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## Medieval Medicine and Healing Practices

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**ABSTRACT:** The glory that was Greece and the grandeur that was Rome” ended when Rome fell to Germanic tribes in the 5th century AD. In the Middle Ages, the practice of medicine was still rooted in the Greek tradition. The body was made up of four humors: yellow bile, phlegm, black bile, and blood. These were controlled by the four elements: fire, water, earth, and air. An imbalance of humors caused disease and the body could be purged of excess by bleeding, cupping, and leeching – medical practices that continued through the Middle Ages. Many diseases were thought to be caused by an excess of blood in the body and bloodletting was seen as the obvious cure. An important aspect in the treatment of ailments was diet. The food choices we make can have an important impact on health. This was known since antiquity for Hippocrates is quoted as saying, “Let food be thy medicine and medicine be thy food. Medicine became steeped in superstition. Ideas about the origin and cure of disease were based on factors such as destiny, sin, and heavenly influences. Therefore, in this period, there was no tradition of scientific medicine, and observations went hand in hand with spiritual and religious influences. Medicine during the Middle Ages was composed of a mixture of existing ideas from antiquity and spiritual influences. Standard medical knowledge was based chiefly upon surviving Greek and Roman texts preserved in monasteries and elsewhere

**KEYWORDS:** medieval, healing, medicine, practices, superstitions, prescriptions, suffering

### I. INTRODUCTION

The Greeks had been influenced by their Egyptian neighbours, in terms of medical practice in surgery and medication. However, the Greeks also absorbed many folk healing practices, including incantations and dream healing. In Homer's epic poems Iliad and Odyssey, the Greek Gods are implicated as the cause of plagues or widespread disease and that those maladies could be cured by praying to them. [1,2]The religious side of Greek medical practice is clearly manifested in the cult of Asclepius, whom Homer regarded as a great physician, and was deified in the 3rd and 4th centuries BCE. Hundreds of temples devoted to Asclepius were founded throughout the Hellenistic and Roman Empire to which untold numbers of people flocked for cures. Healing visions and dreams formed the foundation for the curing process as the person seeking treatment from Asclepius slept in a special dormitory. The healing occurred either in the person's dream or advice from the dream could be used to seek out the proper treatment for their illness elsewhere. Afterwards the visitor to the temple bathed, offered prayers and sacrifice, and received other forms of treatment like medication, dietary restrictions, and an exercise regiment, keeping with the Hippocratic tradition

Some of the medicine in the Middle Ages had its roots in Pagan and folk practices. This influence was highlighted by the interplay between Christian theologians who adopted aspects of Pagan and folk practices and chronicled them in their own works. The practices adopted by Christian medical practitioners around the 2nd century CE, and their attitudes toward Pagan and folk traditions, reflected an understanding of these practices, especially humoralism and herbalism.[3,4]

The practice of medicine in the early Middle Ages was empirical and pragmatic. It focused mainly on curing diseases rather than discovering the cause of diseases. Often it was believed the cause of disease was supernatural. Nevertheless, secular approaches to curing diseases existed. People in the Middle Ages understood medicine by adopting the ancient Greek medical theory of humors. Since it was clear that the fertility of the earth depended on the proper balance of the elements, it followed that the same was true for the body, within which the various humors had to be in balance. This approach greatly influenced medical theory throughout the Middle Ages.

Folk medicine of the Middle Ages dealt with the use of herbal remedies for ailments. The practice of keeping physic gardens teeming with various herbs with medicinal properties was influenced by the gardens of Roman antiquity. Many

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early medieval manuscripts have been noted for containing practical descriptions for the use of herbal remedies. These texts, such as the Pseudo-Apuleius, included illustrations of various plants that would have been easily identifiable and familiar to Europeans at the time. Monasteries later became centres of medical practice in the Middle Ages, and carried on the tradition of maintaining medicinal gardens. These gardens became specialized and capable of maintaining plants from the Southern Hemisphere as well as maintaining plants during winter.[5,6]

Christian practice and attitudes toward medicine drew on Middle Eastern (particularly from local Jews) and Greek influences. The Jews took their duty to care for their fellow Jews seriously. This duty extended to lodging and medical treatment of pilgrims to the temple at Jerusalem. Temporary medical assistance had been provided in classical Greece for visitors to festivals and the tradition extended through the Roman Empire, especially after Christianity became the state religion prior to the empire's decline. In the early Medieval period, hospitals, poor houses, hostels, and orphanages began to spread from the Middle East, each with the intention of helping those most in need.

