6

Iran's Clerical State and Modern Medicine in the Age of Covid-19

HORMOZ EBRAHIMNEJAD

Introduction

When I studied the cholera and plague epidemics in 19th-century Iran as case studies to understand how modern medicine developed amid the continued dominance of humoral medicine, I noticed some affinities between traditional and modern medicines in terms of aetiology and treatment. A similar affinity during the transition period at the end of the 19th century provided favourable ground for dialogue between traditional and modern medicines . In my previous work (Ebrahimnejad 2014), I argued that traditional humoral medicine, as the dominant discourse and paradigm, faded away by going through an internal transformation, which acted as a catalyst for the development of biomedicine. However, both at the height of the Covid-19 pandemic in 2020 and in the present day (2023–5) we have witnessed the use of herbal drugs and traditional treatment by the population in Iran alongside modern medicine, even as Covid-19 vaccines have effectively diminished the mortality caused by the virus.

The successes of microbiology in identifying the agents of plague and cholera at the end of the 19th century gave rise to the hope that modern science would put an end to all epidemic diseases; however, the outbreak of influenza between 1918 and 1920 put an end to this, causing between 40 and 50 million deaths (Byerly 2005: 5; Barro Ursúa and Weng 2020: 2). A century later, the Covid-19 pandemic was another blow to the confidence in microbiology's capacity to cure diseases. It is now time to look beyond the laboratory and evidence-based medicine (EBM), which has proved to have limitations when faced with ancient and novel pathogens in a new global and regional context. As Greenhalgh *et al.* point out, 'the pandemic is an epistemic opportunity for the EBM movement to come to better understand, debate, and embrace EBM+' (2022: 253). Social historians of medicine have for some time now agreed that the prevalence of modern medicine is not only due to

Proceedings of the British Academy, **278**, 112–137, © Authors 2025.

its actual efficacy but also to the expansion of modern medical institutions, which in turn involve politics and the economy. The role played by the modern medical profession and institutions (medical schools and hospitals) in forming modern medical discourse, including microbiology and EBM medicine, is not negligible (e.g. Nandy and Visvanathan 1990). Institutionalisation has also played an important role in the promotion of herbal and traditional medicine in modern times.[1]

In such a context, we have also witnessed the expansion of the herbal drugs market and of so-called alternative medicine. This is partly due to the pervasive development of the market economy and consumerism, which entails institutionalisation of traditional medicine such as through its incorporation into the healthcare system.[2] It is also a consequence of the fact that the line between the effectiveness of biomedical 'chemical medicine' and the ineffectiveness of herbal medicine is not always clear-cut (e.g. Negahban, Maleki and Abbassian 2019). With the increasing number of chronic diseases and the subsequent importance of preventive healthcare, herbal medicine has become increasingly popular and consumer friendly. Its availability has been enhanced through e-commerce delivery without people needing to go through the official healthcare system, obtain a prescription and be subject to higher costs. Furthermore, many herbal drugs for chronic diseases are advertised by specialist doctors and surgeons who warn against the harm caused by the chemical drugs' side effects, as opposed to the relative innocuity of herbal drugs. Such advertisements sometimes avoid mentioning that herbal medicines can also have side effects and, in combination with chemical drugs, can be harmful.[3] The growing audience for such adverts and the use of herbal medicine stems from a range of different factors, including an increasing tendency towards preventive medicine to avoid or postpone curative treatment; legal rulings in different countries; evidence of the harmful side effects of many modern medical treatments; and the bad reputation of pharmaceutical companies.[4] To this, we need to add clinical trials by some herbal drug companies, which could increase with the growing income of these companies. One example is the ephedra herb extract used to treat infectious diseases, specifically coronavirus, which has gone through several trial phases (Global Data 2024).[5]

According to a 2015 report by the WHO, about 80 per cent of the world population rely on traditional medicine for their primary healthcare needs

[1] One of the factors behind the rise of the herbal-based pharmaceutical industry especially in countries like India and South Korea is their institutionalisation (e.g. Hong 1989: 55–6).

[2] This is recommended by the WHO, but it is more frequent in the global south (e.g. Kofi-Tsekpo 2004).

[3] One such example is St John's wort in the form of a herbal preparation for relief of symptoms associated with mild to major depressive episodes. However, using it in combination with a number of other chemical medications including antidepressants and oral contraceptives can be deleterious (e.g. Nicolussi *et al.* 2020).

[4] On media reporting of profit-seeking pharmaceutical companies see, for example, Smedley (2015).

[5] Clinical trials of herbal drugs are, however, far from ubiquitous. The trials of herbal drugs vary from country to country but, in most cases, herbal drugs are not regulated by the state (Parveen *et al.* 2015).

(Parveen *et al.* 2015). In Iran, however, given the economic sanctions,[6] the herbal medicine market has not developed as it has in much of the rest of the world. The resurgence of herbal or traditional medicine in Iran was initially due to the clerical state's Islamist Cultural Revolution (*c.* 1980–3), aimed at fighting against Western influence. A late 20th-century resurgence has also taken place in Asian countries such as Japan, China and Korea for several other reasons (Hong 1989: 26–30). In the European Union, the Committee on Herbal Medicinal Products issues scientific opinions on herbal substances on behalf of the European Medicines Agency (EMA) (for details, see EMA 2024). Within the EU, individual countries also apply their national regulations.

This, however, is not the case in Iran. As we will see, the government and Public Health Ministry do not invest in 'Iranian and Complementary Medicine', a state-sponsored institution that was created at the beginning of the Islamic regime, because they prioritise modern medicine for political reasons, as I will explain below. In Iran, we find a paradox in the attitude of the state towards traditional medicine. On the one hand, the government initiated the revival of traditional medicine in the 1980s and, in response to WHO recommendations, later took further steps to integrate it into the healthcare system. On the other hand, it has often paid only lip service to these recommendations – and even to its own regulations – regarding the support and development of traditional medicine (see Negahban, Maleki and Abbassian 2019).

This paradox is the result of the complex political context arising from the 1979 Revolution, which later evolved into the so-called Islamic Revolution. Medical knowledge and practice are shaped in specific social, political, discursive and material contexts. There is a relationship between concepts, theories and models of knowledge on the one hand, and culture, politics and the economy on the other. It is from this perspective that we might be able to understand the commitment of the clerical regime to modern medicine despite its ideological inclination for tradition. In this chapter, I argue that the existential conditions of the clerical state played a key role in their paradoxical attitude towards traditional and modern medicines during the Covid-19 pandemic.

The persistence of miasma theory during the Covid-19 pandemic

Covid-19 took the global medical community by surprise, as it was not like the previous virus in the SARS family in terms of its diagnosis, the way it spread and its lethal effects. Dr Antony Fauci, who was the head of the National Institute of Allergy

[6] Iran has been under US sanctions since the US hostage crisis in November 1979. These sanctions expanded in the last two decades after the Islamic regime in Iran began to develop nuclear technology that Western countries claim to be aimed at producing atomic bombs.

and Infectious Diseases (NIAID) in the US from 1984 to 2022, acknowledged that the airborne pattern of transmission of the virus was not initially understood (quoted in Entekhab News 2020). Although there is now a general medical consensus that the virus is transmitted through droplets and not free-floating aerosols, scientists have suggested there could still be the possibility of airborne transmission (Bhagat and Linden 2020; Morawska and Milton 2020; Greenhalgh *et al.* 2021; Greenhalgh *et al.* 2022).

Uncertainty about the way Covid-19 was transmitted and lack of clarity about preventive measures against it prior to the production of a vaccine is reminiscent of the age-old vagueness of the concepts of 'contagion' and miasma that were deemed to have caused the cholera epidemics that shook the world in the 19th century. Even though a distinction was made between the theories of miasma and contagion with the introduction of anatomical pathology, traditional physicians in 19th-century Iran were often ambiguous on the question of whether plague was transmitted by contact or through foul air. In theory, they believed that *vabâ* (the generic term for all sorts of epidemics) was due to foul air (miasma), while the same physicians during epidemic outbreaks avoided any contact with the sick because they feared contagion. Hence, Shirâzi wrote his *Tâ'unia* (Treatise on Plague, 1831), criticising his contemporary colleagues for their fear of contagion. Even Shirâzi, who argued that plague was not contagious, when discussing the etymology of طاعون (*tâ'un*, plague) referred to the Arabic root طعن /*ta'n*, which he translated as 'piercing with a spear', a term that inherently carries connotations of 'contact and contagion'.[7] Another 19th-century source informs us that during the cholera epidemic of 1892 in Tehran, the only physician who was available to treat the infected people was a Jew, as all Muslim doctors stayed at home or left the city for fear of being contaminated when treating patients (Astarabadi in Ebrahimnejad 2004: 418–19).[8]

From the viewpoint of humoral aetiology, an epidemic-related fever is generated when corrupted air enters the heart and alters the body's temperature, which is called *harârat-e ghariba* (unnatural heat). This unnatural heat is transmitted through blood circulation to other body parts. When the organs are affected, the fever is light or *yawm* (day fever, lasting one day or so) but when the unnatural heat affects the *akhlât* (humours), it causes 'infectious fever' and epidemic fever is of this kind. We can see that fever and infection are related in humoral aetiology, just as in modern medicine.[9]

The theory of contagion did not gain currency among 19th-century traditional doctors in Iran because the concept of a 'seed', 'pathogen' or 'particle' as the agent

[7] The concept of 'piercing' used by Shirâzi is reminiscent of the bow and arrows used to represent the plague representation in the West in the 17th century (Delumeau 1989; Snowden 2019).

