological realms (21) (22) (23). The Qur'an also drew attention to the organisational features of the universe and nature and how they comprise meta-patterns on a kaleidoscopic scale and proportion. The Qur'an challenged those individuals who believed in nature as a stochastic process without a telos via an analysis of the symmetrical and harmonious phenomena in nature.

Within a hundred years after the Prophet's death (632 C.E), Islam had rapidly expanded to western Asia, North Africa and the Iberian peninsula. The early Bedouins were amazed by the new cultures and civilisations they had confronted and made steps towards learning their knowledge as a way of advancing Islam. Guided by the Qur'an and the hadith which encouraged the attainment of knowledge and understanding of other cultures, early Muslims made a concerted effort in accessing the knowledge of ancient civilisations. It was during the Abbasid dynasty (750-1258 C.E) that the real thrust of Islamic knowledge become expedited. During this period the caliphate shifted from Damascus to Baghdad. Under the Abbasid rulers men of learning were encouraged to access all the ancient texts of the known world and translate them into Arabic. This movement was called the "translation revolution." Within a century Muslims had libraries of translated works. The Abbasid has been referred to as the "Golden Age of Islam" due to its unheralded achievements in science, philosophy and art. As AbdelHalleem states: "It was during the early periods of the Abbasids Empire that progression in the arts and sciences such as medicine, astronomy, optics, mathematics, and calligraphy reached high scholarly levels" (24). The Abbasids' scientific momentum was also influenced by their need to become technologically superior. Early Muslims worked assiduously in translating works from Greek, Syriac, Persian, Aramaic, Indian, Chinese and even Coptic into Arabic. The translation revolution had far reaching results such as globalising the Muslim world from Khorasan to Spain (25).

Muslims of this period were also acutely aware how ancient knowledge could be lost as was the case of the Alexandrian library and others. For this reason, all knowledge merited translation. Ebrahimnejad quotes that in Islam "all human knowledge belongs to God and therefore the sciences are the manifestation of divine wisdom" (26). The translation revolution eventually led to Europeans being re-introduced to the works of Plato and Aristotle among other Greek thinkers. The new sociological conditions in which Muslims found themselves in spurred the develop-

ment of new ways of learning and understanding different cultures. Muslims also believed that their political and military power should be complemented with scientific knowledge in order to foster mature authority (21). Moreover, for Muslims a sound scientific base would prove beneficial as a method of protecting Islam against other ideologies. Therefore, the appropriation of science was a way of strengthening faith amongst Muslim lay and expanding the theoretical scope for Muslim philosophers.

The basis of Islamic philosophy and medicine was largely informed by the Greek scientific and philosophical traditions. Muslims found in the Greeks ideas and methods that promoted logic and science through investigation and analysis. An understanding of Greek knowledge also gave Muslims an ideological bulwark against Christians where the former found themselves in Hellenised countries (27). Galenic and Aristotelian ideas were incorporated in Islamic philosophy and medicine. The Aristotelian model proved significant as it provided an explanatory tool for the separation of the soul from the body after death (26). Aristotelian logic and taxonomy of natural phenomena also provided a viable analytical and experimental method for Muslim scientists. Muslim philosophers like Al-Kindi (800-870 C.E) and Al-Farabi (d. 950) attempted to merge Platonic and Aristotelian lore with Quranic revelation, thereby providing an ideological bridge between faith and reason (28). Al-Farabi had attempted to demonstrate that the correct use of logic could assist in explaining religious ideas (29).

Galen's medical ideas which used Hippocratic concepts, as well as, his own innovations elucidated a humoral theory of the body which was taken up by Muslim physicians. Furthermore, Galenic medicine proposed an explanatory model of body, spirit and soul that melded with Islamic theology to the production of a religious based model of medicine (26). For this reason many Muslim physicians excelled at both medicine and philosophy as befitted by the term 'hakim' (Arabic: 'wise') which was conferred on physicians (30). According to Elkadi, Islamic medicine should comprise the following criteria: It must adhere to Islamic teaching; must be comprehensive and benefitting society; utilise logic in practice through scientific analysis and experimentation; be universal in its approach; be superior as a healing art by observing a holistic approach (13).

It would be a misnomer to suggest that Islamic science and medicine was a copy of previous and extant civilisations. Muslim science and medicine excelled at re-synthesising ideas into a comprehensive system that was based on religion. Religious based Islamic medicine further refined Hippocratic and Galenic ideas as characterised by Islamic medicine's major figures: Al-Razi (865-925 C.E), Al-Zah-

rawi (936-1013 C.E), Ibn Sina (980-1037 C.E), Ibn Rushid (1126-1198 C.E), and Ibn Nafis (1213-1288 C.E). Each of these physicians created specialisations including surgery, epidemiology, virology, orthopaedics, ophthalmology, psychology, pharmacology, public health, anatomy and physiology. For example, Al-Zahrawi developed over 200 surgical instruments and expedited various surgical techniques and understandings of the body. Similarly, the polymath Ibn Sina (Avicenna) wrote a fourteen volume medical treatise called 'The Canon of Medicine' (Al-Qanoon fi al-Tibb), a masterful compendium of medical lore that was a principle medical text for Muslim and European physicians for six hundred years. Some of the key areas of Ibn Sina's Canon included experimental and clinical trials, the concept of quarantine, evidence based medicine, clinical pharmacology and neuropsychiatry (31) (32) (33). Al-Razi was a pioneer of experimental medicine and ophthalmology, and made substantial contributions towards understanding smallpox, measles, and immunology. He also instructed in medical ethics and advised physicians to advance their medical knowledge and making medical improvements. Al-Razi continued the Hippocratic tradition in benefitting patients and practising beneficence.

Tawhid: The Central Principle of Islamic Medicine and Concept of Health

Islamic science and medicine are based on the concept of *Tawhid*. Contained in this concept is the absolute oneness of God as expressed in the first half of the *shahadah* (testament of faith) (Lā 'ilāha 'illā Allāh: there is no god but God). *Tawhid* is the underlying basis of all universal phenomena since cosmic space and time submit to the Divine being. Islamic cosmology emphasises that the hierarchy of existence is dependent on the One by His command ('kun' Arabic: 'be'). The Divine command interconnects all levels of time/space that contains the phenomenal, angelic and archangelic realms (34). Creation is an act of Divine mercy (rahma) and is characterised by al-fitra (natural order) which is composed of the illimitable meta-patterns reflecting symmetry, harmony and beauty. All existence possesses al-fitra in various levels and stages. For example, the fitra of the human body alludes to its beauty and perfection. Fitra also alludes to natural processes such as blood flow in human and animal bodies and how certain actions befit a 'natural state' such as circumcision, correct parenting and showing proper respect to elders.

In Islam, nature is considered to be book of majestic and wondrous design based on universal laws which underlie *Tawhid*. Closely associated with *Tawhid* is the

Quranic encouragement for Muslims to discover the signs (ayat) or meta-patterns of unity and interconnectedness that are immanent in nature. Islamic cosmology views creation as being replete with multitudinous signs awaiting to be revealed to those individuals who have the appropriate level of spiritual maturity. This notion of nature as book of signs was a major reason for fostering Islamic inquiry and experimentation. Both the cosmos and nature manifest *Vestigio Dei* (34).

We shall show them our signs upon the horizons and within their souls until it becomes manifest to them that it is the truth (Qur'an 41:53).

It should be understood that Tawhid became a Muslim leitmotif for understanding creation as a unified and interconnected field. As Nasr explains:

The question of the Unity of the Divine Principle and the consequent unicity of Nature is particularly important in Islam where the idea of Unity over-shadows all others and remains at every level of Islamic civilization the most basic principle upon which all else depends....The formula of Unity is the most universal criterion of orthodoxy in Islam; that doctrine may be said to be Islamic that affirms this unity in one way or other (35).

In this way, Tawhid became a basis for describing the 'natural' principle for forming unities, inter-relationships, mutuality and symbiosis. In scientific terminology, Tawhid may be expressed as the holon principle which in nature can be observed by the relational unities of parts/wholes and their "dynamic constellations" (36). The cosmic compulsion towards creating and maintaining unities is evident from atomic and molecular levels to the formation of galaxies. In Batesonian terms, holons are meta-patterns that exhibit cybernetic processes immanent in nature; a "vast, interconnected whole" that is the totality of all mental, organic and cosmic systems (37). The biological phenomenon of symbiosis is an aspect of tawhid as is the formation of human collectivities in all of their diversity, beginning with familial units. The concept of unity is central to the Muslim religious imagination such as praying towards the direction of the Ka'aba in Mecca five times a day. The Muslim principle of sharing and treating Muslims as a single collective is another way in which tawhid may be used in a sociological sense (38).

Early Muslim physicians were guided by Tawhid in understanding the human body and the notions of health and

illness. In Islamic medical theory, every human being represents a unicity of psycho-physical energies. Ill health is due to a loss of internal equilibrium of these energies which compromises the body's wholeness. For example, the human body comprises approximately ten trillion cells of two hundred types. While differentiated, the body's cells work in maintaining bodily equilibrium. Similarly, the brain which is composed of one hundred million neurons and one hundred trillion synaptic connections work as a unicity to produce different kinds of conscious and unconscious states. The 'flowing' nature of ordinary consciousness is due to the interactivity of neurons and the neuro-hormonal system.

Again using the Tawhid analogy, medieval Islamic medicine viewed the human being (*al-insan*) as a microcosm (*'alam saghir*). The body was essentially a miniature of the cosmos (*al-'alam*), wherein its corporeal structure and organisation correlated with those parts which "make up the wholeness of the universe" (39). According to a Sufism, "the Cosmos is like a big man and man is like a little cosmos" (40). According to this microcosm/macrocosm schema the body consists of four humours (black bile, yellow bile, phlegm, blood) which are connected to the four basic elements (earth, water, fire, air) and the four seasons. These four humours result in the four human temperaments (sanguine, choleric, melancholic, phlegmatic). According to *ibn Sina*, "From mixture of the four [humors] in different weights, [God the most high] created different organs; one with more blood like muscle, one with more black bile like bone, one with more phlegm like brain, and one with more yellow bile like lung" (41). Moreover, the body contains twelve orifices which correspond with the twelve zodiacal signs (42). In addition, the number of veins in the body are equivalent to the number of solar days (42).

The microcosm/macrocosm analogy should be viewed as an attempt by Muslim philosophers, past and present, to maintain connectivities with the natural world. Such an attempt works within the ambit of Tawhid as an organising principle of human health. In similitude with traditional Chinese medicine, Islamic medicine seeks to draw a connection between the body and nature, and that harmony in one produces the same in the other. For this reason, Islamic medicine can be viewed as an ecological medical approach. True human health is not simply the avoidance of disease but the equilibrium between physical, psychological and spiritual states. Such a balance enables the human being towards attaining a refined understanding of Tawhid as it operates in nature and the cosmos and to live accordingly.

Islamic Medicine and Western biomedicine: Ways to Integrate Both Approaches

From the outset it may be problematic to consider a future integration between Islamic medicine and Western biomedicine. While Islamic medicine is religious based and Western biomedicine is non-religious this difference discounts the similarities of both approaches. For example, both medical approaches rely on empiricism and experimentation. As suggested earlier, Islamic medicine heralded an evidence based approach which still exists. Islamic medical physicians have never been averse to evidence based medicine since such an approach adheres to logic and precision, both hallmarks of Islamic medicine. Second, Islamic medicine like Western biomedicine is open to new medical knowledge. Both approaches have borrowed from various arenas of medical knowledge in the past, and this process continues till the present. Western biomedicine is at a pioneering stage in relation to new therapeutic interventions such as gene therapy, stem cell therapy, nanotech medicine, cosmetic neurology and brain-machine prosthetics. During the next few decades there will be major improvements in anti-aging and augmentation interventions which will change common notions of the human body. On this note Saniotis and Henneberg claim that current Western biomedicine with its staunch mechanistic approach has shifted to corrective medicine (43). The exponential growth of cosmetic surgery and cosmetic neurology are indicative of this shift towards corrective and augmentation procedures in western countries. Transhumanists like Kurzweil (44) (45), Bostrom (46), and Stock (47) claim that the human body and mind are heading towards a singularity where immortality will be possible as well as an eradication of disease. Kurzweil even professes that in the future nanotech brains will be engineered which will be superior to the organic brain (44). For transhumanists humanity is moving towards a post-human future where the body will be radically transformed. Western biomedicine will presumably be at the vanguard of this transformation. Nagamia asserts that current Western biomedicine is becoming increasingly commodified, a factor which has led to diminishing levels of public respect for physicians (48). The popularisation of alternative and complementary medicine in the West may also be a protest against the Cartesian and atomistic biomedical approach. Epperly contends that Western biomedicine needs a radical shift from its Cartesian inspired model, to include spiritual factors (49). A major dilemma of Western biomedicine is its seeming failure to account for patients' personal beliefs and experiences which influence one's state of health or illness. Furthermore, Western biomedicine is informed by various assumptions such as the

division between body and mind (Cartesianism), the belief in the insentience of the human body, the dismissal of techniques linked to non-local mind such as spiritual practices (i.e. intercessory prayer), and Western biomedicine's "denial of the role of spirituality" (49).

There are a number of studies linking the benefits of prayer with health and well being, thereby challenging Western biomedicine's rebuff of religious beliefs. The use of intercessory prayer is a technique of non-local mind which means the notion that an individual's consciousness can affect matter (i.e. a person's body). In a 1996 American national survey found that 82% of Americans believed in prayer's ability to heal, and that 64% believed that physicians should pray for their patients upon request (50) (51). A women's survey of the American Cancer society found that 88% of women found consolation in spiritual or religious practice as a way of coping with their illness (50) (52).

Research of non-local mind started in the 1960s with Bernard Grad's seminal experiment using 300 mice which had been given wounds. The mice were divided into three groups; one hundred mice were given to students, one hundred mice were given to a healer, and one hundred mice did not receive any treatment. After two weeks the mice that had been given to the healer had significantly faster healing rates of their wounds than mice in the control and student groups (53). In another study, Grad gave surgical incisions on the backs of 48 mice. During this experiment one third of the mice acted as a control group, one third of the mice were given to a healer, and one third of the mice were left in a cage with same temperature as the mice that were treated by the healer. The healer's group of mice were held by the healer for fifteen minutes twice daily. After two weeks, the healer's group of mice showed significantly higher healing rates than the other two groups of mice "with less than one chance in a thousand that the results were due to chance" (54) (55). Other studies have been conducted on distance healing intention that were double blinded and randomised on non-human life forms such as yeast, fungi, bacteria, enzymes and cancer cells (50) (56) (57) (58). Further distance healing intention (DHI) research has been conducted by Watkins & Watkins (59), on anaesthetised animals rapid recovery after receiving distance healing that was further replicated by a study conducted by Schlitz (60). Other animal studies include amyloidosis on hamsters, and rats injected with ascites tumour cells and treated by distance healing (61). Radin claims that over post war period there have been approximately 900 experiments conducted on non-local mind techniques and how observers may influence matter (62). Collectively, these experiments provide

“independently replicable evidence that observers can affect the behaviour of physical systems” (63).

The use of spiritual based methods is well established in Islam as indicated in Prophetic medicine. Using Quranic passages for curing various psychological and physical illnesses is a time honoured tradition (64). My own field-work in India during the 1990's where I examined the healing complex of Sufis saw at first hand the regular use of Quranic passages in the form of verbal prayers and talismans (tawiz). Moreover, numerical correspondences of Quranic passages were regularly used in healing designs (puleeta) during exorcisms. The use of breath was also used by Sufis and ordinary Muslims for healing purposes, a tradition going back to the Prophet Muhammad.

Already, in Saudi Arabia hospitals spiritual based techniques are being used for people with substance abuse problems (65). Spiritual based techniques include Quranic recitations (listening and reading), prayer, contemplation, meditation, fasting, and performing umra in Mecca. The success rate of such treatment is reflected in low dropout rates (2.8%) and relapse after two years (25%) (65).

The spiritual based healing techniques of Islamic medicine may be utilised by future Western biomedicine. Islamic medicine's holistic model which views the body as an integration of biological and spiritual elements may assist Western biomedicine's analytical scope. The correct inclusion of Islamic medicine to future Western biomedicine concurs with Dossey's vision of Era III medicine which will recognise non-locality as characterised by intercessory prayer, long distance healing and transpersonal imagery (54). Islamic medicine's concept of tawhid in relation to the body/mind unity is further being recognised by the noted psychoneuroimmunologist Candice Pert. In her seminal book *Molecules of Emotion*, Pert explains how the body is a complex network of floating neuropeptides. Neuropeptides live in bodily fluids and lock onto specific receptors. Neuropeptides are involved with chemical changes in the body that affect the immune system. Pert believes that the communication between neuropeptides form the basis of emotion (66). A documentation of emotions and their biochemistry aids in a more informed understanding of how emotions are linked to health and illness. Thus, neuropeptides and their receptors offer a key to understanding how mind and body are interconnected and how emotions can be manifested throughout the body.

Another important area of possible integration is Islamic medicine's considerable pharmacopeia for the treatment of many ailments and diseases. Ethnopharmacologists have recorded 250-290 medicinal plants that are still in use by

Muslims in the Middle-east and North Africa (67). The use of pharmacological substances was conducted by Ibn Sina where he prescribed four ways to treat cancer which included diet improvement for cancer prevention. Promising data has shown that Salgraviolide A derived from the Lebanese indigenous plant *Centaurea ainetensis* causes exhaustion and cell death in skin cancer cells (67). Thymoquinone, a compound found in black seeds which is mentioned by the prophet Muhammad for its health benefits inhibits the proliferation of various kinds of cancer cells including ovarian and breast adenocarcinoma (68), human osteocarcinoma (69), and colorectal cancer (70) (71). Islamic medicine is replete with chemo-protective drugs and foods which stimulate the immune system and have antioxidant, anti-bacterial, anti-viral, anti-inflammatory, anti-cancer and anti-mutagenic properties (72) (73) (74) (75). The use of natural foods, spices and herbs such as olive products, tumeric, bread wheat, black seed, pomegranate, melon, dates, figs, garlic, onion, ginger, some of which have been mentioned by the prophet Muhammad and used widely by Muslims, are believed to have anti-cancer properties (74) (76). A major effort to revive Islamic medicine will also be important to restore the ecological habitat where medicinal plants derive. As a result of ecological degradation and possible climate change, medicinal plant species in the Middle-East may diminish or disappear. Thus, the restoration of the natural habitat is vital for the continuation of Islamic medicine.

Thirdly, Islamic medicine's respect for dying and death juxtaposes current Western biomedicine which dismisses metaphysical beliefs surrounding death. Islamic medicine's "catering for spiritual aetiologies" accommodates with the worldview of many non-westerners who are living in secular countries (77). This is tied to Islamic medicine's holistic approach which takes into account a person's biological, emotional, spiritual, historic and environmental influences that affect health (77).

Conclusion

While there are some dis-similarities between Islamic medicine and Western biomedicine in relation to how the human body is conceptualised, there are some elements where the two approaches can be integrated. Kiyimba makes a poignant point that Islam can offer an appropriate stimulus in relation to scientific observation and demonstrable objectivity as was evident throughout the history of Islamic medicine (78). Islamic medicine's holistic model based on Tawhid can expand the theoretical, aetiological and ethical scope of Western biomedicine. The large

amount of double-blind studies on non-local mind techniques which are used in Islamic medical therapy need greater acknowledgement by the scientific community.

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Procedure of Manuscript Study in Post Graduate Education of Unani Medicine: A Reappraisal

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Summary

Unani Tib as the active representative of a great historical medical traditions remains an important subject for medical historians as well as contemporary practitioners

It is well known fact that a vast literature of Unani system of medicine is lying unexplored in the form of manuscripts which were written and transcribed through various eras and years in India and abroad in different languages many of which are still unpublished.

Many of the glorious creations of these manuscripts have already been lost through the passage of times, human vandalism and neglect, therefore it is imperative that we consolidate our efforts and consult together to conserve the material remains of our cultural heritage. Besides representing the achievements of the past Unani scholars, they primarily reflect the urge of man to lead a higher life. It is a source of great inspiration to those of us living in modern times that even when the facilities have not been generous, life was still lived with full cure and prevention. 1

The situation is gloomy and much needs to be done to create more interest in the study of Unani manuscripts.

All Unani post graduate departments should grant a top place of priority to the science of manuscriptology, because all the early literature that is now available in printed form originally are hand written, so manuscript is the basis for the learning of science today and manuscriptology can be considered as 'science of sciences'. Collection and digitization of manuscripts and to make them available on website for easy access is utmost need of the hour.

Available post graduate Unani scholars across the country should be made engaged in these manuscripts and treasures for exploration, deep study and preparation of subject wise compilations. There is also an urgent need of bringing out ancient classics with commentaries by famous authors. New literature produced on account of these studies should be made available to the people at large.

A discussion about importance, scope, procedure etc is presented in the paper in detail.

Key Words: Manuscriptology, Digitisation, Unani Literature, Medical History

Introduction

Unani system of Medicine derived its basics from the great Greek physicians of yore and evolved steadily and gradually in western Asia, withdrew from the region of its birth, first expanded and then shrank into the Indian subcontinent. It transmitted in India through Arabic and Persian sources and is practiced alongside Ayurvedic and modern western medicine. 9 India became the centre for rebirth of Greco-Arab Medicine where it is preserved in its classical form, overhauled and revamped drastically on scientific lines and patronized by the state. A self reliant and self propelling system in the domain of Unani Medicine is evolving. Now it stages a comeback in the region of its birth, expands extensively in its present habitat and wins acceptance in western countries. Erudite scholars of India are engaged in abiding contribution to the evolution of Unani System.

The ancient traditional knowledge of healing art is hidden in the form of manuscript which is practiced since centuries by thousands of practitioners in different parts of the world based on the fundamental principles laid down by the ancient scholars in classics. There is no change in philosophical background, fundamental principles and concepts, only applied aspects have not been static. Pattern of diseases, form of treatment, number of drugs, method of application and many others recorded by ancient physicians scholarly are lying unrevealed in the form of manuscript.

The form of the book is ever changing; neither its physical shape nor its materials are in any way fixed. India possesses a rich and enormous cultural heritage of manuscript since the ancient period. India probably has the largest number of manuscript in the world mainly due to its centuries old prosperous literary traditions and late arrival of printing press.

Manuscriptology (*Ilmul Makhtutat*)

Definition: The word *manuscript* derives from the Latin *manuscriptum*, literally, “written by hand”.

A *manuscript* is a recording of information that has been manually created by someone or some people, such as a hand-written letter, as opposed to being printed or reproduced. The term may also be used for information that is hand-recorded in other ways than writing, for example inscriptions that are chiselled upon a hard material or scratched as with a knife point in plaster or with a stylus on a waxed tablet, or in cuneiform writing, impressed with a pointed stylus in a flat tablet of unbaked clay.

In publishing and academic contexts, a “*manuscript*” is the text submitted to the publisher or printer in preparation for publication, usually as a typescript prepared on a typewriter, or today, a printout from a PC, prepared in manuscript format.⁴

Manuscripts may be in the form of scrolls or in book form, or codex format. Illuminated manuscripts are enriched with pictures, border decorations, elaborately engrossed initial letters or full-page illustrations.

In the context of library science, a manuscript is defined as any hand-written item in the collections of a library or an archive; for example, a library’s collection of the letters or a diary that some historical personage wrote.

The traditional abbreviations are **MS** for manuscript and **MSS** for manuscripts; it doubles the last letter of the abbreviation to express the plural, just as *pp.* means “pages”.

Education in Unani Tib

Medical education in the classical tradition of Unani medicine followed a model common to the pre modern eras. Students learned from a teacher, preferably a well renowned physician. The physician might be a family member, father, grand father or uncle and hence develop family traditions of medicine and then *madrasa* became a centre of learning throughout the country. The structure and direction of Unani medical education has followed that of biomedicine since the turn of last century. Now in 21st century a well recognized bachelor degree is offered by over forty well established colleges of Unani medicine and post graduate degree is granted by over ten Unani institutes in specialties of not less than ten departments.

It is a matter of great concern and regrets that in post graduate research schemes due attention and emphasis is not given to the study of the vast manuscripts and rare books scattered in Unani medicine across the Indian sub-

continents in various libraries and institutes. More than hundred post graduate research scholars take admission every year in Unani Colleges, but neither their guides nor they themselves inspire postgraduate students to integrate and co-relate manuscriptology with the post graduate studies and take in their research program.

The colleges also don’t care about caring and preservation of these precious treasures. Once we officers of N.I.I.M.H., Hyderabad under the project of ‘Collection and Digitization of Medical manuscripts’ from D/O AUSH, GOI, visited a prestigious Unani College for digitizing the manuscripts. We astonished to see that almost all collections of manuscript were haphazardly kept in a cornered dark room like a collection of waste paper. We were shocked to see the pathetic treatment of these rare and precious treasure of our yore, like great poet Iqbal when he said after visiting Cordoba, Spain “*magar wo ilm ke moti kitabain apne aba ki, jo dekhun unko Europe me to dil hota hai seepara*”. We collected and digitized more than four hundred Unani manuscripts. Even now our Unani patrons intend firmly to engage the post graduate scholars in the preparation and editing of various texts no manuscript would be left untouched and great work will be done

History of Manuscript

Before the invention of woodblock printing in China or by movable type printing press in Europe, all written documents had to be both produced and reproduced by hand. Historically, manuscripts were produced in form of scrolls (*volumen* in Latin) or books (codex), on vellum and other parchments, on papyrus, and on paper. In Russia (*Betula utilis*) birch bark documents as old as from the 11th century have survived. In India the Palm leaf manuscript, with a distinctive long rectangular shape, was used from ancient times until the 19th century. Paper spread from China via the Islamic world to Europe by the 14th century, and by the late 15th century had largely replaced parchment for many purposes.

Originally, all books were in manuscript form. In China, and later other parts of East Asia, Woodblock printing was used for books from about the seventh century. In the Islamic world and the West, all books were in manuscript until the introduction of movable type printing in about 1450. Manuscript copying of books continued for a least a century, as printing remained expensive. Private or government documents remained hand-written until the invention of the typewriter in the late nineteenth century. Because of the likelihood of errors being introduced each time a manuscript was copied, the filiation of different version of

the same text is a fundamental part of the study and criticism of all texts that have been transmitted in manuscript.

The study of ancient forms of writing (and the deciphering of them) in surviving manuscripts is termed palaeography. In the Western world, from the classical period through the early centuries of the Christian era, manuscripts were written without spaces between the words (scriptio continua), which makes them especially hard for the untrained to read.⁴

Role of 'National Institute of Indian Medical Heritage', Hyderabad

National Institute of Indian Medical Heritage was started earlier as Department of History of Medicine in 1956. Dr. D.V. Subba Reddy the then Prof. of Physiology, Madras Medical College who played a key role for the establishment and development of this department was selected as the founder Director. In view of the National importance of the Department of History of Medicine, it was handed over to Indian Council of Medical Research (ICMR). Subsequently it was transferred to Central Council for Research in Indian Medicine and Homeopathy (CCRIMH) in April 1970. The Institute was renamed as Indian Institute of History of Medicine on 04-08-1973. Thereafter, the CCRIMH was divided into four separate Councils and the Institute came under the control of Central Council for Research in Ayurveda and Siddha (CCRAS) from January 1979. Keeping in view of the Institute's achievement and capability, the Government of India has upgraded the Institute on 15-12-2009 as "National Institute of Indian Medical Heritage" (NIIMH).³

Now NIIMH is the pioneer institution in South & East Asia, dedicated to literary research. It is deeply involved in the literary research of all systems of medicine including AYUSH Systems with Ayurveda, Siddha and Unani as the main thrust. This institute is recognized by NTR University of Health Sciences, Govt. of AP, Vijayawada for conducting the Ph.D. Programme in History of Medicine.

Late Dr. D.V. Subba Reddy, the founder director initiated in 1958 AD to catalogue the exclusive Indian Medical literature which is the first work of its kind in the world, published in 1972 AD. The NIIMH has felt its urgency to document the India's precious cultural heritage.⁶

It is great privilege that the institute since its inception has at least one Research Officer Unani to promote the research work in Unani Medicine along with Ayurveda and Siddha. The present director of the institute, Ala Narayana, (being Ph.D. in History of Medicine) has the equal enthusiasm for history of all system of medicine

including Unani system also to be given equal opportunities.

The institute has the collection of more than hundred Unani manuscripts in Arabic/Persian/Urdu languages and more than four hundred Unani manuscripts are preserved in digitized form, the effort is on to collect more Unani treasures as much as possible. The access to these treasures and manuscripts will provide researchers and practitioners of Unani system of medicine much valuable knowledge that also can be applied in the contemporary research. A journal is also published bi-annually from the institute. Now the NIIMH is acknowledged globally as referral center for many researchers and scholars for the source material available with the Medico-Historical Library and Museum of the Institute

Role of *Ibn Sina Academy of Medieval Medicine and Sciences*, Aligarh

Hakim Syed Zillur Rahman, a great bibliophile, philanthropist, a diligent explorer of the Unani manuscripts of Arabic and Persian classics and an erudite scholar in Unani Medicine founded the institution '*Ibn Sina Academy of Medieval Medicine and Sciences*' in 2000 in Aligarh to carry forward the works of ancient physicians to generation next. He is performing a '*Farz Kifaya*' on behalf of all Unani scholars. The academy has the ample collection of manuscripts and rare books, dedicated in research in history of medicine and sciences, editing, translation and publication of rare manuscripts.

Other Institutes in India where Unani Manuscripts are extant

1. A.P. Government Oriental Manuscript Library and Research Institute, Hyderabad
2. Salar Jung Museum Library, Hyderabad
3. Government Nizamia Tibbia College, Hyderabad
4. Moulana Azad Library, AMU, Aligarh
5. Khuda Bakhsh Library, Patna
6. Raza Library, Rampur
7. Jamia Hamdard Library, New Delhi
8. Indological Research Institutions
9. University Libraries
10. Private Libraries
11. Religious Institutions- Mosques And Madrasas
12. Archeological Departments
13. Individual Collections

Study of Unani manuscripts

There exist vast literatures of Unani system of medicine in manuscript form in India and abroad in different languages. A large collection of manuscripts from medieval period in Arabic/Persian languages are also preserved in El-Escorial library (Spain). They need exploration, deep study and preparation of subject wise compilations, dictionaries, monographs, text books and reference books and publication with proper editing. There is also an urgent need of bringing out ancient classics with commentaries by famous authors. New literature produced on account of these studies should be made available to the people at large.⁵

Though a large section of people are aesthetically aware of the value and utility of the manuscript but lesser and lesser number of serious scholars is taking interest in manuscript studies. The reasons are many:

- Knowledge of a classical language helps while referring to original documents as almost all Unani treasures are in Arabic/Persian/Urdu languages, but interest in learning these languages through conventional educational programs is not there. Those who join Unani courses are not taking them as their first or second choice of language either unlike earlier period when it was preferably for Arabic/Persian scholars.²
- The opportunities for students from Arabic and Persian Madrasas are denied by the establishment to take direct admission in Unani Medical colleges so number of Arabic and Persian scholars is also diminishing, but the price the Unani system is paying and will have to pay would be colossal in the sense that a large part of Unani manuscripts collection full of traditional knowledge of healing and medicinal value will remain buried and ultimately perish as there would be less and less number of Arabic/Persian Unani scholars who could identify, catalogue, publish and translate these manuscripts.