Charity, the driving principle behind these healing centers, encouraged the early Christians to care for others. The cities of Jerusalem, Constantinople, and Antioch contained some of the earliest and most complex hospitals, with many beds to house patients and staff physicians with emerging specialties. Some hospitals were large enough to provide education in medicine, surgery and patient care. St. Basil (AD 330–79) argued that God put medicines on the Earth for human use, while many early church fathers agreed that Hippocratic medicine could be used to treat the sick and satisfy the charitable need to help others.[7,8]

Medieval European medicine became more developed during the Renaissance of the 12th century, when many medical texts both on Ancient Greek medicine and on Islamic medicine were translated from Greek and Arabic during the 13th century. The most influential among these texts was Avicenna's *The Canon of Medicine*, a medical encyclopedia written in circa 1030 which summarized the medicine of Greek, Indian and Muslim physicians until that time. The Canon became an authoritative text in European medical education until the early modern period. Other influential texts from Jewish authors include the *Liber pantegni* by Isaac Israeli ben Solomon, while Arabic authors contributed *De Gradibus* by Alkindus and *Al-Tasrif* by Abulcasis.

At Schola Medica Salernitana in Southern Italy, medical texts from Byzantium and the Arab world (see *Medicine in medieval Islam*) were readily available, translated from the Greek and Arabic at the nearby monastic centre of Monte Cassino. The Salernitan masters gradually established a canon of writings, known as the *ars medicinae* (art of medicine) or *articella* (little art), which became the basis of European medical education for several centuries.

During the Crusades the influence of Islamic medicine became stronger. The influence was mutual and Islamic scholars such as Usamah ibn Munqidh also described their positive experience with European medicine – he describes a European doctor successfully treating infected wounds with vinegar and recommends a treatment for scrofula demonstrated to him by an unnamed "Frank".[9,10]

## II. DISCUSSION

Anglo-Saxon translations of classical works like Dioscorides *Herbal* survive from the 10th century, showing the persistence of elements of classical medical knowledge. Other influential translated medical texts at the time included the Hippocratic *Corpus* attributed to Hippocrates, and the writings of Galen.

Galen of Pergamon, a Greek, was one of the most influential ancient physicians. Galen described the four classic symptoms of inflammation (redness, pain, heat, and swelling) and added much to the knowledge of infectious disease and pharmacology. His anatomic knowledge of humans was defective because it was based on dissection of animals, mainly apes, sheep, goats and pigs. Some of Galen's teachings held back medical progress. His theory, for example, that the blood carried the *pneuma*, or life spirit, which gave it its red colour, coupled with the erroneous notion that the blood passed through a porous wall between the ventricles of the heart, delayed the understanding of circulation and did much to discourage research in physiology. His most important work, however, was in the field of the form and function of muscles and the function of the areas of the spinal cord. He also excelled in diagnosis and prognosis.

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Medieval surgery arose from a foundation created from ancient Egyptian, Greek and Arabic medicine. An example of such influence would be Galen, the most influential practitioner of surgical or anatomical practices that he performed while attending to gladiators at Pergamon. The accomplishments and the advancements in medicine made by the Arabic world were translated and made available to the Latin world. This new wealth of knowledge allowed for a greater interest in surgery.[11,12]

In Paris, in the late thirteenth century, it was deemed that surgical practices were extremely disorganized, and so the Parisian provost decided to enlist six of the most trustworthy and experienced surgeons and have them assess the performance of other surgeons.<sup>[31]</sup> The emergence of universities allowed for surgery to be a discipline that should be learned and be communicated to others as a uniform practice. The University of Padua was one of the "leading Italian universities in teaching medicine, identification and treating of diseases and ailments, specializing in autopsies and workings of the body." The most prestigious and famous part of the university, the Anatomical Theatre of Padua, is the oldest surviving anatomical theater, in which students studied anatomy by observing their teachers perform public dissections.

