Smallpox against Itself: Exploring the History of Inoculation in Tibet

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The principle ideas of inoculation

Before discussing inoculation or variolation in Tibet, we need to clarify some facts about smallpox as an infectious disease. In this way, we will understand the development of theories, practices, and methods of inoculation in Tibet. In their long history of writing on medical practices, Tibetans have produced various medical works and used various names and terminologies. Thus, understanding the larger context of the history of smallpox, the principal ideas of disease prevention and inoculation are important and necessary tasks for all scholars who might engage with smallpox and inoculation in Tibet.

In the past, smallpox was the most dangerous and destructive disease. It destroyed families and wiped out entire communities. When it struck, it killed up to fifty percent of its victims.[2] Those who did not die from this disease would have been left with devastating pockmarks on their faces and bodies. As destructive and dangerous as it was, there were no effective treatments for this disease. the fourth Tsenpo Nomönhen or Jampel Chökyi Tendzin Trinlé, 1789–1839 (1789–1839), a Tibetan polymath at the Qing Imperial Court in Beijing, even named smallpox as "the king of all disease" (*nad kyi rgyal po*).[3] Once a

[1] Acknowledgement: I have been working on this paper for several years now alongside my other research obligations. While studying the history of smallpox in Tibet, I was invited to give talks on the subject on several different occasions: in 2020 (through Zoom) at Harvard University and at the Max Planck Institute for the History of Science; and in 2019 at the University of Bonn. I greatly benefited from these talks and appreciate comments and suggestions offered by participants. Following the outbreak of the Covid-19 pandemic, Tibetan social media and online groups have become filled with discussions and debates about Tibetan medicine and its role in treating Covid-19. I have participated in many of these discussions and debates. Indeed, these discussions have contributed to my understanding of additional aspects of infectious diseases. I would like to thank my colleague, Dr. Rachel Griffiths, for reading this paper. Last but not least, I would like to thank Cynthia Col for editing this paper and improving the English. If any mistakes remain, I am solely to blame.

[2] Williams 2010, 14.

[3] Tsenpo Nomönhen 2007, 210.

person contracted smallpox, he or she had to go through the full incubation period and onwards to the final stage of the disease. Survivors developed an immunity against contracting the disease in the future. Specialists took infected smallpox from a person who had or was experiencing smallpox and then deliberately introduced these materials into the skin of people who had not yet contracted the disease. In doing so, the treated person would develop a form of the smallpox infection that was less severe than naturally acquired smallpox. This would cause the infected person to have immunity to smallpox for life. Because this method used smallpox itself to prevent the very disease that had killed millions of people, it was considered unusual. Obviously, whoever first thought of this method was not only unconventional and revolutionary in their thinking. They were also seemingly proposing the original idea of immunology. Thus, as Gareth Williams states:

> The significance of variolation as a medical discovery in its own right must not be underestimated. The people who first thought of this and tried it out were as visionary and bold as Jenner himself, and it was a leap in the dark for them. When Jenner came to experiment with vaccination, he at least had the framework of variation on which to hang his ideas (2010: 58–59).

The person who originally came up with the idea must have made several clinical observations. First, smallpox was a transmissible disease; it spreads between humans, and one person could spread the disease to several others. Second, in every case of smallpox, survivors would develop an immunity preventing them from ever contracting smallpox again. Third, preventive methods such as isolation and quarantine were effective in halting the spread of smallpox. Finally, based on these observations, if physicians deliberately introduced smallpox—either in the form of dry scabs or pus—to patients who had not yet contracted the disease, the treated patients not only would then develop a form of the infection that was less severe than naturally acquired smallpox but also would have immunity to smallpox for life.