Life Cycle of Manuscripts

- Identification of sources of mss and unpublished rare works and consideration for further work (Translation and Publication) needs collaboration with institutes like Central Institute for Modern Indian Languages, Mysore (CIIL), English and Foreign Language University, Hyderabad (EFLU) for foreign languages
- To develop centralized repository of medical manuscripts either by collection of MSS or digitization of MSS or by collection of digital copies of mss.

- To develop mss information system/comprehensive digitized inventory of MSS
- Metadata: To prepare a descriptive catalogue on digitized MSS

Preservation

There is a large number of manuscript and other documents in India written during the last several centuries and now available in different institutions like museums, libraries and in private hands. The problems are more acute because the materials on which the manuscripts and documents are written are extremely delicate and prone to deterioration. As a result it is common observation that a very dismal picture is presented by the collections in these institutions. Insect attack, growth of fungus, dust, acidity in paper, lack of proper storage and other ills can be seen.

- For the conservation of all such materials constant efforts to use modern technology are required for maintenance and preservation.
- Such as regular cleanliness, control of light, humidity and temperature, prevention from fungal and insect attack, control of air pollution as much as possible, repair and lining the manuscripts, de-acidification of manuscript paper and its lamination, encapsulation, proper maintenance by using modern gadgets.¹

Cataloguing:

The manuscript should be catalogued in the following manner.

1. simple index
2. alphabetical index
3. subject wise index
4. descriptive catalogue⁶

Collation and Editing:

Unlike the sciences and arts of present day, the traditional system of medicine like Ayurveda, Unani and Siddha are based on the literature written centuries ago. Any research conducted on the principles of these systems is to be based on the interpretations of the classics or treatises. These interpretations are to be studied considering various aspects involved such as different regions, times, traditions practices, languages or scripts. Comparative study of original texts and its translation

into other languages throws considerable light on the chronology of the original as well as on the text.⁷ Various copies of a manuscript should be compared and collated to find the right word in case of torn, missing and faded folios and differences should be clarified in foot notes. Persons concerned in editing manuscripts know full well that the variations in different copies however appear well in the footnotes and also point to the effort and endeavor of the editor to clarify the differences but the degree of satisfaction achieved after the different copies help each other in reading the complete text and removing the difficulty, none other than the editor can perceive it.⁸

Publication

The manuscripts are to be published in print media for application of ancient knowledge of healing in present scenario for future generation.

1. The text of the manuscript should be published as such without any alteration after collation and comparison and noting down the mistakes found in the text.
2. The critical edition of the manuscript can be published after confirming the confusion, misinterpretation of the writer, omission in the subject and reconstruction by adding missing folios and their parts.

Problems for the study of manuscript

It is necessary to know the sources of the documents for historical development and improvement in the science relating to drugs, diseases, method of treatment and so on.

1. Study of manuscripts in Unani Medicine is quite different from other field of research
2. Problem of handling since the manuscript are centuries old
3. Scholar should satisfy about the authenticity of the manuscript.
4. Major information and interpretation of the language and script will depend on the perfect understanding of the individual scholar
5. Conclusions and views may differ from scholar to scholar
6. Drugs and diseases mentioned in the manuscript vary from region to region
7. Without knowing the technical terms and perfectly the language of the script may mislead the scholar for understanding
8. Identification of nomenclature of drugs and diseases transformed during the course of time
9. Faded, torn, insect bitten and lost folios may need special attention for correct meaning.⁶

Proforma for Collection and Information on Manuscripts³

Example:

Introductory	
Mss No	25
S. No	
State Code	AP
Library Code	GNTC
Acc. No	3282
Source of Collection	Government Nizamia Tibbia College, Hyderabad
Date of Collection	
Record No	
Bundle No	
Publication Status	Published
TECHNICAL	
Title	Sharah Al qanun fit Tib vol. 1
Other Titles	(Sharh Glani)
Author	Ibn Sina (Avicenna)
Co-Author	
Redactor	

Author Date	980-1037 AD	
Subject	Principle of medicine	
Language	Arabic	
Script	Arabic	
Commentary	Ali Gilni (1554-1609)	
Commentary Language	Arabic	
Commentator	Ali Gilni (1554-1609)	
Commentary Date	Anonymous	
Scribe		
Scribe Date		
Scribe Place	Anonymous	
Period of Compilation	(1554-1609)	
Other Details	Written in clear hand writing, head lines and important points are marked red.	
TEXTUAL		
Authors Beginning Sentence	<i>Qal shekhur rais 'iltamasa minni bazo khass ikhwani an usannif fit tib kitaban mushtamilan ala qawaneenihil kullia al juzia'</i>	
Scribes Beginning Sentence		
Authors Ending Sentence	<i>Fal yakun hazel qadr min kalaminal mukhtasar fil usul al kullia li sana atit tib kafian wal nakhuz fil advia al mufrada</i>	
Scribes Ending Sentence		
Colophon	<i>Tamma sharhul kitab al awwal min kutub al qanun be hamdillah ta'ala wa husn taufeeqihi wa yatluho insha allah sharahul kitab althani</i>	
Chapterisation	Chapterized	
Completeness	Incomplete	
Remarks	There are only two complete commentaries written on Al- Qanun in Arabic language and India has the honour that one of these was written in this country by Hakim Ali Gilani under the patronage of Mughal Emperor Akbar. Unfortunately only its first volume has been printed and the remaining ones are extant in manuscript form in various libraries of this country.	
PHYSICAL		
Material ID	Paper	
Size	Length	25
	Width	12
	Unit	centimetre
No of Folios	304	
No of Pages	608	
No of Lines Per Folio	58	
No of Lines Per Page	29	
No of Letters Per Line	18	
Missing Folios	Folios are missing in the middle	
Illustrations	Illustrated red	
Condition	Good and readable, some pages are missing	
Compiled By	Dr Ashfaq Ahmad	
Data Entered By	Dr Ashfaq Ahmad	
About the book	<ul style="list-style-type: none"> ➤ This Mss is the commentary of Al Qanun, book 1 by Ali Glani, deals with principle of medicine. ➤ <i>Al Qanun</i> (considered a medical bible) contains the all aspects of medicine. 	

Conclusion

There are hundreds of manuscript in Arabic/Persian languages in good conditions but still remain unpublished. The following Steps should be taken for the betterment of Unani system.

1. Critical editions of valuable and popular works like *Firdausul Hikmat*, *Kitab al-Tasrif* of Zahravi, works of Galen (Jaleenus), Alvi Khan, Hakim Ahmadulla Khan, Fazl Ali Shifai Khan, etc should be edited, translated into English and published.
2. Glossary of Unani terms used in different classics should be provided in English with works of different period with references
3. A detailed survey and scrutiny of the manuscript would help to tell the history of Unani medicine.
4. The scientific documentation of Unani Drugs will prevent other countries from patenting of our ancient herbs of healing.
5. Inheritors of valuable manuscript to be motivated and educated for proper utilization, efforts should be made to procure from private collections
6. Digitization of all manuscripts scattered across the Indian sub continent and creation of a central data bank for accession should be done for researchers because it is very difficult to handle deteriorated manuscript manually.
7. Preparation of E-Book of all digitized manuscript and to make it available on the website that accession becomes easy.
8. Efforts should be done to develop a centralized Repository of Unani Medical Manuscripts and rare books.
9. Providing the training to Unani technical persons for Unani texts, different scripts, preservation etc in the institute where highly professionals in the field with modern gadgets are available.
10. Multidisciplinary research should be carried in the study of manuscript for validating the old concepts, drugs diseases and treatment on the basis of modern sciences.

11. Work shops and campaigns may be organized for acquainting with the experts in the field of manuscriptology.
12. Translation of valuable manuscript into English in recent period is utmost important to make Unani system a global art of healing, for this purpose Unani scholars with knowledge of Arabic, Persian and English languages should be selected and appointed in Unani research institutions. Otherwise translation in Urdu is like *khud hi padh lo aur khush ho lo*.
13. One separate Department of Manuscriptology should be created in all Unani post graduate institute for medico-historical research in Unani system of Medicine.
14. In this age of software technology, research data base of all Unani published research papers and articles with full text made instantly accessible on the internet on the line of ICMR.

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The Developments on the Use of Misvaque in the Turkish History of Dentistry

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Summary

Misvak is the name of an instrument used as toothbrush in the Islamic world of the middle ages and the tradition of using it to clean teeth has survived since then. In this paper, the place of misvak is specified and some results are obtained.

Key Words: Misvak, Turkish Medicine, Toothbrush

“Misvak” is a word in Arabic and it means toothbrush or toothpick. Its form that is used most frequently is “sivak” and its plural form is “suvuk”. Neither of the words can be found in the holy Koran. “Sivak” is used instead of “misvak” in the prophet Mohammad’s sayings. AbdAllahb.Mas’ûd, the assistant of Mohammad, is known as “sâhib al-sivâk” (the protector of the misvak) for taking great care of the prophet’s misvak. Misvak is “arak” or “diş paklayıcı (tooth cleaner)” in Turkish, “tooth-brush-tree” in English, “Se-fkom” in German and “arac” or “Msuak” in French.

Misvak (stipites, Salvadorae) is produced from a dried piece of the trunk, branches or root of a *Salvadora persica* L (Salvadoraceae) plant. It is in the form of a stick with silvery dusky color. It is as thick as a finger and 10-20 cm long. The plant (*Salvadora persica* L) misvak is produced from a small tree with no thorns. The leaves have symmetrical edges looking like skin. The flowers have four pieces and the fruits have the shape of a tiny cherry. It grows in northern Africa, Iran and India.



Misvak is used instead of toothbrush to clean teeth. It is still popular among Muslims. The Islamic world had already been using misvak centuries before the modern toothbrushes were produced in the 18th century, which demonstrates the importance Muslims attached to teeth cleaning. However, some other methods have been determined to be used in several civilizations in the ancient times. Two of such methods are using toothpicks and rubbing teeth with some drops. Assyrians of the ancient Mesopotamia took great care of teeth cleaning. Some Mesopotamian tablets say: "If a person's teeth are yellowish, they are cleaned with Akkad Salt turpentine and the mouth is washed with honey and beer" (2). Mesopotamians knew how to use toothpicks too. Excavations have revealed that kings had toilet sets including thin sheets of gold and silver used as toothpicks. In some excavations carried out in northern Italy, Switzerland and France, it was found many strings of toothpicks made of bronze, iron and silver. The rings those strings were bound around had a tool to clean ears, a small fork to scratch head or clean nails and a thin lancet with a sharp point thought to be used as a toothpick. Thus, it is possible to claim that oral health maintained with toothpicks dates back to 3000 years ago (3). In the Hallstatt region of Austria, it was found two rings carrying four toilet tools made of bronze. Ancient Egyptians used acacia coal to clean their mouths and whiten their teeth. Oral care was important in Israel of the ancient times too. According to Talmud, the holy book of the country then, a cane should be minced into thin slices and each piece should be used as a toothbrush. Salomon ben Isaac, who lived in the 12th century, recommended the same method. Moshen ben Maimon (Maimonides) (1135-1204) stated that teeth should be brushed after having bath with powdered cinnamon, rose barks, salt and cuttlefish bones and after that, mouth should be washed with vinegar. In the ancient Greek civilization, Docies (4th century) recommended cleaning teeth with glue. In Europe, Desidarius recommended in his work "De Civilitate Morium, Basil" (1530) that food remnants between teeth should be taken out using hedgehog spines or thin chicken bones. John Arderne (1307 - ?), who was an English surgeon, recommended mastic for teeth cleaning. Toothpick became popular in Europe in 1400s and English people began to use it in 1488.

The first modern toothbrush was made in 1780s in England by William Addis. It was made of a bone stick with holes at one of its end in which wisps of hair stabilized with wires were inserted. Toothbrush spread in Boston in 1796. It began to be produced in France in 1840 and later in Germany and Japan. Pig hair was used in the earlier times, but nylon was preferred after 1888. Foot bones of sheep were

the first material used for the handles of the toothbrushes. Handles made of celluloid were produced in 1900s and they were replaced by handles made of celluloid acetate in 1930s. However, celluloid acetate handles required high costs to produce, which caused the production of handles made of plastic. In our day, electric toothbrushes are sold everywhere. Japanese people have used some small sticks for tooth health until the recent times. They were called "koyoji" and used like misvak ripping fibers off one of the ends. Today, very modern toothbrushes are produced in Japan. In Africa, toothpicks called "msuaki" are popular all around the continent (12).

The Islamic world was already using the technique of brushing teeth with toothbrushes in the Middle Ages, a long time before the 18th century when Europeans began to use them (16). As a matter of fact, the prophet Mohammad emphasized the importance of tooth cleanliness and he used misvak as toothbrush. He liked brushing his teeth with it a lot (15). He has nearly 40 sayings about it. He brushed his teeth with misvak when he came home and woke up and before he performed his ablution, worshipped and fasted (4). He used it when he woke up at night to perform his ritual prayers too. He said "Use misvak! It will clean your mouths. If it did not bother the believers much, I would order them all to use misvak before every ritual of worshipping. Two complete acts of worship in the prescribed postures performed after using misvak are more acceptable than seventy acts performed not using it before" (9, 18). Besides this, Mohammad liked misvaks made of olive trees best. Although misvak is mainly produced from *Salvadora Persica* plant, pieces of the trunks, branches and roots of 17 kinds of plant are used for the purpose. Senna and peach tree are amongst those plants. His misvaks were among Mohammad's personal possessions left after his death. Today, his two misvaks are exhibited in Topkapı Palace together with the other holy relics. One of them was made of misvak tree and the other one is of senna.

Turkish medical history suggests that the Turks of the middle Asia knew about oral hygiene even in the middle ages. Rubbing teeth with brushes, washing mouth and using toothpicks called "hilal (crescent)" were all in the traditions a long time before the adoption of Islam (8). After Turks converted to Islam, they began to use misvak in dentistry. Some medical manuscripts in Turkish give information about oral health and misvak (13). For instance; Germiyanlı Ozan, an eminent Turkish physician of the 15th century, translated Ahmed-i Dâi Ebu Nuaym Hâfız Isfahani's "Eş-Şifa fi ahadis al-Mustafa" into Turkish and called it "Kitâb-al Şifa fi ahadis al-Mustafa". In this translation done in the name of Timurtaş Paşazade Umur Bey, one of the vi-

ziers of Murat II, the tenth chapter gives some information about misvak. In the historical Egyptian bazaar in Istanbul, misvak was sold in herbalist shops in the 17th century. A book in Arabic called “Risâlât al-Misvâk” written by the theologian Abd Allah b.Abi Said Muhammed b. (? -1771) in 1752 gives detailed information on misvak (1). Hadimî tried to attract attention to when to use misvak saying “I wrote this manuscript seeing that people have some conflicts over using misvak before worshipping”. According to him, using misvak is necessary. In his manuscript, he refers to the views of those who accepted and refused to use misvak to worship and arrives at the following conclusions considering the Prophet Mohammad’s sayings as well: “The reason why misvak is acceptable is that it cleans mouth and repels bad smells. Besides, it is expectorant. It would be entirely appropriate to use misvak when one wakes up to worship. Misvak should be used softly so that tongue and teeth are not irritated. In terms of ritual ablutions, using misvak is a practice and rule deduced from the Prophet’s own habits and words. People can look neater and cleaner brushing mouth with misvak before ablutions and worshipping. If mouth is cleaned with a misvak performing an ablution, it should be washed up with that water used for the ablution. If a misvak is used in a mosque, it should be washed up after the prayers.”

As is seen, misvak is a widely-known instrument of oral hygiene used for centuries by Turks as well (5, 17). Misvak is prepared in a special way for teeth cleaning. The bark of a stick is peeled off 1cm long from one of the ends and the stick is softened in water for 24 hours. After that, it is battered softly to reveal the fibers at the end and teeth are cleaned with the brush made in that way. In the Islamic world, using misvak is now considered to be a “sünnet”, which means an arbitrary religious practice deduced from the rumors about the Prophet’s own habits and sayings. When misvak is to be used for oral hygiene, teeth are clenched, lips are opened a little and the drog is moved sideways on teeth. In Islamic theology, using misvak is recommended before ritual prayers, ablutions, Koran reading, sleep and whenever mouth goes dry. According to the Shafi school of Islam, misvak cannot be used in Ramadan and between mornings and evenings.

According to the Islamic traditions, oral hygiene should not be neglected even when a misvak or toothbrush cannot be found and teeth should be cleaned with the thumb and index finger of the right hand. Misvak can be used with powdered compounds as well. Equal amounts of pearl, mastic (gum), liquorice root and deer horn ashes are mixed and the compound is ground into a fine powder before pressing on a misvak to be rubbed on teeth and gums. Peo-

ple use misvak for other purposes than oral hygiene as well. They boil each one of seven misvaks in 1kg water until the water is left as much as a glass of it. The water is left in frost at night and drunk in the morning before eating anything to drop the stones in kidneys. This treatment is administered for seven days. Besides this, misvak roots are boiled and drunk also to treat gonorrhea and spleen aches. There are some reasons for the fact that misvak has been used for hundreds of years for oral hygiene. Rubbing it on teeth creates a mechanical effect and the sodium bicarbonate and oily sap in the fibers cleans mouth (6).

In the modern medicine of our day, using toothbrushes is the best way to repel food remnants out of mouth. However, it is significant in terms of showing the importance Muslims placed on oral health that they were brushing their teeth with misvak back in the middle ages when toothbrushes had not been produced yet.

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Views of Ibn Sina (Avicenna) on Ifraat Haiz (Menorrhagia)

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Summary

Ibn Sina (Avicenna) has greatly contributed to science and art of medicine. He completed medicine at the age of sixteen and started writing at the age of twenty one. His "Al Qanoon Fit Tibb" (Canon of Medicine) is a famous medical book regarded as the 'Bible of Medicine'.

Ibn Sina gave detail description of female diseases in Vol. III of "Al Qanoon Fit Tibb" and ifraat Haiz (Menorrhagia) has been mentioned in the chapter second of amraz rehm (uterine diseases). He said that ifraat haiz or sailan khoon or kasrate tams is excessive menstrual flow in duration or amount. He had discussed etiology, symptoms, sign, diagnosis, complications and management of this disease in detail. He said that if ifraat haiz is due to imtela badan or dafa tabiyat then treatment is not needed. Likewise he had very well discussed the treatment of this disease according to the cause. In treatment, compound formulation orally and locally has been mentioned. It can be concluded that the causes, symptoms and complications of ifraat haiz described by him can be correlated with causes, symptoms and complications mentioned in books of western medicine.

Key Words: Ibn Sina, Avicenna, Menorrhagia, Ifraat haiz, Kasrate tams, Canon of Medicine,

Introduction

The full name of Ibn Sina is Abu Ali al Hussain Ibn Abd, Allah Ibn Sina (980-1037 AD). Avicenna is the Latinized form of his name Ibn Sina. His contemporaries gave him the title of 'Rais-al-Atibba' (Prince of Physicians).^{1,2,3} He was born around 980 AD in Afshan, near Bukhara, which was his mother's hometown, in Greater Khorasan, to a Persian family.⁴ His father name was Abd, Allah and his mother name was Sitara. At the age of ten he was a perfect master of the Quran.

Ibn Sina started writing at the age of twenty one. He created an extensive corpus of works during what is commonly known as Islam's Golden Age, in which the translations of Graeco-Roman, Persian and Indian texts were studied

extensively. In his ninety nine works, sixty eight are on Theology and Metaphysics, eleven on Astronomy, Philosophy and Physics, four on Poetry and sixteen on Medical Science. He wrote mainly in Arabic but two of his works are in Persian and of these one is the *Danish Namahi Alai*. He had written other books like *Adwiyate al qalbiyya*, small treatise *Qawanin* (Laws), treatise on colic and *Hududut tibb* (Medical Definitions). There is enough evidence to show that Ibn Sina had an amazing power of observation and analysis and devotion to both theoretical study and experimentation.³

In his autobiography he says "Medicine is not a difficult subject and in short space of time, I excelled in it so that the master of Physic, came to read with me and I began to visit the sick.... I was then about sixteen years of age."³ In medicine he wrote several works of which, Al Qanoon,

the Canon of medicine continued to be printed and read into the second half of the seventeenth century and still in use in the Orient. The synonym of "Canon"- Qanoon-are: code of laws; series of principles. It was printed in Arabic for the first time in Rome in 1593 and in Cairo in 1874. This book is a logical and systematic work of his that provides a complete system of medicine according to the principles of Galen and Hippocrates.^{5,6} It was the first book dealing with experimental medicine, evidence-based medicine, randomized controlled trials,^{7,8} and efficacy tests,^{9,10} and it laid out rules and principles for testing the effectiveness of new drugs and medications, which still form the basis of clinical pharmacology and modern clinical trials:¹¹

Al Qanoon (Canon of Medicine) is composed of five volumes. Vol. 1, The general principles of medicine; Vol. II, Simple Drugs; Vol. III, Description of internal and external diseases of individual organs, from head to foot; Vol. IV, Description of general diseases which are not connected with any special organ, and beauty culture; Vol V, The Compounding of drugs-formulary.^{3,12}

The literature of this manuscript was reviewed in Urdu version (translated by Ghulam Hussnain Kantoori) of Al Qanoon. Ibn Sina had described diseases of female genital organs in Vol. III. Menorrhagia is discussed in *amraze rehm* under the heading of *Ifraat haiz*.¹³

Views of Ibn Sina about Menstrual Cycle: Ibn Sina mentioned normal menstruation according to duration, quality and quantity indicates the healthy condition of women and helps in maintaining *tabayi mizaj* (normal temperament) of the human body. Normal menstruation occurs once in a month that helps in *tanqiya badan* from *fasid mawad* (harmful substances) that are harmful to the body. Duration of normal menstrual cycle is 30 days. Abnormality in menstrual cycle can occur depending upon the duration of cycle or duration of flow of menstruation. The duration of cycle can be prolonged that exceed by 15 or 16 days (oligomenorrhoea) or the duration of flow of menstruation can be more than 7 days (menorrhagia). Increase or decrease in days of menstrual cycle is abnormal that can lead to different diseases like *uqr* (infertility), *samanae mufrat* (obesity), *zouf aam* (weakness), *sueul quinya* (anaemia), *ishqat* (abortion), *zouf janeen* (weak fetus), etc. *Ithebas haiz* (Amenorrhoea) causes *imtela badan*, (congestion in the body) headache, generalized body pain, fever, etc. *Ithebas haiz* leads to hysteria, palpitation and shock. It can also cause *nasfuddam* (heamptysis) and *qai uddam* (haematemesis). According to respective *mizaj* the women will develop that type of diseases like *safravi mizaj* women will have *safravi* diseases, *damvi mizaj* will have *damvi* diseases, *saudavi mizaj* will have *sau-davi* diseases and *balghami mizaj* will have *balghami* diseases.

es. *Inqatae tams* (menopause) is seen in women of 35 or 40 years and in some women it can be observed after 50 years of age. In *sine yaas* (menopause) milk is produced from the breast. Obesity and bulky uterus can also cause *ithebas haiz*.

Ifraat haiz (Menorrhagia)

Definition:

Ifraat haiz or *kasrate tams* or *sailan haiz* is increase in menstrual flow either in amount or duration of blood loss.

Etiology: The causes of *Ifraat haiz* are

1. *Imtela badan* (plethora) means excessive quantity of blood in the body; hence the body expels excessive waste matter through menstruation for *tanqiya badan*.

Sometimes *ifraat haiz* is caused due different type of *marz* (disease) or *amraz rehm* (diseases of uterus)¹²

2. *Amraz Rehm* (Uterine Diseases):

❖ *Zoufrehm* (weakness of uterus) and *zoufurooq rehm* (weakness of uterine vessels). The causes of *zouf rehm* are *sue mizaj rehm*, *zouf urooq rehm* (weakness in the uterine vessels), and as a complication of previous diseases in uterus.³

❖ *Sue mizaj* (abnormal temperament)

❖ *Aakal rehm* (rodent Ulcer)

❖ *Bawaseer rehm* (polyp of uterus)

❖ *Kharishe rehm* (pruritus of uterus)

❖ *Shiqaqur rehm* that leads to *Inshiqaq urooq rehm* (uterine rupture)

❖ *Quroohe rehm* (ulcer of uterus)

❖ *Abila rehm*

❖ Dilatation, fragility and rupture of uterine vessels are caused by *asbaab dakheeli* (internal) and *asbaab khariji* (external factors). The *asbaab khariji* (external factors) are trauma and injury that can also lead to *ifraat haiz*. The *asbaab dakheeli* (internal factors) like *sue mizaj* make the vessels delicate and soft thereby causing rupture of uterine vessels and leads to menorrhagia.

❖ Difficulty in labour, leads to weakness of uterus and rupture of uterine vessels. Intrauterine death or still-birth can also lead to *ifraat haiz*.

3. Due to *riqqat* and *latafat khoon*, blood will become *raqeeq* and *taez* leading to excessive bleeding from uterine vessels.

4. *Ghalbae khilt safravi* (dominance of bile humour) gives rise to vascular fragility, which causes opening of sphincters of uterine vessels, thereby leading to excessive menstrual blood.
5. *Hiddat* and *lazaе dam* leading to *infatahe urooq* (vasodilatation). Ibn Sina said that the causes for the *infatahe urooq* (dilatation of channels) are feebleness or weakness of the *quwate masika* (retentive faculty), excessive force of the *quwate dafiya* (expulsive faculty) and cleansing and relaxing medicines.
6. *Ghair Tabayi Khoon Haiz* (abnormal menstrual blood loss):
 - ❖ *Kasrate* (Excessive) and *Quwate khoon*: Excess of blood in the body and *qawi badan* patients can have *ifraat haiz*. Though the quality and quantity of blood is normal but due to weakness in the body, it is not able to utilize the total blood, hence the excess quantity of blood is menstruated.
 - ❖ Excess of *hiddat khoon* and *tazi khoon*
 - ❖ There can be abnormality in *riqqat*, (decrease in viscosity) *qiwam* (consistency) and *latafat* of *khoon* due to *hararat* (heat) or *kasrat mahiyat* or *ghalbae rootubat* (dominance of liquid) that can lead to *ifraat haiz*.
7. *Nasfe ddam* can also be caused due to excessive rain.¹²

Pathogenesis:

In *ifraat haiz*, initially vasoconstriction leads to dilution and expulsion of small quantity of blood. This phase is followed by vasodilatation, which is associated with thick and excess quantity of blood being menstruated. This phase persists for few days. Again due to vasoconstriction the blood quantity and viscosity will be reduced.

Symptoms:

1. When *Sailan haiz* is due to *dafe tabiyat*, it will not cause any harm to the woman but it is useful to the body and *quwat* is also not changed. This type is seen in obese woman.
2. *Intela aam*: If *sailan haiz* is due *ghalbae khoon*, there will be *imtela* (congestion) of face and body, sometimes it will be with or without pain, prominent vessels with other symptoms of *imtela*. This bleeding should not be stopped unless there is weakness. Patient is comfortable with heavy menstrual flow, belongs to higher class, well nourished with least involvement in exercise and physi-

cal activities. Usually this type of menstrual blood loss can be associated with *ghalbae khilt* (dominance of humours).

The method to diagnose the dominance of *khilt*, patient shall be advised to keep sterile cotton gauze in the vagina for the whole night. Next morning it is dried in shade and the colour of the stain should be observed. If it is yellow, it indicates dominance of *khilt safra* (bile), if whitish, it is *balgham* (Phlegm), if greenish black or *banafshi*, it is *sauda* (black bile) which is dominant in blood. According to *ghalbae khilt* (dominance of humours), *istrefagh* (elimination) should be done.

3. *Sailan khoon* caused due to *zouf rehm*, the menstrual flow will be clear without pain
4. *Sailan khoon* due to *hiddat khoon* is identified by its colour and intensity of flow. As there is reduced viscosity, the menstrual flow is *raqeeq*, there will be early stoppage.
5. Due to *riqqat* and *latafat*, blood will be *raqeeq* and *zard*, comes out quickly with burning sensation and leaving the body weak and yellow coloured.
6. Due to *ghalbae rutubat mayi*, blood will be *raqeeq*, there will be weakness in the sphincters of uterine vessels. Qabiz drug should be given as it will cause warmth. All symptoms of dominance of *balgham* will be present.
7. Due to *ghalbae safra* blood will be *raqeeq* and *taez*.
8. If *sailan haiz* is due to rupture of uterine vessels caused by *sue mizaj*, respective signs and symptoms of the *sue mizaj* will be present. If *sailan haiz* is due to wounds, psychological stress or difficult labour, respective signs will be present.
9. Sign and symptoms of *ghalbae khilt* will be evident.

Differential diagnosis:

Bawaseer rehm: In *bawaseer rehm*, the women will have intermenstrual bleeding and *sailan haiz*. Black coloured menstrual blood flow. If the bleeding is from artery then the colour of blood will not be black. It is associated with giddiness, headache, hepatic and splenic pain, which subsides with the menstrual blood flow.

Zouf rehm and infatahe urooq: Painless fresh bleeding associated with nausea and headache, indicating the relation between uterus, brain and stomach. If blood comes from *saakin vessel* (venous); it will be black in colour. The red, hot and shining blood indicates the arterial blood.

Quroohe rehm: *Ifraat haiz* due to *quroohe rehm* will be purulent and painful menstruation associated with burning sensation.

Quroohe akkali: In this disease, black coloured, dribbling menstrual blood flow will be seen. If *akkala* is in neck of *rehm* (uterus) then black colour will be less. The *akkala* of *fam rehm* can be palpated.

Complications: *Ifraat haiz* causes complications like indigestion, weakness, abortion, and defect in implantation, intrauterine growth retardation, and change in the colour of face, convulsions, diarrhoea, urticaria, back pain, pedal oedema and anasarca. It also causes *safravi humiyat*, backache. It leads to *saqoot ishtah* and this leads to *zouf meda*.

Ilaj (Treatment):

Usoole Ilaj:

- If *sailan haiz* is caused due to *imtela badan*, (congestion in the body) *dafe tabiyat* and *giraniya khoon* the menstrual blood loss should not be stopped until there is a chance of weakness. It is important that *fasd* (venesection) of *basaleeq* (basalic vein) should be done before the patient develops weakness as *fasd* (venesection) decreases *imtela madda*.
- If *sailan haiz* is caused due to *hiddat* (excessive of heat) or *safraviat khoon*, *istrefagh safra* (elimination of bile) should be done with drugs like *shahrtrah* (*Fumeria officinalis*), *halila* (*Terminalia chebula*) as these two drugs have *quwate qabiza* in it.
- If it is caused due to *mayihat khoon*, *hiraar* has to be done and then divert the blood towards the skin. For this purpose *simagh arabi* (*Acacia arabica*) and *kateera* (*Cochlospermum religiosum*) are to be given.
- If the cause is *zoufrehm*, *advia qabiza* (astringent drugs) along with aromatic *advia muqawwia* (tonic drugs) are to be given.
- If the cause is *quroohe rehm*, *advia murrakab al asar* i.e., *advia muqarriya*, *qabiza* and *muqadara* are to be used for the treatment.
- *Ifraat haiz* due to *bawaseer rehm* can be treated with *tukhm katan* (*Linium usitatissimum*) plus *ab garam* (luke warm water).
- *Mujahim* (Dry Cupping) is done below the breast. The cups are to be applied from the below the breast along the line of vessel that runs to uterus and then they are sucked. Cups should be big size. Cupping will stop the excessive menstrual bleeding immediately. Sometime menstrual bleeding will be stopped by this treatment and if it does not work then cups can be applied between the buttocks.

