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Development and Thinking of Classical Islamic Pharmacy Towards a Progressive and Sustainable Pharmacy

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***Abstract**: The purpose of this study is to determine the existence of pharmaceutical science inseparable from its development history which is a long process of growth and development of pharmaceutical science. The method used is library research. The results of the study showed that the development of Islamic pharmacy went through four phases, namely (first phase, second phase, third phase, and fourth phase) and in each of these phases Muslim scientists made a significant contribution to the development of pharmaceutical science. Pharmaceutical services today have been growing in addition to being product-oriented, also patient-oriented.*

***Keywords**: pharmacy, scientist, product, patient, thinking of classical Islamic pharmacy.*

INTRODUCTION

Islam is a religion that carries the mission of progress to build a civilization in the life of mankind's universe. This is what Islam calls Din al-Hadlarah, the religion of progress. There are so many teachings in Islam about the progress of human life, which must be realized in the main civilization or excellence. Islam advances not only doctrinal norms but also plunders. During the time of the Prophet Muhammad for about 23 years, Islam had transformed the Jahiliyah Arabs into a religion that brought enlightenment to civilization, thus forming the civilization of al-Madinah al-Munawwarah. After that, over the centuries Islam became the religion that built world civilization, which gave birth to the golden era of modern Islam: The Golden Age of Islam, the golden age of Islam. Islam in Indonesia also brings changes towards progress, which is a one-time process. Initially, Islam entered Indonesia in the face of Indonesian culture which rested on the stratum of peasant communities which were influenced by animistic beliefs. Since then along with the presence of forward-thinking or renewal propagators of Islam, there has been a process of Islamic development that is adaptive to change and progress [1]–[3].

In Indonesia, Islamic organizations that focus on progressive Islam are Muhammadiyah organizations. Muhammadiyah, which was established on 8 Dhul-Hijjah 1330 H / November 18, 1912, is here to connect the chain of success of Islamic history, especially those oriented towards progress. Muhammadiyah was present to carry out renewal or enlightenment of the condition of Muslims and the Indonesian nation which at that time was colonized and left behind in many aspects of life. This is the initial spirit of Muhammadiyah in initiating and realizing Islam as a religion of progress. The birth of Muhammadiyah according to Prof. Mukti Ali has the main mission, namely: (1) Cleansing Islam in Indonesia of non-Islamic influences and habits; (2) Reformulation of Islamic Doctrine with a view of the modern mind; (3) Reformulation of Islamic teachings and education; and (4) Defending Islam from outside influences and attacks (Mukti Ali, 1958: 20). The efforts made are all based on a progressive view of Islam. Therefore, the wider community assesses and dubs Muhammadiyah as a reformist, a modernist Islamic movement that contains the essence of progressive Islam [4]–[7].

Muhammadiyah views Islam as a religion that teaches values about progress to realize the main human civilization. Progress in the Islamic view is inherent in the mission of the human caliphate which is in line with the sunatulah of life. Islam teaches that people should take care of the world and make it a majra'at hereafter or field of the Hereafter. Islam commands its people to plan for the future as an inseparable part of piety (QS Al-Hashr: 18), even the ummah is commanded to make a change of fate with the efforts of the cause [8].

Allah will not change the fate of a people except for the people who change it' (QS Ar-Ra'd: 11). Muslims should not forget the world, but instead manage to achieve eternal happiness in the hereafter by committing acts of courtesy and should not be corrupted in the face of the earth (QS Al-Qashash: 77).