From the eighteenth century onwards, when European scholars started to study the origin of inoculation, they soon realized that it was not just limited to Turkey, from which Lady Montague had brought it to Europe. Rather, they noticed that it was practiced in many parts of the world. Because of these common features and similarities, scholars became curious about where the idea of inoculation had mostly likely emerged.[4] China and India were often considered as the original place

[4] Boylston 2012.

of inoculation. Also, for a long time, some people thought that the idea of inoculation originated from Tibet. After arriving in China as an missionary doctor, Daniel Jerome MacGowan (1815–93) extensively engaged with the eradication of smallpox in China. When discussing vaccinations in the Wenzhou area in a report based on what he heard during his many years in China, MacGowan indicates Tibet as the source of inoculation.[5] In the 1930s, two medical historians, G. Seiffert and Du Dscheng-Hsing, also attributed China's original inoculation to Tibetans.[6] In referencing the story of the Chinese legend of Mount Emei, Donald Hopkins states, "She may have been taught inoculation by a Tibetan monk who had learned it in India."[7] As recently as in 2014, Alex Mercer asserts that Tibetans practiced inoculation as early as the eleventh century.[8] However, the study of its origin is problematic. Because inoculation was practiced in many countries and societies, tracing its origins involves both historical and medical contexts as well as understanding transnational medical practices and movements. It could have originated from anywhere, and the person who discovered it might not necessarily have been the first person to document it. Thus, I shall not engage with asserting the origin of inoculation here.

Although how it was practiced varied, the principle idea of inoculation was the same everywhere in the world, In Turkey, for example, the method of inoculation was known as "the ingrafting method." This method involved making a small cut in a patient's arm and then putting smallpox-infected lymphatic tissue into the cut. In Europe, there was a method known as "buying smallpox." This referred to deliberately infecting a child either through having the child directly touch an infected person or by having the child carry infected smallpox materials or wear the clothing of an infected person.[9] In Africa, there was a tradition that entailed women going to the home of a person who was infected by smallpox. A woman would wrap infectious materials within a fillet of cotton and then go home and place the fillet onto her child's arm.[10] In China, there was a method called "planting of smallpox"[11] that involved blowing dry smallpox powder into a child's nose. Sometimes, after hearing someone had a mild type of smallpox, parents would take their child to the infected person and let the child touch the smallpox.

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5 Gordon 1884, 78.
6 Seiffert and Du 1937, 28.
7 Hopkins 2002, 110.
8 Mercer 2014, 60.
9 Woodville 1796, 41–42. Boylston 2012, 310, Williams 2010, 53.
10 Hopkins 2002, 178.
11 Needham 2000, 141.

In Tibet, as I shall show later, smallpox was associated with a goddess. Therefore, in talking about inoculation, it was often associated with how the goddess entered or touched the bodies of patients. Thus, terms such as "protecting smallpox" (*'brum bsrung*),[12] "anointing by the smallpox goddess" (*'brum lha bgos pa*),[13] "planting the smallpox goddess" (*'brum lha btsugs*),[14] or "infecting smallpox" (*brum bgo*)[15] were used to describe various methods of inoculation. In vernacular languages, people sometimes also used terms such as "drinking the smallpox goddess" (*lha blud*) or "taking the smallpox goddess" (*lha 'brum bzhes*) to describe inoculation.

In spite of different terms and methods, the principle idea was the same. It involved deliberately introducing smallpox into the body of a person needing protection. In doing so, the person would contract a mild version of smallpox. This would prevent naturally occurring, dangerous forms of smallpox; moreover, the treated person would

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12 Sangye Lingpa 1971, 716.

13 Sumpa Khenpo 2015, 1:784.

14 Tsenpo Nomönhen 2007, 212. In mentioning two Tibetan terms, *'brum 'debs* and *'brum 'dzugs*, Leonard W. J. van der Kuijp and Ning Tien seem to suggest that Tibetan had only two terms for inoculation. Since these terms seem to be calques of the Chinese term *zhongdou* 种痘, they suggest that the Tibetan practices of inoculation might have come from China (Van der Kuijp and Tien 2022, 15). In the eighteenth century, when inoculation became well-known, some speculated on its origins. At that time, a myth emerged in China that a "divine doctor" (*shen yi*) from E-Mei Mountain taught the method of inoculation to a Chinese nun. Subsequently, she spread the method to China during Song Dynasty. Based on this legend many claimed that China had practiced inoculation as early as the eleventh century. In referring to this legend, scholars like Joseph Needham claimed that China had discovered inoculation and that it then spread outwards from China by diffusion (Needham 2000: 114). But all these claims about how the Chinese invented inoculation are not only inconclusive; they are also not supported by any historical facts and sources. First of all, this legend only emerged in the eighteenth century, and there are many problems concerning claims that could be not be substantiated (Chang 1996: 125–130). Secondly, until the early Ming dynasty the Chinese did not have a clear understanding of smallpox or etiology within Chinese medicine. Indeed, there is no consensus on the history of smallpox or on associated terminology (Hanson 2006: 133). Thus, when studying the origins of inoculation, as Chia-feng Chang has said, "the problem of who exactly invented variolation and when is important, but almost impossible to solve at present (1996: 130). Importantly, until the Qing dynasty (1644–1911), no Chinese texts mention inoculation. After examining these legends and claims, Angela Ki Che Leung, a medical historian in Hong Kong, identified the earliest Chinese medical text to mention inoculation as Zhang Lu's (1617–?) medical work *Zhangshi yitong* 张氏医通 (Comprehensive Book of Medicine) in 1695 (Leung 2010: 5). If this is true, as I will show later, Tibetan understanding of smallpox and records of inoculation were much earlier than Chinese awareness.

