

A study on infectious diseases was classified in Traditional Mongolian medicine

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ABSTRACT: In Mongolia, scholarly lamas and doctors have reclassified infectious diseases not found in Indian or Tibetan medicine but common among Mongolians, in accordance with the theories of wind, bile, and phlegm. One clear example is the scriptures that systematically classify, define terminology, diagnose, and treat infectious diseases. We conducted this research to examine sources, documents, and medical texts related to the history of infectious disease classification; to disseminate them for research and training; and to ensure public accessibility.

The research objective is to study how infectious diseases were classified in ancient medical texts. The book *Man ngag bdud rtsi zogs ma*, compiled by the Mongolian scholar Luvsandanzanjantsan, systematized and re-established the classification of infectious diseases.

Mongolian scholar Luvsandanzanjantsan's book “Man ngag bdud rtsi zogs ma” consolidated and re-established the classification of infectious diseases. Then Jambalchoijidanzanperenlei noted in his book that: “Eye infection, Nyan disease betrayed and became friend with wind and bile, Varicella zoster virus, Bacterial poisoning leading to cyanosis and

darkening, Bacterial erysipelas, Nyan brain tumor” etc., were newly detected. Later, smallpox, measles, and influenza were added to the book, bringing the total number of bacteria and infectious diseases to 30. In Sumbe Khamba Ishbaljir's book “Bdud rtsi zil dkar,” infectious diseases are classified into 23. These classifications suggest that Mongolian scholars developed distinct names and classification systems for infectious diseases prevalent in Mongolia, while also incorporating classifications found in the classical texts of Indian Ayurveda and Tibetan medicine.

The prominent Mongolian Buddhist and medical figures, Lamyn Gegeen Luvsandanzanjantsan, in his sutra “Man ngag bdud rtsi zogs ma,” “Man ngag rin chen ‘byung gnas” by Jambalchoijidanzanperenlei, and “Bdud rtsi zil dkar” by Sumbe Khamba Ishbaljir, consider that certain bacteria cause infectious diseases. According to the sources preserved in Mongolia related to infectious diseases, Mongolian ancient doctors and scholar-lamas have greatly enriched the information and facts about infectious diseases. At the same time, Mongolian scholars identified infectious diseases that are not documented in Indian and Tibetan medical texts but were prevalent in Mongolia, thereby enriching the classification of infectious diseases.

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INTRODUCTION

The classification of infectious diseases is of great importance as it is the main basis of epidemiology, diagnosis, treatment, and response. Knowledge about infectious diseases has accumulated, and many new infectious diseases have been registered. As a result, there was a need to systematically classify the pathogens causing infectious diseases according to their characteristics, clinical and epidemiological status, and importance. Accordingly, scientists from many countries have proposed many categories of infectious diseases based on various principles. The first attempts to systematically classify diseases were made in the 1600s and 1700s. However, in many countries, the classification of diseases was challenging due to inconsistencies in disease terminology and a lack of statistical data.

Jacques Bertillon (1851–1922), Chief of Statistical Services for Paris, was tasked by the International Statistical Institute in 1891 to create a new, uniform classification of causes of death.¹ The Bertillon Classification of Causes of Death, as it was first called, received general approval and was adopted by several countries and a number of cities. In 1898, the American Public Health Association recommended the adoption of the Bertillon classification by the civil registrars of Canada, Mexico, and the United States. The association also suggested that the classification be revised every 10 years.²

In 1898, the American Public Health Association proposed adopting the system across Canada, Mexico, and the United States, emphasizing the importance of revising it every ten years to ensure its continued accuracy and relevance.

In subsequent years, Bertillon's classification came to be known as the "International List of Causes of Death" and was eventually developed into the "International Classification of Diseases" (ICD). From 1948 onward, the World Health Organization (WHO) assumed responsibility for publishing the ICD and has revised it multiple times to improve its precision for general epidemiological surveillance and health management purposes.² In the United States, the first edition of the reference book "The Control of Communicable Diseases in Man," published in 1917, identified 38 distinct nosological forms.³

In Mongolia, although scholars and physicians were not continuously connected with India and Tibet, they adapted medical knowledge to local conditions. Diseases affecting Mongolians were reinterpreted according to the traditional humoral theory of wind, bile, and phlegm, and disease classifications were revised to better reflect local characteristics. A clear

example of this can be seen in medical scriptures, which contain substantial systematic evidence on the classification, nomenclature, diagnosis, and treatment of infectious diseases.^{4,5}

Therefore, as an example of research in this field, we have selected this topic to study some sources, facts, and medical books related to the history of the classification of infectious diseases, to put them into research circulation, to use them in training and research, and to make them available to the public.