In the context of universal humanity, progressive Islam seeded the seeds of truth, goodness, peace, justice, benefit, prosperity, and the virtue of life dynamically for all mankind. Islam upholds the glory of human beings both men and women without discrimination. Islam promotes the mission of anti-war, anti-terrorism, non-violence, anti-oppression, anti-backwardness, and anti-all forms of destruction on earth. Such as corruption, abuse of power, crimes against humanity, exploitation of nature and others. And Muhammadiyah with the view of Islamic progress will never stop illuminating the country and the universe of life. Together with other Islamic movements, of course, Muhammadiyah vows that Muslims in this country will grow and develop as a superior group or khayra ummah who become uswah hasanah in building an advanced civilization that radiates mercy for the universe. In that important and strategic context, the position and role of Muhammadiyah as an Islamic movement that carries the mission of Islam to progress are undoubtedly to give birth to an advanced civilization in the state philosophy of Baldatun Thayyibatun Wa Rabbun Ghafur and Islamic treatises as rahmatan lil-'alamin. The concept of Islamic progress applies to all aspects of life ranging from social, and economic to the health sector, including in the pharmaceutical field [9]–[12].

Literature Review

The existence of pharmaceutical science (syadanah, Arabic) is inseparable from the history of its development which is a long process of growth and development of science itself. In each phase of the development of pharmaceutical science, something new emerges and has characteristics every time. In the heyday of Islam, renowned pharmacists came one after another. Their work and thoughts became a significant contribution that influenced the development of pharmaceutical science to this day. Muslim pharmaceutical scientists in addition to mastering scientific research in the field of pharmacy also succeeded in making the composition, dosage, procedure of use, and effects of medicines (both simple and mixed drugs). The heyday of Islam was the time when pharmaceutical science reached its peak. Pharmaceutical figures such as Jabir ibn Ibn Hayyan, Ibn Masawayh, Al-Kindi, Sabur Ibn Sahl, At-Tabari, Ar-Razi, Al-Zahrawi, Ibn Sina, Al-Biruni, Al-Ghafiqi, Ibn Zuhr, Ibn Thufayl, Ibn Rushd, and Ibn Al-Baythar

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became people at the forefront even some of their works were still used as references in pharmacy and medicine until the modern century both in Eastern and Western countries [13]–[16].

METHODOLOGY

In research or writing how to collect data is very important and cannot be ignored just like that the type of research in this proposal is library research, namely literature study as the first step of discussing this proposal the author conducts literature research, to obtain data from main and supporting sources from previous literature, ancient manuscripts/manuscripts, books, Thesis, articles either in the form of hard copies or from the internet related to this topic of discussion. As a continuation of data collection is the processing and analysis of data. The data analysis method that the author uses is qualitative descriptive analysis with deductive thinking patterns [17]–[19].

RESULTS AND DISCUSSION

The Development of Islamic Pharmacy

According to Abu Al-Wafar Abdul Akhir, the history of Islamic pharmacy is divided into four phases, namely the first phase is the result of the hard work of Muslim chemists, as well as pioneers of pharmaceutical science Jabir ibn Ibn Hayyan (720 A.D.-815 A.D.). The second phase, pharmaceutical science was developed by Yuhanna Ibn Masawayh (777-857 AD), Al-Kindi (809-873), Sabur Ibn Sahl (died 869 AD), Abu Hasan Ali bin Shal Rabani At-Tabari (838-870 AD), and Zakariya Ar-Razi (864 AD-930 AD). The third phase, medical and pharmaceutical science through the hands of Al-Zahrawi (936-1013), Ibn Sina (980-1037 AD), Abu Raihan Muhammad Al-Biruni (973-1050 AD), Ibn Aldan Abu Ja'far Al-Ghafiqi (died 1165 AD). In the fourth phase, Muslim pharmaceutical scientists began to expand their studies through the pharmaceutical industry. The result of the study is the art of presenting medicines. Four of them were Ibn Zuhr (1091-1131 CE), Ibn Thufayl (1112-1186 CE), Ibn Rushd (1128-1198 CE), and Ibn Al-Baythar (1197-1248 CE). This fourth phase was the phase of the rise of Muslim scientists of the last Caliphate era. After this phase, Muslims experienced a drastic decline [20], [21].