15 Pel Wangchen Gargyi Wangchuk Gyérap Dorjé 2007, 135.

develop an immunity from smallpox for life. Having said that, inoculation was not as safe as the Jennerian vaccine. The death rate from inoculation was high. It may have been as high as seven percent. For example, during an inoculation procedure at a Tibetan monastery in the Kham region of Tibet, seven monks died out of the total of one hundred seventeen monks who were inoculated.[16] Thus, unless it was absolutely necessary, people would not undergo the procedure.

If we understand these principle ideas of inoculation, practice, and methods, then our tasks of studying inoculation in Tibet is straightforward. First, we need to find when Tibetan started to include the term *sung* (*bsrung*) to describe the prevention of smallpox. It was an important idea and meant that the disease could be protected or prevented if some measures were taken. Of course, all these methods for "protecting against smallpox" should not be identified as the same as an inoculation. This is because not all materials that were used to protect against smallpox actually had an effect that could prevent smallpox. Nevertheless, the idea presented can be considered to be the first to incorporate the principle idea of inoculation. Secondly, in order to qualify as a principle idea of inoculation, the materials used in the procedure must include smallpox itself—the smallpox virus. This means that we need to find out when Tibetans used smallpox materials to prevent smallpox. Smallpox materials could be matter taken from body parts in the form of dry powders or pustules, even bones and bodily flesh themselves. Finally, the most important aspect of inoculation was understanding how immunity worked. This entails realizing that if someone had survived smallpox, the person would be immunized from contracting smallpox again. It is only because people understood this, that many people turned to these dreadful and highly risky methods of prevention. After establishing these principle ideas of inoculation, we may begin to explore how smallpox was understood as an infectious diseases, treatments and preventive methods, and also how ideas about inoculation developed. In exploring the history of inoculation in Tibet, this research does not focus on one particular period or specific works. Rather, it utilizes religious, medical, and historical works that mention methods and practices of inoculation. These works were produced over a long period and address various aspects of smallpox.

Inoculation in the *Four Tantras*?

To address this question, we must briefly detour and engage with the

[16] Chökyi Jungné 2015, 189.

Four Tantras (*rgyud bzhi*).[17] Not only is this text the most important and authoritative medical work in Tibet. It is also one of the earliest Tibetan medical texts containing detailed chapters on smallpox, and it offers some hints about immunizations and inoculations. Although the *Four Tantras* does not explicitly mention the terms later associated with immunity and inoculation, later scholars who commented on the *Four Tantras* linked the ideas of immunity with this work. This warrants further exploration. The first issue concerns the terms used to identify smallpox in Tibetan medical works. As mentioned above, Tibetan medical literature is vast. As such, it is impossible to survey all of these texts and to examine how each medical work records the names of smallpox. Yet, we can say that we frequently encounter several names for smallpox such as: *drum bu* (*'brum bu*),[18] *drum bu rim* (smallpox infectious, *'brum bu'i rims*), and *lha drum* (the god's pox, *lha 'brum*).[19] Sometimes smallpox is simply referred to as *drum né* (small pox, pox disease, *drum né*), or it is identified as *drum pa* (pox, *'brum pa*),[20] etc. However, the undisputed and widely recognized term for smallpox is *drum bu*, and the use of this term comes directly from the *Four Tantras* themselves.

