

Brief history of pharmacy ethics in Iran

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Abstract

Pharmacy is an ethical profession. The aim of this study was to investigate the history of pharmacy ethics in Iran. In the ancient Persia, medical and pharmaceutical ethics were related to religious rules, and everybody had to respect it. The ethical rules were similar to some current pharmacy ethics. During Islamic era, the pharmacy ethics were edited according to the Islamic rules. After introduction of European pharmacy into Iran, the pharmacy ethics did not change and was regarded as before. By presentation of bioethics and medical ethics in recent years, new activities are carried out for better manipulation of their rules in health professions including pharmacy.

Keywords: *Pharmacy, Ethics, Persian history, Pharmacy history.*

Introduction

Iran (formerly *Persia*) is located in southwest Asia with a territory of 1,648,195 square kilometers and a population of more than 70 million people (1).

Iran with its five major climates has been presented a unique diversity of medicinal plants (2).

This country, also, played an important role in the history of medicine and pharmacy in the world, but, unfortunately a very small part of this history has been taken into consideration (3).

History of ethics is closely related to the presence of human being in the world. In other words, ethics are born during the social activity of the people and everybody has its own role.

The aim of this study is a brief excursion on the history of pharmacy ethics in Iran. Our bibliography showed a few investigations on this topic (4, 5). On the contrary, we found many papers regarding medical ethics in Iran. It is partly due to this fact that pharmacy during centuries was associated with medicine in their responsibility with regard to preserving health of the people.

Brief history of pharmacy in Iran

History of pharmacy in Iran goes back to several centuries ago.

The ancient history of pharmacy in Iran is an amalgamation of medico-pharmaceutical beliefs of Babylonians, Assyrians, inhabitants of Mesopotamian Plains as well as Greeks, Indians, Egyptians, and ancient Iranians (3, 6-9).

Babylonians and Assyrians believed that health and diseases were gift of Gods and treatment was based on prays and incantations. But their beliefs were not confined to magic and spiritual activities. R Campbell Thomson examined hundreds of clay tablets obtained from library of *King Assurbanipal* and found a valuable materia medica. He identified 250 vegetable drugs, 120 mineral drugs, alcoholic beverages, and parts of animals being used as drugs (9). In one of the clays, prepared by the Kremers and other scientists which considered as one of the oldest medical documents in the world, the laws and ethical rules are described. In these rules, rewards and punishments of the physicians are clearly described (10). Of the

oldest documents of medicine and pharmacy of ancient Persia, one can mention the holy book of *Avesta* (11), as well as *The Dinkard*, *The Zadsperam*, and the memories of some Greek historians (3, 7, 8, 12).

It is interesting to mention that the term "drug" is probably derived from the Avestan ancient term "darav" meaning the stem of a plant as the origin of medicinal herbs, (*Dar* in Current Farsi language stands for tree). This word later changed into "darug" in the median Farsi language, and then changed to "droga" in Latin, "drogue" in French "drug" in English and "daru" in Farsi language (13, 14).

The *Jundishapur* academic center was established during *Sassanid Dynasty*. This scientific center, due to its cosmopolitan centrality, can be considered as one of the earliest universities (15). One of the famous pharmacists in this school was *Shapur Sahl*. He composed his *Aqrabadin Kabir* (great formulary) in 869 CE, which became the first formulary to receive widespread acceptance and use in hospitals and pharmacies of the time (3, 16). According to Edward Brown: "The most cogent evidence for ancient Iranian interest in pharmacy is the Iranian origin of many drug names in medieval medicine" (17).