[8] Astarabadi's point is not that there were religious differences regarding beliefs about contagion per se; rather, he points out that the Jewish doctor took the opportunity to treat patients at a time when most other doctors avoided possible contamination.

[9] For a more general context on humoral understandings of infectious diseases, see Nutton (2021).

of disease transmission, first proposed by Fracastoro during the Renaissance,[10] was either unknown or seemed irrelevant to most of them. The problem with the theory of germs in contagion for those physicians who knew about the pathogen particle was that it could not explain why people who were not in contact with each other were affected by cholera or plague within a short period. However, from the critical essay of Shirâzi on plague, we learn that there were physicians who, although they could not explain how, believed in some kind of contagion because they avoided touching and treating bubonic plague patients. In other words, they were anti-contagionist in theory but contagionist in practice!

Although the theory of miasmas is no longer accepted in modern medical discourse, it continues to inform our understanding of the outbreak of Covid-19 and some of our public health measures globally.[11] This representation of infectious particles was still at work during the Covid-19 pandemic, during which public health recommendations such as 'social distancing' and avoidance of crowds in closed spaces were advised to prevent air corruption, since it was believed that coronavirus was airborne. Therefore, the windows of offices and classrooms were left open even in the winter to let the virus escape. Yet, it is unclear whether the wind is responsible for the movement of the virus. Some studies have shown that the virus travels in the air even when there is no wind. Early speculative reporting spread information that the virus is transmitted quicker when the humidity rate is 90 per cent. For example, it was reported in Iran that in July 2020, New Delhi saw the number of Covid-19 patients increase from 78,000 to 135,000 with the increasing temperature and humidity (Entekhab News 2020). In September 2020, reporting in Iran speculated that the coronavirus pattern of transmission showed that when the humidity increases (at any temperature), the virus spreads up to six metres even when there is no wind (ibid.). In traditional medicine, a sign of *vabâ* or epidemic is when, due to the weakness of the sun, putrid vapour does not ascend enough to transform into rain. We can see how analogous physical conditions have given rise to a similar epidemiological understanding in contemporary times. However, systematic scientific research has shown that low humidity (i.e. 10–20 per cent) is associated with higher risk of infection and that in conditions of high humidity (70–80 per cent) infection risk becomes 'moderate' (Ahlawat, Wiedensohler and Mishra 2020). However, a number of other environmental factors have also been identified as relevant to evaluating the risk of airborne transmission of Covid-19 (Feng *et al.* 2020; Zhao *et al.* 2022).

[10] Girolamo Fracastoro/Fracastorius (1484–1553) was the first person who, by introducing the concept of seed or germ, presented the scientific theory of contagious disease. This was later confirmed through the discoveries of bacteriology, notably by Pasteur and Koch (Ackerknecht 1982).

[11] According to Anne Marie Moulin, the idea of a virus in the air is almost the same as the concept of miasma, and one could see similar perspectives in France during Covid-19 in 2020 and the Marseilles plague of 1720–2 (Moulin 2023: 53–4).

Cultural and political dimensions

It can be observed that social, cultural and political factors are as influential as experimentally derived medical concepts in addressing the pandemic, as social groups and broader sociopolitical and economic contexts shape the perceived validity – and thus the impact – of medical discourses (Good 1993). Michel Foucault argued that a disease entity is not naturally 'given' but is made and defined through medical discourse (Conrad and Barker 2010: 69). The strict adherence to scientific criteria might result from excessive institutionalisation or bureaucratisation of medicine, which was lambasted by Ivan Illich (1975, 1976), who maintained, albeit to an extreme degree, that 'illness' is made up by doctors. Illich coined the term iatrogenesis (or doctor-caused) to describe some diseases. The medical establishment, according to Illich, has created institutions, laboratories and testing procedures that in many cases benefit doctors and other medical professionals more than patients and sometimes kill more patients than they save.

As has long been observed, the concept of illness is affected by a person's specific culture (Kim 1973). It is important to consider how disease and illness are perceived by society and different societal groups because illness and disease are not only natural incidences but also social, cultural and professional constructs. Despite the significance of the cultural, social and political dimensions in medicine, there are still publications that condemn what they call faked medical information to fight Covid-19 and that aim to discredit any medical treatment and advice that is not in line with evidence-based medicine, as defined by the WHO (e.g. Vraga and Bode 2017; Moreno-Castro *et al.* 2020; Tasnim, Hussain and Mazumder 2020; Vraga, Bode and Tully 2020). This approach still follows the above-mentioned classical dichotomy between 'correct' and 'false', 'legitimate' and 'illegitimate', and 'scientific' and 'folk' medicines, a dualism that should be called into question, considering the blurred line between modern and complementary medicines in terms of aetiology, epidemiology, diagnosis and treatment. Such a 'scientific' perspective is overly restrictive, failing to account for factors such as culture, belief and social standing, which – when examined through historical and social lenses – challenge clear-cut distinctions between traditional and modern medicine.

Significantly, traditional medicine in 19th-century Iran was more inclusive, unlike modern medicine which tends to be exclusive given that it has established well-defined boundaries in line with modern science. Traditional medicine in 19th-century Iran, on the other hand, while principally based on humoral physiology, did not exclude magic and folk medicine. In the same vein, traditional physicians did not always shy away from modern medical theory and practice (e.g. Ebrahimnejad 2014: 17, 37 *et passim*). This was because the dominant medical discourse variously ascribed epidemic diseases to environmental conditions, contagion, divine will or a mixture of all three. Furthermore, during the development of modern medicine in the 19th century, when traditional and humoral discourse was still dominant, there was still dialogue between biomedicine, Galenic and Hippocratic medicine.

This dialogue helped the conceptual evolution of traditional medicine, which in turn facilitated the integration of modern medical theories. However, political, and ideological factors – especially in the context of the Constitutional Revolution of 1907–11, which was captivated by modern science, and the subsequent modernisation under Reza Shah – gave rise to a belief in a dichotomy between tradition and the modern. Such a situation led to the predominance of modern medical discourse. Traditional medicine was marginalised, since the only legal medical practice belonged to those who had completed their studies at medical faculties grounded in modern Western medicine.

Practitioners of modern biomedicine were initially arrogant about its scientific findings and overestimated its efficacy. However, the emerging epidemics and etiological uncertainty have revealed its limits. This can explain, at least partly, why pluralism reappeared in a different form during Covid-19, giving rise to traditional and modern approaches adopted in parallel or in combination by Iranian society. Such a context potentially gives rise to eclecticism in medical theory and practice. The popular medical discourse which spread across social media developed its own anatomical narrative, according to which coronavirus enters the body through respiration and before reaching the lungs stays four days in the throat and produces a cough and sore throat. It was rumoured that as soon as one has a cough or sore throat, they should drink lots of water, inhale the steam of boiled thyme and gargle salty water with vinegar. This would stop the virus from reaching the lungs and would save lives. No matter whether these treatments, which circulated during the Covid-19 pandemic through Telegram or WhatsApp, are effective or not, the important point is that they determine the way that disease is addressed among the Iranian population at large.

Attitudes of social groups towards Covid-19

Unlike the official biomedical view that considers disease as a natural fact that is to be diagnosed and described unambiguously and objectively by scientists and physicians, disease and illness can also be seen as subjective phenomena following different norms. From a social constructivist standpoint, our perception of disease and illness is almost as important as scientific findings and shapes the way society and individuals respond to illness. The impact of social and political forces on the treatment of Covid-19 is therefore crucial. In Iran, we can identify three major societal categories involved in the shaping of public health and preventive or curative measures against Covid-19: the core of the clerical state, which officially applies modern medicine; the general population, whose default medical repertoire is to rely on alternative medicine whenever there is limited access to modern medicine, a lack of belief in it or diminished trust in biomedical practices; and the orthodox clergy (or the clerical estate in general), who refer to the Medicine of the

Prophet and the Imams, which also draws on folk medicine.[12] Each societal group's medical choices are shaped by distinct incentives: the clerical regime is motivated by the exercise of power; the population's preference for alternative medicine stems from a combination of cultural, religious, financial and political motivation (lack of confidence in the government); and the clerical estate's interest in traditional medicine resides in the theoretical foundation of their profession.