Purpose of research work

The ancient medical scriptures aim to study how infectious diseases were classified.

Research materials and methods

1. Materials

The following ancient medical books were used as the main research materials.

1. Lamyn Gegeen Luvsandanzanjantsan. "Mkhan chen chos kyi rgyal po'i gsung 'bum las man ngag bdud rtsi zags ma bzugs so." [Woodblock print, Tibetan script]. It is preserved in the personal library.
2. Jambalchoijidanzanperenlei. (1829). "Man ngag rin chen 'byung gnas." [Woodblock print, Tibetan script]. It is preserved in the personal library.
3. Sumbe Khamba Ishbaljir "Bdud rtsi zil dkar." An ancient Mongolian manuscript medical book (1753). [Woodblock print, Tibetan script]. It is preserved in the personal library.

2. Methods

The following methods were used:

- Source text research method

The materials used in this study were selected in accordance with the research objectives. The works of the authors were organized chronologically based on their birth and lifetime periods. Each source text was examined in detail, including its title, authorship, place of origin, distinctive features, content, interpretation, and available translations. Subsequently, the classifications of infectious diseases, terminology, and key conceptual contributions presented in each ancient medical text were systematically compared and analyzed in relation to other primary sources.

- The checklist method

The checklist method was used to classify information related to infectious diseases in traditional medicine and to identify the components that define them. This method allows for systematic categorization of information, facilitates data collection, and enables easy integration into an electronic database. As a

result, it has become the foundation for developing a comprehensive database on the classification of infectious diseases in the ancient medical books.

RESULTS

“The Oral Instruction Tantra” of the “Four Medical Tantras” noted that: “The group of diseases of the nyan (*gnyan*) infection is divided into 4 groups, based on causes, conditions, entrance, and symptoms, into general and specific. This was classified into 18 groups by Desrid Sanjaajamts in his book “Manag Lhantav,” which is the extended commentary on the “Oral Instruction Tantra,” and made a total of 22 infectious diseases.⁶

In the “Four Medical Tantras,” there are four types of bacterial and worm diseases: wind, bile, phlegm, and blood. In addition, in the “Infectious Diseases” classification, “wind epidemic, bile epidemic, phlegm epidemic, chronic epidemic, and nyan infection (contagious)” were added, and in the 18th century, “The Hundred attentional writing of the Jeweled beads,” four new bacterial diseases were added and expanded to 15 types. In “Manag Lhantav,” five new diseases were added and classified into 20 types, including “bile goes into channel with epidemic, internal malignant anthrax, bacterial (nyan) neck stiffness disease, and nyan disease (not easily found).”⁷ Therefore, it is important to deepen and expand the scope of the work of Mongolian doctors and scientific monks who have made significant contributions in this direction and have worked to update knowledge in this field. By reviewing our traditions, studying the vast knowledge left by our ancestors, and clarifying its values, we should solidify the foundation for the correct and rational development of traditional medicine in the future, and develop it in a rational combination with modern medicine.⁸

1. Lamyn Geegen Luvsandanzanjantsan (1639-1704). In his book “Mkhan chen chos kyi rgyal po'i gsung 'bum las man ngag bdud rtsi zogs ma bzhugs so,” he consolidated and re-established the classification of infectious diseases.

1. Wind epidemic
2. Sudden sharp pain with nyan
3. Unripe hot with nyan
4. Malignant anthrax
5. Measles
6. Nyan disease
7. Brain sharp pain (Brain infection)
8. Diphtheria
9. Short pain (caused by bacteria landing in the chest)
10. Stomach colic (caused by bacteria landing in the stomach)
11. Intestinal colic

12. Erysipelas
13. Swelling of the glands (caused by the descent of the bacteria into the neck joint)
14. Surface anthrax
15. Indoor anthrax
16. Anthrax, like a thorn prick
17. Tumour (Caused by bacteria falling into the muscle and bones)
18. Neck stiffness disease (caused by the descent of the bacteria into the spinal cord)
19. Bile runs into the channel
20. Bacterial vaginosis or gynecological infections
21. Alone, rambling bacteria (caused by bacteria landing in the clavicle area)
22. Bumpy nyan (caused by bacteria landing in any part of the body)
23. Stabbing pain in the ear (caused by bacteria entering the ear)
24. Eczema.⁹