Islamic Pharmacy Figures in the First Phase and Their Works

The figure of Islamic pharmacy in the first phase was Jabir Ibn Hayyan (721-815 AD), his full name was Abu Abdullah Jabir ibn Hayyan Al-Kufi As-Sufi. He was born in 721 A.D. and died in 815 A.D. Jabir Ibn Hayyan was considered worthy of being the principal representative of the Alchemi (chemist) or "The Father of Chemistry" of Arabia in the early days of its development. Western scientists also admit that the foundations of modern chemistry were laid by these Muslim chemists. Jabir Ibn Hayyan in his intellectual wanderings managed to classify the 7 Ibid. Various kinds of objects are composed of chemical elements. He divided it into three parts: body, life, and reason. About chemical elements, Gold (Au) and Silver (Ag) belong to the body, and Sulfur (S) and Arsenic (As) belong to life. While mercury (Hg) or mercury and sal ammonia (coal and oil juice) are classified as part of the sense [22].

In addition, the "Father of Modern Chemistry" is also noted as the inventor of a series of chemical processes, such as distillation, crystallization, calcification, and sublimation. The scientist known in the West as Geber is also recorded as having succeeded in creating cutting, smelting, and crystallizing instruments. In addition, it is also able to perfect the basic processes of sublimation, evaporation, liquefaction, crystallization, lime making, distillation, dyeing, and refining. Thanks to his services, the oxidation-reduction theory so famous in chemistry was revealed. Important compounds or substances such as hydrochloric acid, nitric acid, acetic, and acetic acid were born from the results of Jabir's research and thoughts. He also successfully distilled alcohol. One of the other important achievements in revolutionizing

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chemistry was establishing the perfume industry. Jabir Ibn Hayyan also coloured the treasures of Islamic pharmacy. He vigorously conducted experiments and research. Jabir is also a prolific writer, no less than 200 works have been produced, including the following:

1. Kitab al-Khama'ir (Fermentation);
2. Kitab al-Khawashsh al Kabir (The Ledger of Chemical Properties);
3. Books containing essays, whose systematics seem rather chaotic, on the practice of alchemy with some references pointing to ancient alchemy (Zosimus, Democritus, Hermes, and Agathodemon);
4. Books that constitute a systemic exposition of the teaching of alchemy;
5. The Book of the Balances, a book of equilibriums, an exposition of theoretical foundations, or more philosophical foundations of alchemy and the occult sciences; and
6. Books consisting of manuscripts that investigate more thoroughly and completely the specific problems of the book of Kutub al-Mawazin [22].

Islamic Pharmacy Figures in the Second Phase and Their Works

Yuhanna Ibnu Masawayh

His full name was Abu Zakariyya Yuhanna Ibn Masawayh, popularly known as Ibn Masawayh, but Westerners called him Mesue. He was a famous physician in the 9th century AD who played a major role in the development of science in his time with the translation of Greek works. His career as a renowned physician began during the reign of al-Rashd to al-Mutawakkil. During the work in the palace, the environment got an honourable place. He had a great interest in Greek science, as did Arabic poetry. He studied several 11 Ibid. translations of Greek scholars' works regularly. Ibn Masawayh managed to collect about 30 simplisia, complete with methods of observation and physical diagnosis of pharmacological effects. Ghaliyyah or aromatic blending has also been practiced in aromatic therapy and perfume-making processes. Various spices are used as research materials and developed into perfume ingredients and basic ingredients for herbal medicinal herbs [23].

Al-Kindi

Al-Kindi with the full name Yusuf bin Ishaq Al-Kindi, or his popular name and famous in the West by the name of al-Kindus. He was born in Kuffa in 809 A.D. and died in 970 A.D. In his life history, besides being known as a philosopher, he was also very famous as a scientist. During the 9th century AD, al-Kindi was one of the brightest people in the field of chemistry. 15 Al-Kindi was not only a philosopher but also a scientist who mastered the knowledge that existed in his time. In pharmaceutical science, he tried to establish that the effectiveness of mixed drugs depends on the mathematical relationship between the ingredients. The books left behind include various branches of science such as pharmacology (theory and mode of treatment), mathematics, geometry, astronomy, mathematics, politics, music, and so on [24]–[26].