With the establishment of Islamic government in Iran (638 CE), the medico-pharmaceutical knowledge of many countries came under the rule of Islam. A new era of medical, pharmaceutical and other sciences commenced and became a brilliant period of scientific knowledge, which later disseminated into Europe; thence greatly influenced the European Renaissance (6, 8, 18). The role of Iranian scholars was very important in the advancement of sciences and art (15). The Arabic language became the dominant scientific language (3, 8, 19). But, unfortunately, later, this word was used to denote a race or a nation. An in-depth discussion on this era (≈ 1000 yrs) is not possible in this short space. It is necessary to mention that, according to Martin Levy, "during this era, over 600,000 manuscripts were dispersed in depositories throughout the world." These manuscripts were mostly in Arabic language and some in Persian (20). Therefore, it is reasonable to abridge reviewing the history of pharmacy in Iran to a few well-known Iranian scholars. Mostly, those whom we consider as physician-pharmacists are so called because they have writings on pharmacy and pharmacology.

Ali ibn Sahl Rabban Tabari (circa 818-870 CE)

This Iranian scholar was born in Marv, Tabaristan, from a respectable Jewish family.

His father was a well known physician and a reputable philosopher. He received his education in the discipline of medicine, calligraphy, astronomy, mathematics and literature. He had also studied

Syriac and Greek languages. Later he left Marv to Ray (near Tehran). Then he moved to Baghdad where he converted into Islam. Some historians have introduced him as a tutor of *Rhazes* which was rejected rationally by other historians due to the differences on their birth and death dates.

However, *Rhazes*, as a disciple mentioned him in his well-known book *Al-Hawi fi Tibb*. It is quite possible that *Rhazes* borrowed many aspects of medicine and pharmacy from his book entitled "*Ferdous-al Hikmat*" (The paradise of wisdom). Three out of seven sections of his book are dedicated to drugs, poisons, flavors and diet. Tabari clearly demonstrated his reliance on the Greek medicine and Indian herbal drugs (19, 21- 24).

Mohammad ibn Zakariya Razi (Rhazes in Latin) 865-825 CE

Rhazes was master of alchemy, chemist, pharmacist, philosopher, theologian and a great clinical physician in medieval medicine, and, also, well-known as 'The Galen of East' (23, 25, 26). His famous book *Al Hawi fi Tibb* (The Continens of Rhazes) is an enormous encyclopedia in 26 volumes. The first edition of this book was printed in Brescia, Italy in 1486. Three volumes of this book were dedicated to pharmacy containing many extracts from Greek and Hindu authors (27). These books were used as a source of pharmacology for many years in European universities (26). *Rhazes* wrote more than 180 books and treatises in medicine, pharmacy and other sciences (23). Two of his books concerned with ethics are: 1) *Al- Sirat al-Falsafiya* (The nature of philosophies) and 2) *Tibb-e Rohani* (spiritual medicine) (27, 28). *Rhazes* in his book *Shukuk ala Jalinus* (Doubts about Galen) denoted his critics on the works of Galen.

Abu Mansur Muwaffaq Heravi

He was a physician–pharmacist who lived after *Rhazes* and we have not enough information about his living time period. He is famous for his book written in Farsi on pharmacy and pharmacology under the title "*Ketab ul-Abniya an Haqa' iq'il Adviya*" (the book of the foundations of real properties of the remedies). This book can be considered as the first pharmaceutical writing after domination of Arabic language as a scientific language which was not understood by ordinary people. With this book a new era of pharmacology began to work (3).

Abu Ali Al-Husain bn Abdullah ibn Sina (Avicenna in Latin) (980-1037 CE)

He is considered the greatest scientist of Islamic period. He was also a poet, writer, theologian, philosopher, mathematician, and psychologist. He was called "The prince of physicians" by the Europeans (29).

His masterpiece '*the canon of Medicine*' was translated into Latin and other languages and taught in many European universities for years. He dedicated two volumes of the 5 volumes of this book to pharmacy and pharmacology.

His writings had significant effect on western medical curriculum and was helpful to the European Renaissance (29, 30)

Western medicine and pharmacy in Iran

European pharmacy and medicine was introduced to Iran with the establishment of *Dar-ul-Fonun* (Polytechnic School) in Tehran in 1850 CE. Western medicine was taught by European physicians. Humoral theory was the bases of pharmacy before the advent of western medicine into Iran. Traditional knowledge of pharmacy and medicine was pushed away from the mainstream of the medicine.