- If *ifraat haiz* is due to *riqqat khoon*, *mushil* (purgatives) or *tariq* (diaphoresis) or *mudir* (diuretic) drugs are to be given for expulsion of *madda*. For this purpose *karafs* (*Apium graveolens*), *majeet* (*Rubia cardifolia*), *asaroon* (*Valeriana wallichii*) like drugs are to be given.
- Massage is also done in cases of *sailaan haiz*.
- If *ifraat haiz* is due to *quroohe rehm*, *gulnar* (*Punica granatum*), *murdarsang* (*Plumbi oxidum*) and wax pessary is very useful and it should be kept in the vagina with *roghan gul* (oil of *Rosa damascene* Mill).¹²

Conclusion:

Ibn Sina was a renowned physician of Islamic period. His book 'Al Qanoon Fit Tibb' is a logical and systematic work that provides a complete system of medicine. It can be concluded by this review, that it enlightens many of the causes, symptoms and complications of menorrhagia that be correlated with recent literature present in western medicine.

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Genetic Recessiveness and Genetic Counseling and their Application in Islam

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ة ي ك ي ر م أ ل ا ة ي ب ر ع ل ا ة ع م ا ج ل ا

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Summary

The Sayings of Prophet Mohammad (PBUH) were surveyed for relevant links with genetic recessiveness and genetic counseling. Important and interesting understandings of these concepts are found in the Prophet's Sayings depicting the recessive genes that disappear in one generation and appear in another (Skipping of generations):

(1970 ثي د ح 633 ص 1 ع ز ح ه ج ا م ن ب ا ن ن س) س ا س د س ا س د ق ر ع ل ا ن ا ف م ك ف ط ن ل ا و ر ي خ ت

Islam predates, therefore, the new discoveries of genetics by some 1400 years! The traditions of the Prophet enabled at that time to practice genetic counseling and resolve a social problem based on an insightful understanding of the recessiveness mode of inheritance. In fact, a man was furious about a black child born to him even though his wife and himself were non-black! The total story is detailed in this paper but to resume, the Prophet said: Possibly it is «ق ر ع» (ق ر ع ه ع ز ن ن و ك ي ن ا س ع). The word «ق ر ع» was employed here undoubtedly to designate «recessive gene» which might have segregated from the far grandparents and assorted in that black child. Genetically, this is a fully accepted possibility. This is an example of the scientific miracles (Ijaz) that strengthens faith in God who revealed the religious texts to his Prophet and therefore, demonstrates the ideological and scientific strength and authenticity of Islam. Marvelous social consequences on traits as skin color are evoked like fighting against color racism since black children can be born to non-black parents. Furthermore, compatibility of science and religious texts (The Glorious Qur'an and Honorable Hadith), directly opens the possibility of further investigations based on the religious citations which prove more and more to be full of merit and worthy of studying! Scientific inquiry is a religious manner to attain high degrees in the estimation of God:

O you who believe! when it is said to you, Make room in (your) assemblies, then make ample room, Allah will give you ample, and when it is said: Rise up, then rise up. Allah will exalt those of you who believe, and those who are given knowledge, in high degrees; and Allah is Aware of what you do. Al-Mujadila (She That Disputeth, The Pleading Woman, Qur'an Chapter 58, Verse 11).

ن ي ذ ل ا و م ك ن م ا و ن م ا ن ي ذ ل ا ة ل ل ا ع ف ر ي ا و ز ش ن ا ف ا و ز ش ن ا ل ي ق ا ذ ا و م ك ل ط ل ل ا ح س ف ي ا و ح س ف ا ف س ل ا ج ل ا ي ف ا و ح س ف ت م ك ل ل ي ق ا ذ ا ا و ن م ا ن ي ذ ل ا ا ه ي ا ا ي
(58: 11 م ل د ا ج م ل ا) ن س ا ج ر د م ل ع ل ا ا و ت و ا

At the end of this paper will be cited conclusions and recommendations...

Key Words: Honorable Hadith (Prophet Mohammad's Sayings), Ijaz (scientific miracles in Hadith), genetics, recessiveness and genetic counseling.

ةيبرعلا ةغللاب صخلم

يويبنال مهفلا ىلا ريشن ةمهم نم ئارق تندج و دقو .ن ييثارولا داشرالا او يحي نتلاب قلعتت ئارقول ةمحم لوسرلا شي دأح ةقرولا هذه يف ةتعلطنتسا يبتلا ،ةيحتمل تانيجلا ىلا ةراشا يف ،(1970 شي دح 633 ص 1 ةزج ةجام نبا ننس) ساسد قرعلا ناف مكفطنل اوريخت :يوز امك ،نيلاجملا نيذل يق يبطنتلا .ناملال نم انرق رشع ةعبرأ وحنب ةيادامل هذه يف قبسرلا مذق مل ناك مالسالا ن ريشي اذه نا .(لاي جال نغ زفقولا ةراهظ) رخا يف رمظتسا ةمحم يف يفخت دق ههشب ذه ةمهل سيل ،دوسا مالغب متارم متت لجرل ةيحاتمجا ةلكشم دب لحي يذلا يثارولا داشرالا هه ،ةيحيرات قيبا .يف مهفلا اذه لوسرلا فظو دقو .ةفصل ةيحتمل تانيجلا ىلا ةراشا اذه يفو .(قرع هع ز ن نوكي نا يسع) انه نم صلختسا ،لصفا م شي دح يف ةمحم مباح ناكف مهئاب الو مهفنأ يف يملعلا زاج لال احض او الائم انل مذي اذه ،نكفم لامتجا اذه ،ةثارولا ملع يف .دوسال ةمحم لال ةمحم يف تلمعنا يبتلا (دمال يديجب) دادجال نم داوسلا نيذلا عئاور نم نا .ةيملعلا ةيبرعلا مالسالا ةمحم ن نيبنت لذبو ،يحيوي ام ةمحم دبب ىلا يحيوي يذلا لالاب ناميالا يوقيو ،ةيملسالا صوصنلا يف اني دوسا ريغ نيوبال دوسا دلوي دقف الائم نوللا ىلع ينبملا يريصن علا زي يمتلا ةمحم مهفلا اذه ىلع ةيبنملا يمالسالا

ةيملعلا شاحبالا نم ديزمل هيعارصم ىلع بابلا حتفت ،ماع ةئام عبرا فلأ نم برقت .ةيقبسأب ةشي دحل ةيملعلا شافشكفملا مالسالا قيباطم نا .تاجرد بب للا عفري امم اذه ،شاحبالا هذه لشم يف ةيملعلا امتناصر تتبثت ا يبتلا ،ةيحيصل صوصنلا ىلع ةيبنملا

نيذلا او مكنم اونم انيذلا ةلللا عفر اي اوزش ناف اوزش لايق اذو مكل لالاب حسفي و احسفاف سل اجملا يف او حسفت مكل لايق اذو اونم انيذلا امي اي (58: 11 ملداجملا) ،تاجرد ملعلا او توتو

تايصوتو تاجاتنتسا ةقرولا هذه ةمتاخو

ةلادل تاملل:

يثارولا داشرالا ةيحتمل ةثارولا ،ةثارو ،زاجع ،ةفريشلا ةيويبنال ةنسل

Introduction

We can define genetics as the science of studying genes and modes of inheritance or transmission of traits between generations (Glanze, 1996). This is relatively a new science founded by the «Father of Genetics», Gregor Mendel (1822-1884) who discovered the laws of inheritance following his insightful investigation on peas. The first law of segregation of alleles and second law of independent assortment of alleles represent the basis for a tremendous number of research papers and fundamental basis of understanding of life and of innumerable applications as well (Griffiths *et al.*, 2007).

The ancient understanding of genetics was vague. However, Prophet Mohammad (PBUH) shows an understanding of genetics and its newly discovered concepts like dominance and recessiveness of paternal and maternal alleles. This can be understood from the following Saying of the Prophet (Hadith):

له لالاب لوسرل تلاق ةارم نا انع لالاب يضر ةشئاع نع تلاقف .م عز للاقف ؟ ةاملال ترصبأ و تملتجا اذو ةارملا لس تغت و اهي عد: «لالاب لوسرل لاقف ،تلا و كادي تبرت ةشئاع اهل مبهشأ لجرل ام اموا لالع اذو ؛كلذ لب بق نم ال مبهشأ نوكي له ملسم يحي حص) ه مامع مبهشأ اءام لجرل ام الع اذو ،ه ل واخ دلولا (313 ضي حل يف

يف ىرت ةارملا نع لالاب يبن تلاس انم ميلس ما نع ةارملا كلذ تار اذو لالاب لوسرل لاقف .لجرل اري ام ام انم لهو تلاق كلذ نم تبيحتسا و ميلس ما تلاقف لس تغتلف ن ؛مبهشأ نوكي نيا نمف مغم لالاب يبن للاقف ؛اذه نوكي الع امه اي نمف رقصا قيقر ةارملا ةامو ضي بيا ظيلع لجرل ام (311 مقر ملسم يحي حص) مبهشأ نم نوكي ،قبس و

لالاب لوسر ىلا ميلس ما تءاج ةيما يبا تنب دنه قملس ما نع لهف ،قحلا نم وي ،حتسي ال لالاب نا ،لالاب لوسر اي :تلاقف ةاملال تار اذو يبنل لاق ؟ تملتجا اذو لسغ نم ةارملا ىلع ملتحتو ،لالاب لوسر اي تلاقو ،اهجو ينعت ،قملس ما تطغف يحي حص) ؟ املو امهشاي دبب ،كنمي تببرت ،مغم للاق ؟ ةارملا (130 مقر يراخبل

Based on this understanding, a child might resemble more his or her paternal or maternal uncles. Actually, the term employed by the Prophet (الع) is an accurate translation of the new Mendelian term (dominate), the dominated trait (recessive) is the one that is masked under the effect of the dominant trait.

In this paper, the Islamic religious texts in Qur'an and Hadith will be investigated conceptually vis-à-vis recessiveness versus dominance. Applied understanding of genetic recessive mode of inheritance will be extracted notably in the field of genetic counseling.

Through this paper, It will be demonstrated how the Prophet practiced genetic counseling based on extrapolating on similar cases (to the one that faced him). Genetic counseling is advising about characters, possibilities of contracting characters or diseases based on the family pedigrees and available date on the character under advising. It is a service to help individuals and families translate scientific knowledge into practical information. A genetic counselor works with a person or family that may be at risk for an inherited disease or abnormal pregnancy outcome, discussing their chances of having affected children. It was a premier to practice genetic counseling some 14 centuries ago!

Methodology

The Glorious Qur'an and the authentic Sayings of the Prophet are screened for insightful and applied aspects of recessiveness mode of genetic transmission and genetic counseling. Actually, investigations took place in two directions: genetics with its newly discovered concepts are screened in holy texts and religious understandings are explored in genetics as a relatively new science. These are parallel lines supportive of each other and should aim at unique goals. Few Hadiths cited in this paper are weakly attributable to the Prophet Mohammad (PBUH). Such Hadiths are not necessarily that they are wrong but that their credibility is not absolute! Citation of Hadiths weakly attributable to the prophet is conditioned by a convincing support by other more credible Hadiths and or scientific facts. Such Hadiths can be considered and cited but with conditions put by many Islamic scholars and well reviewed (<http://www.binatiah.com/go/forum.php?action=view&id=2081>). These conditions are respected in this paper.

Results and Discussion

Recessiveness is a condition that appears only in individuals who have received two copies of a mutant gene, one copy from each parent. The individuals with a double dose of the mutated gene are called homozygotes. The individuals with a single dose of the mutated gene appear normal and are called heterozygotes, or gene carriers (Reece *et al.*, 2010).

Genetic counselling or counseling is the process by which patients or relatives, at risk of an inherited disorder, are advised of the consequences and nature of the disorder, the probability of developing or transmitting it, and the options open to them in management and family planning in order to prevent, avoid or ameliorate it. This complex process can be seen from diagnostic (the actual estimation of risk) and supportive aspects (Sequeiros and Guimarães, 2008).

Phenotypic traits of offspring can reflect directly the parents' traits and genotypes. This meaning is depicted from the following Hadith in which Mohammad (PBUH) practiced genetic counseling:

انشدح يرصلما حرسلا نب رهاطلا يبا نب ورمع انشدح نب دمحم نع ناميلس نب ميجرلا دبغ انشدح يدع نب فسوي انعالت امل : لاق هيبأ نع لمس يبا سابعلال ينربخأ قاحس! هدلت ناف دلت يتح كفيلا اضبقا هلا لوسر لاق هدلت ناو نم يفتنا يذلا رميوع هيبأل وهف قرحو لثمدمرحأ ب يجر يذلا لجرلا امحسلا نبال وهف رعشلاو نوللا دوس

قورفلا لثم ينلبيقتساف بب تيتأ متدلو امل فرميوع لاق فرمتلا لثم فزاسل ينلبيقتساف هيبجلب تذخأ مثء ادوسلا ،ريبكلما مجعلما ،يناربطلا هلوسرو هلالا قنص تللقف (ينابلالا محصو ،128ةحفص - 6عزج ٥٧٣٤ مقر ثيدي).

However, traits can change between generations and this notion was also employed by the Prophet in genetic counseling: In fact, at the time of Prophet Mohammad (PBUH), a man was confused as his wife gave a birth to a black boy and was about to accuse his wife of infidelity. When the Prophet asked this man if he had camels and asked him about their color, he answered yes, they are red, and then the Prophet asked him if there were blackish, non-pure black (قروا) camels in his herd and he answered that he did. The Prophet concluded that the two cases are similar (the case of the man with his wife and that of camels). By dialoguing with that man, Prophet Mohammed (PBUH) made him conclude by himself that some characters can reappear after one or more generation of disappearance (recessive inheritance). Actually, skipping of generations is a characteristic of recessively inherited characters (Reece *et al.*, 2010). In addition, of the scientific importance of revealing some of the genetics' secrets some 1400 years ago, another educational importance is attributed to the the Sayings of the Prophet. That is pedagogy and convincing by dialogue and comparing similar cases to reach a conclusion! The genetic understanding of the Prophet could help in genetic counseling and consequently in resolving a social problem.

فزازف ينبنم لجرءاج : لاق نع هلا يضر فرءه يبا نع لاقف ،دوسا مالغ تدلو يتارما نل : لاقف هيبنلا ىلإ ،رمح لاق هانولأ امف : لاق ،معن لاق هلبانم لكل له هيبنلا اهاتأ ىزاف لاق ،اقروك اهيف نل لاق هقروا نم اهيف له لاق نوكي نأ يسع ادو لاق هقروا نوكي نأ يسع لاق هقروا ظللل و لمسو يراخبلال ناخيشلا هاور) قروا عزن نم لعلل اباتك نم (1500 ناعلل اباتك نم).

The word (قروا) in the previous and later Hadiths is a Prophetic designation of allele, in this context a recessive allele that could have reappeared (هعزن).

Similarly, reappearance of the hidden (recessive) alleles is understood from the following Hadith that describes segregation and grouping of recessive alleles after having been masked for generation(s):

هلا لوسر راصنالا نم لجر يتأ لاق رف عج يبا نع دلوب ينبتأ دقو اريخ ال ملع ال يتارماو يمع قنبا مذه للاق فنالا سطفأ بطق يدعج نيرخنملا رشتنم داوسلا ديدش ام متارملا لاقف يداجأ يف الو يلاوخأ يف ههبش فرعأ ال مدعقم تدعقأ ام ايبن قحلاب كئعب يذلاو ال تلاق هنيذوقت مسارب هلا لوسر سكنف لاق هريغ ادحأ ينكلم ذنم ينم لاق لجرلا ىلع لبقأ مء امسلا ىلإ هرصب عفر مء ايلم نوعستو عست مدأ نيبو منيبو ال دحا نم سيل نل اذ هيب

مجرلا ي ف ففطنلا تعلقو اذاف بسنلا ي ف برضت امك اقارع
كفلت نم اذف امل مبشلا مللا لاسرت قورعلا كفلت تبسطضا
كفنبلا كفيلا دخ كدادجا دادجا الو كدادجا امكردى مل يتلا قورعلا
يفالكلا ي ف ينيلكلا) مللا لوسر اي ينع تجرف ءارملا تلاق
(561ص 5 ج).

Segregation of recessive alleles and assortment of these
segregated alleles in both parents can be understood from
the expression of the Prophet

تبسطضا تلمتشا اذاف ، اقارع ني عستو عست (...)
in the following Hadith:

لاق ، مالسلا هيلع يلع نع هيبأ نع نيسنلا نب يلع نع
لوسر اي لاقف ، مللا لوسر يلا راصنالا نم لجر لبقأ
ءابأ ءرشع دع يتح ... نالف نبال نالف ان او يمع تنب مده مللا
الو يبسح ي ف سيل . ءابأ ءرشع دع يتح ... نالف تنب يهو
مللا لوسر قرطاف ، يشبجلا اذه تعضو امن او ، يشبج امسرح
اقارع ني عستو عست كل نالاقف ، مسأر عفر مث ال يوط
قورعلا تبسطضا تلمتشا اذاف ، اقارع ني عستو عست املو
مناف حق ، هيلع مبشلا بهذي نالاقف قورع لك لجر زع مللا لاسو
لجرلا ماقف لاق ، امن قورع وأ كنم قورع نم ال اكلتأي ملو كدلو
(631 ص 2 ج يرونلا) ابجع امدل وبو اب دادزاو متارم اديب ذخاو

The Law of Segregation (Mendel's First law) states that
when an individual produces gametes, the copies of a gene
(alleles) separate, so that each gamete receives only one
copy. A gamete will receive one allele or the other (Griffiths
et al., 2007).

In this last Saying of the Prophet, the number (99)
might indicate the numerous genes that participate in our
phenotypes. It could have been cited in a figurative rather
than an absolute context.

In this respect of human phenotypic traits like the skin
color, Islam fights against racial discrimination notably dis-
crimination based on color. Discrimination is a sociological
term referring to the treatment taken toward or against a
person of a certain group under consideration based on class
or category. Racial discrimination differentiates between in-
dividuals based on real and perceived racial differences.

Islam puts an honorable basis of distinguishing rather
that discriminating people but based on their good conduct
and righteous relations with God and people.

O you men! surely We have created you of a male and
a female, and made you tribes and families that you may
know each other; surely the most honorable of you with Al-
lah is the one among you most careful of his duty (or most
righteous or the best in conduct) surely Allah is Knowing,
Aware. (Al-Hujraat, The Private Apartments, Qur'an Chap-
ter 49, verse 13)

يْتَنُّوْا وِرَكَدَ نِم مُمْكَانَقَلَّخِ اِنَّ سَاْنَالا اَهْيَا اَي
مُمْكَرَكْ اَنْ اَوْفَرَا عَتَلَلْ اَبَقْ وَاْبُوْعُشْ مُمْكَانَقَلَّخِ وَاْجِ

49: (تارجحلا) ريبخ ميلمع ءلالا نالاقف تال ءلالا ذنع
13)

To confirm the mentioned honorable principle, Prophet
of Islam, Mohammad (PBUH) orders Muslims to follow
and obey the leader even if he was of color. At that time,
this was a revolutionary attitude when slaves were repre-
senting an integral part of the social, economic and politi-
cal life of people. Recall that the modern democracies in
the world could put this honorable principle in practice
only very recently.

مكفيلع لمع تاسا نالاقف او عيطأ او او ع م س ا لاق
هحي حص ي ف يراخبالا) ءبي بز ه س ار ناك ي ف شبح دب ع
(ينابلالا ه ح ص و 2327 هحي حص ي ف هجام نبا و 7142

The mentioned honorable non-discriminative principle
is confirmed in another Hadith, which puts a basis for the
conduct of the nation (e.g. The Glorious Qur'an and Ha-
dith):

لوسر انظعو نع مللا يضر ءيراس نب ضابرعلا نع
امنم تفرذ ءغيلب قظعوم ءادغلا ءالص دعب اموي مللا
اذامف عدوم قظعوم مده نالجر لاقف بولقلا امنم تلجوج نويعلا
عمسلاو ، مللا يوقتب مكفيلع لاق مللا لوسر اي انيلا دهعت
افال تخ ري مكفيلع نع مناف يشبج دب ع نالاقف اظلاو
كلذ كدرأ نم ءالص امناف ، رومالا تاشدحمو مكفيلع او ، اريثك
ني يدمملا ني دشارلا افلخل ءنسو يتنسب هيلع مكفيلع
نم سنحو 2676 مقر يذمرتلا ننس) دجاونلاب اهيلع اوض
و (ححصو).

قظعوم مللا لوسر انظعو لاق ءيراس نب ضابرعلا نع
لئاق لاقف ، بولقلا امنم تلجوج ، نويعلا امنم تفرذ ءغيلب
لاقف ؟ انيلا دهعت اذامف ، عدوم قظعوم امنك مللا لوسر اي
نالك يشبج دب ع مكفيلع رمأ نالاقف اظلاو عمسلاو مكفيلع
ني دشارلا افلخل ءنسو يتنسب مكفيلع ، ءبي بز مسأر
، دجاونلاب اهيلع اوضو ، اب او كس مت ، يدع نب ني يدمملا
ءالص ءدب لكو ، ءدب ءشدم لك ناف ، رومالا تاشدحمو مكفيلع او
(4/119 مقر ني عوقوملا مالع ا ي ف نم سنحو ميقلنا نبال)

انظعو نع مللا يضر ءيراس نب ضابرعلا حيين يبا نع
نويعلا امنم تفرذو بولقلا امنم تلجوج قظعوم مللا لوسر
مكفيلع لاق انصواف عدوم قظعوم امنك مللا لوسر اي انلقف
نم نالاقف دب ع مكفيلع رمأ نالاقف اظلاو عمسلاو مللا يوقتب
ءنسو يتنسب مكفيلع اريثك افال تخ يري سيف مكفيلع شع
مكفيلع او دجاونلاب اهيلع اوضو ني يدمملا ني دشارلا افلخل
بي غرتلا ي ف يردنملا) ءالص ءدب لك ناف رومالا تاشدحمو
طرش يلع نوكفي دقو نسحلا ءجرد نع لزنن ال 1/60 بي مرتلا او
(امدحا) وأ ني ححي حصللا

The offspring might display hidden characters from the
pedigree (ancestors) of the mate, the Prophet of Islam, Mo-
hammad (PBUH) recommends selecting well the mate:

وريخت ساسد قورعلا ناف مكفطنل اورىخت : من ع يور
633 ص 1 ع زج هجام نبا ننس) ساسد قورعلا ناف مكفطنل

بتكفل باحصا ن ع هجام نبا شيديحل اذهب درفنا. (1970 شيديح 6/310 ىربكلا اتي عفاشال تاقبطل كلذكو يمل يديلا و ةعستلا اوحكن او مكفطنل اوريخت): مظللو ن نسل ا يف ةحام نبا هجرخ ا يبنل ن ع تبثي ال مدانس ا شيديحل او، (مهيل ا اوحكن او افكالا ا نبا شيديح ن يمل يديلا هجرخ ا (ساسد قرعلا) طفل كلذكو) الو دنس امل موق ي ال شيديح املكو - ا من ع لالا يضر - ساب ع يبنل ن ع حصي هجوب تبثت ملو، اهب جتحي.

و ا مهتاوخ ا هباش ا ندلي اسنل ا ن ا ف، مكفطنل اوريخت فرط، امل عل زك يف يقيتمل ا نيديلا ا ع، (يدينل ا) ن ا و خ ا (مقر 44557).

يكبسلا) عازن ليقو ساسد قرعلا ن ا ف مكفطنل اوريخت (6/310 مقر ىربكلا اتي عفاشال تاقبطل يف (نبالا) ا ا ن ا مل لاقو).

اوريخت لاق (مللا لوسر ن ا ا ن ع مللا يضر قشئاع ن ع ن س ح و ي ن ا ب ل ا ل) مهيل ا ا و ح ك ن ا و ا ف ك ا ل ا و ح ك ن ا و م ك ف ط ن ل (1615 مقر هجام نبا حيحص يف

ا ا م و خ ص ر ت ا ل و م ك ف ط ن ل ا و ر ي خ ت ا ن ع م ل ل ا ي ض ر ق ش ئ ا ع ن ع 2/467 ي ن ا ج ر ج ل ل ا ف ع ض ل ا ي ف ل م ا ك ل ا ي ف ي د ع ن ب ا) ا ف ك ا ل ا ي ف (مهتاياور يلع نيب فعضل ا ن ا ر م ن ب ش ر ا ج ل ا ه ي ف ل ا ق و ا و ح ك ن ا و، مكفطنل اوريخت ا ن ع مللا يضر قشئاع ن ع 7/133 ىربكلا ن نسل ا يف يقيهييبل ا) مهيل ا ا و ح ك ن ا و ا ف ك ا ل ا ق و (ةجحل ا ب موقت ال لاقو)

However, it is believed that this Hadith (Choose well your mates because characters are maskable) is an assemblage from two Hadiths:

Choose well for your semen (your mates) and marry with rivals» and «Choose well where you will put your children (your semen) because characters are maskable»

ه ن ا ل ا ق ي س ا س د ق ر ع ل ا ن ا ف، م ك ف ط ن ل ا و ر ي خ ت a و (1615 مقر هجام نبا حيحص يف ن س ح و ي ن ا ب ل ا ل) مهيل ا س ا س د ق ر ع ل ا ن ا ف ك د ل و ع ض ت ب ا ص ن ا ي ف ر ظ ن ا و ه ي ن ا ا ث ل ا (218 ص 2 ج فرطتسم ن ف ل ك ن م فرطتسم ل ا)

And in another Hadith, we can understand the same message:

ساسد قرعلا ن ا ف، كدلو عضت ايش ا يف رظنا (218 ص 2 ج فرطتسم ن ف ل ك ن م فرطتسم ل ا يف يهيشبالا)

يقارعلا) ساسد قرعلا ن ا ف، حل اصل ا رجحل ا يف اوجوزت (فيعض دانس ا ب 2/53 ا ي ح ا ل ا شيديح ا ج ي ر خ ت يف

يف اوجوزت لاق ه ن ا يبنل ن ع ك ل ا م ن ب س ن ا ن ع يف ل م ا ك ل ا يف ي ن ا ج ر ج ل ا) ساسد قرعلا ن ا ف حل اصل ا رجحل ا (مقر 8/349 ا ف ع ض ل ا

يواخسلا) ساسد قرعلا ن ا ف حل اصل ا زجحل ا يف اوجوزت (فيعض 186 قن س حل ا ص ا ق م ل ا يف

The companions of the Prophet understood the meaning of transmission of traits, which might be paternal or

maternal. In the following story, Ali, companion and cousin of Mohammad (PBUH) accused one of his sons to hesitate during a battle time under the effect of a maternal gene (قرع)، that he should have inherited from his mother (Al-Hanafiyya).

برح يف ا اولل ا ل م ا ح ي ل ع م ا م ا ل ا ن ب ا ة ي ف ن ح ل ا ن ب م ح م ن ا ك ت ا ب ر ض ن ك ل، و د ع ل ا ي ل ع ز ه ج ا ف، م و ج ه ل ا ب ي ل ع م ر م ا ف، ل م ج ل ا ا ل ي ل ق ف ق و ت ف م د ق ت ل ا ن م م ت ع ن م م ا م س ل ا ت ا ق ش ر و ق ن س ا ل ا م د ق ت ف ق ن س ا ل ا ن ي ب ل م ح ا م ل ل ا ق و م ا م a ه ي ل ا ل ص و ا م ن ا ع ر س و ق د ش ب ن ب ا ف ع ض ن م م a ل ا ر ث ا ن ف، ة ي ن ا ث ف ق و ت م ا ل ي ل ق ل م ن م ق ر ع ل ك ر د ا ل ا ق و م ف ي س م ئ ا ق ب م ب ر ض و م ن م ب ر ت ق ا ف م ح م ن ب ا ي ف ا ح ض ا و ر ه ط ي ذ ل ا ن ب ج ل ا ن ا م a ل ا ت ب ث ي ا ن ه ف د ب ا ل ف، ط ق ي ن ع م ن ب ج ل ل ف ر ع ي م ل م a ل م ن م ا ث و ر و م س ي ل ا ه م ن و ك ت ة ج ر د ب ة ل ي ض ف ل ا م ن ن ك ت م ل م a ل، م م ا ن م ن و ك ي ن ا و ا م ر ه ل ا م ط ط ا ف ة ق ي د ص ل ا ة ل ز ن م ب

Finally, another lesson that can be learned from the previously mentioned Saying of the Prophet:

مللا لوسر راصنالا نم لجر يتا لاق رف ع ج يبا ن ع ين تت ا دقو ا ر ي خ ال ا م ل ع ا ل ي ت ا ر م ا و ي م ع ق ن ب ا م ه ل ا ق ا ف ن ا ل ا س ط ف ا ط ط ق د ع ج ن ي ر خ ن م ل ا ر ش ت ن م د ا و س ل ا د ي د ش د ل و ب ا م م ت ا ر م a ل ا ق ا ف ي د ا ج ا ي ف ا ل و ي ل ا و خ ا ي ف ه ه ب ش ف ر ع a ل ا م د ع ق م ت د ع ق ا م ا ي ب ن ح ل ا ب ك ت ع ب ي ن ل a و a ل ت ل ا ق ه ن ي ل و ق ت م س ا ر ب (مللا لوسر س ك ن ف ل ا ق ه ر ي ع ا د ح ا ي ن ك ل م ذ ن م ي ن ل ا ق ا ف ل ج ر ل ا ي ل ع ل ب ق ا م ا م س ل a ي ل ا م ر ص ب ع ف ر م ا ي ل م ن و ع س ت و ة ع س ت م د ا ن ي ب و م ن ي ب و a ل د ح a ن م س ي ل م ن ا ا ذ ه ا ي م ج ر ل a ي ف ق ف ط ن ل a ت ع ق و ا ذ ا ف ب س ن l a ي ف ب ر ض ت a م ل ك ا ق ر ع ك ل ت ن م ا ذ ه ف a م ل م ب ش ل a م ل l a ل ا س ت ق و ر ع l a ك ل ت ت ب ر ط ض a ك ن ب a ك ي ل a ذ خ ك د ا د ج a د ا ج a ل a و ك د a د ج a م ل ك ر د ي م ل ي ت l a ق و ر ع l a ي ف a ك l a ي ف ي ن ي ل K l a (مللا لوسر ا ي ي ن ع ت ج ر ف ا ر م l a ت ل a ق 561ص 5 ج)

The lesson is that he thought about the question intensively before answering although he receives revelation from God! He explained this attitude in another Saying of the Prophet when he thought about a Jew question deeply then answered. A Jew asked him, why did it take you long time to answer although you know it? The Prophet (PBUH) answered: by respect of the wisdom. Undoubtedly, the Prophet wanted to give us a lesson in pedagogy: thinking before answering!

م ا س ي ب ن ل ا ت ك م ف ة ل ا س م ي ب ن ل a ل ا س ا ي و ه ي ن ا ل ا ق ا ف ه ت م ل ع ا م ي ف ت ف ق و ت ن م ل و ي د و ه ي ل ا ق ا ف، ا م ن ع ب ا ج ا (439 ا ر ح ب ل ا ن ي ف س ي ف ي م ق ل a) م ك ح ل l ا ر ي ق و ت

Conclusions and Perspectives:

Muslims believe that the sources of knowledge are experimental but also can be inspired from the authentic revealed texts (The Glorious Qur'an and authentic Sayings of the Prophet, Hadith). These texts are originally guidance

texts for life but include, evidently, scientific indications for applied reasons as well as source of lasting convincing power!