Surgery was formally taught in Italy even though it was initially looked down upon as a lower form of medicine. The most important figure of the formal learning of surgery was Guy de Chauliac. He insisted that a proper surgeon should have a specific knowledge of the human body such as anatomy, food and diet of the patient, and other ailments that may have affected the patients. Not only should surgeons have knowledge about the body but they should also be well versed in the liberal arts. In this way, surgery was no longer regarded as a lower practice, but instead began to be respected and gain esteem and status.[13,14]

During the Crusades, one of the duties of surgeons was to travel around a battlefield, assessing soldiers' wounds and declaring whether or not the soldier was deceased. Because of this task, surgeons were deft at removing arrowheads from their patients' bodies. Another class of surgeons that existed were barber surgeons. They were expected not only to be able to perform formal surgery, but also to be deft at cutting hair and trimming beards. Some of the surgical procedures they would conduct were bloodletting and treating sword and arrow wounds.

In the mid-fourteenth century, there were restrictions placed on London surgeons as to what types of injuries they were able to treat and the types of medications that they could prescribe or use, because surgery was still looked at as an incredibly dangerous procedure that should only be used appropriately. Some of the wounds that were allowed to be performed on were external injuries, such as skin lacerations caused by a sharp edge, such as by a sword, dagger and axe or through household tools such as knives. During this time, it was also expected that the surgeons were extremely knowledgeable on human anatomy and would be held accountable for any consequences as a result of the procedure.

Although plants were the main source of medieval remedies, around the sixteenth century medical chemistry became more prominent. "Medical chemistry began with the adaptation of chemical processes to the preparation of medicine. Previously medical chemistry was characterized by any use of inorganic materials, but it was later refined to be more technical, like the processes of distillation. John of Rupescissa's works in alchemy and the beginnings of medical chemistry is recognized for the bounds in chemistry. His works in making the philosopher's stone, also known as the fifth essence, were what made he became known for. Distillation techniques were mostly used, and it was said that by reaching a substance's purest form the person would find the fifth essence, and this is where medicine comes in. Remedies were able to be made more potent because there was now a way to remove nonessential elements. This opened many doors for medieval physicians as new, different remedies were made. Medical chemistry provided an "increasing body of pharmacological literature dealing with the use of medicines derived from mineral sources".<sup>[41]</sup> Medical chemistry also shows the use of alcohols in medicine. Though these events were not huge bounds for the field, they were influential in determining the course of science. It was the start of differentiation between alchemy and chemistry.[15,16]

The Middle Ages brought a new way of thinking and a lessening on the taboo of dissection. Dissection for medical purposes became more prominent around 1299. During this time the Italians were practicing anatomical dissection and the first record of an autopsy dates from 1286. Dissection was first introduced in the educational setting at the

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university of Bologna, to study and teach anatomy. The fourteenth century saw a significant spread of dissection and autopsy in Italy, and was not only taken up by medical faculties, but by colleges for physicians and surgeons.

Roger Frugardi of Parma composed his treatise on Surgery around about 1180. Between 1250 and 1265 Theodoric Borgognoni produced a systematic four volume treatise on surgery, the *Cirurgia*, which promoted important innovations as well as early forms of antiseptic practice in the treatment of injury, and surgical anaesthesia using a mixture of opiates and herbs. Compendiums like Bald's Leechbook (circa 900), include citations from a variety of classical works alongside local folk remedies.