Sabur Ibnu Sahl

Sabur Ibn Sahl's date of birth is unknown and died in 869 A.D. Sabur ibn Shal was the first physician to introduce the pharmacopoeia. He explained various types of medicines to cure various diseases. Not only that but he is also recorded as the first doctor to trigger a pharmacopoeia. He has explained various types of drugs to treat diseases. His contributions in the fields of pharmacology and pharmacy are also considered big eyes. He explained various types of medicines. His contributions to the development of pharmacology and pharmacy are outlined in the book Al-Aqrabadhin [27].

At-Tabari

Full name Abu Hasan Ali bin Sahl Rabban At-Tabari was born in 838 A.D. and died in 870 A.D. His intellectual odyssey, At-Tabri in addition to mastering medical science, he was also

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an expert in medicine, botany, psychology, astronomy, philosophy, calligraphy, and so on. At-Tabari was the teacher of the famous physician Zakariya Ar-Razi (Rhazes). At-Tabari's contribution to pharmacology was to write several books. Two famous books are as follows:

a. The Paradise of Wisdom (this book deals with medicine using animals and bird organs. He also introduced several drugs as well as how they were made; and

b. The world-famous Kitab Firdaus al-Hikmat Al-Tabari consists of 7 titled volumes and is the first medical encyclopedia to include several branches of medical science. This work was translated and published for the first time in the 20th century. This unique work was later published in Western Europe in cooperation with British and German institutions [28], [29].

Table 1. Works by At-Tabari

No.	Heading	Summary
1	Kitab Paradise of Wisdom	Treatment using animals and organs of birds
2	Kitab Firdaus al-Hikmat Al-Tabari	The first medical encyclopedia to include several branches of medical science

Ar-Razi

His full name is Abu Bakr Muhammad bin Zakariya Ar-Razi. Born in Rayy Province, near Tehran, Iran in 854 AD and died in 923 AD in the same city. He was educated and raised in a strict religious environment. He was the greatest Muslim physician and professor of the Islamic world and Europe in the field of medicine. He was also a philosopher and chemist after the foundations were formulated by Jabir ibn Ibn Hayyan until he was able to make various discoveries of modern chemistry based on research and experiments. The fields of medicine, chemistry, and pharmacy were mastered by Ar-Razi very well. He was not only a scholar of Arabic and Greek medicine like other Muslim scientists, but also a master of Indian medicine. In addition, he was so experienced in chemistry that he had special abilities in medicine that other scientists did not have [30], [31].

Islamic Pharmacy Figures in the Third Phase and Their Works

Al-Zahrawi

Full name Abu Al-Qosim Khalaf Ibn Abbas Al-Zahrawi. He was born in 936 A.D. in the city of Al-Zahra and died in 1013 A.D. In the Spanish city of Córdoba, he studied science, taught medicine, treated the public, and developed surgery. The world today awards him as the "Father of Modern Surgery". Al-Zahrawi was a phenomenal surgeon, whose work and ideas were adopted by doctors in the Western world. Al-Zahrawi is famous as a Spanish Muslim physician and surgeon, whose knowledge was developed during the reign of Abdur Rahman III (1912-961 AD). Among Muslim physicians, he is known as the pioneer of the science of disease recognition (diagnostic) and the repeating method of ear disease. It was he who pioneered ear surgery to restore hearing function, paying close attention to the anatomy of the arteries, veins and tendons. Not only limited to that but he is also known as a pioneer in the development of skin disease science (dermatology) [32], [33].