In the *Four Tantras*, *drum bu* is specifically used to describe not only the definition, etiology, and classification of smallpox but also symptoms and treatments for it. No other disease is known as *drum bu*

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[17] The history of the *Four Tantras* is disputed among medical historians. While some Tibetan scholars have attributed it to the eighth-century physician Elder Yutok Yönten Gönpo (708–833 CE) (Rechung Rinpoche 1973, 207), modern scholars have claimed that it was Junior Yutok Yönten Gönpo (1126–1202) who revised and expanded the *Four Tantras* that we know today as a composition from the twelfth and thirteenth century (Fenner 1996; Ga 2010).

[18] This term appears in several historical and medical works that are said to be earlier than the *Four Tantras*. For example, *drum bu* occurs in two Dunhuang documents: *The Old Tibetan Chronicle* in Dunhuang SO750,0003 and Pelliot tibétain 960 (P.t. 960) (*Li yul chos kyi lo rgyus* [*Religious Annals of the Li Country* (Khotan)]). P.t. 960 describes the disease as contagious and mentions that the Tibetan government decided to evict infected people to Tibet. However, whether this *drum bu*, which was an infectious disease, is the same as smallpox is not clear. Because no available records describe the disease itself in detail, it could also refer to other pox infections disease.

[19] The meaning of this term closely resembles the Chinese name for smallpox, Tianhua 天花 (heavenly flowers). As mentioned above, the *Four Tantras* associates smallpox with a deity, specifically a Mamo goddess. However, it does not provide a specific term for this association. The earliest known use of the term "god's pox" (*lha 'brum*) that I have been able to find appears in the autobiography of Tāranātha (1575–1634) (Jonang Taranatha 2018, 125).

[20] This is a generic term for "pox disease." Since smallpox also produces pox, it was sometimes referred to as a *drum pa*. However, when *drum pa* is mentioned, it does not necessarily refer to smallpox; it could be another pox-related disease. Thus, mentions must be contextualized.

other than smallpox. The term *drum bu* consists of two distinct Tibetan words: *drum* (*'brum*) and *bu* (*bu*). Each word conveys a different sense. *Drum* refers to something that is small, solid and round. *Bu* means "son"; however, it is also used figuratively used to describe something small or tiny. Combining these two words as *drum bu* refers to something solid and small in a rounded shape. As a medical term, *drum* is also used to describe a lump, or pox that has formed on different body parts through infections disease, bodily injury, or other swollen entities. For example, *zhang drum* (*gzhang 'brum*) means "annual lump"; this term is used to identify hemorrhoids. If we combine both words as *drum bu*, we get "smallpox" or "a pox that is small." In the sixteenth century, Europeans used the term "smallpox" to distinguish the disease from syphilis, then known as the "great pox." Similarly, the author of the *Four Tantras* used *drum bu* to differentiate this disease from others—particularly infectious diseases or pox-producing illnesses, such as leprosy and certain bodily injuries. Therefore, when discussing *drum bu* as a disease, it must be remembered as an infectious disease, with symptoms, a disease progression, treatments, and preventive measures specific to smallpox—not to other diseases.

As the title suggests, the *Four Tantras* has four treatises: *Root Treatise*, *Explanatory Treatise*, *Instructional Treatise*, and *Subsequent Treatise*. Among these, chapters twenty-three and twenty-four of the *Instructional Treatise* (*Man ngag rgyud*) are related to smallpox or *drum bu* (*'brum bu*). The concluding chapter of the *Subsequent Treatise* (*Phyi ma'i rgyud*) engages with preventive medicine. All these chapters are related to each other. The term *drum bu* first occurs during the explanation of divisions or classifications of disease in the *Explanatory Treatise*. When discussing the thirty-eight diseases that affect the whole body, smallpox is listed as an infectious disease.[21] Then, in the *Instructional Treatise*, it appears once in chapter twenty-three and four times in chapter twenty-four, which concerns smallpox. All these are precursors to the smallpox chapter of the *Instructional Treatise*. There is no ambiguity about what *drum bu* means. Yet, this term also appears at least three times in different chapters of the *Instructional Treatise*. Specifically, the term appears as part of descriptive or adjectival phrases, or in what Tibetan physicians call symptoms of disease (*nad*

[21] Yuthok Yonten Gonpo, *The Root Tantra and The Explanatory Tantra from the Secret Quintessential Instructions on the Eight Branches of the Ambrosia Essence Tantra* (*Men-Tsee-Khang*) (Mentseekhang Documentation & Publication, 2018), 128.