2. Jambalchoijidanzanperenlei (1789-1838). His book “Man ngag rin chen ‘byung gnas” was written in 1829, and it is the largest and most comprehensive text on the study of medicinal ingredients of Mongolian traditional medicine that we have found with the extent of our current knowledge. In the book noted that: “Eye infection, Nyan disease betrayed and became friend with wind and bile, Varicella zoster virus, Bacterial poisoning leading to cyanosis and darkening, Bacteria erysipelas, Nyan brain tumor,” etc., were newly detected. Later, smallpox, measles, and influenza were added to the book, bringing the total number of bacteria and infectious diseases to 30. He also distinguished ripen hot disease and disseminated hot disease, and detailed 27 bacterial diseases.¹⁰ We counted it to 30 during the study. In:

1. General treatment of the nyan epidemic
2. Difference between nyan disease and a way to treat the three black swirls
3. Treatment of neck stiffness disease
4. Treatment of bile runs into the channel
5. Treatment of indoor anthrax
6. The method to treat brain sharp pain (Brain infection)
7. The method to treat eye infection
8. The method to treat stabbing pain in the ear
9. Treatment of diphtheria
10. Treatment of anthrax
11. Treatment of short pain (caused by bacteria landing in the chest)
12. Treatment of stomach colic
13. Treatment of intestinal colic
14. Way to cure ma mo ngam nag
15. Way to cure bacterial-related muscle betrayal
16. Treatment of swelling of the glands

17. Treatment of erysipelas
18. Way to cure alone, rambling bacteria (caused by bacteria landing in the clavicle area)
19. Methods of treating bumpy nyan (caused by bacteria landing in any part of the body)
20. A way to cure nyan disease, betrayed and became friends with wind and bile
21. A way to cure the varicella zoster virus
22. Treatment of a condition caused by bacteria landing in the liver
23. Treatment of bacterial poisoning leading to cyanosis and darkening
24. Treatment of bacteria erysipelas
25. Treatment of nyan brain tumor
26. Way to cure nyan amruu
27. Way to cure smallpox
28. Way to cure measles
29. Way to cure influenza
30. Treatment of influenza landing in the lungs

3. Sumbe Khamba Ishbaljir (1704-1788).

Ishbaljir was the first to write the classification of diseases as follows in his book “Bdud rtsi zil dkar.” It includes:

1. Internal medicine
2. Hot disease
3. Infectious disease
4. Five sense organs disease
5. Five vital organs (heart, lungs, liver, spleen, and kidneys)
6. Six visceral organs (stomach, intestines, colon, etc.)
7. Gynecological diseases
8. Childhood illnesses
9. Commonly occurs diseases
10. Wounds (Lhan skyes rma)
11. Open wound
12. Karmic-caused diseases
13. Poisoning, etc 13 categories. This category is further divided into subcategories.

In Sumbe Khamba Ishbaljir’s book “Bdud rtsi zil dkar,” infectious diseases are classified as follows:

1. Smallpox
2. Influenza
3. Bacteria or nyan diseases
4. Brain sharp pain (Brain infection)
5. Diphtheria
6. Short pain (caused by bacteria landing in the chest)
7. Stomach colic
8. Intestinal colic
9. Erysipelas
10. Swelling of glands

11. Muscle betrayal
12. Surface or outdoor anthrax
13. Anthrax
14. Indoor anthrax
15. Anthrax, like a thorn prick
16. Tumor
17. Neck stiffness disease
18. Bile goes into the channel with the epidemic
19. Bacterial vaginosis or gynecological infections
20. Alone, rambling bacteria (caused by bacteria landing in the clavicle area)
21. Bumpy nyan
22. Stabbing pain in the ear (caused by bacteria entering the ear)
23. Eczema.¹¹

In addition, based on the principles followed in classifying infectious diseases in the above-mentioned book, some infectious diseases are explained as examples as follows.

The disease is classified according to which organ system it affects

1. Erysipelas - A disease in which all layers of the skin are affected, causing a red rash that is distinct from the surrounding skin.
2. Eczema - A purulent inflammation that affects the top two layers of the skin. Eczema is an allergic skin infection. The affected skin becomes dry and red and can be very itchy.
3. Rubella - A contagious respiratory disease caused by a virus. Rubella is spread by contact with the skin of an infected person or by airborne droplets.
4. Intestinal colic (infectious intestinal inflammation) - an acute inflammation of the small and large intestines, usually in the small intestine. Symptoms include abdominal cramps, diarrhea, vomiting, fever, and loss of appetite.