Ibnu Sina

The full name Abu Ali Husayn bin Abdullah bin Sina or Ibn Sina, is known in the Western world as Avicenna and also the understanding of doctors. Ibn Sina was born in 980 A.D. in Afsanah, a small village near Bukhara (Capital of the Samanyyah Dynasty), present-day Uzbekistan and died in 1037 A.D. During his lifetime Ibn Sina served in court. His job was to prepare treatment and treatment for the caliph, the royal family, and important officials. Ibn Sina's competence in medicine is beyond doubt. He is a surgeon, performing complex surgical

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practices, such as alleviating swelling in cancer in the initial period, dissecting the throat glands and windpipe, and removing ulcers in the crystallization of the lungs. He also treated haemorrhoids by tying his findings to neurological diseases which Ibn Sina was his Pioneer. He detailed how to remove it and the precautions that must be observed, and taught surgical methods by cutting a bend under the patient's skin using anaesthesia to treat wounds [34]–[37].

Al-Biruni

Abu Raihan Muhammed Ibnu Ahmad Al-Biruni lahir pada tahun 973 M di Kath, sebuah city in the course of the Oxus river, Khwarizm (Uzbekistan) and died in 1051 AD in Ghazni (Pakistan). Al-Biruni was the greatest scientist in all of human history. Al-Biruni was the first Muslim scholar to study the intricacies of India and the Brahminical tradition. He intensely studied Indian language, texts, history, and culture. Al-Biruni also not only mastered various sciences such as physics, anthropology, psychology, chemistry, astrology, history, geography, geodesy, mathematics, pharmacy, medicine, and philosophy. He also made a major contribution to the development of pharmaceutical science. Al-Biruni defined pharmaceutical science and defined its methods and principles [38].

Al-Ghafiqi

His full name is Abu Ja'far Muhammad Ibn Qassoum Ibn Aslam Al-Ghafiqi. He died in 1965 A.D. He was a medicine expert from Andalusia (Spain). He collected and studied various types of plants that he obtained from Spain and Africa. This Muslim scientist contributed to the development of pharmacology and pharmacy. Al-Ghafiqi's contribution to advancing the science of composition, dosage, and concocting and storing medicines is written in the book Al-Jami' Al-Adwiyyah Al-Mufradah. This book describes approaches, methodologies, experiments, and observations in pharmacology and pharmacy [39].

Muslim Pharmaceutical Figures in the Fourth Phase and Their Works

Ibnu Zuhr

Ibn Zuhr's full name was Abu Marwan Abdu al-Malik Ibn Zuhr. He was born in Seville, Spain in 1091 A.D. He was known as a physician, pharmacist, surgeon, Islamic scholar, and teacher. He studied medicine at the University of Cordoba. Ibn Zuhr bequeathed several important medical books for modern human civilization, including the following:

A. Kitab al-Taysir fi al-Mudawat wa al-Tadbir (Care and Diet). This book is an encyclopedia of medicine. In addition, this book describes a series of important contributions he made to medical science. The book explores various diseases and how to cure them.

Kitab al-Iqtisad fi Islah al-Anfus wa al-Ajsad (Book of the Middle Course concerning the Reformation of Souls and the Bodies). It contains a summary of various types of diseases, their treatment, and prevention. The book is also considered very valuable because it explores and discusses psychological studies.

C. Kitab al-Iktisad fi Islah an-Nufus wa al-Ajsad (Curing souls and bodies) is a summary of various diseases, treatment, prevention, health, and psychotherapy. A copy of this book is still preserved in the Palace Library in Rabat.

D. Kitab al-Aghthiya (Book on Foodstuffs). Ibn Zuhr also emphasized the importance of maintaining health with good and balanced nutritional intake. This book details and explains the different types of food and medicine and their effects on health. His ideas and discoveries have been influential in both Western and Eastern medicine for several centuries [39]–[41].