rtags).[22] These are not categories of disease; rather, they are symptoms of disease.[23]

After briefly introducing the term smallpox and establishing it as a distinguished infectious disease, we will now provide a brief description of its etiology, classifications, symptoms, and treatments as presented in the *Four Tantras.* Chapter twenty-three in the *Instructional Treatise* is titled "The Treatment of Hot Infectious Disease Bel Né" (*rims kyi tsha ba bal nad bcos pa*). It deals with infectious disease in general and specifically focuses on *bel né*. In talking of the cause of infectious disease, it reads:

de dus ma mo mkha' 'gro kun 'khrugs te/ /
nad kyi kha rlangs sprin du chags pa las/ /
bal nad rgyu gzer gag lhog 'brum nag 'byung /

At that time, the spirit of a Mamo Khandro[24] would fight each other.

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[22] I have consulted with several Tibetan traditional physicians, including Men Kyi Tso Mo, who were trained in both traditional Tibetan medicine as doctors (*men pa*) and also hold PhDs in Germany. They all agreed that *drum bu* is understood as a distinct disease, while other terms are considered symptoms of disease. An analogy can be drawn to the word "cold" in English: While it can refer to low temperature, it sometimes also refers to the disease, common cold.

[23] Overall, the term of *drum bu* appears nine times in *Four Tantras*. Chapter thirty-two of the *Instructional Treatise* concerns mouth disease (*kha nad gso ba'i le'u ste so gnyis pa'o*); in this chapter, *drum bu* appears twice. One instance is *drum bu chu ser* (*'brum bu chu ser*), referring to tiny clots from pus; the other instance is *gang sem drum bu* (*gang sem 'brum bu*), or gang sem pox. In both cases, *drum bu* is part of a word or phrase, not a standalone term for a disease. The term *drum bu* also appears in chapter eighty-one of, which concerns Nāga-demon diseases (*klu'i gdon nad*). It occurs in a discussion of eighteen different types of leprosy. Among these, there is a type of leprosy known as *drum bu*. It is called *drum bu* (*tiny pox*) because of its symptoms and characteristics; it features tiny white and red pox. The question, then, is how to interpret the usage of *drum bu* in chapters twenty-three and twenty-four, as compared to its usage elsewhere, like in chapters thirty-two and eighty-one. Anyone familiar with the *Four Tantras* would recognize the fundamental differences and distinctions that can be made. First, the term of *drum bu* in the *Explanatory Tantra* as an infectious disease and use of the term *drum bu* in the *Instructional Treatise* are precursors for smallpox chapter. Throughout, *drum bu* refers specifically to smallpox. Second, the use of *drum bu* in chapters thirty-two and eighty-one are not used to identify the disease itself; rather, *drum bu* is used as part of discussions of symptoms of disease.

[24] Here we must wonder about the similarity between miasma theory and ideas about Mamo Khandro. Miasma theory originated in ancient Greece as early as the fourth or fifth century BCE. The idea is that infectious disease was caused by "pollution" or a noxious form of "bad air." The belief that bad air was the cause of pestilence is attributed to the Greek physician Hippocrates (c. 460–377 BCE). The Greco-Roman physician Galen (c. 130–201 CE) expanded the theory and claimed that bad air caused *miasma,* an imbalance of humors in the body. Importantly, the

> Then, they would release infectious air composed as clouds. These [clouds] would produce *bel né*, intestinal colic, measles, and black smallpox.[25]

This states that disease originated from the goddess Mamo Khandro (*mamo sky goer*). She would release infectious air composed as clouds; these would have an effect on the humors and cause infectious diseases. Next, this chapter discusses the category of infectious diseases. The chapter also gives several primary causes of infectious diseases including unbalanced seasons, unhealthy food, and pollution. These would have an effect on the humors and then cause infections. After citing the origin and category of infectious diseases, it goes on to describe infectious disease in general and its divisions. It reads:

> *dbye ba bal nad 'brum bu rgyu gzer dang / /*
> *gag lhog cham pa'i rims dang rnam pa lnga/ /*
> *de la phyi ma bzhi po 'og tu ston/ /*
>
> The exhaustive division of infectious diseases is five; the Nepalese disease (unidentified), smallpox (*drum bu),* and dysentery, as well as diphtheria and colds. The last four will be described in the later chapters.