Although each of these theories has distinct roots in different cultural and religious traditions, they were all intertwined in the general understanding and practice of medicine. For example, the Benedictine abbess and healer, Hildegard of Bingen, claimed that black bile and other humour imbalances were directly caused by presence of the Devil and by sin. Another example of the fusion of different medicinal theories is the combination of Christian and pre-Christian ideas about elf-shot (elf- or fairy-caused diseases) and their appropriate treatments. The idea that elves caused disease was a pre-Christian belief that developed into the Christian idea of disease-causing demons or devils. Treatments for this and other types of illness reflected the coexistence of Christian and pre-Christian or pagan ideas of medicine[17]

### III. RESULTS

Herbs were commonly used in salves and drinks to treat a range of maladies. The particular herbs used depended largely on the local culture and often had roots in pre-Christian religion. The success of herbal remedies was often ascribed to their action upon the humours within the body. The use of herbs also drew upon the medieval Christian doctrine of signatures which stated that God had provided some form of alleviation for every ill, and that these things, be they animal, vegetable or mineral, carried a mark or a signature upon them that gave an indication of their usefulness. For example, skullcap seeds (used as a headache remedy) can appear to look like miniature skulls; and the white spotted leaves of lungwort (used for tuberculosis) bear a similarity to the lungs of a diseased patient. A large number of such resemblances were believed to exist.

Many monasteries developed herb gardens for use in the production of herbal cures. and these remained a part of folk medicine, as well as being used by some professional physicians. Books of herbal remedies were produced, one of the most famous being the Welsh, Red Book of Hergest, dating from around 1400.[18,19]

During the early Middle Ages, botany had undergone drastic changes from that of its antiquity predecessor (Greek practice). An early medieval treatise in the West on plants known as the *Ex herbis femininis* was largely based on Dioscorides Greek text: *De material medica*. The *Ex herbis* was a lot more popular during this time because it was not only easier to read, but contained plants and their remedies that related to the regions of southern Europe, where botany was being studied. It also provided better medical direction on how to create remedies, and how to properly use them. This book was also highly illustrated, where its former was not, making the practice of botany easier to comprehend. The re-emergence of Botany in the medieval world came about during the sixteenth century. As part of the revival of classical medicine, one of the biggest areas of interest was *materia medica*: the study of remedial substances. "Italian humanists in the fifteenth century had recovered and translated ancient Greek botanical texts which had been unknown in the West in the Middle Ages or relatively ignored. Soon after the rise in interest in botany, universities such as Padua and Bologna started to create programs and fields of study; some of these practices including setting up gardens so that students were able to collect and examine plants. "Botany was also a field in which printing made a tremendous impact, through the development of naturalistic illustrated herbals. During this time period, university practices were highly concerned with the philosophical matters of study in sciences and the liberal arts, "but by the sixteenth century both scholastic discussion of plants and reliance upon intermediary compendia for plant names and descriptions were increasingly abandoned in favor of direct study of the original texts of classical authors and efforts to reconcile names, descriptions, and plants in nature. Botanist expanded their knowledge of different plant remedies, seeds, bulbs, uses of dried and living plants through continuous interchange made possible by printing. In sixteenth century medicine, botany was rapidly becoming a lively and fast-moving discipline that held wide universal appeal in the world of doctors, philosophers, and pharmacists.

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Those with mental disorders in medieval Europe were treated using a variety of different methods, depending on the beliefs of the physician they would go to. Some doctors at the time believed that supernatural forces such as witches, demons or possession caused mental disorders. These physicians believed that prayers and incantations, along with exorcisms, would cure the afflicted and relieve them of their suffering. Another form of treatment existed to help expel evil spirits from the body of a patient, known as trephining. Trephining was a means of treating epilepsy by opening a hole in the skull through drilling or cutting. It was believed that any evil spirit or evil air would flow out of the body through the hole and leave the patient in peace. Contrary to the common belief that most physicians in Medieval Europe believed that mental illness was caused by supernatural factors, it is believed that these were only the minority of cases related to the diagnosis and treatment of those suffering from mental disorders. Most physicians believed that these disorders were caused by physical factors, such as the malfunction of organs or an imbalance of the humors. One of the most well-known and reported examples was the belief that an excess amount of black bile was the cause of melancholia, which would now be classified as schizophrenia or depression. Medieval physicians used various forms of treatment to try to fix any physical problems that were causing mental disorders in their patients. When the cause of the disorder being examined was believed to be caused by an imbalance of the four humors, doctors attempted to rebalance the body. They did so through a combination of emetics, laxatives and different methods of bloodletting, in order to remove excess amounts of bodily fluids.[20]