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Table 2. Works by Ibn Zuhr

No	Heading	Summary
1	Kitab al-Taysir fi al-Mudawat wa al-Tadbir	Various types of food and medicines and their effects on Health
2	Kitab al- Iqtisad fi Islah al-Anfus wa al-Ajsad	Summary of different types of diseases, their treatment, and prevention
3	Kitab al-Iktisad fi Islah an-Nufus wa al- Ajsad	Summary of various diseases, their treatment, prevention, health, and psychotherapy
4	Kitab al-Aghthiya	Various types of food and medicines and their effects on Health

Ibn Thufayl

Ibn Thufayl's full name was Abu Bakr Ibn Abd al-Malik Ibn Muhammad Ibn Thufayl. In Latin Ibn Thufayl is popularly known as Abubacer. He was born in Granada, Spain in 1112 A.D. and died in Morocco in 1186 A.D. He had an extraordinary passion for studying that led him to become a scientist in medicine, mathematics, astronomy and philosophy, even becoming a very famous poet during the Muwahhidun Dynasty which at that time ruled Spain. His medical profession and tenacity in working led to him being trusted and appointed as personal secretary to the Governors of Ceuta and Tangier by Putra Abdul Mu'min until finally, he became the personal physician of Abu Yusuf Ya'kub al-Mansur, Caliph of the Muwahhidun State (1163-1184 AD)51, as well as being the qadhi and vizier of the caliphate. Ibn Thufayl resigned his position as a physician in 1182 AD, due to his old age. Ibn Thufayl then begged the caliph to take his place in his place. At the discretion of the Caliph, the request was granted and Ibn Rushd became the court physician [42]–[44].

Ibnu Rusyd

Ibn Rushd's full name is Abu al-Walid Muhammad bin Rushd or known as Ibn Rushd was born and raised in Cordoba, Spain in 1128 AD and died in 1198 AD. Ibn Rushd was an accomplished philosopher, and expert in the Quran, as well as natural sciences such as physics, medicine, biology, and astronomy. Ibn Rushd is also known as a pioneer of general medicine, as well as a pioneer of the science of body tissues (histology). He also contributed to the field of vascular research, as well as smallpox [45], [46].

Ibnu Al-Baythar

His full name is Abu Muhammad Abdallah Ibn Ahmad Ibn Al-Baythar. Ibn al-Baythar was born in Malaga in 1197 A.D. and died in Damascus in 1248 A.D. Ibn al-Baythar was famous as a veterinarian, botanist and pharmacologist, scholar of plant science (botany). Ibn al-Baythar first studied in Seville, Spain, where he collected various types of plants in the city as material for his research. Ibn Al-Baythar while in Egypt was appointed by Al-Klim Ayyubi as "Chief Master of Concocting Medicine". After leaving Cairo, he went on many journeys and several scientific expeditions. Then he left for Damascus and settled there. In Damascus, he was busy collecting various types of plants as material for research and medicine [47].

The Existence of Progressive Pharmacy

The 21st century has entered into a growing period, where information can be found in various sources and various forms that can increase competence in the pharmaceutical field. Pharmacists are one of the human resources who have a role in community service in the health sector. According to the Government Regulation of the Republic of Indonesia Number 51 of 2009 concerning Pharmaceutical Work, a pharmacist is a pharmacy graduate who has graduated as a pharmacist and has taken the pharmacist oath of office. Pharmacists currently play a role in the management and regulation of drugs, community pharmacy, hospital pharmacy, and the pharmaceutical industry. In the management and regulation of drug

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regulations, one of the roles of pharmacists is as one of the professionals who participate in formulating regulations on health and medicine [48]

In community pharmacy, one of the roles of pharmacists/pharmacists is as the person in charge at the pharmacy who plays a role in the final checking of prescriptions and drugs to be handed over to patients. Unlike community pharmacy, the role of pharmacists in hospital pharmacy is more directly intersecting with patient medicine where a hospital pharmacist interacts directly with doctors so that it can affect patient treatment directly. A pharmacist in the pharmaceutical industry has many important roles in the development of drugs such as being a guarantor of the quality of the drug production department, and others [49].