This chapter focuses on a general description of five infectious diseases and specifically Nepalese diseases. Discussion of four infectious diseases are the focus of the following chapters: chapter twenty-four is on smallpox, chapter twenty-five is on dysentery, chapter twenty-six is on diphtheria, and chapter twenty-seven focuses on the common cold.

As described, chapter twenty-four is specifically focused on smallpox. Like all the other chapters in the *Instructional Treatise*, it provides the definition of the disease, its causes, symptoms, and divisions and also its development, treatment, and outcomes. In discussing why this disease is named *drum bu*, the text states:

> *'brum bu'i rims ni spyi dang 'dra ba la/_/*
> *ngo bo tsha ba chu ser la babs nas/_/*
> *rus rkang lha ba'i gting nas skye bar byed/_/*

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sound of the word *miasma* and the name Mamo are quite similar. If the *s*-sound in *miasma* is blurred, it becomes "miama." As such, it seems possible that it could have been read as Mamo in Tibetan in the eighth century. Christopher Beckwith has clearly demonstrated that the "Greek school" of medicine had an influence on the development of Tibetan medical science (1979, 306). In particular, such knowledge was translated and transmitted by Greek and Roman-inspired physicians that were brought to the Tibetan royal court.

[25] Yutok Yönten Gönpo 2015, 239–44.

thor pa'am 'brum bu 'ong phyir ming du brjod//

> Like all infectious diseases, the nature of smallpox is hot. Its hot nature comes out as pus (*chu ser*) and grows as bloody liquid [and/which] comes out when the bone is crushed. Since it scatters in this way, *drum bu* comes up. Thus, it is called *drum bu*.

There are two major types of smallpox: one is black; the other is white. Each of these is divided into three sub-divisions.[26] Then, the chapter proceeds to describe two types of treatments: a general treatment and a specific treatment. The general treatment itself is divided into three stages. The first stage is described in terms of how to open a "hire-hole," a metaphoric word for "ripening" to describe the progression of the disease. After describing these prodromal signs and symptoms, the chapter continues: *bar du 'brum pa phyir thon bde snyam byed/* "At that time, when the smallpox comes out, the patient temporarily feels better."[27]

This appears to be an important observation. In modern scientific studies, it also shows that patients initially experience pain and suffering, but then they would temporarily feel better.[28] If the patient is cold, the wind could internalize the disease, and this would damage organs. Therefore, the patient must be kept warm.[29]

In talking about a specific treatment, by following this general description of treatment, the chapter again states that the illness could not be naturally contracted a second time. After the lesions dry up and fall off the skin, patients will have passed through all the stages of smallpox. These survivors would not contract smallpox again. As it says: *'brum pa rdzogs nas shi ba phal du med//* "No one dies after the completion of pox." [30] Moreover, if someone died from a second infection, it would have had nothing to do with smallpox or disease; rather, the *Four Tantras* indicates that a person's individual karma is the cause.[31]

The concluding treatise of the *Four Tantras* deals with smallpox and other infectious diseases. The summary chapter of the *Subsequent Treatise* outlines how diseases could be deterred. Thus, it provides an overview of preventive medicine in the Tibetan medical tradition.

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26 Yutok Yönten Gönpo 2015, 255.

27 Yutok Yönten Gönpo 2015, 255.

28 Hopkins 2002, 4.

29 This heat-therapy was well known in Europe in the past. It might have originated from Rhazes, because he also talked about how patients needed to be wrapped in warm clothing and kept in a warm room to "provoke sweats" (Rhazes 1848, 47).