Medicine advocated by the clerical state

Although from the outset of its creation in 1979, the clerical state sponsored the revival of Islamic and alternative medicine and added it to the university curriculum,[13] it is highly significant that in the context of Covid-19, it did not adopt Islamic medicine or traditional humoral medicine to define and implement its public health policy. According to the semi-official *Iran* newspaper, the *Specialised Committee of the National Covid-19 Task Force* (announced in August 2020) was the only official body to enunciate the state's policy on Covid-19 (Magiran 2020). Even the supreme leader and other *marâje'* (plural of *marja'*), Shiite sources of emulation, commissioned the *Specialised Committee* to determine the hygienic measures to be observed in mosques, shrines and religious festivals. The government stated that the decisions made by this committee were entirely based on modern science, specifying that its policy was approved by the WHO (Magiran 2020). The government of Iranian President Ruhani (2013–21) was known for its relatively moderate policy in domestic and foreign affairs and was more relaxed in the application of religious codes, a posture that put it in some opposition to the hardliners. However, except for some discord between the two political factions within the government (the hardliners and the moderates) regarding the distribution of funds from state reserves for Covid-19, both had the same adherence to modern medicine. This contrasted with the perspective of the clerical estate (the traditional Shiite hierocracy that had developed since the 16th century in Iran), which should not be confused with the clerical state (the current regime of the Ayatollahs).[14]

The mouthpiece of the Islamic Revolutionary Guard Corps (IRGC), *Fars News*, regularly reports state-of-the-art scientific, technological and medical news,

[12] In one case (March 2020), Sheikh Motrezâ Kohansâl, a cleric from Langarud (north Iran), claimed that a liquid that he represented as 'the perfume of the Prophet' healed Covid-19 patients. He went to the bedside of Covid-19 patients without wearing a mask or gloves, and with his finger and a dropper rubbed the perfume on the back of the lips and around the mouth of patients (Deutsche Welle 2020).

[13] The clerical state refers to the state (Islamic government). The clerical estate is the traditional clerical establishment. Many clerics from this establishment are coopted by the state and others remains independent (a few of them dissident), although in a minority.

[14] On the development of the Shiite hierocracy, see Arjomand (1981).

but it does not refer to Islamic or traditional medicine (Fars News 2020a). On 20 September 2020, the *Fars News* reported:

> Researchers at the Royan Institute studied the mutations of the genome of Sars Covid-19, which is essential to finding treatment and controlling the disease.[15] They discovered that the genome of this virus mutates very fast. The researchers compared the genome of this virus in 20 Iranian and non-Iranian patients with a history of travel to Iran or contact with an individual. The results of this research published in Cell Journal show 44 differences in the level of the nucleotides and 26 differences in the protein that were caused by mutations. Comparison of these mutations with the global figures indicates that some of these mutations are seen only in the Iranian population.
>
> (Fars News 2020b)

The clerical regime, in order to showcase its power, endeavours to develop modern science and technology. At the height of the coronavirus pandemic, the spokesperson of the IRGC announced that this military organisation had invented an instrument that could detect coronavirus (as well as any other virus) from a distance of 100 metres.[16] There is of course no evidence for the accuracy of such an instrument, and, indeed, this claim has frequently been ridiculed on social media. In another example, in June 2023, the Iranian government claimed that they had produced 'the first quantum processing algorithm' (Iran International Newsroom 2023). Regardless of whether social media users found this to have been faked, the news indicates how enthusiastic the clerical regime is to display its command of modern science and technology. The regime's adherence to modern medicine is also for practical purposes, as modern science and technology enable it to exercise its power more effectively. For example, to realise its project of demographic growth, the supreme leader has allowed cloning of the organs, despite the fact that it could be interpreted by Sharia as an intervention in God's creation. Both religion and science are at the service of power under the clerical regime. Ayatollah Khomeini, the founder of the Islamic Republic, said in a speech on 16 November 1981:

> Today we are facing all the powers outside and inside who try to break this revolution and defeat and destroy this Islamic movement and the Islamic Republic … [T]he preservation of the Islamic Republic is more important than the preservation of one person, even if it is the Imam of the Age (Mahdi). Because the Imam of the Age sacrifices himself for Islam. All the prophets who came from the beginning of the world until now fought for the word of truth and the religion of God and sacrificed themselves. The Holy Prophet [Mohammad] and his Ahl al-Bayt (household) suffered all those hardships. They made sacrifices to preserve Islam and to establish the Islamic government [that has now been materialised in Iran] and maintaining this is an objective obligation for everyone [including the Hidden Imam].
>
> (Khomeini 1981)

[15] Fars News, 'Royan Research Investigates Specific Differences in Coronavirus Gene Mutations in Iranian Society'.

[16] The video in which the head of the IRGC demonstrates the device can be found at https://www.aparat.com/v/v41x66s (accessed August 2023).

More recently, on 6 November 2022, the cleric Hossein Jalâli, the deputy of Rafsanjan and a member of the Cultural Committee of the Majlis (Islamic parliament), opposed Shamkhani's (the secretary of the National Security Council) favourable talk about the moderate ex-president Khatami, by reminding him of the words of Ayatollah Khomeini in the following terms:

> Colleagues, Iran is the country of the Imam of the Age (Hidden Imam), the victory of the Islamic system is a divine promise. Global arrogance wants to present Islam as weak and the religious government as ineffective; they are all wet! Today Iran is powerful and strong after passing through crises and making amazing progress in the creation of knowledge-based enterprises, air and space, nuclear, Nanos, stem cells, nuclear medicine, and thousands of valuable achievements that some of our neighbors dream of having one of them, Iran has been able to become a dominant power in West Asia and soon you will see that it will show its strength as an undisputed power in front of America's hypocritical hymen … Mr. Shamkhani, maintaining the [Islamic] government is one of the obligatory duties, even more than preserving the life of Imam of the Age. You should not prioritize friendship with Khatami over the principle of the Islamic government.
>
> (Entekhab News 2022)

Through the development of biomedical engineering and science and seeking to implement state-of-the-art medicine, the regime has no other aim than asserting and strengthening its control of the population through demographic manipulation or increasing it for political reasons. Gone are the views of the 19th century, when the clerical estate opposed the dissection of the dead body – whether for the newly introduced anatomical pathology, post-mortem autopsies or criminology – because the body, even when dead, was considered sacred. For decades, this prohibition prevented the modern school of medicine from carrying out dissection for education; the anatomical knowledge of students was instead based on descriptive materials and illustrations. At that time, the clerical estate did not hold power.[17]

We should also consider the fact that Ayatollah Khomeini, the founder of the regime, advocating traditional medicine was in line with his opposition to whatever the Pahlavi regime had established, including modern universities and modern medical education and practice. It was thus politically motivated. When he came to be treated at the time of illness, however, Khomeini's attitude towards traditional medicine was radically the opposite. When he suffered a heart attack in March 1986, a private hospital for cardiology was established in the vicinity of his residence in Jamârân (north of Tehran), given that his health conditions made it risky for him to be transferred, in the case of any illness, to the existing hospitals

[17] We can see parallel developments elsewhere in the Islamic world. The Islamic bioethical code was approved by the International Academy of Islamic Jurisprudence in 1983 in Jeddah (Saudi Arabia), based on the principle of 'public interest or well-being' (*al-maslaha*) and 'the necessities outweigh prohibitions' (*al-darurat tubihu al mahzurât*). Blood transfusion and organ transplantation are among practices that normally should be prohibited in Islam but modern Islamic jurisprudence allows them (Houot 2013).

that were too distant from his residence. This hospital was equipped with the most modern instruments, including a PET scan that at that time existed only in three hospitals in Iran. When, about a year later, his medical team discovered that he had metastatic cancer of the stomach, his medical team operated on his stomach and then prescribed chemotherapy that might have been fatal. During his cardiac treatment, Ayatollah Khomeini not only did not refuse to take the medication prescribed by his medical team but also adhered strictly to their prescription and always asked which medication was good to treat for his various problems (Gooya News 2023). There are, however, no reports that he asked either those around him or his medical teams to use traditional medicine, which he had initially championed.

Civil society and Covid-19

The second social group comprises a large section of the population that due to the combination of several factors – including cultural background, lack of clear knowledge about coronavirus and financial affordability – have recourse to alternative or herbal medicine in their fight against Covid-19. To this, we should also add the factor of confidence in the political power that controls the medical system (hospitals, medical insurance, production and distribution of vaccines). Iranian society, in general, has been divided by the authorities into 'them' and 'us', which has badly affected trust in the government. The authoritarian approach to dealing with civil rights was much more pronounced during the pandemic when, for political and financial reasons, the supreme leader, despite the medical experts' opinion and the rising mortality, opposed the introduction of the newly produced Pfizer and AstraZeneca vaccines. This further dented the population's confidence in the government and its 'modern medicine'. The tendency to favour herbal drugs during the coronavirus pandemic can also be understood within this context.[18]

The clerical estate's response to Covid-19

The third social category consists of the orthodox clerics and their followers, who lambasted the government for restricting access to mosques or enforcing the closure of shrines and forbidding pilgrims to cross the border with Iraq to go to the shrines in Najaf and Karbala. The practice of social distancing obstructed religious ceremonies and pilgrimages and transformed some of the supporters of the regime into their opponents, as their belief in the healing 'properties' of the shrines came into conflict with the clerical government's closure of the shrines. The religious city of Qom, which hosts the Mausoleum of Ma'soumeh (sister of Imam Reza,

[18] Sanitary dictatorship as opposed to sanitary democracy in the case of France and Europe is examined by Moulin (2023: 125–35).