And say: Praise be to Allah, He will show you His signs so that you shall recognize them; nor is your Lord heedless of what you do (An-Naml, The Ant, The Ants, Qur'an Chapter 27, Verse 93).

انّ نون روعت ف هتاي امكيري س هلل دمحا ل لوق و (27: 93 لمنال) نول م عت ام ع ل ف ا غ ب ك ب ر ام و

Looking for relevant links between genetics and religious texts has given fruitful results for the precise topic of genetic recessiveness with applied aspects in the society (e.g. genetic counseling, fraternity and equality). More investigations are important to demonstrate furthermore the authenticity and strength of this religion and consequently its supra terrestrial source, the Creator and Ultimate Knower of everything, Allah! Some of the secrets of this universe are revealed to the messengers of God. The authentic texts are therefore a rich source of spiritual as well as research inspiration!

The Knower of the unseen! so He does not reveal His secrets to any * Except to him whom He chooses as a messenger; for surely He makes a guard to march before him and after him * So that He may know that they have truly delivered the messages of their Lord, and He encompasses what is with them and He records the number of all things (Al-Jinn, Jinn, Qur'an Chapter 72, Verses 26-28)

نم ال ا * ادح ا . هب ي غ ي ل ع ر ه ظي ال ف ب ي غ ل ا م ل ا ع و ه ي د ي . ن ي ب ن م ك ل س ي ه ن ا ف ل و س ر ن م ي ص ن ت ر ا . ي ت ا ل ا س ر ا و ف ل ب ا د ق ن ا م ل ع ي ل * ا د ص ر ه ف ل خ ن م ا د د ع ء ي ش ل ك ي ص ح ا و م ه ي د ل ا م ب ط ا ح ا و م ه ب ر (26-28: 72 ن ج ل ا)

Acknowledgments:

Ultimate thanks to God, Allah for everything in this life. Many thanks are addressed to all the following colleagues and friends for amiable critical reading and useful remarks: Dr. Sa'eed Rahbania, Prof. Hilmi Abdel-Hadi, Dr. Mohammad Dawabsheh and Sheikh Ziyad Ayaseh.

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ميركلا ن ارقلا
ليخ مديقت . هي اول شي داحال ا يف هي انتمنا ل ل ع ل . جرفنا و ب ا ، يزوجنا ن ب ا .
هي مل ع ل ا ب ت ك ل ا ر ا د . س ي م ل ا .
ر ا د ه ج ا م ن ب ا ن ن س . ي ن ي و ز ق ل ا ي ع ب ر ل ا د ي ز ي ن ب د م ح م ط ل ا د ب ع و ب ا ، ه ج ا م ن ب ا .
2002 ، هي مل ع ل ا ب ت ك ل ا .
ع م ج م ل ا . ف ر ط ن ت س م ن ف ل ك ي ف ف ر ط ن ت س م ل ا . د م ح ا ن ي د ل ا ب ا م ش ، ي ه ي ش ب ا ل ا .
1999 . ي ف ا ق ي ت ل ا

جمانرب ري غصلا عا جلا في عرضو حي حص . نيدلا رصان دمحم ، ينابل ا لشاحبال المسال رون زكرم جاتنا نم هي شي داحال ا تاق ي ق ح ت ل ا فوظنم هي ر د ن ك س ل ا ب ق ن س ل ا و ا ر ق ل ا

ق س ب ت ك م . ه ج ا م ن ب ا ن ن س ف ي ع ر ض و ح ي ح ص . ن ي د ل ا ر ص ا ن د م ح م ، ي ن ا ب ل ا ل ا
ة . ي م ا ل س ل ا ب ت ك ل ا

ر ك ف ل ا ر ا د . ز ا ب ن ب ا م ر ق ا ع ع ب ط . ي ر ا خ ب ل ا ح ي ح ص . ط ل ا د ب ع و ب ا ، ي ر ا خ ب ل ا
1998 .

ب ت ك ل ا ر ا د . ا ط ع د م ح م ق ي ق ح ت ، ي ر ب ك ل ا ن ن س ل ا . ن ي س ح ل ا ن ب د م ح ا ، ي ق ه ي ل ا
م . 1994 ، ي ل و ا ل ا ع ع ب ط ل ا ، ن ا ن ب ل - ت و ر ي ب ، هي م ل ع ل ا

ل ك ا ح ص ل ا ن ب ي س و م ن ب ق ر و س ن ب ي س ي ع ن ب د م ح م ي س ي ع و ب ا ، ي ذ م ر ت ل ا
ي ذ م ر ت ل ا ن ن س . ي م ل س ل ا

د ن س م . ي ن ا ن م ل ا ه ي و ر ي ش ن ب ر ا د ر م ش ن ب ه ي و ر ي ش ع ا ج ش ي ب ا ، ي م ل ي ل ا
ر ا د . ل و ل غ ز ي ن و ي س ب ن ب د ي ع ل ا ق ي ق ح ت ، ب ا ط خ ل ا ر و ت ا م ب س و د ر ف ل ا
1986 ، ي ل و ا ل ا ع ع ب ط ل ا ، هي م ل ع ل ا ب ت ك ل ا

ل د ا ع خ ي ش ل ا ق ي ق ح ت . ل ا ج ر ل ا ا ف ا ع ض ي ف ل م ا ف ل ا . ي د ع ن ب ل ل ا د ب ع ، ي ن ا ج ر ل ا
ن ا ن ب ل - ت و ر ي ب ، هي م ل ع ل ا ب ت ك ل ا ر ا د ، م ر و ع م ي ل ع خ ي ش ل ا و د و ج و م ل ا د ب ع
1997 ، ي ل و ا ل ا ع ع ب ط ل ا

ل م ح ن ع ي ن غ م ل ا) ا ي ح ا ل ا ش ي د ا ح ا ج ي ر خ ت . ن ي س ح ل ا ن ب م ي ح ر ل ا د ب ع ، ي ق ا ر ع ل ا
ج م ا ن ر ب . (ر ا ب خ ا ل ا ن م ا ي ح ا ل ا ي ف ا م ج ي ر خ ت ي ف ر ا ف س ا ل ا ي ف ر ا ف س ا ل ا
ش ا ح ب ا ل ا ل س ا ل ا ر و ن ز ك ر م ج ا ت ن ا ن م ه ي شي د ا ح ل ا ت ا ق ي ق ح ت ل ا ف و ظ ن م
هي ر د ن ك س ل ا ب ق ن س ل ا و ا ر ق ل ا

ف ح ن ل ا ي ف هي م ل ع ل ا ع ع ب ط ل ا ، هي ر ج ع ع ب ط . ر ا ح ب ل ا ق ن ي ف س . س ا ب ع ، ي م ل ا
1355هـ ، ف ر ش ا ل ا

(2007) ر ج ف ل ا ت ا ر و ش ن م ، ي ف ا ك ل ا . ب و ق ع ي ن ب د م ح م ر ف ج و ب ا ، ي ن ي ل ك ل ا

د و م ح م . د ق ي ق ح ت . ي ر ب ك ل ا هي ف ا ش ل ا ت ا ق ب ط . ي ل ع ن ب ب ا ه و ل ا د ب ع ، ي ك س ل ا
ع ع ب ط ل ا ، ر ص م ، ر ش ن ل ا و ع ا ب ط ل ل ر ج ه ، و ل ح ل ا ح ا ت ف ل ا د ب ع . د و ي ح ا ن ط ل ا
1992 ، هي ن ا ث ل ا

م ق ر ا ل ا ر ا د ، م ي م ت م ث ي ه ق ي ق ح ت . د و ا د ي ب ا ن ن س . د و ا د و ب ا ، ي ن ا ت س ج س ل ا
2001 ، ي ل و ا ل ا ع ع ب ط ل ا ، ع ي ز و ت ل ا و ر ش ن ل ا و ع ا ب ط ل ل

د ب ع ب ا ه و ل ا د ب ع ق ي ق ح ت ، ق ن س ح ل ا د ص ا ق م ل ا . ن م ح ر ل ا د ب ع ن ب د م ح م ، ي و ا خ س ل ا
ر ش ن ل ا و ع ب ط ل ل ي ج ن ا خ ل ا ت ب ت ك م ر ش ا ن ل ا ، ق ي د ص ل ا ل ل ا د ب ع و ف ي ط ل ل ا
1991 . هي ن ا ث ل ا ع ع ب ط ل ا ، ر ص م

ش ي د ا ح ل ا ن م ر ي ن ك ن ا ي ب ي ف ق ن س ح ل ا د ص ا ق م ل ا . ن م ح ر ل ا د ب ع ، ي و ا خ س ل ا
ي ب ر ع ل ا ب ا ت ك ل ا ر ا د . ق ن س ل ا ا ي ل ع ق ر م ت ش م ل ا

ق ي ق ح ت ، ر ي ب ك ل ا ي ن ا ر ب ط ل ا م ج م . د م ح ا ن ب ن ا م ي ل س م س ا ق ل ا و ب ا ، ي ن ا ر ب ط ل ا
هي م ي ت ن ب ا ت ب ت ك م . ي ف ل س ل ا د ي ج م ل ا د ب ع ي د م ح

ن ن س ي ف ل ا م ع ل ا ز ن ك . ي د ن ه ل ا ن ي د ل ا م ا س ح ن ب ي ل ع ن ي د ل ا ا ل ع ، ي ق ت م ل ا
ع ع ب ط ل ا ، ق ل ا س ر ل ا ق س س و م . ي ن ا ي ح ي ر ك ب ق ي ق ح ت ، ل ا غ ف ا ل ا و ل ا و ق ل ا
م . 1981/1401هـ ، ق س م ا خ ل ا

ر ا د . م ا ل س ا ل ا ع ي ا ر ش ح ر ش ي ف م ا ل ك ل ا ر ه ا و ج ع ع و س و م . ن س ح د م ح م ، ي ف ح ن ل ا
ت و ر ي ب ع ع ب ط ، ي ب ر ع ل ا خ ر و م ل ا

ا ي ح ا ل ا م ا ل س ل ا م ه ي ل ع ت ي ب ل ا ل ا ق س س و م . ل ئ ا س و ل ا ك ر د ت س م . ا ز ر ي م ل ا ، ي ر و ن ل ا
1988 ، هي ن ا ث ل ا ع ع ب ط ل ا ، ن ا ن ب ل - ت و ر ي ب ، ن ا ر ت ل ا

1995 ، ر ك ف ل ا ر ا د ، م ل س م ح ي ح ص . ا ي ر ك ز و ب ا ، ي ق ش م ل ا ي و و ن ل ا

ق س س و م . ل ا ع ف ا ل ا و ل ا و ق ل ا ن ن س ي ف ل ا م ع ل ا ز ن ك . ي ق ت م ل ا ن ي د ل ا ا ل ع ، ي د ن ه ل ا
ق ل ا س ر ل ا

ش ي د ا ح ل ل ق ت و م ي ل ع ع ج ر م) هي ن س ل ا ر د ل ا : هي ت و ب ك ن ع ل ا ك ت ب ش ل ا ع ق و م
د ب ع ن ب ي و ل ع : م ا ع ل ا ف ر ش م ل ا (ع ا م ج ل ا و ق ن س ل ا ل ه ا ج ه ن م ي ل ع هي و ب ن ل ا

م ا ع ل ا ف ر ش م ل ا (ع ا م ج ل ا و ق ن س ل ا ل ه ا ج ه ن م ي ل ع هي و ب ن ل ا)
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Bilal AHMAD GHAREEB

ةتيكيري مآلة ةيب رةلأ ةعماج لآ بي رة دمح أ دمح لآ لآ ب د.

GENETIC RECESSIVENESS AND GENETIC COUNSELING
AND THEIR APPLICATION IN ISLAM

مالس رة لآ يف امهتاق يب طتو يشارولا داش رة لآ او ةي ح ن م لآ ةشارولا

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A Study of an Arabic Manuscript 'Ain-Al-Hayat' Written on Geriatrics by Mohammad Ibn Yousuf Harvi and its Translation into English

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Summary

Ain-Al-Hayat is an Arabic manuscript written on the topic of geriatrics by Mohammad Ibn Yousuf Harvi. Copies of the manuscript are available in different libraries of the world. Ain-Al-Hayat has been published and translated into Urdu by Ibn Sina Academy of Medieval Medicine and Sciences (IAMMS), Aligarh, U.P. India.

But unfortunately it has not been translated into English so far. Therefore keeping in view the importance of the manuscript, I took a project from government of India to translate it into English. Now Ain-Al-Hayat is going first time to be published along with English translation from National National Institute of Indian Medical Heritage (C.C.R.A.S.), 3rd Floor, Osmania Medical College building, Putlibowli, Hyderabad-500095, India. The details of study and contents of the book are mentioned in this paper.

Key Words: Ain-Al-Hayat, Geriatrics, Manuscript

Introduction

- **Name of the Mss:** *Ain-Al-Hayat*
- **Author :** Mohammad Ibn Yousuf Harvi
- **Period :** 1532 AD (Paper Mss)
- **Language :** Arabic
- **Script :** Arabic
- **Source :** Andhra Pradesh Government Oriental Manuscript Library and Research Institute, Hyderabad
- **Subject :** Geriatrics
- **Pages :** 196
- **Collated, Edited and Translated into English by:** Dr. Ashfaque Ahmad

Geriatrics

In recent period Geriatrics has been given so much importance which is a sub-specialty of internal medicine and family medicine that focuses on health care of elderly people. It aims to promote health by preventing and treating diseases and disabilities in older adults.

The term geriatrics comes from the Greek γέρων geron meaning "old man" and ιατρός iatros meaning "healer". However, geriatrics is sometimes called medical gerontology.

The first modern geriatric hospital was founded in Belgrade, Serbia in 1881 AD by Dr. Laza Lazarević. The term geriatrics was proposed in 1909 by Dr. Ignatz Leo Nascher, former Chief of Clinic in the Mount Sinai Hospital Outpatient Department (New York City) and a "Father" of geriatrics in the United States.

Geriatrics differs from standard adult medicine because it focuses on the unique needs of the elderly person. The aged body is different physiologically from the younger adult body, and during old age, the decline of various organ systems becomes manifest.

The decline in physiological reserve in organs makes the elderly develop some kinds of diseases and have more complications from mild problems (such as dehydration from a mild gastroenteritis). Elderly people require specific attention to medications.

Changes in physiology with aging may alter the absorption, the effectiveness and the side effect profile of many drugs. These changes may occur in oral protective reflexes (dryness of the mouth caused by diminished salivary glands), in the gastrointestinal system (such as with delayed emptying of solids and liquids possibly restricting speed of absorption), and in the distribution of drugs with changes in body fat and muscle and drug elimination.

Psychological considerations include the fact that elderly persons (in particular, those experiencing substantial memory loss or other types of cognitive impairment) are unlikely to be able to adequately monitor and adhere to their own scheduled pharmacological administration.

All these troubles faced by elder persons are not new age problems therefore in every period oldness has been given due significance and each and every measures to prevent, care and get out of the problems have been amply illustrated in ancient books of Unani system of Medicine. Besides, the procedures to preserve youth and vigor had been also portrayed in Unani classics. Maintaining youth has been intense desire by every one in every period right from the creation of human being.

Heat and moisture are two main essential component of life described in Unani Tibb. Hot and humid nature is most proximate to human life therefore it has much importance in everything like nature, humors, behavior, age, season and region.

Therefore two most important things regarding death and ageing are described in Unani Tibb:

1. Preservation of *Ratubat Ghareezia* (Innate Fluid) and
2. Strengthening of *Hararat Ghareezi* (Innate Heat)

There are three main factors cited for ageing in Unani Tib:

1. Deteriorating heat and moisture (Essential constituent of life)
2. Fragility *Hararat Ghareezi* or weakening of normal physical temperature
3. Frailty of vital powers that causes to weakness of organs and emergence of diseases

Keeping in view the above perspective all imperative measures are adopted in Unani Medicine to delay the ageing process that may bolster the nature and strengthen physical temperature and physical powers.

Earlier some books were written on this topic for example:

The famous Arabic physician, Ibn Al-Jazzar Al-Qayrawani (Algizar, circa 898-980), also wrote a special book on geriatric medicine and health of elderly (*Kitāb al-Mashāyikh*) or (*al-Mashāyikh wa-ʿilal-him*). He also wrote a book on sleep disorders and another one on forgetfulness and how to strengthen memory (*Kitāb al-Nisyān wa-ʿurūq Taqwiyat al-Dhākira*) and a Treatise on causes of mortality (*Risāla fī Asbāb al-Wafāh*). Another Arabic physician in the 9th century, Ishaq ibn Hunayn (died 910), the son of Hunayn Ibn Ishaq, wrote a Treatise

on Drugs for Forgetfulness (*Risalah al-Shafiyah fi adwiyat al-nisyan*).

Al Qanun (Canon), written by Ibn Sina (Avicenna) in 1025, has also some chapters to offer instruction in the care of the aged, foreshadowing modern gerontology and geriatrics. In a chapter entitled "Regimen of Old Age", Avicenna was concerned with how "old folk need plenty of sleep" and how their bodies should be anointed with oil, and recommended exercises such as walking or horse-riding. Thesis III of the Canon discussed the diet suitable for old people, and dedicated several sections to elderly patients who become constipated.

Generally a chapter about *Tadbeer Mashaikh* (ageing) is depicted in every major treasure of Unani Medicine but a separate and absolute book regarding this subject written first time is *Ainul Hayat* by Mohammad Ibn Yousuf Al-Harwi (D. 1542 AD) that is under study.

Ain-Al-Hayat:

There are some other manuscripts with the name of *Ainul Hayat* also but related to different topics for example *Ainul Hayat* written by Nurul Haq Shekh Abdul Ahad Sarhindi Al Faruqi Al Hanafi Al-Naqshbandi is about plague written in Persian language. Another compiled by Mubarak Mujur is a collection of tried prescriptions and talisman amulets along with medicines for animals and birds. There are other books also with same name.

Understudy Manuscript of *Ain Al Hayat* was written by a distinguished Arab *Tabeeb* Mohammad Ibn Yousuf Al-Harwi around 1532 AD. It is written about foods and drugs that enhance life span, maintain vitality, and prevent aging. It was intended to impart knowledge regarding such types of drugs which also contains health points.

It is great honor for the author that the book was written on the modern subject of Geriatrics (diseases of elders) nearly 500 years ago when Geriatrics as a subject was yet to come into being. Such information on Geriatrics not only augments the existing knowledge, but also gives an idea on the medical science that deals with diseases and problems specific to old people; medical practices, medical heritage and life style of people belong to those times.

The under study manuscript bearing a historical significance has not been translated into English so far. In view of the importance, utility and world wide interest in Geriatrics we thought it necessary to collate and edit this Arabic treasure and to translate it into English. Another reason of inspiration was our endeavor to bring out the scientific and medial masterpieces of forgotten *Tabeebs* of yore into light.

Collation and editing of *Ain Al Hayat* became easier for me because of assistance of our learned teacher and ace writer Hakim Syed Zillur Rahman and his earlier work of editing and translating into Urdu.

Hand written copies (manuscripts) of *Ain Al Hayat* available in India are only four.

1. 1st copy with Accession No. 8882 and serial no 226 available at A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad. It contains 196 pages with 13 lines on each page and 10 words in each line. The condition of the manuscript is good and easily readable with good script.
2. 2nd copy available at Raza Library, Rampur, U.P.
3. 3rd copy available at Raza Library, Rampur, U.P.
4. 4th copy available at Ibn Sina Academy of Medieval Medicine and Sciences (IAMMS), Aligarh, U.P.

The last three copies of *Ain Al Hayat* were acquired by a well known academic and author Hakim Syed Zillur Rahman but the Mss of A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad was not accessible to him as per his account in the preface of the book. Keeping in view the three Mss of *Ain Al Hayat* (two from Raza Library, Rampur, and one of IAMMS, Aligarh) he edited and prepared an ultimate copy of *Ain Al Hayat*. It was also translated into Urdu language by him and Arabic text was printed along with Urdu translation and published from IAMMS Aligarh.

I got access the manuscript of *Ain Al Hayat* which is available at A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad and the book of *Ain Al Hayat* prepared from last three Mss and printed by IAMMS, Aligarh as described above.

I have made the manuscript of *Ain Al Hayat* with Accession No. 8882 available at A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad my base manuscript because it was not accessible for the editing of the earlier book.

The text of Mss has been compared and collated with the printed book of IAMMS and differences or missed portions were added in the critical copy of *Ain Al Hayat*.

Before taking up the translation of this work into English I had prepared the final edition after collation of these two copies. In case of torn, missing or faded words the variations are clarified in foot notes of the Arabic text.

First time ever *Ain Al Hayat* is going to be translated into English. This crucial edition of Arabic text is going to be printed and published along with English translation by National Institute of Indian Medical Heritage

(Central Council for Research in Ayurvedic Sciences), Hyderabad.

The translation is aimed to the persons who are unaware of Arabic or Urdu languages and desire to be acquainted with the experiences and findings of learned Unani physicians who compiled their treasures in that language.

Author of the book Mohammad Ibn Yousuf Al-Harwi (D. 1542 AD) was a learned physician with a number of works to his credit. He was one of the premier physicians of Mughal era. He came to India from Herat in 1526 AD along with Mughal emperor Baber (D. 1532 AD). He was among illustrious physicians of Herat and Khorasan and was famed in India also due to attachment with Mughal courts.

Migration of physicians from to India from the cities of central Asia like Herat, Samarqand, Bukhara etc started in the period of Babar and Humayun. They are include Mir Nizamuddin Ali Khaleefa, Mohammad Ibn Yousuf Al-Harwi, Yousuf Ibn Mohammad Ibn Yousuf Al-Harwi (Moulana Yousufi), Hakim Abul Buqa, Khwaja Khawand Mahmud like learned physicians. Ancestors of Shareef family also belonged to this soil of learning.

Muhammad ibn Yūsuf Harawī

In 1518 AD Muhammad ibn Yūsuf al-Harawī composed in Arabic an alphabetical medical dictionary and encyclopedia. It covered anatomical and pathological terms and concepts, medicinal substances, and prominent physicians, with all the entries arranged alphabetically.

Al-Harawī also wrote a lexicon titled *Jawāhir al-lughah*, in three chapters: the first explaining terminology for parts of the body (in alphabetical order), the second on the names of simple and compound drugs (also in alphabetical order), and the third on names of diseases, presented in order from head to toe according to their locations. An autograph copy of *Jawāhir al-lughah* exists in which the author states that he completed the correction of the treatise in 898/1492 (London, Wellcome Library for the History and Understanding of Medicine, MS Arab. 143). The *Baḥr al-jawāhir* is a very different treatise written later, in 924/1518. It has no subdivisions, but rather presents all the medical terminology together in alphabetical order, with the explanations of the numerous anatomical, pathological and medicinal terms mostly in Arabic but sometimes in Persian. For a comparison of the two treatises, see A.Z. Iskandar, "*Jawāhir al-lughah wa-Baḥr al-jawāhir*: muḥāman mukhtalifan lil-tabib Muḥammad ibn Yūsuf al-Harawī" [in Arabic], *al-Mashriq*, 1963, vol. 57, pp. 331-334 and 7 plates;

also Iskandar, "Wellcome", pp. 68-9. See also Ullmann, *Medizin*, p. 237. (National Library of Medicine, USA)

S.Z. Rahman has written in *Muqaddama Ainul Hayat* that *Bahrul Jawahar* is a popular medical dictionary published several times. This book was written in Herat and dedicated to a learned friend Wazir Zaheeruddin Amir Beig along with mentioning the titles of respect and admiration to him. The author has described in the preface of the book plaintive devastation and destruction of Herat and Khorasan and mass killing of its inhabitant and written that he has forgotten the composing of this book at some stage in that period but reminded by honorable Wazir he took interest again. This dictionary contains many medical words from Greek and Arabic origin which can not be found in other dictionaries. Its perusal gives an insight about the intelligence, acumen and endeavor of an erudite author. He mentioned the name of several books as source reference like Al-Shfa, Al-Qanun, Al-Havi, Al-Taqweem etc. He also cited his teachers and other physicians of his time from where he retrieved his knowledge and information. Several copies of this manuscript are available in India. This book was printed first time ever in 1872 AD from Naval Kishore Luknow. This book with Urdu translation is also preserved in IAMMS, Aligarh.

Ain Al Hayat: Understudy book is *Ain Al Hayat* which reminds the nice stay of author in *Herat*. The detail is coming next.

All biographers have referred only these books to the credit of this author but the learned author Hakim Syed Zillur Rahman has discovered another book *Tareekhul Hind* (History of India) to the credit of Al-Haravi through his profound study which is significant in context of studying of India. Probably non availability of this book became hindrance to its recognition.

Ain Al Hayat probably written in 1532 AD is a unique and distinctive treasure composed on the topic of enhancing life span and retarding the ageing process.

Ainul Hayat contains three *Maqasid* (sections):

1. 1st *Maqasad* on Revealing of *Hararat Ghareezi* (Innate Heat)
2. 2nd *Maqasad* on Strengthening of *Hararat Ghareezi* and life increasing substances
3. 3rd *Maqasad* on Weakening of *Hararat Ghareezi* and life decreasing substances

It is explained in the book that life, its increase and decrease depend primarily upon basic fluids and basic heat. The drugs, foods and regimen affecting *Hararat Ghareezi* are cited in detail. Moreover measures like mental, psycho-

logical, ethical and spiritual to enhance the life expectancy are also illustrated in this book.

Similarly the author advocated applying all possible resources for Istifragh, Tanqia and excretion of waste products along with strengthening of physical powers, preventing the fall of normal body temperature, power of self-preservation or adjustment called *Quwwate-Mudabbira (vis medicatrix naturae)* in the body, immunity and instigating internal powers of the body to fight against different kind of diseases.

Impact of environmental condition which is given a lot of importance today like smoke, vapors, pollution or pure and clean ambiance of high altitude along with fine points about water has also been well captured by the author.

In 2nd *Maqasad* he also elaborated on a modern topic 500 years ago that is *Riazat Motadila* (appropriate exercise) which can preserve muscle mass and strength and avoid the decline from vitality to frailty. As we knew that physical frailty is inevitable as we grow older. A large number of studies in past few years showed that after age 40, people typically lose eight percent or more of their muscle mass each decade, a process that accelerates significantly after age 70. Less muscle mass generally means less strength, mobility and it also has been linked with premature mortality.

But a growing body of newer science suggests that such decline may not be inexorable. Exercise might be able to rewrite the future of our muscles. Other studies have found that as people age, they not only lose muscle, but the tissue that remains can become infiltrated with fat, degrading its quality and reducing its strength. There was little evidence of deterioration in the older athletes' musculature, however. The athletes in their 70s and 80s had almost as much thigh muscle mass as the athletes in their 40s, with minor if any fat infiltration. The athletes also remained strong. So any activity is better than none. (New York Times News Service, 02-12-2011) I think taking into account the above procedures and adopting holistic approach the consequences of age related problems can be minimized to a maximum extent to live a hassle free life till the end.

Third *Maqasad* deals with Weakening of *Hararat Ghareezi* and substances decreasing life period such as abnormal psychological movements, six essential things, grief, happiness, exercise etc.

Most interestingly the author hinted 500 years ago to the recent burning topic for protection of ecological balance as he pointed out that needless uprooting green trees can decrease life span, thus he gave the message how to stop mass cutting of green trees.

The author talked about his own experience in many places in the book and contradicted various prevalent notions, for example it is reported that Emerald can not to be tolerated by snake's eyes so the author himself experimented it by observation and then disagreed with.

There are many valuable drugs mentioned in this book which are generally missing in other treatises of Unani Medicine, a look to some illustrations:

- Rare drugs are available in Unani system for shrinkage and atrophy of kidney but the author has written about the meat of young pigeon that it cures the atrophy of kidney.
- Residing among the pigeons and smelling their breath and odor help treating syncope, numbness, paralysis and smallpox.
- Fattening drugs should be used during moon light. Galen quoted that *Ilmul Aghzia* is most useful medical science and occasionally eating and drinking cause deterioration as fatal poisons. Plato mentioned that human cold live longer provided no pollution of smoke and vapor etc.

Other important thing about author that he did not contented to use only the prevalent terms like tonic to *Hararat Ghareezi*, *Mufarreh* and *Muqawwi Badan* etc but he went ahead for the terms of drug actions used in recent times like protection of senses and youth, lengthening of life periods, decelerating of ageing pace etc.

All I can say that in 21st century of modern science and technology the drugs, foods, environment and regimen amply illustrated in this book affecting *Hararat Ghareezi* and eventual increase in life span can be studied at a miniature level or nano scale which is called Nanotechnology.

In the recent years nanotechnology has revolutionized scientific research across the globe in a big way. A nanometer is equal to one billionth of a meter. Nanotechnology facilitates research on particles less than one billionth of a meter in diameter, and thus paves way to some amazing inventions and discoveries. The biological properties of atoms and molecules are found to greatly differ on a nano scale such as at 100 nanometers or below compared to what they are in bulk matter.

Exploiting this feature of matter, nanotechnology manipulates single atoms of foods, drugs or plants etc to discover new properties and then uses these to create im-

proved materials, devices and systems. Research in nanotechnology extends over an array of fields such as health, environment, agriculture, food and beverages, genetics, biotechnology and other sciences. (The Hindu Newspaper Opportunities, 30-11-2011.)

We must admit that the physicians of yore in Unani Medicine had natural inclination towards research had the attributes of a scientist of the time such as exceptional analytical skills accompanied by perseverance and tenacity to over come odds and propensity to work hard.

I hope the researchers in the subject of geriatrics will get benefits from the drugs and foods revealed in this book and new compounds will come into light by working on the exploration and research of Unani drugs cited here which will contribute for innovation of new anti oxidant drugs that will help retard the pace of ageing. We should try to be more productive, focused, intuitive, analytical and creative.

Acknowledgement:

I am grateful to the Director General, CCRAS, New Delhi and Director, National Institute of Indian Medical Heritage (CCRAS), Hyderabad for creating good working environment in the institute where our latent capacities through innovation and excellence could flower, and also for providing the facilities for printing the original Arabic text of the Mss along with English translation the first time ever.

Thanks are also due to the Director of A. P. Government Oriental Manuscript Library and Research Institute, Hyderabad and research officer there who has given me access to the manuscript of *Ain Al Hayat*. In the last but not the least many thanks to our erudite inspirational figure Prof. Syed Zillur Rahman who always kept motivating me, his Urdu translation of *Ain Al Hayat* helped me a lot in this work.

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The Curing Power of the Old Thermal Spring Mentioned in Murad Emrî Efendi's "Bursa's Natural Thermal Springs"

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Summary

One of the most famous characters of the 19th century Bursa, Murad Emrî Efendi is known for being the first journalist in Bursa. Except for his journalist side he also had a fondness for education and books and also his typographer identity which had a great contribution to the cultural life of Bursa. Both his scientific articles and brochures he individually wrote and printed in his newspapers are remarkable. The scope of this article of ours is the "Bursa's Thermal Springs" book which was firstly published as a consecutive narrative and printed in Matbaa-i Emrî on various dates mentioning the use of the curing power of The Old Thermal Spring for some diseases.

Key Words: Murad Emrî Efendi, Old Thermal Spring, Bursa.