30 Yutok Yönten Gönpo 2015, 25.

31 Yutok Yönten Gönpo 2015, 257.

Emphasizing the importance of preventing disease, it reads:

> *lan cig lnga brgya'i tha mar bab dus na/ /*
> *'byung po rnams kyis glo bur ye 'drog gtong / /*
> *ma mo mkha' 'gros nad ngan yams su 'bebs/ /*
> *mu stegs gdug pas rdzas kyi sbyor ba byed/ /*
> *de dus bdag gzhan srung ba shin tu gces/ /*
>
> Over the period of the last five hundred days, evil forces suddenly create obstacles. Mamo Khandro spreads infectious disease. Heretical forces develop harmful materials. At that time, it is important to protect oneself and others.[32]

This chapter also describes how Mamo Khandro spreads all kinds of infectious diseases and how other evil forces create a lot of problems during the degenerated time. The chapter emphasizes how important it is for people to protect themselves from all these infectious diseases. It provides several preventive methods, including describing how reciting mantras and performing meditations could prevent infectious disease. Among the methods it outlines, the most relevant idea concerns how some medicinal properties could be used to prevent infectious diseases including smallpox. It reads: *khyad par tsha rims srung dang 'brum pa srung /* "this is especially helpful for protecting against hot disease and smallpox."[33]

The idea is that if these prescribed materials are carried on the body, their presence could prevent all hot diseases including smallpox. No historical or medical records suggest that ingredients like musk and white frankincense could effectively prevent the occurrence of smallpox. Nevertheless, the principle idea of preventive medicine is presented here. That is, if someone uses the right kind of medicine, many diseases—including smallpox—could be prevented. Future ideas about inoculation and preventive medicine would be based on this principle. However, as we have already noticed, the *Four Tantras* mentions the principle idea of inoculation—that is, the understanding that a disease could be prevented by using some medical substances and the idea of immunization. However, it does not explicitly mention inoculation; nor does it describe using *drum tar* (*'brum thar*, or being freed from smallpox) as a way to immunize someone by giving them a mild version of smallpox.

Although providing lots of remedies for treating smallpox, the *Four Tantras* does not explicitly mention smallpox-infected body parts. However, from the sixteenth century onwards, there were several

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[32] Ibid., 648.
[33] Ibid., 649–47.

medical texts that discuss employing smallpox—in the form of dry smallpox powder or scabs, or the body parts of these people who had died from smallpox—to treat patients who were having or experiencing smallpox.[34] Strictly speaking, this method may not be the same as inoculation as we understand it today. This is because it talks about treating patients who were already experiencing smallpox or cases where there is evidence the disease has already progressed in the body. In contrast, inoculation is a preventive method. It is administrated before a person became sick and contracted the disease.

However, in the following century, Desi Sangye Gyatso (1653–1705), the regent of the Fifth Dalai Lama, associated this treatment with the *Four Tantras.* In interpreting the term *né dré* (*nad 'bras*), meaning the "byproduct of disease" in the *Four Tantras,* Desi Sangye Gyatso identifies it as the drying scabs of smallpox itself.[35] In his famous medical paintings, he does not mention how it needed to be used, or whether it could be for inoculation or as a medical substance for the treatment of smallpox. However, he lists dry smallpox scabs as one of the medical substances for smallpox. As mentioned above, these dry smallpox scabs could be used for both inoculation and treatment.[36]

The ideas of immunity

As mentioned above, the *Four Tantras* does not explicitly mention inoculation and immunization. There could be two explanations for this. First, it is possible that when the *Four Tantras* was written, the authors were unaware of the method of inoculation. The second reason might have to do with how some medical knowledge was transmitted among physicians. Many forms of medical knowledge were shared openly. Therefore, they were written down and published in books. Other forms of medical knowledge were hidden. This kind of medical knowledge is known as "secret medicine" (*gsang sman*). Such knowledge was only taught orally to students by physicians when they thought that particular students or relatives could be trusted with the information. We may never know why inoculation and

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[34] Gongmen Konchok Pendar (gong sman dkon mchog phan dar, 1511–1577), an important physician and a nephew of the great physician Konchok Delek (1447–1506), was one of the earliest scholars to mention this treatment. When discussing the treatment of smallpox in his medical text, *The Mini Collection of a Variety of Treatments (man ngag yig chung sna tshogs*), he lists "dry smallpox scabs" (*'brum skogs*) as one of the ingredients. He attributes this method to a mythical figure known as Daka Nyima Ozer (the Daka's Sun Ray.

[35] Desi Sangye Gyatso 2005, 1: 853.

[36] Parfionovitch et al. 1992, 72.

immunizations were not included in the *Four Tantras*. However, later on, when explaining sections about smallpox in the *Four Tantras,* some commentators explicitly connect how the *Four Tantras* describes immunity and also mentions how smallpox could treat smallpox patients by using infected smallpox body parts.