765–818, the eighth Imam of the Shiites), was the epicentre from which Covid-19 spread elsewhere in Iran. According to the Health Minister, the virus was introduced to Qom by Chinese travellers, and one of the first victims of Covid-19 in Qom was an Iranian merchant who made frequent business trips to China. The Ministry of Health advised the closure of the mausoleum but Ayatollah Sa'eedi, the curator of the shrine and the Friday Imam of Qom, strongly objected to this decision in the following terms: 'We consider this holy shrine as Dar al-Shafâ (abode of healing); Dar al-Shafâ means people come and get healed for mental and physical diseases. Therefore, it should be open here, and people should continue their pilgrimage even more than before. Of course, we also take necessary cautions and observe health matters.' The website of Ma'soumeh Shrine published a note protesting the decision of the Qom Province Supply Council to disinfect the shrine, claiming that 'there is no need to disinfect or close the shrine, as its faith-based architecture and silver structures are the best weapons against bacteria. The Supreme Leader's representative in Qom had previously said that the shrine is a place of healing and must remain open.'[19]

The opposition of a section of the clergy to the clerical state's public health Covid-19 policy originates in the foundation of the clerical estate. The popular belief in shrines as places of healing and intercession is the result of the work of the Shiite clerical establishment shaped under the Safavids (1501–1726) and consolidated under the Qajars (1797–1925). This cultural work, epitomised in the 110 volumes of *Behâr al-Anvâr* (Oceans of Lights) by Mohammad Bâqer Majlesi (1617–99), along with the creation of hundreds of mausoleums dedicated to the Shiite Imams' descendants, laid the foundations for the Shiite hierocracy and the power of the clerics today (Arjomand 1985; Ashtiani 1989). However, once at the helm of the state, the same clerics opposed the belief that the saint shrines could protect the faithful from Covid-19. We find a clear difference in attitudes towards Covid-19 between the Islamic clerical government and the clerical estate, even though both sides share the same ideology. However, those within the power structure sometimes attempt to reconcile traditional and modern medicine by drawing on their repertoire of hadiths and employing *ijtihad* – the capacity to derive rulings from the sources of Sacred Law – to justify the benefits of modern medicine. Allam al Hoda (the curator of Imam Reza mausoleum and the Friday Imam of Mashhad) stated that 'the Imams themselves were subject to natural law even though they can miraculously heal or protect … the fact that the saints heal, does not dispense us from observing hygienic measures' (Aftab News 2020). Allam al Hoda here endorsed the government's instructions that the faithful should not visit the shrines. And those who resisted, such as the individual who licked the shrine to prove that the virus can never infect saint locations, were arrested and jailed.[20]

[19] https://p.dw.com/p/3YTnh (accessed 20 June 2025).

[20] Usually, pilgrims kiss the shrine, but in order to show that this would not infect him he went even further.

In Shiism, *feqh*, or jurisprudence that determines the legal rights of individuals on every matter, is based on the expert opinion of the jurisconsult (*faqih*). However, in the Islamic regime, where the supreme leader is the ruling *faqih*, there are two kinds of *feqh*: the state and civil. According to the state *feqh* (*feqh-e hokumati*), people must comply with the state's prophylactic measures and failure to do so would be punishable by law. This is based on the principle of the mandate of the jurist (*velâyat-e faqih*), whose decree during Covid-19 must be obeyed (Khatami 2020).[21] According to section K of article 8 of the management of public services, improving public health and preventive measures against infectious and epidemic diseases is an example of the implementation of the decree of the supreme leader (*velâyat-e faqih*) (Sadat 2022). The adherence of the clerical regime in Iran to 'modern' medicine and international regulations set by the WHO is in line with its strategy of adopting modern science and technology, such as nanotechnology, cloning of organs and missile and nuclear technologies. Islamists in the modern age see no contrast between modern science and religion not least because they can use modern science and technology to boost their power while they oppose modern human social sciences, such as sociology and critical history.

The state media, while broadcasting the policy of the state on Covid-19, also aired the voices of orthodox Shiites, who are attached to traditional medicine and the Medicine of the Prophet and the Imams. The medical editor of *Tasnim*, the semi-official newspaper linked to the Islamic Revolutionary Guard Corps, lamented that 'eight months into the outbreak of corona in the country, no use was made of traditional medicine in dealing with the pandemic'. Dr Akbari, a pathologist and researcher in traditional medicine, was quoted as saying that he proposed that hospitals establish a department for practitioners of traditional medicine under the responsibility of one of the faculties of traditional and complementary medicine (Tasnim News 2020b).

In January 2021, another *Tasnim* article reported that the government was facing criticism for neglecting the promotion of traditional medicine, as it was allocated a budget of almost zero. Out of 155 trillion toman (£2,066,666,666) earmarked for public health in the 2021 budget, only 7.5 billion T (£100,000) was given to traditional medicine.[22] The article concluded that 'the government did not believe in traditional medicine, despite the high popularity of simple and herbal remedies, the public's predisposition toward traditional treatments for Covid-19, and the reportedly near-zero mortality rate among patients who used such methods'. The article further notes:

[21] This was a 'external lesson' 9 (*dars-e khârej*). External lectures are given at a higher level of seminary schools (*howza*) and can be defined as: 'argumentative presentation of the lesson without relying on a specific text'. In this lesson, the professor presents different opinions about the topic under discussion, recounts and criticises its evidence and finally presents his opinion.

[22] This conversion is made on the basis of the rate in March 2024 (1£= 75,000 toman).

> The government neglects the rich capacity of traditional medicine in the country, while, according to the Ministry of Health, the combined use of traditional and modern medicine in countries like China has helped greatly in treating patients with Corona and reducing the complications caused by the disease. Also, Iran is a vast country with historical roots and ancient medicine with more than 8000 plant species; for this reason, it is considered one of the most important countries in the field of 'ethnopharmacology' and has many study opportunities for research in this field.
>
> (Tasnim News 2021a)

The core argument of this group of doctors is that treatment based on traditional medicine would improve the immune system and reduce the mortality rate. Even the Deputy Minister of National Health acknowledged that what saves lives during Covid-19 is prevention and care and not cure through the prescription of drugs. Nevertheless, hospitals did not accept this suggestion and exclusively relied on modern medicine in tackling Covid-19.

The most immediate source of information on Covid-19 for the population in Iran was social media (WhatsApp, Telegram, immo, Instagram), where we find a mixture of modern and traditional prescriptions to prevent or cure Covid, with a preference for herbal and traditional medicine. To fight the corrupt or foul air due to coronavirus, one should fumigate the area by burning *espand* (rue or mustard seed). Infusions of herbs and spices such as *âvishan* (thyme), ginger, cinnamon, camomile (*bâbuneh*) and pennyroyal were advised to prevent coronavirus as well as simple colds.

With the growing disillusionment with the clerical regime, social media has been increasingly used, substituting the state-run information channels. Social media has also played a role in breaking the monopoly of the pharmaceutical industry that is controlled by the state in general and by the IRGC in particular. One of these social media posts (circulated throughout the Covid-19 pandemic: 2020–2) states that: 'pharmaceutical companies prefer to make a profit out of "our pains" by selling their chemical drugs, including those used in chemotherapy, rather than to inform us about alternative (herbal and natural) drugs and we know about this thanks to social media.' Another explains: 'The effects of lemon in killing cancerous cells [for example] are far greater than chemotherapy.' The same post on WhatsApp claims that 'the reason why we are left ignoring the benefits of lemon in treating cancer is that pharmaceutical companies have copied the properties of lemon in the form of chemical drugs and made a huge profit from it. So long as this secret is not made public, many die so that the huge profits of the said companies are secured.'[23] This message is grounded in widely accepted knowledge about the benefits of lemon peel (e.g. Lang 2019; Katiboina 2021), which is used to criticise pharmaceutical companies.

Sometimes, perhaps to lend greater credibility, these prescriptions are attributed to modern, formally trained physicians – reflecting the significant influence that

[23] Forwarded message on WhatsApp (author unknown), 'Read on the Benefits of Lemon Peel'. Posted in March 2023.

modern medical institutions exert on the population. For instance, the experience of Dr Jalal Yunes, who worked in a Cairo hospital treating Covid-19 patients, was widely circulated through WhatsApp. As a preventive measure against Covid-19, Dr Yunes advised that 'if everyone eats two onions per day with a meal, coronavirus will never affect them, even though they are in direct contact with Covid patients'. Dr Yunes also advised: 'Those experiencing respiratory difficulties due to Covid-19 should mince an onion, place it in a perforated plastic bag, and inhale its vapours for ten minutes. This, instead, would disinfect all lung infections.' He further asserted that 'if everyone repeats this for three weeks, Covid-19 would be completely eradicated.'[24] At the end of the WhatsApp post, it is stressed that this should be communicated to as many people and as fast as possible. According to another post widely forwarded through WhatsApp, a soup made of carrot, celery and other vegetables and herbs has been trialled at the University Hospital Masih Daneshvari (Educational, Research and Treatment Centre for Tuberculosis and Pulmonary Diseases), north Tehran, where many Covid-19 patients were hospitalised. The effectiveness of this soup was considered to be nearly certain. Such a phenomenon demonstrates the extent to which cultural and belief systems inform medical knowledge and practice.