Introduction

Murad Emrî Efendi born in 1880 in Larissa [Yenişehir Fenar] now within the borders of Greece moved to Bursa with his family in 1882 after the 1878 Berlin treaty.¹ Despite his fondness for reading and books Murad Emrî Efendi didn't have the chance to get a regular education although he wanted it very much. He tried to compensate his lack of education through reading and writing in his personal library which had thousands of books. His enterprises in education after he moved to Bursa reveal themselves as the compensation of his lack of education. As a versatile intellectual, Murad Emrî Efendi built a library named Küt-üphâne-i Emrî to serve the people of Bursa. Not long after he founded Kitaphane-i Emrî a modern book shop which later became an important part of the cultural life in Bursa by getting together the newly published books in İstanbul rapidly with the readers in Bursa..



Figure 1: Logo of Matbaa-i Emrî

Emrî Efendi's emigration to Bursa started a new era for both himself and 19th century Bursa. Murad Emrî Efendi started his journalism career with a children's newspaper called Fevaid which he had printed in the Hüdavendigâr printing house.² This step gave Murad Emrî Efendi the first civilian

journalist title. However Murad Emrî Efendi's most important venture was Matbaa-i Emrî. After Ferâizcizade printing house the second private printing house was founded by Murad Emrî Efendi. Later he printed the first newspaper "Bursa" and the first economy magazine "Sanayi" in his printing house and presented them to the cultural life of Bursa.³

Murad Emrî Efendi a printing house owner and a science and literature enthusiast says that his only aim was to contribute to education and science.⁴ Matbaa-i Emrî, has become a very important part of this contribution. Emrî Efendi wrote an introductory and printed all the manuscripts in his library which were on the brink of disappearance and prevented them from vanishing forever and thus became an editor as well. He also printed many books and brochures which he thought would contribute to the cultural life in Bursa. Murad Emrî Efendi became an important face of the 19th century Bursa's cultural life. In his introduction he wrote in the first issue of the Bursa newspaper he noted that the primary purpose of journalism is to enlighten the community. Accordingly with what he said he allowed many scientific articles both in Bursa newspaper and Fevaid. One of these articles published in the "Fünun" section of the Bursa newspaper on 20th December 1892 is the "Bursa's Thermal Springs" which was published one chapter at a time. In the 100th issue of the Bursa newspaper

Emrî Efendi announced that this article was published into a book.

After being published as a scientific article Bursa's Thermal Springs was printed as a book in 1308 in Matbaa-i Emrî'de. The inner cover includes this information: "Was printed into a book for the first time after being published chapter by chapter in Bursa newspaper." The author and the publisher of the book Murad Emrî, is in Bursa Çarşı-yı kebir, in Temürkapu, in Geyve Inn Matbaa-i Emrî 1308"

There is the preface written by Emrî Efendi following the informative in the inner cover. The reason for writing the book follows the prayer for the well being of the Sultan:

"After our article mentioning thermal springs we would like to write about the thermal springs in Bursa, a god given gift to our city, we consider them beneficous for everyone and as important as health, in doing so our scientific article named Thermal Springs of Bursa based on the statements of a doctor named Professor Bernar was created." After some general information on healthcare: "Healthcare is a reliable science which could also be based on religious sciences. Health is a blessing which we only value it enough when we lose it." is written. The preface is concluded as follows: "It is known that thermal springs in Bursa cure many illnesses. This is why getting information about thermal springs is important in every aspect. Thus we've especially written this article for people coming to our city looking for a cure.



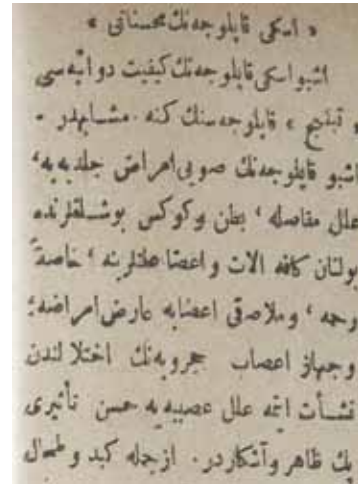
Figure 2: Old Thermal Spring of Bursa

It would be a great success for us if this article that we wrote for everyone to benefit, makes some treatments easier with the comments of various doctors." The epilogue [Hatime] section also includes a list of places to visit for

people coming from other cities. When preparing this research we abided by the original text and tried to make it more suitable for the modern language. We added the original reading in the footnotes and the original text written in the old language at the end of our research.

The 110th issue of the Bursa newspaper mentions the book as follows: "The book named Bursa's Thermal Springs made several publications after being published in our news paper chapter by chapter. This book is beneficial for people coming to the thermal springs. The articles included in the book are as follows:

1. The analysis, benefits of the chemicals in the springs and which illnesses they cure.
2. Important rules that people entering the springs must obey.



Document 1: Book of Bursa's Thermal Springs

3. The temperature of the springs, the exposure time, which season and time is more useful and how many times a day it can be used.
4. The order when entering the spring, sanitary methods and many new information.

In the book the illnesses cured by the springs are defined by a doctor named Hâzık and the price is 5 kurush."

The book named "Bursa's Thermal Springs" was very popular at the time and undoubtedly contributed to the thermal spring tourism. The book was written almost as a guide book for people visiting Bursa.

The book includes detailed information on the use of the springs and which illnesses they cure:

“The benefits of the springs and an example”

Roads, bridges and railways have increased the communication among the people and the people world have become like the members of a family, this is how everybody speaks of the benefits of thermal springs in Bursa, a city close to our capital city Istanbul. In fact many people don't know exactly how the springs help curing illnesses and some have been cured coincidentally after using the springs. It can also not be denied that some people have been worse after using the springs because of the lack of knowledge in how to use the spring properly and. We must almost say that this issue results from a lack of knowledge of the chemical effects and ingredients of the thermal springs.

The curing power of the springs has both been experienced and carried forward and reported. This is why many illnesses are either cured or got better thanks to the thermal springs and god's will.

The benefits of the Old Thermal Spring

The illnesses cured by the Old Spring are the equivalent of the ones cured by the “Teblenc”(?) Spring The water of this spring has an obvious curing effect on dermal diseases, all the possible stone formations in the chest and abdomen area and on organ diseases, to the womb and neighboring organs, self appearing illnesses, mental illnesses caused by the damaged nerve cells and other cells related in the process. Generally the spring water is good for the infected swellings appearing in the liver, spleen, neck, the groin and the circulatory system. Other illnesses: Thermal spring water is also very useful for the inaction and looseness of the thin tissues forming the arteries, capillary vessels and the biliary tract and also the blood blisters and circulation problems caused by the stiffness in the vessels mentioned before. It is also experienced that even depression patients and patients with clogged wombs benefit from the thermal springs. This spring also completely cures pain caused by a shrunk bladder.

Also nerve tension and shrinkage, excretory system problems caused by hemorrhoids; all genital sicknesses are cured by this spring. It cures all the inconvenience and pain women experience during their periods. This spring is also very useful for women who lose their reproductivity during the monthly periods. It is seen that many infertile women have given birth to babies thanks to this thermal spring. Apart from this the spring prevents or stops the growth of any myomas appearing in the womb or ovaries of women. It has been observed and proven that the body is ridden of illnesses especially caused by the nervous system.

Thus the spring prevents the discharge of the sticky, consistent and irritating liquid out of the womb which is caused by the looseness of the womb or irregular menstruation and other circulatory problems when it is used appropriately. It has been experienced various times that the spring cures continuous diarrhea caused by exposure to cold and repeating pain, looseness and irritation in organs related to the dorsum which cause back pain and also hemorrhoid pain. Also patients with erectile dysfunction caused by an illness or excessive use benefit from the spring and regain their health, sexual drive and sexual potency thanks to the spring. It helps the vessels to absorb the digested materials. Also facilitates the special blood vessels that gradually absorb and alter the white colored gastric fluid discharged during digestion and channel it to the vena. It regulates the excretory system. Increases sex appeal, improves sexual life by supplying strength and integrity and increased sperm discharge at the end of the sexual intercourse.

The spring mentioned cures nine different types of illnesses together with the ones we mentioned above it is necessary to use the spring for every illness mentioned.

First Type:

It is such an illness that affects the intestines, livery spleen, vena, pancreatic gland, intestinal gland and all of the digestive system. The damaging of the thin flesh that covers the inner cavities of the body, digestive disorder, and related sicknesses, vomiting and circulatory problems caused by the vena and diseases like these are cured in the spring.

It helps the circulatory system to work efficiently, helps the digested food to be absorbed by the veins and cures looseness and weakness of the veins. Stops the pain in the mammary ducts of women and eliminates the reason for fatigue and exhaustion. It also cure hemorrhoids the problem usually people with a sedentary life have caused by spending most of the time sitting alone.

Second Type:

These types of illnesses are usually known to be female specific. Reasons: It would be correct to say that the woman's womb consists of two ovaries and fallopian tubes and for men it is called the prostate.

The spring has a relieving effect on the irritation of the glands mentioned above and the urinary canal. Also good for back, groin and pelvis pains that women experience due to irregular menstruation; headaches appearing with various symptoms, palpitation, artery shrinkage, absence of mind and breathing difficulties that interrupt the blood

circulation and cause illnesses which effect all the inner organs at the same time. Apart from these it is good for gonorrhoea and the color of the skin. Women losing their fertility early under normal circumstances lose their fertility after a certain age. The spring is also useful for the prevention of cysts in the bladder, urinary organs and prostate glands, incontinence, anuria and the relief of resulting pain and also for patients suffering infertility before the expected period.

Third Type:

It is necessary to use the springs in the early stages of excess growth on or around the genital organs. Also this spring helps relieve the stiffness in the ovaries and the prostate and also the twisting feeling in the tissues covering the ovary canals or the mentioned organ tissues. The depression caused by these illnesses causes swelling around the body and the genital organs and may even cause repetition of generally observed illnesses.

Forth Type:

Infertility, either caused by a malfunctioning womb or other reasons such as the looseness or the blisters on the neighboring organs resulting in discharge of fluids.

Fifth Type:

[Filbeyt (?)] meaning and [nejüvlü sebt (?)] named illnesses causing repeating oedema, myoma in the lower body and also headaches and poor or increased vision and eye irritations and osteolysis are classified in this type.

Sixth Type:

It is an illness causing to decay the tissues (veins) gets infected and stink which the Arabian doctors called milk disease. Also the infected blood accumulating among the cells whose unity is damaged causing slightly salty mucus. Patients with these symptoms should use the Old Thermal Spring.

Seventh Type:

An illness causing hair loss and occur when recovering from major illnesses nahreş (?) Patients suffering from mucus accumulation and long term hair loss may use and benefit from the spring.

Eighth Type:

It is an incurable illness of the throat caused by tension in the nerves. People call it as dry coughing. And it is the incurable infection of the throat [tazyin-i renenin].

Ninth Type:

These are eye related illnesses like pain in the eyes old wounds in the eye lids that have become tumourous infections. Again the accumulation of aqueous humor in the eye lids with blood and other mucus fluids which cause slight stains on the cornea and may be loss of vision in the future. Also ear related illnesses causing infectious ear pain, the looseness of the eardrum resulting in partial hearing loss. As for the nose partial or complete loss of smelling may be listed.

Other thermal springs located in çekirge: Buyu Güzel, Vani, Çekirge, Yeni Han and almost every household has got a private thermal spring and they completely resemble the Old Thermal Spring, thus they are especially more generous and useful for curing illnesses women suffer from.

Conclusion

Therefore the nature is being used in many ways as treatment for thousands of years. One of these which have an important role in Turkish culture is the thermal springs. Bursa is especially famous for thermal springs used for medical treatment. The most famous of the springs are: Old Thermal Spring, New Thermal Spring, Kükürtlü Thermal Spring and Karamustafa Thermal Spring. These springs have been used to cure dermal illnesses, infertility, gynecological diseases, eye related illnesses, and sexual illnesses for centuries. In 19th century Bursa the Old Thermal Spring has been used as a supplementary treatment for: inner organ illnesses, pox, gynecological diseases, myoma and swelling around genital organs, treatment of infectious fistula and wounds, salty mucus treatment following the recovery of major illnesses, eye illnesses, respiratory illnesses, hemorrhoids and back pain, erectile dysfunction and pain resulting from shrunk bladder.

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Hijamat (Cupping therapy) and Gynaecological Diseases-a Review

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Summary

Unani medicine is a holistic medicine, which aims not only to correct the present disturbances but also to make the individual emerge after recovery with a greater power of resistance to future disturbances. The management of any disease depends on the cause, aggravating factors, pathogenesis, pathology, and clinical manifestations. The principle of treatment is elimination of the cause, normalization of humours and of tissues/organs. The mode of treatment is by Ilaj bil Ghiza, Ilaj bit Tadbeer, Ilaj bil Advia and Ilaj bil Yad. Hijamat is one of the Ilaj bit Tadbeer (Unani regimental therapies) used for local evacuation or shunting of morbid humours. In this therapy, cups are applied to the surface of the skin through negative pressure created by the vacuum. Hijamat bila Shurt (Dry cupping) works on the principle of Imalae Mawaad (Shunting) that shunts away the morbid matter responsible for disease from the affected place, whereas Hijamat bil Shurt (Wet cupping) get rids of the morbid matter from the affected side by letting down the sufficient quantity of morbid Akhlat and this procedure is known as Tanqiyae Mawaad.. The clinical trials on practice of cupping therapy in different pain conditions and other general diseases are documented. Though, the classical texts are enriched with practice of hijamat in different gynaecological diseases, it is not in regular use, and moreover clinical trials are not documented. Thus, it need of the hour to evaluate the clinical effectiveness of hijamat in gynaecological diseases in the light of classical literature.

Key Words: Unani Medicine; Cupping; Hijamat; Gynaecological diseases

Introduction:

Unani medicine is a holistic medicine taking into account of patient's physical, mental, and social conditions in the treatment of illness. The basic philosophy of the Unani system is that the body is composed of matter and spirit. Human body is taken as a whole, since a harmonious life is possible only when there is a proper balance between the physical and spiritual functions. It aims not only to correct the present disturbances but also to make the individual emerge after recovery with a greater power of resistance to future disturbances. In the Unani medicine, great emphasis is laid on the human nature called, '*Tabaiyat*' and the physician is advised to activate and follow this power and not to antagonize it.

Buqrat (Hippocrates), the great Greek philosopher and physician (460 to 377 BCE) was the first, to relieve medicine from the grip of fallacy and enchantment and gave it the status of science.¹ The theoretical frame work of *Unani* system of medicine is based on his teachings. According

to him nature heals and physician is only the nature's assistant. His chief contribution to medical dominion is the humoural theory. This theory presupposes the presence of four humours in the human body: *Dam* (blood), *Balgham* (phlegm), *Safra* (yellow bile) and *Sauda* (black bile). These humours were assigned temperaments—blood is hot and moist, phlegm is cold and moist, yellow bile is hot and dry and black bile is cold and dry. Thus, the temperaments of a person is expressed according to the preponderance of the humour i.e. blood, phlegm, yellow and black bile in them. Every person is supposed to have the unique humoural constitution, which represents his/her healthy state.¹ Alteration and imbalance of humours cause diseases. *Tabaiyat* (nature of the body) spontaneously removes the morbid matter through the process of sweating, urination or defecation and maintains homeostasis of the body. When *Quwwate Mudabbire Badan*^{2,3} (the power of body responsible to maintain health) fails to eliminate the cause, quantitative or qualitative derangement in normal equilibrium of *Akhlat* (humours) occurs in the body. These abnormal

humours lead to pathological changes in the tissues at the affected site of the body and show signs of clinical manifestations.²

In *Unani* system of medicine management of any disease depends on the cause, aggravating factors, pathogenesis, pathology, and clinical manifestations. The principle of treatment is elimination of the cause, and normalization of humours and of tissues/organs. The mode of treatment is by *Ilaj bil Ghiza* (diet therapy), *Ilaj bit Tadbeer* (regimental therapy), *Ilaj bil Advia* (pharmacotherapy) and *Ilaj bil Yad* (surgery).³ *Hijamat* is one such therapy, which comes under various regimental therapies used for local evacuation or shunting of morbid humours. In this therapy, cups are applied to the surface of the skin through negative pressure created by the vacuum.⁴

***Hijamat* (Cupping):**

Cupping in Arabic is known as "*Hijamah*" which literary means "sucking".⁵ It is an ancient method of treatment that has been used in the treatment and cure of a broad range of diseases viz., hypertension, migraine, anxiety, menorrhagia, dysmenorrhoea, rheumatic conditions ranging from arthritis, sciatica, back pain etc.^{4,6} The aim of cupping is to extract morbid matter that is believed to be harmful for the body, which in turn rids the body of potential harm from symptoms leading to a reduction in well being.

Cups can be applied to any part of the body where the skin surface is level, smooth and fleshy enough to permit a firm air seal. These parts include the neck, temples, forehead, back, chest, abdomen, hips, buttocks, thighs, knees, and calves.⁷

Cupping therapy is a very ancient and practiced worldwide that spanned from East to West. In the primitive shamanistic societies there were certain shamans who specialized in the sucking out of illness and infirmity from the body.⁸ Cupping practice dates from as early as 3000 B.C. The earliest record of cupping is in Ebers Papyrus, one of the oldest medical texts in the world. In Ebers Papyrus, it is described that cupping was used to remove foreign matter from the body.⁹ The Chinese has been practicing the art of cupping for at least three thousand years. The method was described in the book "A Handbook of Prescriptions for Emergencies", in which the cups were actually animal horns, used for draining pustules. As a result of using horns, cupping has also been known as "jiaofa" or the horn technique.^{10,11}

In ancient Greece, Buqrat (Hippocrates) used cupping for internal diseases and structural problems. It was used to remove the excessive blood from organism; scarification

was thus often used in conjunction with cups.⁹ He also advocated application of cups below the breast in menorrhagia.¹ Both Buqrat and Jalinoos (Galen) were strong advocates and users of cupping therapy. Samuel Bayfield (1839) wrote, "Hippocrates was a minute observer, and has left us some striking remarks on the shape and application of the cups. He recommends that they should be small in diameter, conical in shape and light in weight even when the disease for which they are applied is deeply seated". Hippocrates recommended cupping for the treatment of angina, menstrual and other disorders.^{10,12} This therapy in multiple forms extended into medicine in Asian and European civilizations.

Cupping therapy was passed on to the Muslim Arabs and Persians from the ancient Greeks and Romans, through Alexandrians. As stated in many *Hadith*, the Prophet Mohammed (PBUH) permitted and strongly recommended the use of cupping. Anas Ibn Maalik (may Allah be pleased with him) reported that the Messenger (PBUH) said, "Indeed the best of remedies you have is cupping..." [Saheeh al- Bukhaaree].^{10,13} Ibn Abbaas reported that the Prophet (PBUH) said: "Healing is to be found in three things: drinking honey, the knife of the copper, and cauterization of fire." (Reported by al-Bukhaari, 10/136).¹⁴

How Cupping Therapy Works:

Unani physicians thought that the proper and timely evacuation of wastes from the body forms an important aspect of hygiene. Whether it is constipation, urinary retention, or even suppressed menses, the undue retention of anything is a major cause of morbidity and diseases and hence, should be expelled. The functioning of the vital organs at the body's core can get obstructed by toxin, morbid humours and other congested offending matter that can harm the body and lead to the vast majority of diseases. Hence, the body tries to peripheralise such morbid matter/humours by sending them to the surface of the body in the form of cysts, boils or eruptions. Cupping is one of the *Unani* regimental therapies that activates this peripheralization and relieves pathogenic congestion to the internal organs, thus averting or preventing more serious disorders. The suction applied by cupping sucks out and improves the eliminative functions. It evacuates the waste from the organism by improving the circulation of blood, lymph and other vital fluids. It leads to the breaking up and dispersing of blockages and congestions in the flow of the vital force, offending waste matter, toxins and morbid humours.⁸ In addition, cupping also disperses pathogenic heat and inflammation by bringing them to the surface for release. Pathogenic heat and toxins can fester and eat away the organism when they're submerged and under

pressure, but they find release at the surface. Cupping can even be instrumental in mitigating or relieving fevers in the acute crisis stage, and reducing the putrefaction of blood and other humors, a common cause of fevers.

Hijamat bila Shurt (dry cupping) shunts/diverts away the *morbid Akhlat* responsible for disease from the affected place. This process is a kind of *Imalae Mawaad* (*shunting/diversion of morbid material*).^{7, 15}

Hijamat bil Shurt (wet cupping) gets rid of the *morbid matter* from the affected side by letting down the sufficient quantity of morbid *Akhlat*. *This practice is a type of Tanqi-yae Mawaad* thereby, relieving pain and inflammation and stimulating the organs.⁷

When dominant *Khilt* (humour) is on the external body surface, this can be evacuated through *Hijamat*. If dominant abnormal humour is in the internal body or both internal and external, then it is removed through *Fasd* (venesection). *Alaq* (Leech) is applied when morbid matter is in between internal and external body.^{10, 16} The use of wet cupping serves as a substitute for *Fasd* in which larger quantities of blood are let out.¹¹

Acupuncture and Acupressure utilize suction and stimulation of points to attain the desired results.⁶ Cupping therapy also involves suction and blood letting, thereby the principle of both is considered to be similar.

The innovation of Acupressure and Acupuncture analgesia in Chinese Traditional Medicine has proved that they can elicit the release of morphine like substances (endorphins), serotonin or cortisol, which can ultimately lead to a pain relief and alter the physiological status of the individual. These procedures are being utilized and proven useful in pain and addictive management. Acupuncture and acupressure work at biological level by stimulating or activating the immune system, encephalin secretion, neurotransmitter release, vasoconstriction and dilatation. They also stimulate the gates for pain in the CNS, which interprets pain sensation. Acupoint stimulation can lead to the pain gates to be overwhelmed by increasing frequency of impulses, thereby ultimately leading to closure of the gates and hence, relieve or reduces pain.⁶ Cupping therapy is also proposed as an effective treatment for pain and has been given similarities with acupuncture and acupressure theory..

Types of Hijamat (Cupping)

On the basis of blood letting:

1. *Hijamat bil Shurt* (cupping with scarification or wet cupping)

2. *Hijamat bila Shurt* (cupping without scarification or dry cupping).^{10, 17} It is further divided into *Hijamat Nariya* (cupping with fire) and *Hijamat Ghair Nariya* (cupping without fire)^{10, 16}

In wet cupping or scarification with application of cups, involves first making an incision on the skin, then applying the suction cups to suck out small amounts of blood, whereas in dry cupping, cups are applied without incision to pull the local underlying tissue up into cups.

Indications of Hijamat bila Shurt (Dry Cupping):

- To direct the flow of matter in the opposite direction, e.g. cupping below the breast for checking menstrual bleeding.^{11, 16}
- To draw inflammation away from deep parts towards the surface and make it more accessible to medicine.^{7, 16, 18}
- To divert inflammation from an important organ to a less important one.^{16, 18}
- To infuse warmth and blood into an affected organ and to dispel humours from it.^{16, 18}
- To allay pain. e.g. applied over the umbilicus to relieve violent colic and abdominal flatulence, congestive dysmenorrhoea especially in young women etc.^{16, 19}
- It is beneficial for intestines and various menstrual disturbances.^{16, 19}
- Dry cupping is used for restoring organs to its original position for example in inguinal hernia.^{16, 19}
- Dry cupping is used in various diseases like excessive menstrual bleeding, removal of deep swelling, sciatica, piles, hydrocoele, gout, renal calculi, epistaxis, etc.^{4, 16}

Method: In dry cupping, the classical method for creating suction in the cups is with fire. Hold a cotton ball that is soaked in olive oil with a forceps. Ignite the cotton ball and whisk it quickly inside the cup right before placing it on the skin at the desired location, which is to be cleaned with spirit. It creates a powerful suction. The vacuum created by the lack of oxygen anchors the cup to the skin and pulls it upward inside of the glass jar as the air inside the jar cools. The cups may be applied for 15 minutes or until the site under the cups begins to appear reddish. After 15 minutes, press the skin around the edges of the cup to remove it. When air enters from outside, the cup will fall off by itself.⁹ A piece of linen or sponge soaked in warm water should be packed around it to reduce swelling and easy removal.¹⁸

In recent years, more sophisticated suction methods have been developed. Some cups have spherical rubber tops that can be squeezed to create suction. Other cups come with a special suction pump that pumps out the air to create an even more powerful vacuum.^{8, 11} The improved plastic cup for cupping therapy is easier to handle and safer to use. The cups are available in different sets of large, medium and small sizes. The choice of size depends on the site and location of the affected area as well as the condition of the patient. Smaller cups should be used for older, weaker patients and children; larger ones for patients of robust constitution. The sized of cups usually available in the market are cup no.1: 5.8cm; cup no.2: 5cm; cup no.3: 4.2cm; cup no.4: 3.5cm; cup no.5: 2.6cm; and cup no.6: 2.2cm in diameter excluding rim. (Fig 1)

Hijamat bil Shurt (Wet Cupping):

Shurt word literally means 'scarification' or 'giving incision'.¹⁷ It is also called as *pachna lagana*. Both wet cupping and venesection were originally used as a prophylactic measures. This type of cupping produces weakness and debility of the treated area.¹⁸

Hijamat bil Shurt is better than any other method of elimination because, it acts only in the organ to which it is applied. Unlike any other mode of elimination, it does not produce any loss of vital fluids, does not affect vital organs and thus produces no serious disturbances. In wet cupping scarifications are made deep enough to draw blood from the deeper parts.^{10, 18}

Hijamat bil Shurt is of two types, *Zaroori* (essential) and *Akhtiyari* (intentionally). The essential type of wet cupping is done whenever, it is necessary, whereas in *Hijamat Akhtiyari* following conditions should be kept in mind.¹⁶

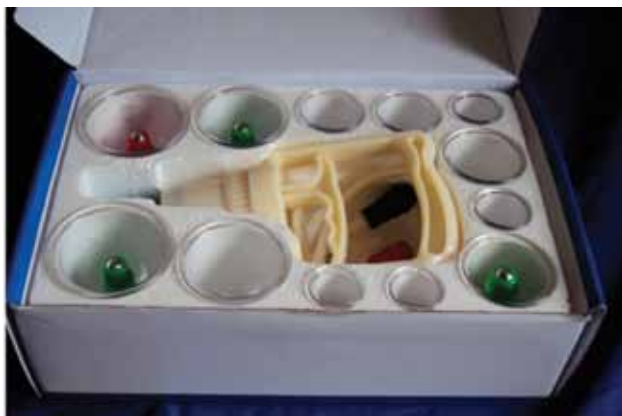


Fig. 1: Set of 12 cups of different size

Conditions and Time of Wet Cupping:

- *Unani* Physicians mentioned that *Hijamat bil Shurt* is not conceded at the beginning of the lunar month because the humours are then congested and difficult to move. It is the best to carry out at about the middle of the month when, because of full moon, there is marked agitation and activity of humours. The sixteenth and seventeenth days of the lunar month are best.^{7, 15, 16}
- The best time of cupping is the afternoon i.e., the three hours after sunrise is the best time to apply the cups.^{7, 16, 18}
- Foods should be served after one hour of the treatment.^{7, 16, 18}
- It should be done in summers, because in summer matters are in liquid state, and due to heat they are drawn towards external surface of the body hence, evacuation of matter becomes easy.^{10, 16.}
- It should be done on those persons having thin blood; if blood is thick deep scarification is needed, which will result in much pain and weakness.^{7, 16}
- If a person is not able to tolerate wet cupping then leeching is to be applied.¹⁵
- It should be done after resting for at least an hour or so after the bath if blood is thick.¹⁶

Contraindications:

- It should not be done on persons under 2 years or over 60 years of age.^{15, 16}
- Cupping is less effective in heavy, and thick skinned person.¹⁸
- Wet cupping should never be done after taking a bath except those having thick blood. Because just after bath the skin becomes thick so for the removal of the blood we have to scarify deeply and this will cause much pain and weakness.^{15, 16}
- It should not be done just after sexual intercourse.¹⁶
- It should not be done after heavy work or exercises, because of this metabolism of matter increases, hence chances of weakness of vital energy also increases.¹⁶
- Cupping should not be applied on bony prominences, sites prone to cramps,^{7, 18} inflamed skin, varicose veins or much hair growth and lymph nodes.
- It should be not applied in cases of high fever and convulsions.
- It is also contraindicated in easy bleeding disorders and during pregnancy on lower back, and abdominal area.

Essential Points to be remembered in Hijamat bil Shurt (Wet Cupping):

1. Extent of scarification: According to the consistency of the matter, the number and depth of scarification differs; for example when the quantity is more and consistency thick then the number and depth of scarification (incision) will be more and vice versa.^{10, 16}
2. Organs should be massaged with great force before scarification and dry cupping should be applied several times; subsequently the matter, which we want to eliminate, gets attracted towards that side.^{10, 16}
3. Excess intake of food is avoided after scarification, because the immune system of body will be active in alleviating pain caused by the wound, and will be unable to concentrate more on the digestion of the food taken in excess; because of this, most of the food content will get transformed into wastes of the body, so food should be given after one hour of cupping.^{10, 16}
4. Bilious person should be treated with seeds or juice of pomegranate, which is sweetened with sugar or lettuce served with vinegar.⁷
5. The use of wet cupping serves as a substitute for venesection, in which larger quantities of blood are let out.¹⁸

Indication of Hijamat in Gynaecological Diseases:

Though, the classical texts are enriched with the practice of *Hijamat* in various gynaecological diseases, but it is not in regular use. Moreover, till date none of the clinical trials have been documented to prove the efficacy of *hijamat* in gynaecological diseases.

In this review, uses of Hijamat in various gynaecological diseases have been mentioned so, that knowledge can be updated.

Busoor Farj (Vulval Eruption): Ismail Jurjani was of opinion that dry cupping should be applied on the lower back in *Busoor Farj*.¹⁹

Nutue Rehm (Uterine Prolapse): Ismail Jurjani mentioned that dry cupping applied on low back and buttock is beneficial in female genital prolapse. He also advocated dry cupping below the umbilicus or breast as it helps to ascend the prolapse organ. Inhalation of aroma along with cupping is also beneficial in this condition.¹⁹

Ibn Sina also had the same belief that dry cupping is to be applied below the umbilicus and on the back along with inhalation of aromatic drugs at the same time, as it



Fig. 2: Application of cups below the umbilicus in dysmenorrhoea

helps the uterus to ascent to its right position within three days.⁷

Razi was of view that dry cupping should be applied for longer period in uterine prolapse since, it is a chronic disorder; consequently the organ can ascend up.²⁰

Akbar Arzani mentioned in *Nutue Rehm*, that dry cupping is more beneficial if applied below the umbilicus and breast.²¹

Melane Rehm (Displacement of Uterus): Razi says that to bring posteriorly displaced uterus anteriorly, dry cupping should be applied anteriorly.²⁰

Usre Tams (Dysmenorrhoea): According to Razi in *Usre Tams*, fire cupping is to be applied on suprapubic or infra umbilical area along with *Mubarrid Riyah Zimad*.¹⁹ (Fig 2) Ibn Sina was also of the same opinion.⁷

It is hypothesized that exercise improves dysmenorrhoea by shunting of blood flow away from the viscera, which results in less congestion in the pelvic area, suppresses the prostaglandins and promotes release of beta endorphins providing endogenous analgesia.¹⁸ According to *Unani* physicians the effect of relieving the menstrual pain by applying the cups below the umbilicus, works on the principle of *Imalae Mawad*, which also means shunting of morbid humours/blood away from the uterus.¹⁸

Secondly, it is also mentioned that A β sensory fibres from the peripheral tactile receptors can depress the transmission of pain signals. This effect presumably results from local lateral inhibition in the spinal cord that why such simple maneuvering as rubbing the skin near painful areas

is often effective in relieving pain. It probably explains why liniments are often useful for relief of pain. This mechanism psychogenic excitation of the central analgesia system probably also forms the basis of pain relief by acupuncture.²¹ The same effect can be suggested while applying and creating suction by vacuum in dry cupping

Ehtebas Tams (Amenorrhoea): Ismail Jurjani writes that in *Ehtebas Tams*, wet cupping is applied laterally on calf approximately 4 inch from the *Shataaling*. Before applying cups the patient is advised to enter in *hammam* (bath) and pour warm water on legs then be asked to walk. Then dry cupping is to be applied for three times followed by wet cupping. (Fig 3) At the time of wet cupping the patient is advised to keep the legs firm on the floor, when blood start to flow. This type of cupping is not only useful in amenorrhoea but can be used in epilepsy, melancholia, skin diseases and sciatica. He was also of the view that if *Ehtebas Tams* is caused by *Farbahi* (obesity) or *Ifraat wa Ghilzat Khoon* (increase in viscosity of blood) or *Mizaj Barid* (cold temperament), wet cupping is to be applied on ventral part of the leg. (Fig 3) It should be applied two days before menses so that both type of *Istafragh* (eliminating methods) will not be mixed. On first day, cups are to be applied on the one leg and on next day it is applied on the other leg. Sometime *Fasd* (venesection) of saphenous vein is also useful. Legs are to be tied strongly with bandage till *Shataaling*. To induce menstruation, *Lateef* and *Garam* (hot) drugs are given near expected date of menstruation.¹⁹ Ibn Sina and Akbar

Arzani had the same view.^{7,22} Ibn Sina advised *Hijamat bil Shurt* on *Kaab* (calf muscle) especially in obese women.⁷

Figure 3, 4 and 5 shows the procedure of wet cupping.