Historical remarks

As mentioned before, pharmacy in ancient Persia was integrated into medicine, and physicians were engaged in pharmaceutical affairs; for example, *Ibn Masawayh* was the head of Jundishapur hospital but, he was also a famous pharmacologist. Therefore, the ethical principles of pharmacy and medicine were associated with each other.

In that period, ethics was mostly based on religious orders. *Plato* remembered of Iranian ethical art such as knowledge, justice, selfishness, freedom, mercifulness and kindness as Persian training rules (31). Ethical rules in medicine including the character of a good physician, medical behavior including deontology, kindness, humility, avoiding giving abortifacient and denying poor patients are mentioned in *Avesta* and *Pahlavi* sources. Ignoring these rules was associated with hard punishments (6, 28, 32). Furthermore, as mentioned in other sources, the physicians and the pharmacists had to attain qualifications, listen to patients with calmness and gentleness, take honor in their profession, and be God fearing, etc (3). Many of these parameters are very similar to those are recommended today.

During Islamic era in Iran, ethical issues of pharmacy and medicine were taken into more consideration.

The well-known Iranian physicians such as *Tabari*, *Rhazes*, *Avicenna*, and others allocated parts of their writings to ethics (23, 33). *Haly Abbas* (*Ali Abbas Majors Ahwazi*) translated and modified the *Hippocratic Oath* and brought it into his book under the title of "*Ahwazi Letter of Advice*". This statement contains many ethical parameters nowadays presented as pharmacy code of ethics (34).

During Safavid state, an Iranian government came into being. Pharmacy in this period had more advancement than before. *Elgood* called this period "The Golden Age" of pharmacy of Iran; however pharmacy ethics were not considered by unofficial drug sellers (3).

During education of medicine and pharmacy in *Dar-ul-Fonun*, the ethical issues were dependent on the behavior of the educators.

Tehran University was opened in 1934 CE. In the faculty of medicine, pharmacy and dentistry, no place was allocated to pharmacy ethics.

Dr. Etemadian wrote a book on medical ethics in 1963 CE (35). The content of this book

was not taught in the faculty of pharmacy and no syllabus was introduced for pharmacy ethics. Just the dean of the faculty was reminding the responsibilities of the pharmacists in the society and was mentioning some advices in respecting social behaviors and keeping the prestige of the pharmacy profession to the students, for one or two hours.

In current academic year (2008-2009), a course of pharmacy ethics (one credit) is being launched for the undergraduate pharmacy students of faculty of pharmacy of Tehran University of Medical Sciences.

Bioethics was presented as a new concept. This term was not so new in medicine and pharmacy in Iran because physicians and pharmacists have preceptions and regulations concerned with those presented in bioethics (6, 28, 32-34).

By the explosive advancement of sciences like biotechnology, nanotechnology and biomedical sciences, the issues of bioethics and medical ethics are put into consideration in Iran. The obligations of bioethics and medical ethics are also put into action; further activities in these fields are under investigations (36).

Conclusion

Pharmacy (and medicine) has been a profession engaged with ethical measures in the ancient period of Iran. During early Islamic periods, many medico-pharmaceutical scholars wrote treatises regarding ethics. Introduction of European pharmacy (and medicine) led to the establishment of Tehran University in 1934 CE. Pharmacy ethics in that period was dependent on the behaviors of the instructors and cultural religious beliefs of that time. Thirty years after the opening of Tehran University, the first book in medical ethics was published. This book was not taught in the faculty of pharmacy. By the introduction of bioethics and advancement of biosciences, bioethics was taken into consideration in Iran and their obligations were put into action; so today ethics is included in the curriculum of pharmacy education.

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