Official 'scientific' discourse

In the official discourse, on the other hand, modern medicine dominates. At the peak of Covid-19 the Iranian Ministry of Health warned against self-treatment with alternative medicine advertised on social media but allowed physicians to use chemical antiviral drugs such as hydroxychloroquine, favipiravir and remdesivir, even though they had not yet received approval from the WHO and were still being clinically trialled (Fars News 2020c),[25] and despite some studies that were published in Iran showing that hydrochloroquine (for the treatment of malaria) and hydroxychloroquine (for rheumatism and arthritis rheumatoid) were ineffective in the treatment of Covid-19 (e.g. Singh *et al.* 2021).[26] It is worth noting that while in the West, the efficacy of drugs like remdesivir remained uncertain during the pandemic, in Iran, physicians were allowed to prescribe them for those Covid-19 patients who were wealthy enough to pay for them. Dr Akbari (previously quoted in *Tasnim News* above) stated: 'At the start of the pandemic, hydroxychloroquine was prescribed

[24] This information was widely circulated on WhatsApp during the pandemic in Iran. The only reference I have found is on a Facebook account belonging to the Afghan Academy posted on 16 November 2020. This post cites a letter by Dr Jalal Yunes sent to the Egyptian president advising that onion can cure and prevent coronavirus. It is interesting to note that Egypt is a major producer of onion!

[25] The US Food & Drug Administration (FDA) approved remdesivir on 22 October 2020 (FDA 2020).

[26] A similar opinion about these drugs was published on the website *Doctor-e to* (Your doctor) on 2 December 2020, although the post was revised in October 2024: https://doctoreto.com/blog/what-is-hydroxychloroquine-sulfate/ (accessed 17 November 2024).

for coronavirus but then it proved to be ineffective. Nonetheless, our authorities allow this medicine to be imported and prescribed but they refuse to systematically prescribe thyme and honey that have been widely used and proved to be effective in the treatment of corona.'[27] One can also conjecture that the pharmaceutical companies who imported hydroxychloroquine and remdesivir were more motivated by profit than by the duty of supplying the market with effective drugs.

The underlying factor, however, for the prevalence of modern medicine in the public health response to Covid-19 in Iran is the historiographical, political and medical discourse of modernity and modernisation, characterised by a dichotomy between the modern and the traditional. This discourse has survived the clerical regime's policy of incorporating traditional medicine within the university medical curriculum as part of its 'Cultural Revolution'. In this discourse, there is a sharp break between traditional and modern medicine, and one should adhere to one or the other. In such a context, social actors choose their medicine according to their ideological, economic, professional and political stance. However, in a situation where modern medical discourse dominates, religious conservatives within the power structure sometimes adopt a reconciliatory attitude and accept that their medicine could be practised in parallel to modern medicine, as was the case with Ayatollah Allam al Hoda mentioned above. A similar stance can be observed among practitioners of traditional medicine. This is not the case for most practitioners of modern medicine, who categorically reject the use of herbal drugs for treatment. Dr Malekzadeh, the Deputy Minister of Health, responding to a request to launch specialised complementary courses in traditional medicine, voiced concerns that traditional medical knowledge 'created more chaos in the Ministry of Health'. He said this despite the formal commitment of the Ministry at that time (2020) to fully support traditional medicine. *Tasnim News*'s article explicitly criticised the 'artificial dichotomisation' in medicine (2020b). Prior to this, in June 2015, Dr Malekzadeh had opposed the creation of a 'traditional medicine' department in the Health Ministry because he believed that there is only one type of medicine, which is what is recognised by the WHO standard.[28] In his long response (4 Azar 1399/24/11/2020) to the (*bassij*/mobilisation) students close to the Islamic Revolutionary Guard Corps (IRGC), who criticised him for not having allocated the 5 per cent fund earmarked for traditional medicine, Malekzadeh answered that first of all this was approved by the 735th meeting, dated 15 April 2013, of the Supreme Council of Cultural Revolution and the Headquarter for the Development of Science and Technology of Medicinal Plants and Traditional Medicine 'that is the decision-making authority … So, this question should be asked to the relevant institution.'

[27] The FDA first approved hydroxychloroquine for the treatment of Covid-19 on 28 March 2020 but later, on 15 June, cancelled the approval after clinical studies showed that it was ineffective for such treatment with some serious side effects, such as irregular heartbeat, in the patients who used it (Drugs.com 2024).

[28] Dr Malekzadeh said 'I don't believe there should be such a thing as traditional medicine because medicine is one' (MedVoice 2023).

He then insisted on the necessity of the 'independence of medical universities [from the Supreme Council of Cultural Revolution] … Secondly, research on herbal drugs was not exclusive to traditional medicine but the faculties of pharmacy and other disciplines could also research this' (Iran Science Watch 2020). In general, Malekzadeh refuted all use of herbal drugs before they are tested through research and clinical trials. In particular, he refuted the approach of complementary medicine faculties or establishments who referred to old medical textbooks and applied their prescriptions to their patients, as he believed that they could be harmful.

The use of alternative or complementary medicine when modern medicine has not always been successful in treating lethal cancers, chronic conditions and severe syndromes is not exclusive to non-Western countries and is also at work in the West. Likewise, the promotion of traditional medicine by the clerical regime is not the revival of what was at work before the creation of the modern faculty of medicine under Reza Shah in 1933. The School of Persian Medicine has been added to other schools of the University of Medical Science, including the School of Medicine, School of Dentistry, School of Pharmacy and School of Allied Medical Sciences. To become specialised in Persian (traditional and complementary) medicine, the candidate should have graduated from the Faculty of Medicine after seven years of studies and training in modern medicine. All the teaching staff and deanery of the School of Persian Medicine are graduates of the Faculty of Medicine. This means that a specialist in traditional medicine has already acquired modern medical knowledge and skills and would practise traditional medicine within the framework of modern medicine. In other words, modern medical discourse prevails even for traditional medicine. Dr Malekzadeh's stance aligns with the general policy of the clerical state, which withholds substantial and meaningful support from traditional medicine practitioners. Although the government has not banned traditional medicine, it deprives it of all chance of development insofar as it does not subsidise herbal products or locally produced herbal raw materials– while it does subsidise 'the pharmaceutical industry's importation of raw materials' (WHO 2001). This situation is evident in the official website of the School of Persian (traditional) Medicine, which is poorly populated with several of its links inactive. One of its links that is quite well updated belongs to the Basij (Mobilisation) medical students at this School, which broadcasts political news in line with hardliners' viewpoints.[29]

The rise of neo-traditionalism in medicine

The rise of what we might call neo-traditionalism in medicine in Iran is grounded in three interrelated factors. The first is ideology as an instrument of national identity and anti-imperialism, which was prominent in the 1979 Revolution

[29] An English summary page can be found here: http://en.tums.ac.ir/en/content/238/school-of-persian-medicine (accessed 12 July 2023).

and shared by both Islamist and secular opponents of the Shah. As explained above, this ideology was adopted by the clerical state as a hallmark of fighting against Western culture, while in fact the regime applies modern medicine in practice. The second factor is the availability and affordability of herbal drugs in comparison to the high cost or lack of effective chemical medicine during the Covid-19 pandemic. And the third factor is the professionalisation and institutionalisation of traditional medicine by its practitioners, who endeavour to attain official recognition that would allow them to expand their activities and market presence. In such a context, the practitioners of traditional medicine, for ideological and professional reasons, stay within the boundaries set by classical sources of Galenico-Hippocratic medicine by applying the content of this literature. They then try to prove the effectiveness of this medicine from the viewpoint of modern medical knowledge and terminologies as a way to legitimise their work. For example, according to a specialist in traditional medicine, *hejamat* (scarification by cupping) would increase the oxygen level in the blood of Covid-19-affected patients. It can also cure diabetes by improving insulin sensitivity; it can increase anti-depression hormones in the brain, which is why those who are subject to phlebotomy feel lighter and happier! (Tasnim News 2021b).[30] In general, traditional medicine claimed that the immune system would be boosted by bloodletting (of different forms) during Covid-19; it was also claimed that the use of garlic and onion, raw or cooked, as well as nigella or fennel seeds enhanced immunity against Covid-19 (Tasnim News 2021c).