Razi mentioned that to induce menstruation, *Fasd* of saphenous vein and blood letting should be applied on one leg before expected day of menses and repeated the same procedure on other leg on next day. Since, it expels less quantity of blood, *Mudir Tams* (emmenagogue) drugs are also used. In his opinion, *Abhal* (*Juniperus communis* Linn) and *Mishktaramasee* (*Mentha arvensis*) are very powerful *Mudir Tams* drugs.²⁰

Hijamat bila Shurt in Kasrate Tams (Menorrhagia): Hippocrates in his aphorism writes that menorrhagia treatment consists of applying cupping to the breasts.¹ Ibn Sina mentioned that in *Kasrate Tams*, cups are to be applied below the breasts along the line of vessel that runs to the uterus and then sucks. Cups should be big. This will stop the menstrual bleeding immediately. Menstrual bleeding will be stopped by this treatment and if it does not work then cups can be applied between the buttocks.⁷

Razi was of the opinion that to stop excessive menstrual flow, cups should be applied below the breasts as the vessel from the uterus reaches here. He also said that big cups are to be applied as the uterus is having *Musharikat* (especial connection) with the breasts.²⁰ Majoosi, Ibn Rushd, Akbar Arzani and Ismail Jurjani also had the same conviction as Razi.^{19, 20, 22, 23, 24} Ismail jurjani also advised *Fasd Baseleq*

Hijamat bil shurt (wet cupping) in amenorrhoea



Fig. 3: Application of dry cupping; (b) Multiple small incisions on area were dry cupping on calf



Fig. 4: Application of incised area; (d) Collection of blood in suction cup

(venesection of basilica vein) to eliminate *Madda Saudavi* (black bile) from the body.¹⁹

Masihi was of opinion that wet cupping on both buttocks is useful in menorrhagia.¹⁶

Sailaan Rehm (Leucorrhoea): Ismail Jurjani described that *Hijamat bila Shurt* is useful in leucorrhoea.¹⁹

Warm Rehm (Inflammation of the Uterus): Wet cupping on the thigh is useful in *Warm Rehm*, pain and congestion.^{16, 19}

Hennawy (2004) mentioned that cupping therapy is useful for blood disorders, pain relief, inflammatory con-

ditions, mental and physical relaxation, varicose veins and deep tissue massage and quotes up to 50% improvement in fertility levels.⁶

Current Use of Cupping Therapy:

Traditional or complementary and alternative systems of medicine (TM or CAM) are very fast growing branches of medicine attracting practitioners as well as general population globally. According to WHO 65 to 80% worlds population are using traditional medicine as primary treat-



Fig. 5: (e) Collection of blood and removing of vacuum cup; (f) After removal of cup.

ment for disease. These systems of medicine are based on complex pathophysiological concepts and uses dietotherapy, regimental therapy and herbo-mineral preparations to treat different diseases.²⁵ Surveys show that approximately one third of the UK's population and slightly higher in the USA have used CAM.⁶

Ceo *et al* in their systemic review included 550 clinical studies published on cupping therapy between 1959 and 2008, included 73 randomized controlled trials (RCTs), 22 clinical-controlled trials, 373 case series, and 82 case reports. In 550 clinical studies, only 73 RCTs were published in the last two decades, 78.1% of these RCTs were with high risk of bias.

Niasari *et al* concluded that wet cupping may be an effective method of reducing LDL cholesterol in men and consequently may have a preventive effect against atherosclerosis.

Ludtke and his coworkers²⁸ suggested short-term effects of a single wet cupping therapy for nocturnal brachialgia paraesthetica.

Farhadi *et al*²⁹ found that in nonspecific low back pain, traditional wet-cupping care was significantly more effective in reducing body pain than usual care at 3-month follow-up with satisfactory safety and acceptance by patients.

Michalsen *et al*³⁰ found that cupping therapy may be effective in relieving pain and other symptoms related to carpal tunnel syndrome (CTS); however, the efficacy of cupping in the long-term management of CTS and related mechanisms remains to be clarified.

Lee *et al*³¹ in their systemic review included clinical trials of cupping to treat hypertension in patients. They reported that two control trials met all inclusion criteria. In one RCT study, results suggested significant effect in favour of cupping on vascular compliance and degree of vascular filling in which effectiveness of dry cupping on changes in cerebral vascular function compared with drug therapy was assessed. One uncontrolled observational study (UOS) tested wet cupping for acute hypertension and found that a one-time treatment reduced blood pressure.

Kim *et al*³² in their systematic review observed seven RCTs. Two RCTs suggested significant pain reduction for cupping in low back pain compared with usual care and analgesia. Another two RCTs also showed positive effects of cupping in cancer pain and trigeminal neuralgia compared with anticancer drugs and analgesics, respectively. Two RCTs reported favorable effects of cupping on pain in brachialgia compared with usual care or heat pad. The other

RCT failed to show superior effects of cupping on pain in herpes zoster compared with anti-viral medication.

Anjum *et al*³³ reported in their RCT that both dry and wet cupping were effective in reducing pain, stiffness, restriction of movement, swelling in arthritis.

Bhikha³⁴ in pilot studies concluded that cupping showed potential as adjuvant therapy in the active treatment of patients with type 2 diabetes, hypertension or osteoarthritis. Cupping was also associated with an improvement in the patient's quality of life. Further studies in a larger number of patients are suggested by the results of this pilot study.

Conclusions

The above review shows that there are ample indications of use of cupping in Gynaecological disorders in classical literature and still in practice all over the world but till date the efficacy of cupping in gynecological disorders have not been proved. The diseases in which cupping was commonly employed included pain conditions, herpes zoster, cough or asthma etc. Wet cupping was used in the majority of studies, followed by other types of cupping therapy. No serious or adverse effects were reported in the studies though long term effect of cupping therapy is not known. Thus, it is high time to evaluate the clinical effect of cupping therapy in gynaecological diseases in the light of classical literature.

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The American Hospital in Gaziantep, The History of the Connected Medical School and Nursing School and Their Effects on Their Environment

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Summary

Starting in the mid 1870s until the I World War, the American Protestant Missionary Organisation ABCFM opened a medical school, a hospital and a school for nursing in Antep. In this study, the workings of the ABCFM missionaries in Antep in the field of medicine are presented and their effects on this city are shortly discussed. The ABCFM missionaries active in the field of medicine played a role in the acceptance of the approaches and methods of modern medicine in the region. The hospital triggered the establishment of other institutions of modern medicine in the city. Training professionals of modern medicine, alongside with the Beirut American University, they can be counted among the actors of a cultural transformation in the field of healing, in Southern Anatolia and northern Mesopotamia. Evaluating the personal contributions of the ABCFM's missionary doctors, together with the structural features of the ABCFM work in Antep, may help to understand the influences which led to the emergence of a need for modern medical services in Anatolia.

Key Words: Medical missionaries, medical education, Gaziantep

Covering the period between 1793 to 1810, the so-called "Second Great Revival" in the USA describes a significant increase in the membership to religious communities, growing social interest in religious gatherings and a strong enthusiasm about supporting religious institutions (1). The most successful missionary organisation in the history of the USA, *American Board of Commissioners for Foreign Missions* (ABCFM), was founded during this period.

Founded in 1812 by the graduates of the Congregationalist Williams College, the ABCFM sent missionaries to the Cherokee Indians in Tennessee, then to India, Sri Lanka, Hawaii Islands, China, Singapur and Thailand. While the missionary field expanded all the way from Africa to the Far East, the Ottoman Empire, China and India stood out as regions with big investments in money and staff (1).

Besides religious education, the ABCFM was conscious about the advantages of providing its missionary staff with practical skills and missionary candidates with a training in medicine, agriculture and mechanical engineering were especially preferred. In some cases, even a short medical education was on the training agenda (2).

In the early times of missionary activity, the primary duty of medical missionaries was to take care of the health of the missionaries working on the field. However, in time,

ABCFM laid greater importance on the role of medical services in building connections with local populations (3). It was among the goals of the protestant missionaries to transform ancient religious structures, power constellations and cultures in India, China and the Ottoman Empire, where well-rooted regimes ruled. The paradigm and practices of modern medicine served well to shatter the "old orders" (4).

The American Board missionaries started their activities in the Ottoman Empire in 1820 (5). Concentrating on educational work and on opening up institutions of modern education, the missionaries also sent children of families embracing the Protestant faith to receive education in the USA. Activities in the field of health care started after the efforts in providing modern education. The first medical missionary of the ABCFM in the Ottoman Empire was Dr. Asa Dodge, who started his work in Beirut in 1833. He was followed by a small army of doctors and nurses spreading all over anatolia and the Middle East (6).

The ABCFM had three mission districts in the Ottoman lands. Those were the Western Turkey Mission, the Eastern Turkey Mission and the central Turkey Mission. Besides these geographical divisions, missions aiming at certain ethnicities such as the Nestorian Mission or the Bulgarian Mission have been formed and dissolved in time. Within the dis-

trict categories, there were mission stations such as the ones in Trabzon, Bursa, Antep, Harput or Marash. The Antep station was connected to the Central Turkey Mission.

Besides work in the field of health care and education, the ABCFM opened up orphanages in Antep, Maraş, Bursa and Harput and run printing houses in Malta, İzmir, İstanbul, Beirut and Antep. The missionary printing house in Antep was the only one in the city since 1915 and even non-missionary material, all kinds of magazines, journals and books were also published here (6). The Central Turkey mission was the fastest growing one in the Ottoman Empire. The stations in Antakya, Tarsus, Adana, Antep, Maraş, Urfa and Halep were connected to it.

Antep had the biggest Protestant community in the entire Empire. It housed the Central Turkey College, which had a medical department (1878-1888) and is still housing the American Hospital (7). One of the 2 remaining medical institutions founded by the ABCFM missionaries is in Istanbul, and the other one is in Antep. Furthermore, while the American Hospital in Istanbul is overtaken by a profit-oriented, private company, the one in Antep, founded in 1880, is still run by a philanthropic foundation. It is possible to say that the only enduring medical institution founded by the ABCFM missionaries is the American hospital in Antep.

The Protestant missionaries could establish a big and strong community in Antep and contributed greatly to the adjustment of city life to the needs of the industrial age, playing a part in integrating the commercial life there to the global market. Their services in the field of health care and education were the main means to this end. The geographical and historical position of the city within the webs of transportation and production, its demographical constitution and personal traits, individual accomplishments of the missionaries working in Antep were decisive in the enduring character of change they contributed to. In this article, the medical department of the Central Turkey College, the Antep American Hospital and the later established school of nursing are being presented, in order to take a closer look at the medical missionary work in Antep. The outstanding characters running those institutions and their work in the field of healthcare will be discussed, with an eye on their interaction with the city.

The Missionary Doctors in Antep

Faruk Taşkın states that, following Istanbul, Antep was the second city where the ABCFM missionaries organized insitutionalized work (8), already in 1848 (9). Rahmi Doğanay narrates that in 1844, the Nasturian mission was

dissolved, from where the missionaries were commissioned to other stations. During this relocation, Thomas Laurie and Dr. Azariah Smith were sent to Antep, and together with a few number of local, already converted Armenians, they started the core of their community (9). Dr. Bülent Çukurova notes that the first ABCFM missionary to come to Antep was Dr. Thomas P. Johnson. Due to a strong negative reaction from the local Gregorian Armenian community, Dr. Johnson had to leave the city after a very short visit. He was followed by Dr. Azariah Smith, and between 1852-53, Dr. Henry Lobdell, between 1853-1857, Dr. Andrew Pratt and Dr. Henry Lee Norris, who came in 1874 and left in 1879. Those doctors were not only providing health care services, but also, spreading the protestant word around and preaching the Gospel (10).

In 1880, the medical department of the Central Turkey College in Antep was established and started education. In the same year, Dr. Cyrus Stevens arrived in Antep and served as the missionary doctor, and as teaching professor of surgery and obstetrics (11). Dr. Myron Davis, who was sent from Kayseri to support him, turned out to be a morphine addict and was called back from duty in 1881 (12). Dr. Sewny, an Armenian from Sivas who was by then still studying at the American Medical School in Beirut, served for a short while in Antep, but resigned in 1880 (12). Roughly said, during the second half of the 19th century, the ABCFM founded institutions of modern medicine in Antep, but judging from the speedy exchange of staff, this first period of seeding seems to have come with difficulties.

Dr. Cyrus Stevens, who came to Antep in 1882 and who served at the hospital and at the medical department together with Dr. Fred Douglas Shepard, quit the work of a missionary doctor in 1884 and returned to the USA, to work at the New York Medical School and at the school's hospital (13). Dr. Robert Neal, who was married to Dr. Shepard's wife's sister kızkardeşi Florence, came to Antep in 1884 with his wife, but died in the same year of diphtheria (12). After also the Schottish nurse, Stewart Walker-Arnott, died of diphtheria in 1884, the staff of both the medical department and the hospital weakened strongly.

Dr. Fred Douglas Shepard and Dr. Fanny Shepard arrived in Antep in October, 1882. The couple played a decisive role in the acceptance of the hospital in the city and the short-lived, but well-maintained history of the medical department. While Dr. Shepard was famous for reaching far-out villages on horse back and investing what he earned from wealthy patients in Halep in the needs of the medical department, Fanny Shepard visited women patients in their

homes, searched for new endemics in the Amanos Mountains and taught medical botany at the school (12).

Short before the I. World War, Anatolia was scene to mass movements of deportation, migration and transportation of big army forces. Strong famines made themselves felt after the 1890's and Antep was shaking to its foundations through big epidemics of cholera and typhus, and the number of tuberculosis cases were so high that Dr. Shepard's life dream was to establish a sanatorium and tuberculosis hospital in Antep (14). The swift success of a number of simple medications in cases of cholera and typhus, and the missionary doctors' effective surgical intervention in cataract cases and success in trachoma cases, made them sought for in Antep, where eye diseases were very common. Dr. Shepard, according to the memories of his daughter, run around with a bottle of chloroform in his pocket, usually performed an operation in one of the big houses of the city before lunch, and in the time between lunch and dinner, performed at least 8 other operations in the hospital, besides running his rounds in the wards and receiving outdoor patients (15).

There were cases where he also had to cure his students in the medical school, where he lectured daily. In one example, students rushed in during class and reported that one of their class mates took an overdose in opium. Dr. Shepard urged the physics teacher Dr. Bezciyan to produce some pure oxygen, and so, brought his student back to life (14).

During the 33 years he served in the hospital and at the medical department, Dr. Shepard traveled on horseback all the surrounding villages of Antep and Kilis, also took care of the patients in and missionary families in Urfa, Mardin, Diyarbakır, Adana, Mersin and Antakya (7). In 1907, in a speech he held during an event celebrating the 25. Anniversary of his arrival in Antep, he said: "I came here to prove that God is love.". He died, heart-broken of the suffering and violence he had to witness in the war-torn and collapsing Empire, while he was labouring among the Armenian refugee groups being deported to Syria. An epidemic of typhus broke out among the deported Armenian populations and Dr. Shepard caught the disease, while taking care of the sick, and died on December 18, 1915 (14).

Dr. Shepard's former classmate and wife, Dr. Fanny Shepard, also won herself a certain fame through her efforts ranging from organising a web of lace production among local women, to her studies in local botanics, to taking care of female patients in and outside the hospital. Before 1886, women were not officially permitted in hospitals, neither as care givers, nor as patients. Until then, Fanny treated wom-

en in their homes. After 1886, a women's ward was added to the American Hospital and together with the midwife Caroline Hamilton, who also trained nurses and taught at the medical department, Fanny Shepard treated female patients in the hospital (7).

As a solution to the big famine of 1888 in Antep and surroundings, Fanny Shepard organised a web of local women to produce lace at home, in accordance with the fashion in the USA and easily marketable in Fanny's homeland and Europe. In time, this enterprise grew into a big volume of trade and thousands of women produced lace in Antep for the Western market (12). Teaching medical botanics at the medical department, Fanny used to climb the Amanos Mountains to the North of İskenderun each summer, camping with her family for a couple of months at those heights and collecting unknown specimen of local plants (7). Fanny sent her samples to Dr. G.E. Post (1838-1909), a professor of botanics at the Beirut American University. Dr. Post is the author of a significant volume on the plants of Northern Mesopotamia and Syria, and through their cooperation, nine new endemic species were defined, six of which carried the surname of Fanny Shepard in their epithets.(7). According to Prof. Dr. Asuman Baytop, Fanny Shepard is the first woman to lecture medical botanics in Turkey and she is also the first female botanist to collect plants and make a collection of local plants in Turkey (16).

The son of the Shepard couple, Lorrin Shepard, who was born in Antep, studied medicine at Yale University and after directing the American Hospital in Istanbul between 1927-1957, he taught Turkish at the Yale University after 1960 (17). Dr. Shepard's grandson, Barclay M. Shepard, also directed the Antep American Hospital between 1995-2001. The Shepard family served in Turkey for three generations.

The Medical Department of the Central Turkey College

The establishment of the medical department of the Central Turkey College and afterwards, the Antep American Hospital, were the first steps in introducing institutions of modern medicine in South Anatolia. The medical department was opened in 1878, had over 20 graduates in 12 years and closed in 1888. The 21 Armenian students, who graduated from the department, served in Antep and some of them in the USA, and there were some who continued their studies in the Beirut American College (12).

When the medical department of the Central Turkey College opened, there was already the medical department

of the Beirut College and the medical department of the French, Jesuit St. Joseph's College also in Beirut. That the second Protestant medical school was opened in Antep can be connected to the economical success of the Armenian protestant population here, and their high willingness and cooperation for training modern professionals well-acquainted with the American Protestant culture from among their youth. However, the Muslim community also seems to have supported the effort. Barlas reports that the donations of the Antep Muslims, especially of Taha efendi, who donated the ground on which the college and the hospital clinics were built, was a great incentive for the missionaries in choosing this city as the home of the College (18).

The college provided education in medicine and in surgery and even though there weren't any Muslim students, the official language of education was Turkish (18). In a report presented to the Rockefeller Foundation by the ABCFM, entitled, "Medical Education and Medical Practice in Turkey", the school, holding medical education in a native language, is described to be "some kind of Tuskegee", due to its experimental nature. The goal hereby is described as "giving space to the local culture as far as possible, and at the same time, educating students to have the potential to create better social conditions in their environments" (19).

In the medical department, the academic year was divided into three semesters. At the end of each semester, which covered three and half months, the students had 15 days of free. The medical education took 4 years. The school also had departments of dentistry and pharmacy, in which the education covered three years (19).

The diploma of the medical department of the Central Turkey College was not acknowledged by the Ottoman Government, for the entire time of its existence. In 1888, a big famine brought the Antep populations to their knees (14). The Suez Channel, opened in 1869, severely weakened the land route from Caucasia, the Persian high lands and the Far East, to the Arab Peninsula and beyond, a route on which Antep was one of the main stations. Commercial life flattened in the city. Families trying to survive, had less to spend for the education of their children and they did not have much interest in investing in a medical education, which did not even provide an official diploma. The financial support for the school diminishing, the medical school with its higher costs of training was closed in 1888, the year in which the director of the College, Trowbridge, died (12).

In the report presented to the Rockefeller Foundation by the ABCFM in 1917, the medical department is marked as "temporarily closed". According to the report, during this

interval, the students of the department were transferred to the medical department of the American College in Beirut and they had to pay only half of the normal fee there (19). The report states that, while it operated, the school gave 21 graduates with an MD title (19).

Antep American Hospital

The Antep American Hospital, due to financial problems, was built piecewise, and completed in 5 years (20). In 1878, a polyclinic also used for training purposes of the medical department, a dispensary and a men's ward of 10 people formed the core of the coming hospital (14). In 1880, with donations from the Cilician Evangelist Union and from international donors, the structure which forms the eastern wing of the hospital today was built, and health care services as well as medical education was carried out here (20).

According to the biography of Dr. Shepard written by his daughter, Alice Shepard Riggs, from its early days on, the hospital had to wrest with financial and practical difficulties.

The basic equipment of the hospital consisted of a wooden operation table, covered with zinc, and produced in Maraş according to the doctor's instructions, just like the sterilization cattle and the forceps (14).

The medicine and medical raw material with which medication was produced dispersed in the polyclinic and given to the patients during house and village visits, were bought from England and the USA. Pharmacists from among the Armenian population were trained, to produce the needed mixtures (14). The pharmacist of the hospital was preparing, according to Dr. Shepard's estimation, over twenty thousand medications in a year (14).

After the I. World War broke out in 1914, the Ottoman government asked the hospital administration to reserve the hospital for military cases and in 1915, 47 beds were used exclusively for cases from the Ottoman army (18). In 1917, the hospital was given over entirely to military use. In December 1918, the English army started the occupation of Antep and the English soldiers established themselves in the Central Turkey College as their main base, giving back the hospital to the American missionary crew (12). In 1919, the French army overtook the city from the English and the College building became their base, the hospital being run from then on by the American Near East Relief. The main duty of the hospital now was to take care of the victims of war, especially from among the Christian populations (12).

In 1922, the War of Independence in Anatolia came to a successful end. After the occupation forces were pulled back and a secular Turkish state was established in October 1923, all kinds of religious activity, service and the use of religious symbols were forbidden in the American Hospital (12). The Christian populations of Antep followed the withdrawing French Army, migrating especially towards Syria. Under these circumstances, the patients seeking the services of the American hospital were mainly consisting of Muslim populations. For the first time in the history of the Hospital, between December 1921-July 1922, the number of the Muslim patients exceeded the number of the Christian ones. By 1923, 96% of the patients were Muslims (7)

The Nursing School

The sources trace the beginnings of the nursing education in the Ottoman Empire to the course for medical attendants, established by Besim Omer Pasa in Kadirga in 1911, inspired by the Red Cross Conference the Paşa attended in Washington in 1907 (21). Mistakenly, the first Nursing School in Turkey is cited to be the one established in the Amiral Bristol American Hospital in Istanbul in 1920 (22). However, the first nursing school of the American School in Antep was founded officially already in 1912. The director of the school was head nurse Alice Bewer (12). After 1914, with the increasing military use of the hospital, this school most probably closed up, after giving its first graduates.

In Brian Johnson's book on the history of the Antep American hospital, it is stated that the graduates of this school served in Ottoman military hospitals during I. World War. One of the graduates even became the director of the Red Crescent Hospital in Antep. Johnson states that, due to the improvements this nurse achieved in the conditions of therapy and hygiene, the Ottoman officials in due course appointed her as an administrator to six other military hospitals (12).

After the 1930's, the number of native doctors in Turkey increased in high speed. In 1958, Dr. Dewey, the director of the Antep American Hospital, defined the necessity of building closer ties of cooperation with the local medical establishment and with the Turkish government and after the 1960's, projects of public health and health education became a focus point of the hospital. This was when the nursing and medical attendant courses, run informally, became institutionalised.

In the report of the Hospital Association from 1964, it is stated that, although the hospital did not have a formal

school, nursing education is continued in the hospital and that 70 thousand lira is spent each year for each nursing student (20). Finally, in 1973, a nursing school was officially opened. The private nursing school was directed by the head nurse Muzaffer Kürkçü. In the first year, the school was started with 15 young women (20). In 1977, after the legal regulations changed, the school had to fulfill the requirements put for schools of higher education and the school had to close in 1978. In 1995, the school made a last attempt and could last this time only for four years, after giving one generation of graduates (23).

The Relations of the ABCFM Missionaries with the City

In the eyes of the missionaries, Antep was always a backward city in a thousand year old sleep. However, in spite of the prejudiced gaze of the missionaries and the tensions of the clashing ethnicities, the people of Antep easily accepted the medical services offered in the hospital. In time, the missionaries seem to have developed emotional attachments to the city, with active involvement in urban life and like in the example of the Shepard family, left a mark in the memories of the people. Antep had its local doctors, pharmacists and midwives before the missionaries came. Although not institutionalized and quite random, professionals of modern medicine practiced here. But, the missionary doctors of the ABCFM traveled regularly on horse back through village and towns, dispersed medicine and provided organized cure during epidemics of typhus and cholera, followed and applied quarantine regulations, like keeping villagers with infectious diseases in the wards and not letting them back in their villages, they effectively intervened in cases of trachoma and cataract and so saved many from blindness, opened soup kitchens during famines, supported patients in need with food and medicine and so, contributed greatly to the acceptance of modern medicine in Antep.

In time, the Antep American Hospital turned into an institution providing secular health care services. The policies of the Turkish government play a big part in this transformation. Today also, the hospital functions as an intermittent between philanthropic organisations in the USA and the patients needing financial support in Antep.

Conclusion

World wide, ABCFM contributed to the adjustment of local economies to the global market. In the Ottoman Empire too, one of the goals was to create new needs and

abilities in the local populations, that would turn them into modern producers and consumers. Institutionalized services of healthcare, together with services of modern education, was a basic field of intervention towards this transformation. Generalizing from the example of the work of the medical missionaries in Antep we could say that: One of the significant dynamics contributing to the acceptance of modern medicine in Ottoman lands were the organised efforts of the Protestant missionaries. The modern hospital established by the ABCFM in Antep became, in the turbulence of historical change, permanent and resistant, changing into a secular, philanthropic institution. The schools of medicine and nursing, although not as enduring, contributed to social change in the field of healthcare.

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Hijamah (Cupping): A Graeco-Islamic Perspective Therapy

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Summary

Cupping is a practice of applying a cup to the skin from which air can be exhausted by heat or by a special suction apparatus, which causes swelling of the tissue beneath it and an increase in the flow of blood in that area. This is thought to draw out the detrimental excessive blood from diseased organs nearby and thus promotes healing. The present paper describes different aspects of cupping in perspective of Graeco-Islamic Medicine.

Key Words: Hijamah, Cupping, History of Medicine

Introduction

Hijamah is an Arabic word which has different meanings such as process of scalp hair removal or application of cups (Seenghi). The process of *Hijamah* is also locally known as *applying seenghi* because in the ancient period *hijamah* was done by using cow horns (*seengh*) or other hollow animal horns. The apparatus for *hijamah* was termed as *Mahjama* which was either of horn-shaped or cup-shaped (*Aab-khorah*) or pumpkin shaped (*Qara*) [1]. In present paper we have discussed details under the heading like history of cupping and its definitions by ancient Graeco-Arabic scholars, importance of cupping mirrored by Ahadith-e-Nabvi, classification of cupping, few specific rules for voluntary cupping, methods of Application of the cups (*Mahjama*), various sites for cupping application, basic principles of cupping, contraindications of cupping, precautions after cupping induction and finally conclusion.

History of Cupping and its definitions by ancient Graeco-Arabic Scholars

Hijamah dates back thousands of years for the treatment of diseases and pain. The ancient *Unani* physicians were the first to use *hijamah* systemically. Eberus Papyrus, thought to be the oldest medical textbook, written in approximately 1550 BC in Egypt, mentions bleeding by *hijamah* in order to remove the foreign matter from the body.

Initially, hollow animal horns were used for the purpose of *hijamah*, which further evolved into bamboo cups, which were eventually replaced by glass or plastic cups. The ancient cultures including the early Greeks and Egyptians embraced the therapeutic value of *Hijamah*. Initially its applications were primarily for the treatment of diseases and pain, but clinical experience over the years has advanced its application to many chronic ailments [2].

Several scholars of the *Unani* medicine have defined *Hijamah* (*cupping*) as follows:

1. Razi states that *Hijamah* is a process by which bleeding is oozing through the superficial small vessels located in muscles to get rid of the problem of local congestion (*imtala*) in the body [3].
2. Shaikh Ibne Sina has described the process of making incision (*Pachhna*) is known as *Hijamah* which is more useful to excrete the noxious matter, accumulated close to the skin [4].
3. Jurjani clarifies that *Hijamah* is a process by which superficial bleeding is initiated from the smaller vessels or their branches, situated within the muscles to lower down the local congestion without producing weakness in the power of the vital organs [5].
4. Ibn-e Hubal Baghdadi has defined *Hijamah* as a process which helps in *istifragh-e-dam* from the small vessels of the skin & muscles and reduce the congestion at the part applied or the surrounding areas [6].

5. Allama Kabeer-Uddin says that *Hijamah* at lower extremities, especially at ankle joints is similar to the *fasd* (venesection) because normally blood and noxious matter move in the downward direction and *hijamah* also attracts them, so when *hijamah bil-shurt* is indicated at ankle joints the oozing of the blood is higher than in venesection [7].

Importance of Cupping mirrored by Ahadith-e-Nabvi

Following Ahadith-e-Nabvi from *Al-Kitub-al-sittah* (encyclopedia, assemblage of six great texts of *Ahadith-e-Nabvi i.e. Bukhari Sharif, Muslim Sharif etc.*)[8] reflect the importance of cupping.

1) نب اورم انشدح عي نم نب دمأ انشدح نيس سحلا ينشدح نبا نع ري ببح نب ديس نع سطفال لاس انشدح عاجش قشرش قشالث يف افشلا لاق امهنع لالا يضر سابع عفر يكلنا نع يتدمأ ين أو ران يكلو م ح م قطرشو لسع نع سابع نبا نع داجم نع شيل نع يمقلا هاورو شي دحل م ح ح او لسع لالا يف ملسو هيلع لالا يضر ينبنالا

Narrated by Ibn 'Abbas: The Prophet said Healing is in three things: A gulp of honey, cupping, and branding with fire (cauterizing). But I forbid my followers to use (cauterization) branding with fire.

2) مصاع نع ليسي غلا نب نم ح رلا دب ع انشدح مي عن وبأ انشدح لالا يضر لالا دب ع نب ربا ج ت ع م س لاق قدا ت ق نب رمع نب ن لوق ي ملسو هيلع لالا يضر ينبنالا ت ع م س لاق امهنع م ك ت ي و دأ نم عيش يف نو ك ي و أ م ك ت ي و دأ نم عيش يف ناك قفاوت ران ب ع ذل و أ لسع قشرشو م ح م قطرش يف ريخ يوتكأ نأ ب ح أ مو ا دالا.