In the 21st century, pharmacists globally are required to be part of the healthcare team that takes part in making decisions for a patient. A pharmacist is also expected to educate patients about several diseases such as diabetes and other chronic diseases to help other health workers and improve the patient's health level. Based on FIP data, the number of registered pharmacists in 74 countries representing 76% of the world's population reaches 4 million but only about 2.8 million are active and most of the pharmacists are actively working in community pharmacy. From the scope of work and responsibility that has been given to pharmacists, not everything has been carried out optimally. The number reaching 4 million also does not guarantee holistic patient safety. Therefore, continuous assessment and development by the pharmacist himself is needed [50].

Development of pharmaceutical science

Pharmaceutical services today have been growing in addition to being product-oriented (product oriented) also patient-oriented (patient-oriented) along with increasing public awareness of the importance of health and cultural shifts that cause an increase in drug consumption, especially over-the-counter drugs, cosmetics, cosmeceuticals, health food, nutraceuticals and herbal medicines [51].

In the field of clinical or community pharmacy, the existence of a pharmacist is very necessary, for example, pharmacists in hospitals can provide education or consultants related to drugs to be used by patients, pharmacists also ensure the quality of drugs to be given to the community with the best quality, pharmacists can also provide advice to doctors if the prescribed drugs are not appropriate to be given to patients. The existence of a pharmacist in pharmacies is no less important, pharmacists on duty in pharmacies also have a significant role in the community, such as providing consultation or helping the selection of drugs to patients, maintaining the quality of drugs in pharmacies, and providing education to the public. The World Health Organization (WHO), provides the concept of the functions and duties of pharmacists by the competence of pharmacists that can be implemented in the field of clinical pharmacy / to the community we know as 9 Stars Pharmacist: [52]

1. Caregiver

Pharmacists can provide services to patients, and provide drug information to the public and other health workers.

2. Decision Maker

Pharmacists can make decisions, both patient and managerial.

3. Communicator

Pharmacists can communicate well with several parties such as; patients, consumers, and other health workers.

4. Leader

Pharmacists can become leaders, for example, responsible for pharmacy management ranging from procurement management, service, administration, and others.

5. Manager

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Pharmacists can manage pharmacies well in terms of service, labour management and financial administration, for that pharmacists must have good managerial skills.

6. Life long Learner

Pharmacists must constantly explore knowledge and always learn new knowledge that can be useful for society.

7. Teacher

Pharmacists must be able to become teachers/guides for their staff to be able to provide education to the community both in hospitals, and pharmacies.

8. Research

Pharmacists participate in various research to develop knowledge that can be useful to society.

9. Contractor

Pharmacists are expected to become entrepreneurs in developing independence and helping to improve the welfare of the community [53], [54].

Tabel 3. 9 Stars Pharmacist

No	Role	Description
1	Caregiver	Providing services and drug information to the community
2	Decision Maker	Making Decisions related to their pharmaceutical work
3	Communicator	Good communication skills
4	Leader	Leader in pharmacy management
5	Manager	Manage your pharmacy effectively with responsibility
6	Life long Learner	Exploring new knowledge
7	Teacher	Providing education to the community
8	Research	Developing knowledge that can be useful for society
9	Entrepreneur	Develop independence and help improve the welfare of the community

From the discussion related to the existence of advanced pharmacies or pharmacists, it can be an afterthought for us to change perspectives related to pharmacists, pharmacists are not medicine men, pharmacy caretakers etc., but health workers who have many roles in society related to medicine.

CONCLUSION

In its journey, the development of Islamic pharmacy went through four phases, namely (the first phase, second phase, third phase, and fourth phase) and in each of these phases Muslim scientists made a significant contribution to the development of pharmaceutical science. The pharmaceutical field is product-oriented and patient-oriented. Pharmaceutical services today have been growing in addition to being product-oriented, also patient-oriented.

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Author Contribution

All authors contributed equally to the main contributor to this paper, all authors read and approved the final paper, and all authors declared no conflict of interest.

Conflicts of Interest

All authors declare no conflict of interest.

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