Practitioners of traditional medicine also have recourse to the principle of research and trials, which is fundamental in modern medicine, to legitimise the use of herbal medicine. For example, on herbal drugs for Covid-19, they claim that:

> according to laboratory research, the following drugs are effective for the treatment of coronavirus: saffron, lavender, chamomile, black seed, jujube, liquorice root, medicine of Imam Kazem (peace be upon him), baking soda incense, mint inhalation extract, and in addition to the medicine, proper nutrition and sufficient rest are necessary. The order to use each of the above medicines is different according to the gender, age, and condition of each person and should not be used arbitrarily.
>
> (ISNA 2021)

As previously noted, only 56 herbal medicines have undergone clinial trials in Iran, even though more than 8,000 medicinal plants have been identified. In any case, there cannot be a systemic clinical trial of herbal medicine, simply because the government does not allocate any budget for it.

[30] The 'traditional doctor' in this source explains the physiological function of hejamat (scarification), including change of humour and increase in the level of oxygen in the blood to 96 per cent. It is noteworthy that hejamat prescribed in the medicine of the prophet is based on Galenic medicine. The practice of hejamat in folk/prophetic medicine in North Africa (Algeria, Egypt) is associated with magic and ritualistic preparations (Cherak 2013).

The modern pharmaceutical industry and political rents

The question of why the Health Ministry opposes the official and state-sponsored application of traditional medicine to treat Covid-19 requires further research. One of the critics of the government's reliance on modern medicine in the treatment of coronavirus claimed that the reason for the exclusion of traditional medicine in treating Covid-19 patients is the drug mafia: namely, that those involved in the Health Ministry in importing or producing chemical drugs try to preserve their monopoly on the pharmaceutical industry. As we saw earlier, this allowed them to benefit from drugs such as hydroxychloroquine and remdesivir that had not yet undergone clinical trials (see above). The charge of corruption is certainly an established issue, and as mentioned above, the budget allocated for traditional medicine was far from honouring the 'ideological' commitment of the clerical regime to traditional medicine. This, however, is only a by-product of the regime's policy to employ modern science and technology to strengthen its power and reinforce its control over society. The Tasnim News Agency criticised Dr Malekzadeh, for having created a pharmaceutical company and taken up the position of chairman of its board of directors while being in the position of Deputy Health Minister. To sharpen their criticism, they also added that this company had produced some ineffective drugs for the treatment of coronavirus and called for his resignation. Malekzadeh's response to this was the following:

> As a distinguished [emeritus] professor and faculty member of the Tehran University of Medical Sciences in the field of gastrointestinal disease, on 29/02/2015 I created, together with some other colleagues, the (private and knowledge-based) company of Fanâvarân Royan Mohaghegh Darou and was elected as the chairman of its board of directors. For the following reasons, my membership in this company is not subject to the law approved in 1994 that banned the accumulation of more than one job. …
>
> The final clause of Article 141 of the Constitution of the Islamic Republic of Iran exempts teaching positions and faculty members from the law that prohibits the accumulation of public jobs alongside managing private companies. … In addition, according to Note 4 under Article 17 of the Fifth Development Plan Law and Note 7 under Article 1 of the Law on Permanent Budget Decree, faculty members can also form 100% private knowledge-based institutes and companies with the approval of the board of trustees of the same university or participate in these institutions and companies.
>
> (Iran Science Watch 2020)

This amounts to what Kevan Harris calls 'capitalism from above as wide and disperse patrimonial networks have come to dominate the technocratic agencies' (Harris 2013: 66). The cumulation of positions and exclusive rights to create commercial companies by the elites of the Islamic regime has become a well-established trend. Dr Velayati, a paediatrist who became the Foreign Minister at the start of the Islamic Republic, has occupied 63 positions, including the one he created during the pandemic, which had the 'exclusive right to import Favipiravir

from Japan to treat corona before a vaccine was produced and the first users of this drug were the men of the regime' or those wealthy enough to pay for it.[31] In 2023, the managing director of the Society of Thalassemia Patients raised concerns that the pharmaceutical companies inside Iran take advantage of the sanctions on importing drugs. They do so by changing the formula of foreign drugs to produce cheaper alternatives, yet market these less effective drugs as the imported drugs to the patients (Khabarban 2023). Whether such accumulation of activities reserved for those who benefit from political rents leads to corruption or the development of capitalism (from above), what is significant in the case under study here is that they have been devoted more to modern medicine than traditional and complementary medicine.

There is contradictory information about the commitments of the clerical state in integrating traditional medicine into the healthcare system. The two main healthcare systems according to the WHO are the 'integrative system', which recognises traditional and complementary medicine and employs them in all areas (research, education, regulation, insurance, etc.), and the 'inclusive system', which recognises traditional medicine but does not incorporate it in the healthcare system. Referring to this categorisation, Negahban, Maleki and Abbassian (2019) demonstrate that Iran has an inclusive system. In the WHO global report in 2019, it is said that the Islamic Republic of Iran has integrated national policy on T&CM issued in 1996 and revised in 2010 (WHO 2019: 104–5). However, when it comes to the insurance of herbal drugs, out of tens of thousands of registered herbal medicines, only 56 are national drugs (included in the National Essential Medicines List) and are covered by public health insurance (WHO 2019: 105). A comparison with India provides insight into the attitude of the clerical state towards traditional medicine. The Ministry of AYUSH in India, formed in 1995, focuses on developing education and research on naturopathy, Ayurveda, yoga, Unani medicine, Siddha and homeopathy (AYUSH) (Singh and Shuka 2021: 31). There are several bodies or legislation, including the Central Council of Indian Medicine Act, research councils, Department of AYUSH, and the Drug & Cosmetic Act 1940, that regulate herbal medicine in India. In a striking contrast to the modernisation of Ayurveda in India and traditional medicines in Japan, China and Korea – which not only represent the assertion of their national identities against Western colonial and imperialist rule but also respond to their economic ambitions by developing a global pharmaceutical industry – in Iran, despite the Islamic government's promotion of traditional medicine, no concrete and substantial steps have been taken to integrate traditional medicine and herbal drugs into education, research and medical insurance.[32] The institutional modernisation of traditional medicine in Asia can potentially break the

[31] https://fa.opensocietyalliance.org/s1202024021520/ (accessed 17 June 2024).

[32] On the modernisation of Ayurvedic medicine, see Gaudillière and Pordié (2014); on the modernisation of herbal medicine in China and Korea, see Kloos (2017); on the inclusion of traditional Korean medicine in the National Medical Insurance, see Son (1999).

tradition/modern dichotomy, fostering a dialogue between the two. However, as Anne Marie Moulin (2016) notes in the case of Ayurvedic medicine in India, this process entails an inherent contradiction – namely, how to incorporate innovations into a therapeutic tradition that is revered precisely for its strict adherence to ancient texts deemed inviolable. In Iran, by contrast, the emphasis on epistemological gaps and theoretical differences – articulated by Dr Malekzadeh for modern medicine and Dr Akbari for traditional medicine – reinforces a long-standing dichotomy between the two. This divide appears to serve the interests of the clerical state in consolidating state authority more than it advances the institutional and professional standing of traditional medicine.

Conclusion

Unlike the fundamental changes and discontinuities in medical knowledge that have occurred since the nineteenth century when the foundations of modern public health were laid, the Covid-19 experience brings to the fore striking continuities in the way Iranian society confronts epidemics as well as other diseases.

Following the 1979 Revolution, which brought the clerics to power, the clerical state worked towards the restoration of traditional and humoral medicine as part of its ideological agenda. Dr Velayati, a paediatrician educated in the US and the Minister of Foreign Affairs, was one of those who took the lead in this process. Thus, the revival of traditional medicine had political and ideological (rather than theoretical) foundations and incentives.

With the outbreak of Covid-19, in the absence of a vaccine, hazy (or lack of) knowledge about the virus and ineffective chemical drugs, traditional and herbal medicine were used and advertised as an alternative solution to respond to the pandemic. It is, however, significant that neither the ideological motivations nor the extensive use of herbal medicine during the pandemic led to its official recognition by the clerical regime, which instead remained attached to modern medicine in dealing with the pandemic; therefore, traditional medicine could not regain its former status. The opposition of the clerical regime to the use of vaccines made in the West at the start of the pandemic was due to its geopolitical agenda and anti-Western foreign policy, as well as to financial reasons. This enabled the government's medical institutions to receive a budget for the development of different vaccines, such as Noor and Barekat (produced by companies under the Headquarters of Imam) or Fakhra (under the Defense Ministry), as well as funding for some private companies, which are often directly or indirectly linked to the IRGC.