Narrated by Jabir bin Abdullah: I heard the Prophet saying, «If there is any healing in your medicines, then it is in cupping, a gulp of honey or branding with fire (cauterization) that suits the ailment, but I don't like to be (cauterized) branded with fire».

3) ديمح انربخأ لالا دب ع انربخأ لتاقم نب دمحم انشدح م ح ح لالا رجأ نع لئس نأ نع لالا يضر سنأ نع ليوطلا وبأ م ح م ملسو هيلع لالا يضر ينبنالا لوسر م ح ح لاقف .ن ع ا و ف خ ف هيل او م م ل ك و م اع ط نم ني ع اص ا ط ع أو ق ب ي ط

Narrated Anas bin Malik: When Abu Taiba cupped the Prophet and the Prophet ordered that he be paid one or two Sas of foodstuff and he interceded with his masters to reduce his taxes.

4) نع قمر ك نع بوي نع بي هو انشدح دسأ نب يلع م انشدح هيلع لالا يضر ينبنالا نأ امهنع لالا يضر سابع نبا مئاص وهو م ح ح ت ا ح وهو م ح ح ملسو

Narrated Ibn Abbas: The Prophet was cupped while he was in the state of Ihram, and also while he was observing a fast).

5) قمر ك نع بوي انشدح ثراول دب ع انشدح رمع م وبأ انشدح يضر ينبنالا م ح ح لاق امهنع لالا يضر سابع نبا نع مئاص وهو ملسو هيلع لالا

Narrated Ibn 'Abbas: The Prophet was cupped while he was fasting.

6) اتبا ت ت ع م س لاق ق ب ع ش انشدح سا ي ي ب أ نب مدأ انشدح م ت ن ك أ م ن ع لالا يضر لالا م ن س نأ لئس لاق ينبنالا دازو فعضلا لجأ نم الال لاق مئاصلل م ح ح لالا نو م ر ك ت هيلع لالا يضر ينبنالا ده ع يلع ق ب ع ش انشدح قبا بش ملسو

Narrated Thabit Al-Bunani: Anas bin Malik was asked whether they disliked the cupping for a fasting person. He replied in the negative and said, Only if it causes weakness.

7) نع ماشه نع يدع ي ب أ نبا انشدح راشب نب دمحم ينشدح ملسو هيلع لالا يضر ينبنالا م ح ح لاق امهنع لالا يضر سابع نبا نع قمر ك نع ل م ح ح لاق ي ا م ب م ناك ع ح و م م ح م وهو مسأر يف

Narrated by Ibn 'Abbas: The Prophet was cupped on his head for an ailment he was suffering from while he was in a state of Ihram. At a water place called Lahl Jamal.

8) نبا نع سوا ط نبا نع بي هو انشدح دسأ نب يلع م انشدح ملسو هيلع لالا يضر ينبنالا نع امهنع لالا يضر سابع ط ع ت سا و م ر ج أ م ح ح لالا ط ع أ و م ح ح ت ا ح

Narrated by Ibn 'Abbas: The Prophet was cupped and he paid the wages to the one who had cupped him and then took Su'ut (Medicine sniffed by nose).

9) ع م س نأ م ق ل ع نع نام يلس ينشدح لاق ل ع ا م س انشدح ش د ح ي ق ن ي ج ب نبا لالا دب ع ع م س نأ ج ر ع ا ل ا م ح ر ل ا دب ع نم ل م ج ي ح ل ب م ح ح لالا ملسو هيلع لالا يضر ينبنالا لوسر نأ م س ا ط س و يف م ح م وهو م ك م ق ي ر ط

Narrated Ibn Buhaina: The Prophet was cupped at the middle of his head at Liha-Jamal.

10) ينربخأ لاق بهو نبا ينشدح لاق دي لت نب دي ع س انشدح قدا ت ق نب رمع نب مصاع نأ م ح ح ا ر ي ك ب نأ م ر ي غ و و ر م ع م ح ع ن ق م ل ا د ا ع ا م ه ن ع لالا يضر لالا دب ع نب ربا ج نأ م ح ح يضر ينبنالا لوسر ت ع م س ين ا ف م ح ح ت ا ح ح ر ب أ ال لاق افش هيف ن لوق ي ملسو هيلع لالا

Narrated by Jabir bin 'Abdullah: that he paid Al-Muqanna a visit during his illness and said, I will not leave till he gets cupped, for I heard Allah's Apostle saying, "There is healing in cupping.

11) نع ورمع نب دمحم نع دامح انشدح ل ع م س نأ نب ي س و م انشدح هيلع لالا يضر ينبنالا لوسر نأ ق ر ي ه ي ب أ نع ق ب ل س ي ب أ م ح ح لاق ري خ ه ب م ت ي و ا د ت ا م ع ي ش ي ف ناك ا ذ ا لاق ملسو

Narrated Abu Hurayrah: The Prophet صلى الله عليه وسلم said: The best medical treatment you apply is cupping.

12) نبا ينعي ييحي انشدح يقشمدلا ريزولنا دمحم انشدح (12) دئاف انشدح يل اولما يبا نبا نمحرلا دب ع انشدح ناسح ديب ع هالوم نع عفار يبا نبا يل ع نبا لدا ديب ع يلوم لوسر مداخ يمس هتدج نع عفار يبا نبا يل ع نبا لدا يل ا يكتشي دح ا ناك ام تلاق ملسو هيل ع لدا يل ص لدا لاق ال ا هس ا ر يف اعجو ملسو هيل ع لدا يل ص لدا لوسر امبضخ لاق ال ا هيل جر يف اعجو الو م ح ح ا

Narrated Salmah: The maid-servant of the Apostle of Allah صلى الله عليه وسلم said: No one complained to the Apostle of Allah صلى الله عليه وسلم of a headache but he told him to get himself cupped, or of a pain in his legs but he told him to dye them with henna.

13) ديب ع نبا ريثكو يقشمدلا ميهاربا نبا نمحرلا دب ع انشدح (13) قشبك يبا نع هيبا نع نابو نبا نع ديلولا انشدح لاق هيل ع لدا يل ص يبنلا ن ا هتدج ن ا ريثك لاق يراصنالا نم لوقي وهو هيفتك نيبو متماه يل ع م ح ح ا ناك ملسو عيشل عيشب يوادتي ال ن ا مرضي الف امدلا هذه نم قاره ا

Narrated Abu-Kabshah al-Ansari: The Apostle of Allah صلى الله عليه وسلم used to have himself cupped on the top of his head and between his shoulders, and that he used to say: If anyone pours out any of his blood, he will not suffer if he applies no medical treatment for anything.

14) دب ع نبا ديب ع انشدح عفان نبا عيبرلا قنوت و با انشدح (14) لاق لاق قريه يبا نع هيبا نع ليهس نع يحمجرلا نمحرلا قرش ع عسب م ح ح ا نم ملسو هيل ع لدا يل ص لدا لوسر اء لك نم افش ناك نيرشعو يدحو قرش ع عستو

Narrated Abu Hurayrah: The Prophet صلى الله عليه وسلم said: If anyone has himself cupped on the 17th, 19th and 21st it will be a remedy for every disease.

15) نبا ركب قركب و با ينربخ ا لي عس نبا يسوم انشدح (15) لاقو قركب يبا تنب قسك يتم ع ينتربخ ا زيزعلا دب ع له ا هني ناك اهابا ن ا قركب يبا تنب قسك يسوم ري ع لدا يل ص لدا لوسر نع معزيو ائثالثلا موي قما ح ل ا نع اقري ال عاس هيفو مدلا موي ائثالثلا موي ن ا ملسو هيل ع

Narrated Kabshah daughter of Abu Bakrah: (The narrator other than Musa said that Kayyisah daughter of Abu Bakrah) She said that her father used to forbid his family to have themselves cupped on a Tuesday, and used to assert on the authority of the Apostle of Allah صلى الله عليه وسلم that Tuesday is the day of blood in which there is an hour when it does not stop.

61) نع رمع انربخ ا قازرلا دب ع انشدح لبا نبا دم ح ا انشدح (61) م ح ح ا ملسو هيل ع لدا يل ص لدا لوسر ن ا سن ا نع عداتق هب ناك عجو نم مدقلا رمظ يل ع م ح ح ا وهو

Narrated Anas ibn Malik: The Apostle of Allah صلى الله عليه وسلم had himself cupped on the dorsum surface

of his foot because of a pain in it while he was in the sacred state (wearing Ihram).

71) روصنم نبا يل ع لدا انشدح قبيش يبا نبا ركب و با انشدحو (71) نع قمل ع يبا نبا قمل ع نع “ لالبا نبا ناميلس انشدح لدا يل ص يبنلا ن ا قني ح نبا نع جر ع ا ل ا نمحرلا دب ع هس ا رطس و م ح ح ا وهو قلم قيرطب م ح ح ا ملسو هيل ع

Ibn Buhaina reported that the Apostle of Allah صلى الله عليه وسلم got himself cupped in the middle of his head on his way to Mecca.

Classification of cupping

Depending upon the method of the application of *hijamah* it is classified into two types such as:-

- A. Hijamah-Bila-shurt (Non-invasive cupping or Dry cupping)
- B. Hijamah-Bil-Shurt (invasive cupping or wet cupping or cupping with scarification) [6,9-11].

Non invasive cupping is characterized by application of cups without making an incision (*Pachhna*). Invasive cupping is indicated after making an incision on the included area.

Both of these types are further classified into two types:-

- i. *Mahjama Nari* (Cupping with fire)
- ii. *Mahjama Ghair Nari* (Cupping without fire) [11-14]

Such type of cupping in which any inflammable thing is placed in the cup to produce fire which creates negative pressure and thus helps in attachment of the cups at the surface of the included area is known as *Mahjama Nari*. In *Mahjama Ghair Nari* flame is not used to create the negative pressure, i.e. vacuum is created by any means other than flame (mostly by vacuum pressure pumps) [1,6,9-11,13-14].

The following two types of *Hijamah-Bil-Shurt* were also described by some Unani scholars [10,14]:

- a) *Zaroori Hijamah* (Essential Cupping)
- b) *Ikhtiyari Hijamah* (Voluntary cupping)

Few specific rules for voluntary cupping

1. It should be done in the middle of the *Qamri* (Lunar) month. Again few Ahadith-e-Nabvi from *Al-Kutub-al-Sittah* [8] reemphasized here that, The Prophet صلى الله عليه وسلم said: If anyone has himself cupped on the 17th, 19th and 21st it will be a remedy for every disease.

2. The best time for voluntary cupping is daytime, especially just before evening as it is the most moderate time of the day. Narrated Kabshah daughter of Abu Bakrah: (The narrator other than Musa said that Ayisha daughter of Abu Bakrah said that her father used to forbid his family to have themselves cupped on a Tuesday, and used to assert on the authority of the Apostle of Allah Prophet (ﷺ) that Tuesday is the day of blood in which there is an hour when it does not stop.
3. It should be done in the summer season because due to the heat harmful matters tend to be in their more dilute form.
4. It should be applied to such persons who have more dilute blood.
5. They should be advised some digestive & anti suppurative syrup before the induction of voluntary cupping.
6. The application should be avoided in weak persons.
7. It is contraindicated in person less than two and above sixty years of age.
8. It should not be done just after *hammam* except in persons who have viscous blood.
9. Also cupping should not be done after a heavy work load or a strenuous exercise [10,14].
4. Before the induction of *mahjama nari*, the temperature of the cup-edge should be checked properly, by applying it on one's own hand.
5. For appropriate vacuum strength, there should be a wait for sufficient time for appropriate intensity size of flame [15].

Nowadays *mahjama-nari* is replaced by vacuum pump-cups which can be used more easily by simply putting the cup on the selected part and then attaching a pump to the nipple of the cup to evacuate the air from the cup, due to which a negative pressure is developed. It is easy to adjust the amount of suction required, with the help of these pumps, by releasing the nipple lock. The strong vacuum created by the cupping can leave the patient with minor bruises which usually disappear in a few days. Occasionally moving cups are applied after lubricating the skin with a thin layer of oil which allows the cups to slide over the skin, applying suction to a larger area. This is known as cupping massage.

2. Hijamah-bil-Shurt (Invasive cupping)

Before the induction of invasive cupping gross general and systemic examinations were done and maintained the pre-operative criteria of the patients i.e. assessment of hemoglobin level, bleeding time, clotting time, blood sugar level, aseptic measures and patient consent. After that cups are placed on the affected area in the same way as is done in non-invasive cupping and moderate vacuum pressure is created for a short duration. This method should be done repeatedly until the affected area becomes reddish & swollen. Then *shurt* (incision) is done carefully, if the patient is weak only one *shurt* is sufficient but it should be wider and deeper. If blood is thick (concentrated), then *shurt* is done for two times- one, for diluting blood flow and the other for concentrating blood flow. If blood has some impurities then one more *shurt* may be done to purify it. Only one incision (*shurt*) is sufficient if less amount of bleeding is required, while in case of heavy bleeding requirement many incisions may be given [13].

Various sites for cupping application

Different eminent Unani scholars have described following areas for the induction of *hijamah*.

- a) **Hijamah Qamahduwa and Yafookh:** *Hijamah-e-Qamahduwa* is done on the protuberance behind the ear and the *Hijamah-e-Yafookh* is done on the middle and crown of the head. According to some Unani physicians these types of *hijamah* is beneficial in case of confusion,

Methods of Application of the cups (Mahjama)

1. Hijamah-bila-Shurt (Non invasive cupping)

In ancient periods the application of *Mahjama* or cups on the specific areas was achieved by holding a small flame inside the cup, to create vacuum pressure, the cups were then placed quickly on the skin over the area to be treated and were allowed to be in the place for ten to fifteen minutes. The strength of vacuum pressure was modulated by the size of the flame, the time of exposure to the flame and how quickly the cup was placed on the affected area. Observance of safety precautions is necessary while using a naked flame and glass around the patients. John Brazier, principal of the college of Oriental Body Balance based in Lythem, St. Annes has described the following rules for safety precautions during the induction of *mahjama-nari*:

1. Parts preparation should be done prior to application of *mahjama nari*.
2. The Cup size should be selected according to the site of cupping.
3. Cups (*mahjama*) should be clean and should not have any chips and cracks.

anxiety and migraines while some others say that it is beneficial for eye diseases [1].

- b) **Hijamah Naqrah:** It means cupping at the back or neck, which is beneficial in various ophthalmic and nervous problems [4].
- c) **Hijamah Manakib:** It means cupping on shoulder joints. Cupping on the right shoulder is beneficial in liver diseases and on left shoulders in spleen diseases and quartan fever [1].
- d) **Hijamah -Kawahil:** It is done at inter-scapular region especially in cases of palpitation, neck pain & shoulder joint pain etc [5]. Narrated Abu-Kabshah al-Ansari: The Prophet Muhammad (ﷺ) used to have himself cupped on the top of his head and between his shoulders, and that he used to say: If anyone pours out any of his blood, he will not suffer if he applies no medical treatment for anything [8].
- e) **Hijamah Akhda-ain:** It is done on either of the Akhda (right and left carotid) or the lateral side of the neck. It is effective in *amraz-e-raas* (the diseases of the head e.g. diseases of the ear, nose, throat and teeth etc.) and other vital organ disorders [1].
- f) **Hijamah-Tahtul-Zaqan:** It is done on the chin and is beneficial the recurrent attack of stomatitis and other problems of gums and cheeks [3].
- g) **Hijamah Maq'ad:** It is cupping on the anal area and is effective in case of anal-fistula [1].
- h) **Hijamah Rusug:** It is done on wrist joints and is much beneficial in scabies, itching & ulceration of hands [1].
- i) **Hijamah Uzn:** When cupping is done on the tragus of ears, it is beneficial in heaviness and pain in the eyelids [1,16].
- j) **Hijamah-Qutun:** It is done on the folds of thighs (loin) and is effective in gout, hemorrhoids, elephantiasis, urinary bladder diseases and uterine diseases etc. narrated Jabir ibn Abdullah: The Prophet Muhammad (ﷺ) had himself cupped above the thigh for a contusion from which he suffered [8].
- k) **Hijamah Fakhzaain:** It is done on the thighs. Cupping on the anterior aspect of thigh is beneficial for orchitis and the lower limb abscess, while cupping on the posterior aspect of thighs is beneficial in coxalgia, hemorrhoids and anal fissure etc [1].
- l) **Hijamah Tahtul Rakhbain:** When *Hijamah* is done at the lower aspect of the knee joints. It is beneficial in the knee joint pain which is due to accumulation of the noxious matter (*Akhlat-e-fasidah*). It is also beneficial in the abscess and chronic ulcers of lower limbs [1,16].

- m) **Hijamah Ka'abaain:** It is done on ankle joints and it is beneficial in case of sciatica, gout & early menopause etc [1].
- n) **Hijamah Pistaan:** Cupping at breast, which is effective in epistaxis and menstrual problems [1,16].
- o) **Hijamah Warikaain:** It means cupping on hips or buttocks. It is beneficial in the management of piles, proctitis, haematuria, epistaxis, burning micturition and other diseases of the kidney and the urinary bladder [1].

Basic principles of cupping

Hijamah may be done after two years of age and up to sixty years of age only. *Hijamah Naqrah* should be done after completion of *istifragh* of the whole body. *Hijamah Kawahil* should be done slightly above the exact part because if it is done at the lower side it produces weakness of stomach and heart. It is instructed that the patient should take water in excessive quantity on the day of cupping. In *Balghami* and *Saudawi* temperaments *Tiryaq-e-Farooq* or *Dawa-ul-Misk* or any other hot drugs should be used before cupping to liquefy the blood. *Muqawwi-e-meda* drugs (digestive tonics) such as *Sharbat Anar*, *Sharbat Bahi* etc. should be given to the patient before cupping. *Hijamah* should be done specially in such type of patients who have relatively diluted blood. If cupping is required in those patients who have more concentrated blood then it should be done after *Hammam*. If there is excessive accumulation of morbid matter then *hijamah* should be done after induction of venesection. If accumulated morbid matter is more concentrated then heavy massage should be done prior to non-invasive cupping induction. In the case of invasive cupping, an incision should be made according to quantity and thickness of accumulated matter, e.g. deep incision is done if morbid matter is thick [5,13-14].

Contraindications of cupping

The following are the contraindications for *hijamah* as described by various eminent scholars of the Unani system of medicine:-

1. Before two years and after 60 years of age.
2. Just after *hammam* except if the blood is more viscous.
3. More obese patients.
4. In excessive accumulation of morbid matter.
5. In patients having weaker muscles tone.
6. Just after sexual intercourse and some heavy exercise [5, 13-14].

Precautions after cupping induction

1. One should not take eggs just after cupping.
2. Heavy meal intake should be avoided just after cupping.
3. If the patient is weak and of hot temperament then after *hijamah*, the types of drugs which empower the vital organs should be used e.g: *Tiryaaq-e-Farooq* and *Dawa-ul-Misk* etc.
4. If the patient is of cold temperament then chicken curry or pigeon curry should be advised after cupping.
5. It is better to use sour things for eating after cupping.
6. Patients should be advised to take *Arq Ghulab*, *Arq Kasni* and *Sharabat Anar* etc in case of choleric temperament.
7. *Hammam* may be advised after 2 hours of invasive cupping [5,13-14].

Hijamah-bila-Shurt (Non invasive cupping)

Application of *Mahjama* (cups) without making an incision (*shurt*) is known as *hijamah-bila-shurt*. It is applied on affected areas by creating negative pressure inside the cups either by holding a small flame inside the cups (*Mahjama-Nari*) or by using vacuum pump (*Mahjama-Ghair-Nari*). It is specially indicated when absorption is required without induction of *istifragh-e-dam*. *Mahjama-Nari* is more beneficial when morbid matter is relatively thicker [4,10].

There are following conditions in which non invasive cupping is useful [1,5,6, 13,14].

1. When transfer of matter is needed from one part to other part of the body then *mahjama* should be applied at the same part where the transfer is needed e.g. *hijamah-e-pistaan* is recommended in excessive menstrual bleeding conditions.
2. When natural absorption or retention is needed e.g. cupping is done at the epigastric region to control vomiting.
3. When all therapeutic measures fail to treat swelling in deeper parts then *hijamah-bila-shurt* should be done on the affected area, which makes swelling appear on the surface and thus it may be treated by local application of specific drugs.
4. In case of deep pustulated wounds, it is difficult to clean them hence; non invasive cupping is done to draw the pus easily.
5. In the case of the inflammation of a vital organ, cupping should be done over the surface area of a minor organ in order to transfer the morbid material (*Imtila-e-mawad*) from the vital organ.
6. To warm any organ affected by excessive cold, *mahjama*, especially *mahjama nari* is applied which provides warmth by increasing flow of the blood.
7. *Hijamah-bila-shurt*, especially Non invasive cupping with fire (*mahajjama-nari*) is more effective for softening the excessive air perfusion (*ghalba-e-riyah*) in the conditions such as *Qoolanj-e-reehi* etc.
8. *Hijamah-bila-shurt* is also beneficial for lessening the dislocations of the organs, e.g. cervical vertebral dislocation and fractured ribs dislocations.
9. *Hijamah* provides instant relief from severe pain by dissolution of the causative matter or transfer of the causative matter towards the less sensitive area and increased the muscles strength, e.g. in *Irq-un-Nisa* (sciatica) pain is relived by induction of non-invasive cupping on the medial or lateral aspect of the thigh, low back ache, fibrofaceitis, muscular strain, frozen shoulder, lumbo-sacral and cervical spondylitis.
10. When it is needed to increase the size of any organs then *hijamah-bila-shurt* should be directed on that organ.
11. *Hijamah-bila-shurt* is also effective for reduction of size of any organ, in this situation *mahjama* (cup) should be applied around that specific organ.
12. *Abul Qasim Zahrawi* has described that *hijamah-bila-shurt* should be advised especially for such type of areas where *shurt* (incision) cannot be tolerated, such as the surface areas of liver, spleen, breast, kidney, umbilicus etc.
13. According to *Ibn-e-Hubal* Baghdadi, *Hijamah-bila-shurt* is also effective in inguinal hernia, when *mahjama* is applied at the lower abdomen to pull the intestine above from the scrotum.
14. *Jurjani* has described following six major advantages of the *hijamah-bila-shurt* (non-invasive cupping). It plays an effective role in changing the direction of the matter e.g. *Hijamah-e-pistaan* is beneficial in excessive menstruation; similarly *hijamah* should be done on the abdominal area to check the epistaxis.
15. It is beneficial to return the displaced organ to its normal position, e.g. in shoulder dislocation the application of *mahjama* can reduce it easily, it is also useful in inguinal hernia to return the herniated contents to their normal position. One specific advantage of non-invasive cupping is that it causes the deep seated problems to become prominent, e.g. in the case of internal piles, *hijamah-e-maq'ad* is very much effective to make it prominent so that it should be treated properly. *Hijamah-bila-shurt*

shows dramatic effects when it is applied on such type of organs or areas which has lost their sensation and movements. It is beneficial in the drainage of pus from any deep abscess. Non-invasive cupping plays an important role in the pain relief in different ailments.

Conclusion

In this paper, we discussed various dimensions of cupping from which one can fully understand the technique and can be able to perform it nicely.

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The Relation between Times Progression to Human Health in the Arabic Islamic Heritage

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Summary

The Translation, that started by the beginning of Almansour Caliphate (136- 158 Hijri/754-775 AD), of various ancient civilizations languages into Arabic language had an important role in the introduction and development of Astrology (Ahkam al-nujum), as ancient astrological books were common within the various scientific Islamic media. Natural Astrology, that belonged to the Al-Anwā' Science(meteorology) and was based on observing the effects of planets in the natural elements, had acquired a great popularity in the Islamic World. It avoided some traditional objections against Astrology, because being able to forecast about future meant that there was nothing to be done to improve human life, and consequently astrology would be worthless. In addition, both astrology branches: Choices (ikhtiarat) and Matters (masael) such as choosing the good days and periods and avoiding bad unlucky times for performing various tasks, or identifying various conditions to find lost things, gave a practical significance for Astrology.

Therefore, it is not uncommon for Muslim Arab physicians to have interests in astronomical sciences in general, and astrology in particular since choosing the appropriate time to give a patient a proper remedy was more vital than the remedy itself. They considered it was impossible to choose the suitable time to take medications or to perform bloodletting (fsd) without physicians' having some astronomical knowledge. Many of these physicians, such as at-Tabarī, ar-Rāzī, al-Hasan b.)al)-Bahlūl⁽¹⁾,¹ allocated chapters with astronomical titles in their medical manuscripts that contributed to give their medical sciences wider scientific prospects.

The importance of this study is in focusing on the subject of "Times" (Azmina) as an important practical aspect of the practical astronomy that helps to offer a clear idea for integration of sciences in the Islamic era, by studying the relation between Times Progression to the Human Health.

Key Words: Times Azmina, human health, illness, hours, seasons alternations.

1. Introduction:

Islamic astronomers allocated a large portion for the Time and Timing in their books, and they tried to interpret and clarify the reason behind its progression, and explained the difference in the time concepts between Arabs and other nations in the Islamic state.

Azmina books emerged from the development of specialized Arabic *Al-Anwā'* books that were ranked highly in the Arabic Islamic heritage, as a result to the extension of the state after Islam contributed in involvement of the scholars to compile them to prevent their loss within the educational and civilized diversity.

Four Times (*Al- Azmina al-arbaa'*) were studied extensively in some of them, and so were the twelve months in both of solar and lunar years in other books.

¹ The distinguished personalities names in research are written as Fuat Sezgin wrote them.

One Of the clues about the importance of *Azmina* is that it is found within most of the astronomical issues that attracted the attention of the Arab Muslim physicians who studied the subject matter from the translation of "Hippocrates" who associated the knowledge of changes of *Azmina's* states with the knowledge of illnesses' causes .

We studied some aspects of the relation between the progression of times "*Taaqub al-azmina*" and the human health in the Arabic Islamic heritage, because "*Azmina*" were in the focus of the Arabic astronomers, scholars and physicians.

2. Times in the Arabic Islamic Heritage:

Al-Marzūqī (died in 5th Hijri century/11th AD) gave in his book "Times and Places (*Al-Azmina wa al-amkina*), the definition of time under the title "A Chapter about Essence

of Time (*Fasl in mahyeat al-zaman*), by writing, “some ancient scholars said that time is the revolution of planets”; Platon said, “it is a moving image of the world similar to the planets”; another said, “it is the movement of the sun in the ecliptic”, and al-Nawbaḡtī reported all that was mentioned, and these sayings are similar”. [1] We conclude from the definition that the exact understanding of the Time (*Azmina*) concept is not linked especially to astronomy, but to the understanding of the ancient scholars’ opinions about this concept in the ancient civilizations too. Some of the important Arabic and Islamic manuscripts (books) that included “Time” topic within their contexts are:

1. Al-Birūnī’s Illustration for the Pioneers in Astrology (*kitab al-tafhim li-awa’il sina’at al-tanjim*) (362-440 h/973-1084 AD): it identified most parts of Time within the astronomy art, which is the third in the book. These definitions were an aid for Astrology (*Ahkam al-nujum*) which is the last art in the book. It is impossible to understand this science without forming a general idea about time from an astronomical point of view. He said about hours: “hours are of two kinds, equal and unequal. The former, *mustawiyah*, are each the twenty-fourth part of the civil day, and are all equal in length. The unequal ‘crooked’, *mu’wajjah*, hours are in each case the twelfth part of the day or night, each of them is a half sixth of the day and night”. [2] Then he differentiated between the natural and the conventional month by saying, “The month is of two kinds, natural and conventional. The natural month is that period of time required by the moon, situated at a particular distance from the sun east or west, to travel until it reaches the same distance.

As the shape of the illuminated part of the moon corresponds to its distance from the sun, starting with the crescent because it is the starting and final form of the shapes and between them 29½ days and a fraction, but since half a day is not possible, they considered both months as 59 days, is divided into periods of 30 and 29 days according to the course of the sun and the moon. But, this determination is based on the mean progress of the sun and moon or by their corrected rates of movement, for it agrees with the determination of the months by the visibility of the new moon, whether there be a succession of two or three months greater or less than the average or no. The conventional or technical month, however, is the twelfth part of a natural year as near as possible”. [2]

And accordingly he differentiated between the natural year and the conventional one:

“The natural year is defined as that period of time during which the four seasons (hot and cold seasons, harvest

and seed time) are completed once. It is measured by the return of the sun to a particular point of the ecliptic from which it set out: it is therefore called a solar year. Its extent is 365 days and a fraction of less than a quarter of a day as we have found, but more than a quarter according to our predecessors have found. This is the natural year, and its months, which are the twelve equal parts into which it is divided, are the solar or conventional months not the natural ones. On the other hand the conventional year is composed of twelve natural months, their length is 354 days and 11/30th of days; such a year is styled lunar”. [2]

We notice the ease of liking the natural year with the conventional month, and liking the conventional year with the natural month which reflects the Islamic era understanding of times concept and most aspects of the economic and social life.

2. *Al-Mughni fi ahkam al-nujum* for Ahmad Ibn Jusuf Ibn ad-Daya known as Ibn Hibintā, an astrologer, a physician and an engineer (3rd – 4th Hijri century, 9th – 10th AD): he linked between the hours of the day and night and planets directly, the concept of time in this manuscript reflected the view of astrology (*Ahkam al-nujum*) to it, he said, “each planet has a day of the week which is concerned of its first hour, and the next planet is concerned with the second hour and so on till they revolve one after another in most hours of the day, the sun has Sunday, and he is the Lord of the first hour of it, the second is for Venus, the twelfth is for Saturn. Jupiter is the Lord of Monday night, and its first hour, then the plants follow to the Monday midday, the Moon is The Lord of Monday, and its first hour, and so on...”. [3]

3. “Times and Places (*al-Azmina wa al - Amkina*) for al-Marzūqī. It is a very important document for times and more developed than the first books about *Anwā’* that mentioned the Arabic Peninsula knowledge about *Al-Anwā’*. one of the distinguished ideas in this book is the use of lunar places (*Manāzil*) to identify the year seasons. It said that, “the astrologers identify the year season by rising the sun in one of the 28 stars, and they give for every of the four times seven stars of them.