Naming and classifying infectious diseases by their causative agent or etiological agent.

1. Nyan epidemic - A contagious, febrile (hot) disease caused by bacteria or nyan. These include nyan epidemic (a contagious fever), Intestinal colic (an intestinal infection), eruption epidemic (an infectious disease that causes eruption of the skin), and epidemic plague (a highly contagious disease caused by bacteria or nyan).
2. Nyan disease - The common cause of nyan is the ingestion of blood-red, legless roundworms. There are seven types of nyana, all of which are as poisonous as electricity.
3. Sudden sharp pain with nyan. A sudden, sharp, and epidemic-related pain, often accompanied by fever and upper body symptoms.
4. Unripe hot with nyan - “Unripe” in this situation

describes a stage where the disease has not yet matured. Nyan or gnyan means infectious disease or plague.

5. Influenza - The cause is the same as for the common epidemic or infectious disease. The condition can be caused by exposure to foul odors, infectious sweat, fear, sleep disturbances, and drinking a lot of cold water.
6. Diphtheria - A respiratory infection. It is caused by nyan entering the throat. Symptoms include a thickened coating of the tongue, a rough in the soft palate, a sore throat, and difficulty swallowing food and drinking.
7. Short pain (Caused by bacteria landing in the chest). Actually, short, sharp pain in the chest is caused by an external infection.
8. Stomach colic - The cause is bacteria entering the stomach. The condition can cause the diet not to be absorbed, being cold after sweating, and evil spirits, etc.
9. Nyan anthrax - This disease is classified as a "hot disease" (acute infection). This disease was classified according to where the pathogen was located and which organ it affected.

DISCUSSION

In European medicine, the Miasm theory, which was proposed by the Greek physician Hippocrates in the 4th century BC, that the main cause of disease was caused by the patient's environment and spread due to harmful air, was followed until the 19th century.¹² The first attempts to systematically classify diseases were made in the 1600s and 1700s, but were unsuccessful due to conflicting disease terminology and a lack of statistical data. Mongolian scholars studied diseases by classifying them according to the causative agent, clinical symptoms, and organ system affected.¹³

The first edition of what is now known as the Control of Communicable Diseases Manual (CCDM), published in the United States in 1917, did indeed identify 38 communicable diseases or "nosological forms".¹⁴

According to the classifications written in the scriptures we studied, the theoretical and methodological foundations of the book "Four Medical Tantras" are derived from the ancient Indian Ayurvedic medical trinity (The three foundational, classical texts of Ayurveda written by sages Charaka, Sushruta, and Vagbhata), namely the work "Ashtanga Hridaya Samhita by Vagbhata," so the classification of infectious diseases is synonymous.

In the "Four Medical Tantras," there are four types of bacterial and worm diseases: wind, bile, phlegm, and blood. In addition, in the "Infectious Diseases"

classification, "wind epidemic, bile epidemic, phlegm epidemic, chronic epidemic, and nyan infection (contagious)" were added, and in the 18th century, In "Manag Lhantav," five new diseases were added and classified into 20 types, including "bile goes into channel with epidemic, internal malignant anthrax, bacterial (nyan) neck stiffness disease, and nyan disease (not easily found)".¹⁵ For Mongolians, Mongolian scientists and doctors have learned from Indian and Tibetan medical texts and have also revised and updated the classification of infectious diseases to suit local conditions. A clear example of this can be seen in medical scriptures, which contain substantial systematic evidence on the classification, nomenclature, diagnosis, and treatment of infectious diseases.¹⁶

Conclusion

The prominent Mongolian Buddhist and medical figures, Lamyn Gegeen Luvsandanzanjantsan, in his sutra "Man ngag bdud rtsi zags ma," "Man ngag rin chen 'byung gnas" by Jambalchoijidanzanperenlei, and "Bdud rtsi zil dkar" by Sumbe Khamba Ishbaljir, consider that certain bacteria cause infectious diseases. According to the sources preserved in Mongolia related to infectious diseases, Mongolian ancient doctors and scholar-lamas have greatly enriched the information and facts about infectious diseases. At the same time, they have discovered new infectious diseases that are not found in Indian and Tibetan medical books but are common in Mongolia, and have enriched the classification of infectious diseases.

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