The use of modern medicine alongside other modern technologies, such as nanotechnologies, nuclear and missile technologies, as instruments of power by a regime that identifies itself with pre-modern knowledge and the supernatural power of the saints speaks volumes about the power component of a regime of knowledge. It is highly significant that the clerical establishment founded its power on religion

but ended up upholding its power by relying on modern science and technology. Historically, this reflects the enduring cohabitation of religion, magic and science, reminiscent of patterns observed in previous centuries in the West. It also illustrates how the exercise of power often aligns religion and science as instruments of authority, rather than ends in themselves. Epistemologically, this phenomenon might align with what Habermas describes as 'reason-interested' (Habermas 1972 in Rillo and Carrillo 2023: 5). If we assume, as Habermas does, that 'the direction of the efforts in the acquisition of knowledge' emanates from (or is informed by) the intention behind the pursuit of knowledge, we could then arguably conclude that the reliance of the clerical regime on modern medical knowledge is merely utilitarian or practical rather than an act 'geared toward the preservation of a certain value entailed in the acquisition of a particular form of knowledge' (Dube 1977: 44). In other words, I believe that the original value of 'inquiry' or freethinking that Habermas refers to as the origin of knowledge does not necessarily apply to the application of modern science and technology in the so-called post-modern world.

References

Aftab News. (2020), 'Alam al-Huda: Gold and Silver of the Shrine Do Not Heal Anyone: Imam Reza Provides the Means to Prevent Corona', 14 Esfand 1398 / 4 March 2020. Available at: https://aftabnews.ir/fa/news/639970. Accessed October 2024.

Ahlawat, A., Wiedensohler, A. and Mishra, S. K. (2020), 'An Overview on the Role of Relative Humidity in Airborne Transmission of SARS-CoV-2 in Indoor Environments'. *Aerosol Air Quality Research*, 20(9): 1856–61. https://doi.org/10.4209/aaqr.2020.06.0302

Arjomand, S. A. (1981), 'The Shiʿite Hierocracy and the State in Pre-modern Iran: 1785–1890'. *European Journal of Sociology*, 22(1): 40–78. http://doi.org/10.1017/S000397560000360X

Arjomand, S. A. (1985), 'The Clerical Estate and the Emergence of a Shiʿite Hierocracy in Safavid Iran: A Study in Historical Sociology'. *Journal of the Economic and Social History of the Orient*, 28(2): 169–219. https://doi.org/10.2307/3631858

Ashtiani, A. (1989), 'Cultural Formation on a Theocratic State: The Institutionalisation of Shiism in Safavid Iran'. *Social Compass*, 36(4): 481–92. https://doi.org/10.1177/003776889036004005

Barro, R. J, Ursúa, J. F. and Weng, J. (2020), 'The Coronavirus and the Great Influenza Pandemic: Lessons from the "Spanish Flu" for the Coronavirus's Potential Effects on Mortality and Economic Activity'. *National Bureau of Economic Research*, Working Paper 26866. https://doi.org/10.3386/w26866

Bhagat, R. K. and Linden, P. F. (2020), 'Displacement Ventilation: A Viable Ventilation Strategy for Makeshift Hospitals and Public Buildings to Contain COVID-19 and Other Airborne Diseases'. *Royal Society Open Science*, 7(9): 200680. https://doi.org/10.1098/rsos.200680

Byerly, C. R. (2005), *Fever of War: The Influenza Epidemic in the U.S. Army During World War I* (London: New York University Press).

Cherak, F. Z. (2013), 'La thérapeutique de la rouqiya entre Algérie, Egypte et France' in A. M. Moulin (ed.) *Islam et révolutions médicales* (Paris: Karthala), 297–328.

Conrad, P. and Barker, K. (2010), 'The Social Construction of Illness: Key Insights and Policy Implications'. *Journal of Health and Social Behavior*, 51(1S): 67–79. https://doi.org/10.1177/0022146510383495

Delumeau, J. (1989), *Fear in the Western World: 1300–1800* (Cambridge, MA: Harvard University Press).

Deutsche Welle. (2020), 'Coronavirus: Islamic Medicine and the Controversy of Sheikh Morteza Kohansal', *Deutsche Welle Iran*, 22 March.

Drugs.com. (2024), 'An Update: Is Hydroxychloroquine Effective for COVID-19?', 26 August. Available at: https://www.drugs.com/medical-answers/hydroxychloroquine-effective-covid-19-3536024/. Accessed October 2024.

Dube, J. E. R. (1977), *Habermas' Proposal: The Unity of Knowledge, Interest and Action*. Master's thesis, University of Winsor, Canada. Electronic Theses and Dissertations. 2260. https://scholar.uwindsor.ca/etd/2260

Ebrahimnejad, H. (2004), 'Religion and Medicine in Qajar Iran' in R. Gleave (ed.) *Religion and Society in Qajar Iran* (London: Routledge), 401–28.

Ebrahimnejad, H. (2014), *Medicine in Iran: Profession, Practice and Politics, 1800–1925* (New York: Palgrave Macmillan).

Entekhab News. (2020), 'Surprising Facts About Coronavirus Airborne Movement / Virus Movement Through Moisture', 05 Mehr 1399/26 September. Available at: https://www.entekhab.ir/fa/news/576663/. Accessed October 2024.

Entekhab News. (2022), 'MP: Preserving the System Is Even More Important Than Saving the Life of the Imam of the Time', 15 Aban 1401/6 November. Available at: https://www.entekhab.ir/fa/news/701952. Accessed October 2024.

European Medicines Agency (EMA). (2024), 'Herbal Medicinal Products', European Medical Association website, European Union. Available at: https://www.ema.europa.eu/en/human-regulatory-overview/herbal-medicinal-products.

Fars News. (2020a), 'The Most Up-to-Date Results of Cell Therapy of the Corona Patient: Coronavirus Can Deceive the Immune System', 16 September. Available at: https://farsnews.ir/FarsNews/1600238157000853122. Accessed August 2023.

Fars News. (2020b), 'Royan Research Investigates Specific Differences in Coronavirus Gene Mutations in Iranian Society', 20 September. Available at: https://farsnews.ir/ScientificAcademic/1600588374000207045. Accessed August 2024.

Fars News. (2020c), Available at: https://farsnews.ir/social/1596007493000409949 Accessed October 2024.

FDA. (2020), 'FDA Approves First Treatment for COVID-19', *Federal Food and Drug Administration*, 22 October. Available at: https://www.fda.gov/news-events/press-announcements/fda-approves-first-treatment-covid-19. Accessed October 2024.

Feng, Y., Marchal, T., Sperry, T. and Yi, H. (2020), 'Influence of Wind and Relative Humidity on the Social Distancing Effectiveness to Prevent COVID-19 Airborne Transmission: A Numerical Study'. *Journal of Aerosol Science*, 147: 105585. https://doi.org/10.1016/j.jaerosci.2020.105585

Global Data. (2024), 'Tsumura & Co – Company Profile'. Available at: https://www.globaldata.com/company-profile/tsumura-co/premium-data/clinical-trials. Accessed 12 October 2024.

Good, B. J. (1993), *Medicine, Rationality, and Experience* (Cambridge: Cambridge University Press).

Gooya News. (2023), 18 June. https://news.gooya.com/2023/06/post-76946.php. Accessed 22 June 2023.

Greenhalgh, T., Fisman, D., Cane, D. J., Oliver, M. and Macintyre, C. R. (2022), 'Adapt or Die: How the Pandemic Made the Shift from EBM to EBM+ More Urgent'. *BMJ Journals*, 27(5): 253–60. https://doi.org/10.1136/bmjebm-2022-111952

Greenhalgh, T., Jimenez, J. L., Prather, K. A., Tufekcim, Z., Fisman, D. and Schooley, R. (2021), 'Ten Scientific Reasons in Support of Airborne Transmission of SARS-CoV-2'. *Lancet*, 397(10285): 1603–5. https:/doi.org/10.1016/S0140-6736(21)00869-2

Harris, K. (2013), 'The Rise of the Subcontractor State: Politics of Pseudo-Privatization in the Islamic Republic of Iran'. *International Journal of Middle Eastern Studies*, 45(1): 45–70. https://www.jstor.org/stable/43302954

Hong, S.-P. (1989), 'Traditional Korean Medicine in the Modernisation Process: Institutional and Attitudinal Changes'. Ph.D. thesis, Iowa State University. https://doi.org/10.31274/rtd-180813-8980

Houot, S. (2013), 'La *fatwâ*, un cadre pour la bioéthique contemporaine' in A. M. Moulin (ed.) *Islam et Révolutions Médicales* (Paris: Karthala), 123–43.

Illich, I. (1975), *Medical Nemesis* (London: Calder & Boyars).

Illich, I. (1976), *Limits to Medicine. Medical Nemesis: The Expropriation of Health* (London: Penguin Books).

Iran International Newsroom. (2023), 'Iran's Claim of Quantum Processor Draws Ridicule', 8 June, updated 25 October 2024. Available at: https://www.iranintl.com/en/202306086480. Accessed October 2024.

Iran Science Watch. (2020), 'Full Response of Dr. Malekzadeh, Resigned Deputy Minister of Research at the Ministry of Health to the Statement of the Student Basij of 11 Iranian Universities of Medical Sciences', 24 November. Available at: https://www.isw.ir/47166. Accessed October 2024.

ISNA. (2021), 'The Role of Traditional Medicine in the Prevention and Treatment of Coronavirus', *Iranian Students News Agency*, 9 March. Available at: https://www.isna.ir/news/1400120906855. Accessed October 2024.