They start by the spring season which is summers in Arabs, the stars of this season are *al-Shartān*, *al-Batin*, *al-Şeria*, *al-Debarān*, *al-Haka’t*, *al-Hana’t*, and *al-Zerāa*...”. [1]

The difference in astronomical cognizance heritage is simply evident about identifying the beginning of time for old nations. The Arabs, in contradiction to all nations, started by winter. Al-Marzūqī said, “Arabs divide the year into two halves: winter and summer. They start in winter as if they predict the principles and food in the world from it”. [1]

3. The Relation Between Time Progression and Human Health in Arabic Heritage:

The astrological books that were related to Hippocrates (5th century BC.) gave him a reputation that he was an astrologer even though he was a physician, he had acquired both sciences as it could be understood from his speech that was reported in the book "The Objective of the Wise and the Best Result to be Introduced (*Ghayet al-Hakeem and ahaq al-natejateen in at-taqdeem*) for Abu l-Qāsim al-Mağrīṭī (338-398 H/950- 1007 AD), "Hippocrates concise words are: If Jupiter controlled the sun at the time of solar year change (*tahwil*) the diseases are less and health is plentiful in this year and pregnancy and child bearing is recommended".[4]

The most important that the Arabs had acquired from Hippocrates books is the book of "Knowing the Seasons", that studies meteorology, *al-anwā*, astronomy and astrology. He explained in it the study of time change in knowing the causes of illnesses, so it was an important source for most of the Arab physicians. The wise Hippocrates said, "The soul inside us was that attracts air to us, and wind changed lives from an aspect to another and changed it from cold into heat, and dryness into moisture, and from happiness into sadness, they changed houses contents of *karn*⁽²⁾, or *asab*⁽³⁾ silver or drinks or honey or fats and so they heated them once and cooled them once and solidified them a third time because the sun and planets changed the air by their movements and if the air changes, everything would change consequently, and he who knew the times' issues and their aspects knew the greatest cause of the illnesses and causes of keeping Human health".[5]

3.1. The relation between hours progression and Human health:

Ibn Hibintā offered rare and distinguished lines that link between hours and human life reported from Abi Ma' šar who reported them from Hermes in the section of Lords of days and hours in the Astrology (*ahkam al-nujum*): "Abi Ma' šar reported from Hermes that of their confidential secrets was that they looked to the Lord of the hour in which the infant was born that made his ascendant (*at-tali*) for the first year of his birth and inferred of its aspects about his health and illness, and the Lord of the second hour of it was for the treasury in origin and for the body in the second year of the age, ...etc.". [3]

² Smooth shiny stones that leave no traces.[6]

³ It was suggested that people take the nerves of some un prohibited animals, cut them and change them into beads, and when they are dry, they use it as ornaments.[6]

Ibn Hibintā discussed the issue of illness and health within many issues of human life, so they were results for linking the hours with horoscope and planets, and he said, "who was born in Taurus, and it was at night in the hour of the sun, and the moon was in Sagittarius he was feeble and poor".[3]

Ibn Hibintā reported from Indian scholars in the Astrology (*ahkam al-nujum*), the way of judging on the health status of the sick and prognosis. He said, "we found in some of that was reported from Indian scholars when asking about the prognosis of a patient, they set the ascending and calculate from the Lord of the hour to the sum, take a grade and shed three, if you had one or two emaining he would heal by God's will. If three remained he would not, and God knows".[3]

3.2. The relation between days progression and Human health:

The Scholar and physician al-Hasan b. (al)-Bahlūl (lived in the second half of the 4th H. century/10th AD.) had reported in his important book "the Clues" (*al-Dalā'el*) which is the most comprehensive book about the clues ever known. He reported physicians' sayings such as Demokrit, Hippocrates, Galen, Hunain b. Ishaq and other scholars about *al-anwā*, such as Ibn Qutaiba.

In the chapter about meteorology, there was a section about the clues related to the lunar months in which he dealt with the clues of illnesses of every day of the lunar month which made it a reference for the clues of upper traces and illnesses in addition to other benefits. He said, "they mentioned the clues that know from the lunar month, not any specific month, and a clue for ailments in every day of the lunar month: the first night, if he became ill and didn't heal would stay ill the while month, the second night, remains ill, the third night, he was worried about, the fourth, he heals with the help of the physicians... the twenty ninth he heals, and the thirtieth, if he didn't heal, is death was suspected".[7]

Hunain b. Ishaq (194-260 H/ 809- 873 AD) worked with astrology in addition to the upper traces, and in his medical mathematical article "Tide and Ebb", he identified the effect of the moon in its different mansions on tide and ebb and on the secular world and people's health. Some of this article was mentioned in "The Clues"(*al-Dalā'el*). He wrote, "you could know the prognosis of the sick from the rise of the moon and its fall, because those who get sick at the beginning of the month are able to resist illness, and those who get sick by the end of the month are weak to resist illness".[7]

3.3. The relation between seasons progression and Human health:

We notice in studying the relation between seasons progression and human health that the Arab physicians, such as 'Ali b. Rabban at-Tabarī (born in 180 or 185 H./ 796 or 801 AD, and died in about 250 H./ 864 AD) , Abu Bakr ar-Rāzī (died in 313 H/925 AD) and al-Hasan b(al)-Bahlūl depended on Hippocrates's book "Knowing the Seasons", that encompassed everything about the progression of the four seasons on health. at-Tabarī reported the relation between a year, wind and health, "If the year had a dry and clear air, and everything appeared in its time illnesses will be little and was a good year..."[5]. And he mentioned the relation between the seasons, wind and health, "if the winter was dry with northern wind, and the spring was rainy with southern wind, the summer would have mildew, fever, ophthalmia, and diarrhea, especially for those who was cold and wet.[5]

We notice that there is a correlation between seasons and wind because times of wind blowing are related with the fall of the fixed stars and their rise. Al-Marzūqī said in mentioning the four winds and their directions, "Southern Direction from the rise of *Souhel* to the rise of Pleiades *al-Şeria*, *Siba*, from the rise of Pleiades *al-Şeria* to Uras Major, and North, from Uras into the fall of Vega, and *Doubour* from the fall of Vega to the rise of *Souhel*..."[1] Because the rise of stars had certain periods in the four seasons of the year.

Ar-Rāzī didn't make reference to Hippocrates only, but also commented on the explanations of Galen, for example, he reported Hippocrates "Fever follows lack of rain", [8], and mentioned two quotes from Galen, in one of them, he said, "Fever occurs in hot humid, dry air, and infrequently happens in cold air. Notice the temperature of the air, the rain nothingness and whether it was from the North or the South, because it was great". [8]

Then ar-Rāzī commented on the same idea, which proves his mastery of all previous sciences, and having sufficient experience that qualified him to express his view "What Galen had mentioned in explaining this is clear, and he means that joining interference of the wind to the interference of the hot and cold; humid and dry period fostered this and improved its clues.

An example of this is that if the spring was southern the spring illnesses were abundant and stronger. In contrast, with fluctuations of times against each other, illnesses may happen. The change of time from its specific nature would change it, and fluctuations of times against each other gradually in the long run effects health".[8]

We conclude the following:

1-The importance of studying the astrological medical manuscripts to cover some aspects of *Al-Anwā'* science , and the science of astrology.

2-The translation related to astrology books into Arabic played an important role in developing Arabic Islamic Astrology and justified the existence of the theoretical astrology.

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History of Hijamat

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Summary

Hijāmat is a mode of treatment, which is carried out by creating partial vacuum in the cupping glasses, placed on the body surface by mean of fire or suction, in order to evacuate morbid material or to divert the material from the deeper tissues of diseased part, or to return a displaced organ to its normal position or to encourage the blood flow to the site of Hijāmat. Hijāmat was particularly used among the Chinese, Babylonians, Egyptians and Greeks etc. The pottery cups, hollowed out animal horns and bamboo cups were used commonly for the purpose. In Greece (Unan) the use of Hijāmat dates back to that period when most of the physicians were trapped in the superstitious believes. A book has been written by Hippocrates on Hijāmat and Fasd which was later translated by Yuhannā-bin-Māswaih into Arabic and named as Kitāb fil-Fasd wa'al-Hijāmat.

The Muslim physicians during the middle ages used and further developed the Ilāj bil-Hijāmat theoretically as well as practically. The history and Unani medical books reveal that it was among the most popular methods of treatment in all communities of that period. Even a full-fledged book kitāb fil-Hijāmat was written by Rabban Tabari, which is available in the library of Bāsil Halab. In further development of this aspect, there are so many valuable contribution of different physicians of that time as Zakariya Razi, known as Razes in west (850-923 A.D), Ali Ibn Abbās Majūsi, known as Haly Abbās in West (930-994 A.D), Abulqāsim Zahrāwi, known as Abacuses in West (936-1036 A.D), Ibn Sina, known as Avicenna in West (980-1037 A.D), Ismāil Jurjāni (1136 A.D), Ibn Hubal (1213A.D) and Ibn-ul-Quf al-Masēhi (1233-1286 A.D).

Key Words: Hijamat, Vacuum, Cupping Glasses, Bamboo Cups

The word *Hijāmat* has been derived from the Arabic verb *Hajama*. It has different meanings which are mentioned in different dictionaries and texts. One of the meanings of *Hajama* had been adopted by the Arabic physicians.

It literally stands for sucking.

Ibne Manzoor mentioned in *Lisan-ul-Arab*:

Al-Hajama is to suck. When a baby sucks the breast, it is said that '*hajama al sabyo sadya Ummihi* (the baby sucked the breast of his/her mother) and when he/she does not suck, it is called '*ma hajama al sabyo sadya ummihi* (the baby did not suck the breast of his/her mother).¹

This meaning is very closed to the technical meaning of *Hijāmat*, because in ancient time and middle ages *Hijāmat-e-Ghair Nariya* was carried out by sucking, through the narrow opening of the hollowed out animal horn, which was placed on the site of *Hijāmat* by the mouth. And still it is in practice in certain rural areas. But nowadays cupping glasses made up of glass or wood are used for sucking purpose and vacuum is created by vacuum pump.

Hijāmat is a mode of treatment, which is carried out by creating partial vacuum in the cupping glasses, placed on the body surface by mean of fire or suction, in order to evacuate morbid material or to divert the material from the deeper tissues of diseased part, or to return a displaced organ to its normal position or to encourage the blood flow to the site of *Hijāmat*.

Synonyms of *Hijāmat*

Singhi lagana and *Pachna lagana* – Hindi ²

Cupping – English

Jiaofa and Bafuanfa – Chinese ³

Some Old Arabic Terms relevant to *Hijāmat*

❖ ***Hijāmat*:** Some physicians pronounce it as *Hajāmat*, but the actual pronunciation is *Hijāmat*, as it has been mentioned in *Al-Qāmūs-ul-Muhēt*.⁴

“Its occupation is called *Hijāmat* like *Kitābat*” (It is written by giving *Jar/Zer* on its first letter)

In another Arabic dictionary, *Mukhtar-ul-Sehah* it has been mentioned as follows.⁵

The noun is *Hijāmat* with *Kserah*.

According to *Kabīruddēn* when the word, *Hijāmat* is merely used, it means *Hijāmat-bil-Shurt*.⁶

- ❖ **Ihtijām:** This is an infinitive of an Arabic verb 'Ihtajama'. It means to be cupped.
- ❖ **Muhtajim:** this is active particle; derived from the infinitive 'Ihtijām' which means person to be cupped.
- ❖ **Hajjām:** This is an exaggerative noun of verb 'Hajama', which means Cupping-performer or Cupping-operator.
- ❖ **Mihjamah** and **Mihjam** (Pl. **Mahājim**): The instrument which is used during *Hijamat* is called *Mihjamah*.⁷
- ❖ The instrument which is used for the scarification or pricking the skin in case of *Hijāmat-bil-Shart* is also called *Mihjamah*, as it is mentioned in *Lisān-ul-Arab*:

Al-Mihjam is the instrument in which blood of *Hijāmat* is collected during suction and the scarificator of cupping performer also is known as *Mihjam*.¹

- o **Mahjam** (Pl. **Mahaajim**): This is adverb of *Hajama*, denoting the site of *Hijamat*.
- o **Mishrat** (Pl. **Mashārit**): This is the instrument, which is used for the scarification or pricking the skin (Blade, Scalpel).⁸

Some New Arabic Terms relevant to *Hijamat*

- **Al-Moāljāt bil-Kāsāt** (Cupping Therapy): This word is used to denote the Dry Cupping, in which no blood is sucked out.⁹
- **Al-Moāljāt be-Massin wa-Tasrēb-il-Dam** (Blood Letting): this word is used to denote the wet cupping, in which the morbid materials are sucked out from the site of *Hijāmat*.⁹
- **Al-Moāljāt bil-Kāsāt-wa-Mass-il-Dam** (Cupping and Bloodletting): this word is used when we perform dry cupping and wet cupping simultaneously.⁹
- **Al-Moāljāt bil-Kāsāt ma' Amle Kudūsin au-Wakhzin** (Prick Cupping): this word also indicates the wet cupping.⁹
- **Al-Hijāmat-ul-Jāffah**: It is used for dry cupping.⁹
- **Al-Hijāmat-ul-Ratabah**: It is used for wet cupping.⁹

Hijāmat in ancient period

In history the time span since prehistoric period to the sixth century AD is known as ancient period.¹⁰

A long duration of early human life and culture is almost obscure and beyond the approach of history, so it is very difficult to say anything exactly about that period. But this fact also may not be denied that the human being, since its existence on this terrestrial globe has been making efforts to get relief from the pain and ailments and also has been trying to develop various new methods of treatment, which can help overcome the health problems. So *Hijāmat* may also be the result of those efforts.

Whatever information is available in the record of history in form of monuments and pictures shows that the *Hijāmat* is an ancient method which was particularly used among the Chinese, Babylonians, Egyptians and Greeks etc. The pottery cups, hollowed out animal horns and bamboo cups were used commonly for the purpose.¹¹

Regarding the earliest evidence of use of *Hijāmat* in Egypt a noble writer says "the earliest recorded evidence was discovered in Egypt in a document Eber's Papyrus dating from 1550 BC."^{12, 13}

In China also *Hijāmat* was used as a treatment for various ailments. Its use among Chinese dates back about 2000 BC. According to Dr. Ghassan Jafer," the treatment by the air cups in the internal diseases has been mentioned in the book of *Al - Ambratoor al - seeni* about 4000 years' ago.¹¹

But another writer Subooti Dhamananda, Director, Institute of Traditional Medicine, Portland, describing about the Chinese cupping therapy, writes regarding in history in China "the earliest use of cupping is recorded, is from the famous Taoist, alchemist and herbalist, Ge Kong (281-341 AD). The method was described in his book named 'A hand book of prescriptions for emergencies' in which the cups were actually animal horns used for draining pustules."³

In Greece (*Unan*) the use of *Hijāmat* dates back to that period when most of the physicians were trapped in the superstitious beliefs. They assumed that diseases were caused by penetrating of devils in to the body of patients. Therefore, they used to perform the *Taqwēr* (trephination) to drive away the devils from the body. Some times *Hijāmat* was also done to expel out the devils along with the blood. But when *Hippocrates* (*Buqrāt*), Father of Medicine, appeared in the medical world, he directed the medicine towards the scientific bases and gave the concept of *Akhlāt* (humors). He believed that the health is based on the correct balance of four *Akhlāt* and any imbalance in its quantity or quality may cause the diseases. Thereafter, in the light of this concept, it was hypothesized by the physicians, following Hippocrates, like Galen (*Jālinūs*) that the blood letting through this method might maintain that balance of *Akhlāt*, mentioned by him⁹. A book also has been written

by Hippocrates on *Hijāmat* and *Fasd* which was later translated by *Yuhannā-bin-Māswaih* into Arabic and named as *Kitāb fil-Fasd wa'al-Hijāmat*.^{14, 15, 16, 17}

Among the **Indians** mostly horn cups were used for this purpose.⁸⁹ Later, the horn was replaced with the bamboo, pottery and glass cups but the previous method is still used in rural areas.

The ancient **Arabs** although were living in desert, but were much developed in culture, literature and various fields of knowledge. They were much familiar with the medical science also, but the medical science was confined only up to the knowledge of *Hijāmat*, *Kayy* (cauterization) and the properties of some herbs and plants. *Hijāmat* was the most popular mode of treatment in comparison to others. It has been reported that its largest use was in *Āshūrī* tribe among the Arabs.¹¹

After the migration of Muslim Physicians with their medical literature including Hijamat therapy, introduced to the Europe through Spain.¹¹

Hijāmat during the Days of Holy Prophet (ﷺ)

More than sixty *Ahādēth* (traditions) related to cupping are attributed to the Prophet (ﷺ). According to these *Ahādēth* the Prophet (ﷺ) not only confirmed its effectiveness but also advised people to cure themselves through it, he determined its sites on the body and explained the most favorable time for it, indicating the specific day time, week's days and dates of lunar month, and precautions to be taken by the person to be cupped before and after the treatment. Some sayings of the Prophet (ﷺ) are mentioned below:

Narrated Jabir bin Abdullah "I heard the Prophet (ﷺ) saying, "If there is any healing in your medicines, then it is in cupping, a gulp of honey or branding with fire (cauterization) that suits the ailment, but I don't like to be (cauterized) branded with fire".¹⁸

Mālik told me that he was informed that the Prophet (ﷺ) said, "If any medicine can cure the disease, that is cupping which is very effective".¹⁹

It is narrated by *Anas* that the Prophet (ﷺ) said, "In fact, the best of treatments, which you carry out, is the cupping and marine *Saussurea*".^{20, 21, 22, 23}

The Prophet (ﷺ) said, "Indeed, the best of the treatments which you carry out are the cupping and Venesection".⁹

It is narrated by *Anas* that the Prophet (PBUH.) got cupped on *Akhḍāin* (both side of the neck) and *Kāhil* (Inter

scapular region), on the 17th, 19th and 21st day (of a lunar month).²⁴

It is narrated by *Abu Hurairah* that the Prophet (ﷺ) said, "If there is any beauty in the treatments, which you carry out, that is cupping".^{25, 26}

It is narrated *Ibne Abbas* "The Prophet (ﷺ) was cupped while he was in a state of *Ihram*".^{20, 27, 28, 29}

It is reported by *Ibne Abbās* that the Prophet (ﷺ) got cupping, while he was *Muhrim* and also got cupping, when he was *Sāim* (On fast).^{20, 28, 29}

Hijamat during middle era: -

The Muslim physicians during the middle ages used and further developed the *Ilāj bil-Hijāmat* theoretically as well as practically. The history and *Unani* medical books reveal that it was among the most popular methods of treatment in all communities of that period. Even a full-fledged book *kitāb fil-Hijāmat* was written by *Rabban Tabari*, which is available in the library of *Bāsil Halab*.³⁰

Nearly in all and every medical book of that time, containing the chapter of *Usūl-e-Ilāj Hijāmat* has been mentioned in detail.

In further development of this aspect, there are so many valuable contribution of different physicians of that time as *Zakariya Razi*, known as *Razes* in west (850-923 A.D), *Ali Ibn Abbās Majūsī*, known as *Haly Abbās* in West (930-994 A.D), *Abulqāsim Zahrāwi*, known as *Abacuses* in West (936-1036 A.D), *Ibn Sina*, known as *Avicenna* in West (980-1037 A.D), *Ismāil Jurjāni* (1136 A.D), *Ibn Hubal* (1213A.D) and *Ibn-ul-Quf al-Masēhī* (1233-1286 A.D).

Rāzi has described the cure of various diseases by *Hijāmat* in his book *Al Hāwi* and *Al Mansoori*. He writes under the treatment of *Irq-ul-Nisā'* (Sciatica) in *Al Hāwi* "if the thick and hard morbid materials are collected in hip, *Hijāmat* becomes necessary and has a significant role also."³¹

Ali Ibne Abbās Majusi has also described the types, sites, indications, precautions and the most accurate time about *Hijāmat*, in the second volume of *Kamil-ul-Sana'a* under the chapter of *Ilāj-bil-Yad* which is done in muscles.³²

Abul Qasim Zahrāwi has described the *Hijamat* in his book *Al Tasreef*. Apart from its types he has also mentioned the following sites of *Hijamat*.

- *Nuqrah* (Nape)
- *Kāhil* (upper part of the back/inter scapular region)
- *Akhḍāin* (both lateral margins of the neck)
- *Zaqan/Ziqan* (chin)

- *Katifain* (both shoulders)
- *Us'us* (coccyx)
- *Zandain /Zindain* (both forearms)
- *Sāqain* (both shanks)
- *Urqubain* (both Achilles tendons).³³

Ibne Sena has discussed about *Hijāmat* in the first volume of *Al Qanoon-fil-Tibb*. Along with the description of *Hijamat* in detail he has pointed out certain important aspects as follows:

- (A) For the local evacuation of humors *Hijāmat* is better than *Fasd*.
- (B) *Hijāmat* should be preferred in individuals with diluted blood than in concentrated blood.
- (C) *Hijāmat* is less beneficial in obese individuals having viscid blood, because it is difficult to suck the blood due to its viscosity.³⁴

Ismail Jurjāni also described all the aspects of *Hijāmat*. Apart from this he also mentioned the age limits for *Hijamat*. According to him, *Hijāmat* is contraindicated in children below the age of two years and in elderly persons above the age of sixty years.³⁵ This age limit is particularly to *Hijāmat-bil-Shurt*.

Ibne Hubal also discussed about the *Hijāmat*. He writes in his book *Kitabul Mukhtarāt*, "*Hijāmat* sucks out the blood from those small blood vessels which are scattered in the muscles and skin, so it does not produces weakness as in the case of *Fasd*. It reduces the congestion from the particular organ and the adjacent organs.³⁶

Ibn-ul-Quf has mentioned the *Hijāmat* vividly in his book *Al-umdah-fil-jarāhat*. He described *Hijāmat-bil-shurt* and *Hijāmat-bilā-shurt* in two separate chapters. Explaining the purpose of *Hijāmat*, he writes: "the sanguineous material which is to be evacuated may be in any of the four sites:

1. Superficial part of the body
2. Deeper part of the body
3. Both deep and superficial parts of the body.
4. In between the deeper and superficial part of the body.

In case of the first condition, it will be evacuated by *Hijāmat*, in second and third will be drained by the *Fasd* (venesection) and in fourth by *Tālēq* (leeching).³⁷

Conclusion:

It was a very popular mode of treatment in older time but as the time passed the rules of *Hijāmat* were gradually forgotten due to negligence, dereliction and abstention un-

til those rules were obliterated and lost except few ones. Due to the improper performance by some medical persons it did not achieved the expected results and people started to avoid it. Some physicians did not take care about the indications, contraindications, time and sites of *Hijāmat* so the people did not achieves the promised benefits. Apart from this negligence much emphasis is being given these days.

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Meeting of the Executive Board of Directors of ISHIM

Tuesday 26/10/10 Istanbul / TURKEY

Attendance:

1. Dr Abdalnasser KAADAN
2. Dr Nil SARI
3. Dr Faisal ALNASIR
4. Dr Ayşegül DEMIRHAN
5. Dr Mustafa SHEHATA
6. Dr Sharif Kaf ALGHAZAL

Appology:

1. Dr Hajar BIN ALI
2. Dr Hussain NAGAMIA
3. Dr Mahdi MOHAGEG

Agenda:

1. Journal
2. Ethical Issues
3. Website
4. Membership
5. Prizes to the best 3 posters
6. Group photo and presentations
7. Next meeting

Minutes:

The committee members thanked Dr. Nil SARI for organizing this wonderful conference where 200 participant from around the world in attended this meeting which was held in İstanbul from 26-28 Oct. 2010.

1. Journal

The President thanked Dr. Ayshagul for her continuous support offered to the journal.

Uptill now 18 issues have been published. However Dr. Ayshagul has a debit of \$ US 350. The members promised to settle this amount to her.

Dr. Abu Shawireb from Libya will try to get financial support for the journal from Libya. The president has to write a letter in this issue.

The following was decided:

- Each issue has to be sent to Dr Kaf ALGHAZAL before printing so it would be put in the website.
- A fee of US \$ 35 will be charged from each author for each article that they submit for publication.
- The WHO EMRO Indexing approval has to be written in the journal. Dr Kaadan will follow up this matter.
- Each board member has to review issue 18 and send their comments to Dr Ayshagul by November 2010.
- A "peered reviewed" statement has to be written in the journal.

2. Ethical Issues

Dr. Kaf Al Ghazal said that the society should take care also of ethics beside the historical aspects. It was agreed.

3. Website

- The fee for maintaining the website will be covered from the fee subscriptions. Dr.Kaadan will take care of it.
- All the abstracts from this conference has to be published in the website. Dr Nil will send it to Dr Kaf al Ghazal.
- Dr Faisal suggested that a short CV and photo of each board member has to be published in the ISHIM Website. All agreed and it was decided that all members should send their CVs and photos to Dr Kaadan by November 2010.

4. Membership

- Dr. Faisal suggested to give an offer of fee discount to all new members who apply during the conference. It was agreed.
- Dr. Faisal also suggested that at the end of each 2 years, a list of members names be included in the journal. It was agreed.

Dr. Kaadan will send the old list to Dr Faisal for updating and organization.

- All the Fees for the new members received by Dr. Faisal (3 during this year and few more during the conference) will be handed to Dr.Kaadan.

5. Prizes to be offered for the best 3 posters

Dr. Kaadan and Dr. Nil will review the posters to nominate 3.

6. Group photo with officials.

- It was agreed to make a trial to meet the Turkish President and the Prime-Minister to introduce ISHIM to them.
- It was agreed to take a group photo with the president of İstanbul University.
- It was agreed that in the opening session of each ISHIM conference, the president will introduce the board members to the audience.

7. Next meetweg and conference

The following was agreed:

- The next conferance will be in Tehran Iran in April 2012.
- The President is to write request letter to:
 - Iranian officials to ask about the possibility of holding the conference in Iran.
 - To the Malaysian officials for conducting the conferance in Malaysia.
 - The possibility of holding ISHIM conference with Dr Ayshagul conference in Turkey next year. *The only problem is that there is no enough financial support.*
 - Dr. Nil SARI to call Dr Ihsan-Uldeen Uglo to find out the possibility of introducing ISHIM to the Islamic countries.

The meeting was adjourned at the afternoon of same day.

SCIENTIFIC EVENTS

42nd World Congress of the International Society for the History of Medicine

It was held in Cairo in 10-13 October 2010

www.ISHMcongresscairo2010.com

Congress President

Prof. Dr. Giorgio Zanchin

Contact Address

Prof. Dr. M. Nasser Kotby

11, El Ansary St., Manshiet El Bakry, E.T.11341 Cairo, Egypt

Tel : (20) 101 150 593 Fax : (20) 22 91 54 34

e-mail: nkotby@cng.com.eg - mnkotby@gmail.com

Address for Abstract:

abstracts@ISHMcongresscairo2010.com

5th International Congress of the International Society for the History of Islamic Medicine

It was held with the collaboration of the International Society for History of Islamic Medicine and Istanbul University in İstanbul, Turkey, during October 26-28, 2010.. Opening Speeches were made by the Congress Presidents ,Prof.Dr.Nil Sarı and Prof.Dr.Şafak Sahir Karamemetoğlu and ISHIM President Prof.Dr.Abdul Nasser Kaadan .Many scientific papers were present in this meeting.This congress continued 4 days and congress members visited many historical places of Istanbul.

Istanbul 2010- Health in Istanbul – From the Past to Present

It was held in İstanbul in Turkey during 3-6 November 2010

Congress Presidents:

Prof. Dr. İbrahim Başağaoğlu

Prof. Dr. Ayşegül Demirhan Erdemir

Contact

Dr. Hakan Ertin

e-mail:ertin@gmail.com

Heilbad Kultur in Europa

This meeting was held in Duszniki Zdroj in Poland during 19-20 May 2011.It was about Hot Springs and He-

aling Waters. It was organized by Prof.Dr.Bozena Plonka –Syroka from Wroclaw ,Poland .Prof.Dr.Ayşegül Demirhan Erdemir,Prof.Dr.Arın Namal and Assist Prof. Dr.Mahmut Gürgan gave original and valuable papers in this congress .

3. International Congress for Medical Ethics and Law(Ethics Committees)

This international Congress was held in Mannheim in Germany during 28-30 May 2011 by Institut für Deutsches, Europäisches und Internationales Medizinrecht, Gesundheitsrecht from Germany und Bioethik der Universitäten Heidelberg und Mannheim- IMGB from Germany and Society for Medical Ethics and Law from Turkey. President of this meeting was Prof.Dr.Jochen Taupitz.Its topics was Ethical Boards.I6 papers of Turkish and German scholars were present in this congress.

The History of Geology and Medicine –An International Conference

1-2 November 2011-London

It was held in London and Prof.Dr.Aysegul Demirhan Erdemir from Turkey gave a paper on Turkish Hot Springs.

Contact:

Prof.Dr.Richard Moody:

e-mail:rtj.moody@virgin.net

5th Balkan Congress on the History& Ethics of Medicine

It was held in Istanbul during 11-15 October 2011. It was organized by the Turkish Society for the History of Medicine, the Balkan Association for the History & Philosophy of Medicine and the Society for Medical Ethics and Law. In this congress, many original papers were present and the Congress Book was published.

Symposium on Culture of Health Cures in Europe-II Bursa (Turkey), 7-8 June 2012

It was held by Uludag University , Medical School ,Department of History of Medicine and Ethics and Istanbul University Medical School ,Department of History of Medicine and Ethics in Bursa in Turkey.Congress presidents were Prof.Dr.Ayşegül Demirhan Erdemir and Prof.Dr.Arın

Namal.This congress was made with the Cooperation of Turkey and Poland .

43rd Congress of the International Society for the History of Medicine-Padua-Abano Terme (Italy)

It was held in Padua in Italy during 12-16 September 2012

Contact:

www.ishm-congress2012.org

“Health, Culture and the Human Body”

It was made in Istanbul during 13-15 September 2012

Contact:

Assoc. Prof. Dr. Hakan Ertin

e-mail: hakanertin@gmail.com

2 nd International Congress on the Turkish History of Medicine

12th National Congress on the Turkish History of Medicine

2nd Symposium of the Turkish History of Dentistry with International Participation

It was held in Istanbul in 10-13 December 2012.Many scientific scholars were present in these meetings. Congress presidents were Prof.Dr.Aysegül Demirhan Erdemir,Prof. Dr.Öztañ Usmanbas and Prof.Dr.Arın Namal. These meetings continued 4 days.



Prof. Dr. Nil Sarı in the Congress of ISHIM in Istanbul in 2010



Prof. Dr. Abdul Nasser Kaadan in the Congress of ISHIM in Istanbul in 2010



ISHIM Executive Committee Members' Meeting in Istanbul Congress of ISHIM in 2010.



Participants in Balkan Congress in Istanbul in 2011



Prof.Dr.Jochen Taupitz in Mannheim Congress



Prof.Dr.Arın Namal and Prof.Dr.Ingrid Kastner in Spa Culture Congress in Poland in 2011



Prof. Dr. Aysegul Demirhan Erdemir and Dr. Richard Moody in London Congress in 2011



Prof. Dr. Aysegul Demirhan Erdemir in the Congress in Istanbul in 2012

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الجمعية الدولية لتاريخ الطب الاسلامي
International Society for the History of Islamic Medicine

(ISHIM)

طلب التحاق

Application for Membership

- Regular member (\$25 or QR 95) (عضو منتظم (25 دولار أميركي أو 95 ريال قطري)
 Student member (\$10 or QR36.50) (عضوية الطلاب (10 دولارات أو 36,5 ريال قطري)

Name : الإسم :

Occupation/work : المهنة :

Postal Address : العنوان البريدي :

Tel : الهاتف : Fax: الفاكس :

E-Mail : العنوان الإلكتروني :

Personal Data : معلومات ذاتية :
(Attachment of a short CV copy is preferred) (يستحسن إرفاق نسخة من السيرة الذاتية مع الطلب)

Signature: الإمضاء :
Payments : طريقة الدفع :

Credit Card number : Exp. Date.....

Visa Master card American Express

Draft/Money order (payable to the: International Society for History of Islamic Medicine - ISHIM)

Bank details: QNB – Doha/Qatar (US\$ Acct # 0055-068990-060 - QR Acct # 0055-068990-001)

Signature:.....

For Official Use : للإستعمال الرسمي :

Date : التاريخ :

Please send this application to:

Dr.H.A.Hajar Al Bin Ali

P.O.Box : 5666

Doha – Qatar

Fax: (974) 4443447

الرجاء إرسال الطلب إلى:

د.حجر أحمد حجر البنعلي

ص.ب : 5666

الدوحة قطر

فاكس : (974) 4443447