Medicine in the Middle Ages was rooted in Christianity through not only the spread of medical texts through monastic tradition but also through the beliefs of sickness in conjunction with medical treatment and theory. Christianity, throughout the medieval period, did not set medical knowledge back or forwards. The church taught that God sometimes sent illness as a punishment, and that in these cases, repentance could lead to a recovery. This led to the practice of penance and pilgrimage as a means of curing illness. In the Middle Ages, some people did not consider medicine a profession suitable for Christians, as disease was often considered God-sent. God was considered to be the "divine physician" who sent illness or healing depending on his will. From a Christian perspective, disease could be seen either as a punishment from God or as an affliction of demons (or elves, see first paragraph under Theories of Medicine). The ultimate healer in this interpretation is of course God, but medical practitioners cited both the bible and Christian history as evidence that humans could and should attempt to cure diseases. For example, the Lorsch Book of Remedies or the Lorsch Leechbook contains a lengthy defense of medical practice from a Christian perspective. Christian treatments focused on the power of prayer and holy words, as well as liturgical practice.

Members of religious orders were major sources of medical knowledge and cures. There appears to have been some controversy regarding the appropriateness of medical practice for members of religious orders. The Decree of the Second Lateran Council of 1139 advised the religious to avoid medicine because it was a well-paying job with higher social status than was appropriate for the clergy. However, this official policy was not often enforced in practice and many religious continued to practice medicine.<sup>[47]</sup>

There were many other medical practitioners besides clergy. Academically trained doctors were particularly important in cities with universities. Medical faculty at universities figured prominently in defining medical guilds and accepted practices as well as the required qualifications for physicians. Beneath these university-educated physicians there existed a whole hierarchy of practitioners. Wallis<sup>l</sup>suggests a social hierarchy with these university educated physicians on top, followed by "learned surgeons; craft-trained surgeons; barber surgeons, who combined bloodletting with the removal of "superfluities" from the skin and head; itinerant specialist such as dentist and oculists; empirics; midwives; clergy who dispensed charitable advice and help; and, finally, ordinary family and neighbors" Each of these groups practiced medicine in their own capacity and contributed to the overall culture of medicine.[21]

## IV. CONCLUSIONS

High medieval surgeons like Mondino de Liuzzi pioneered anatomy in European universities and conducted systematic human dissections. Unlike pagan Rome, high medieval Europe did not have a complete ban on human dissection. However, Galenic influence was still so prevalent that Mondino and his contemporaries attempted to fit their human findings into Galenic anatomy. During the period of the Renaissance from the mid 1450s onward, there were many advances in medical practice. The Italian Girolamo Fracastoro (1478–1553) was the first to propose that epidemic diseases might be caused by objects outside the body that could be transmitted by direct or indirect contact. He also



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proposed new treatments for diseases such as syphilis. In 1543 the Flemish Scholar Andreas Vesalius wrote the first complete textbook on human anatomy: "De Humani Corporis Fabrica", meaning "On the Fabric of the Human Body". Much later, in 1628, William Harvey explained the circulation of blood through the body in veins and arteries. It was previously thought that blood was the product of food and was absorbed by muscle tissue. During the 16th century, Paracelsus, like Girolamo, discovered that illness was caused by agents outside the body such as bacteria, not by imbalances within the body. The French army doctor Ambroise Paré, born in 1510, revived the ancient Greek method of tying off blood vessels. After amputation the common procedure was to cauterize the open end of the amputated appendage to stop the haemorrhaging. This was done by heating oil, water, or metal and touching it to the wound to seal off the blood vessels. Paré also believed in dressing wounds with clean bandages and ointments, including one he made himself composed of eggs, oil of roses, and turpentine. He was the first to design artificial hands and limbs for amputation patients. On one of the artificial hands, the two pairs of fingers could be moved for simple grabbing and releasing tasks and the hand looked perfectly natural underneath a glove. [22]

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