Katiboina, V. (2021), '11 Benefits and Uses of Lemon Peel', *Medicine Net*. Available at: https://www.medicinenet.com/benefits_and_uses_of_lemon_peel/article.htm. Accessed October 2024.

Khabarban. (2023), 'The Monthly Cost of Treatment of Thalassemia Patients Has Increased by 5 to 7 Million / Monopoly in Domestic Pharmaceutical Companies', 21 June. Available at: https://38038781.khabarban.com/. Accessed October 2024.

Khatami, Ayatollah S. E. (2020), '*Dars-e khârej* (External Lesson) on Coronavirus 03-02-1399', Eshia.ir. Available at: https://eshia.ir/feqh/archive/text/khatami/feqh3/98/990203/. Accessed October 2024.

Khomeini, Ayatollah (1981), 'Speech on 16 November'. Available at: https://www.aparat.com/v/f01v218. Accessed October 2024.

Kim, K.-I. (1973), 'Traditional Concept of Disease in Korea'. *Korea Journal*, 13(1): 12–18.

Kloos, S. (2017), 'The Pharmaceutical Assemblage: Rethinking Sowa Rigpa and the Herbal Pharmaceutical Industry in Asia', *Current Anthropology*, 58(6): 693–717. https://www.journals.uchicago.edu/doi/pdfplus/10.1086/693896

Kofi-Tsekpo, M. (2004), 'Institutionalization of African Traditional Medicine in Health Care Systems in Africa'. *African Journal of Health Sciences*, 11(1–2): i–ii.

Lang, A. (2019), '9 Benefits and Uses of Lemon Peel', *Healthline.com*. Available at: https://www.healthline.com/nutrition/lemon-peel. Accessed October 2024.

Magiran. (2020), 'The President at the Meeting of the Specialized Committees of the National Headquarters for Combating Coronavirus', *Magiran*. Newspaper, No. 7419 (25/05/1399). Available at: https://www.magiran.com/article/4077443

MedVoice (2023), Available at: http://medvoice.ir/1807. Accessed on 14 April 2023.
Morawska, L. and Milton, D. K. (2020), 'It Is Time to Address Airborne Transmission of Coronavirus Disease 2019 (Covid-19)'. *Clinical Infectious Diseases*, 71(9): 2311–13. https://doi.org/10.1093/cid/ciaa939
Moreno-Castro, C. Vengut-Climent, E., Cano-Orón, L. and Mendoza-Poudereux, I. (2020), 'Exploratory Study of the Hoaxes Spread via WhatsApp in Spain to Prevent and/or Cure Covid-19'. *Gaceta Sanitaria*, 35(6): 534–41. https://doi.org/10.1016/j.gaceta.2020.07.008
Moulin, A. M. (2016), 'Book Review: *The Herbal Pharmaceutical Industry in India: Drug Reformulation and the Market*. Sous la direction de Jean-Paul Gaudillière et Laurent Pordié'. *Medical Science*, 32(10): 895–7. https://doi.org/10.1051/medsci/20163210024
Moulin, A. M. (2023), *La vie avec les virus* (Paris: Presses Universitaire de France).
Nandy, A. and Visvanathan, S. (1990), 'Modern Medicine and Its Non-Modern Critics: A Study in Discourse' in F. A. Marglin and S. A. Marglin (eds) *Dominating Knowledge: Development, Culture, and Resistance* (Oxford: Oxford University Press), 145–84.
Negahban, A., Maleki, M. and Abbassian, A. (2019), 'Policies and Laws Related to the Integration of Traditional and Complementary Medicine into the Iranian Health System Based on the WHO Definition: A Document Analysis'. *Journal of Education and Health Promotion*, 29(8): 221. https://doi.org/10.4103/jehp.jehp_321_19
Nicolussi, S., Drewe, J., Butterweck, V. and Meyer Zu Schwabedissen, H. E. (2020), 'Clinical Relevance of St. John's Wort Drug Interactions Revisited'. *British Journal of Pharmacology*, 177(6): 1212–26. https://doi.org/10.1111/bph.14936
Nutton, V. (2021), 'Epidemic Disease in a Humoral Environment: From Airs, Waters and Places to the Renaissance' in C. Thumiger (ed.) *Holism in Ancient Medicine and Its Reception* (Leiden: Brill), 357–76.
Parveen, A., Parveen, B., Parveen, R. and Ahmad, S. (2015), 'Challenges and Guidelines for Clinical Trial of Herbal Drugs'. *Journal of Pharmacy & Bioallied Sciences*, 7(4): 329–33. https://doi.org/10.4103/0975-7406.168035
Rillo, A. G. and Carrillo, B. E. M. (2023), 'Elements to Understand the Epistemology of Medicine'. *International Journal of Humanities and Social Science Invention*, 12(2): 3–14. https://www.ijhssi.org/papers/vol12(2)/B12020314.pdf
Sadat, S. M. M. (2022), *Mas'uliyatha-ye feqhi-ye dowlat va masuliyatha-ye madani-ye madrom dar dowran-e korona* (Legal responsibilities of the state and civil duties of people during corona), 05 Bahman 1400/25 January 2022: 8.
Shirâzi, M. M.-T. (1831), *Tâ'uniya (On Plague)*, in Arabic, lithograph, Majles Library, Tehran. 1264.
Singh, B., Ryan, H., Kredo, T., Chaplin, M. and Fletcher, T. (2021), 'Review of Hydroxychloroquine'. Available at: https://www.cochrane.org/fa/CD013587/. Accessed October 2024.
Singh, S. and Shuka, V. K. (2021), 'Current Regulations for Herbal Medicine in India'. *International Journal of Drug Regulatory Affairs*, 9(2): 30–4. https://doi.org/10.22270/ijdra.v9i2.466
Smedley, T. (2015), 'Big Pharma Attempts to Cast Off Bad Reputation by Targeting the Poor', *Guardian*, 25 June. Available at: https://www.theguardian.com/sustainable-business/2015/jun/25/big-pharma-attempts-to-cast-off-bad-reputation-by-targeting-the-poor. Accessed 17 December 2023.
Snowden, F. (2019), *Epidemics and Society: From the Black Death to the Present* (London: Yale University Press).
Tasnim News. (2020a), 'What Is the Reason for the Public Opposition to Traditional Medicine by Some Officials of the Ministry of Health?!' 3 October. Available at: https://www.tasnimnews.com/fa/news/1399/07/12/2361548. Accessed October 2024.

Tasnim News. (2020b), 'Report// The Mortality Rate of "Corona Patients" in the Field of "Traditional Medicine" Has Been Close to Zero!' 14 October. Available at: https://www.tasnimnews.com/fa/news/1399/07/23/2369250. Accessed October 2024.

Tasnim News. (2021a), 'Mr. Secretary! How Is It Possible to Promote and Develop Traditional Medicine Demanded by Leadership with a "Near-Zero Budget"!?!' 25 January. Available at: https://www.tasnimnews.com/fa/news/1399/11/06/2439588. Accessed October 2024.

Tasnim News. (2021b), 'Video// Prevention and Treatment of More Than 200 Diseases Through "Cupping"', 4 Khordad 1400 / June 2021. Available at: https://www.tasnimnews.com/fa/news/1400/03/04/2509314. Accessed October 2024.

Tasnim News. (2021c), 'Strengthening the Immune System During the Corona Period Using "Cupping and Cupping" + Nutritional Instructions', 30 January. https://www.tasnimnews.com/fa/news/1399/11/10/2440149. Accessed October 2024.

Tasnim, S., Hussain, M. M. and Mazumder, H. (2020), 'Impact of Rumors and Misinformation on COVID-19 in Social Media'. *Journal of Preventive Medicine and Public Health*, 53(3): 171–4. https://doi.org/10.3961/jpmph.20.094

Vraga, E. K. and Bode, L. (2017), 'Using Expert Sources to Correct Health Misinformation in Social Media'. *Science Communication*, 39(5): 621–45. https://doi.org/10.1177/1075547017731776

Vraga, E. K., Bode, L. and Tully, M. (2020), 'Creating News Literacy Messages to Enhance Expert Corrections of Misinformation on Twitter'. *Communication Research*, 49(2): 245–67. https://doi.org/10.1177/0093650219898094

World Health Organization (WHO). (2001), *Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A Worldwide Review*, WHO/EDM/TRM/2001.2 (Geneva: World Health Organization). https://www.who.int/publications/i/item/WHO-EDM-TRM-2001.2. Accessed October 2024.

World Health Organization (WHO). (2019), *WHO Global Report on Traditional and Complementary Medicine*, *2019* (Geneva: World Health Organization). Available at: https://iris.who.int/bitstream/handle/10665/312342/9789241515436. Accessed October 2024.

Zhao, X. Liu, S., Yin, Y., Zhang, T. and Chen, Q. (2022), 'Airborne Transmission of COVID-19 Virus in Enclosed Spaces: An Overview of Research Methods'. *Indoor Air*, 32(6). https://doi.org/10.1111/ina.13056