For inoculation, the concept of immunity was an important medical concept because it meant that someone could be free from the recurrence of a particular disease after having the disease once or having been vaccinated against it. Among all infectious diseases, Tibetans had the term "immunity" for smallpox; it was known as *drum tar* (*'brum thar*)," which became synonymous with being freed from smallpox. As mentioned above, this term was not included in the *Four Tantras.* However, later scholars explicitly linked this term with it. Kyempa Tséwang was one of the earliest scholars to connect the idea of *drum tar* with the *Four Tantras.* The author of the biography of Kyempa Tséwang is not certain. According to a colophon of one of his writings, he mentions that he composed the treatises in 1479, suggesting that he might have lived in the fifteenth century. [37] However, Janet Gyatso states that Kyempa Tséwang and Zurkharwa Lodrö Gyalpo (1509–79) were contemporaries and that both were part of the Sur medical lineage.[38] In his famous commentary on the *Four Tantras*, Kyempa Tséwang uses the term of "immunization" (*thar rgyu 'on*) to describe smallpox. In discussing the definition from the *Four Tantras*, he states:

> *khyab par rdzogs pas thar rgyu 'ong ba yin zhing thor ba'am 'brum bu 'ong bas de'i phyir 'brum bu zhes ming du brjod cing btags so/*
>
> After completion [of the course of the disease], [the infected person] would be freed (*thar rgyu 'ong*). [The disease] would be scattered, and then the scabs would fall off. It is known as *Drum bu*.[39]

This means that anyone who survived smallpox would be free from or immunized from smallpox. This is an extraordinary reinterpretation of the term. The term *tar* (*thar)* is used to describe someone who was "free" or "liberated" or "exempt" from a particular disease. Applying the medical meaning of this term here, this statement conveys that if someone has had the disease, such a person would be freed or exempted from this disease and would not get this disease again. In other words they would be immunized. In medical terms, the idea of immunization would be an important concept; it was the primary idea

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37 See his brief biography, Jampa Trinlé 1990, 212–13.
38 Gyatso 2015, 164, 437–38.
39 Kyempa Tséwang 2005, 2: 882–83.

of how inoculation worked. Once someone had a particular disease, they would not get it again.

In the seventeenth century, another famous physician, Lobzang Chodrak (1638–1710, widely known Darmo Menrampa) echoed similar views about smallpox. When commenting on the definition of smallpox he states, "after completing, it will have liberation" (*rdzogs pas thar rgyu 'ongs*).[40] He further engages with the debate about the identification of *si bu kop tse,* one of classification of smallpox in the *Four Tantras.* This debate focuses on whether *si bu kop tse* was the same as *sip bu* (measles). At that time, there were scholars who identified *si bu kop tse* as *sip bu* (measles); this would mean that having an immunity to smallpox would also give protection or immunity against measles. However, Darmo Menrampa argues that these two diseases are not same. He writes:

> *'ga' zhig gis 'di da lta yongs grags kyi sib bu yin zer pa mi mthad de/ thor sib cig thar yang gcig thar go mi chod pas mngon sum du 'gal lo/*
>
> According to some, this [*si bu kop tse*] is the same as *sip bu* [measles], as this disease is known currently. However, I disagree with this view because it contradicts the fact that if someone is immunized from smallpox, this does not mean [that person] is immunized from measles.[41]

The concept of *drum tar* not only became an important aspect of Tibetan medical practice but was also a significant part of human life itself. Often, Tibetans used this term to describe whether they had immunity to smallpox. If they lacked immunity, they would avoid traveling to places like China, which was considered a cradle of smallpox. For instance, when the Kangxi Emperor invited the Fifth Panchen, Lobsang Yeshe (1663–1737), to Beijing, he explained that, since he was not immunized against smallpox (*drum tar*), he could not undertake the journey to China.[42]

The earliest mentions of inoculation

What, then, was the earliest Tibetan work to mention inoculation? It is not easy to answer this question. First, when the principles of inoculation first emerged, it might have been only a rudimentary idea that was limited to some basic principle and not fully formulated as were later understandings. Second, the person who documented the

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40 Lobzang Chodrak 2005, 288.
41 Ibid., 2: 289.
42 Lobsang Yeshe 2014: 250, 254

practice might not have been the first person to have developed the idea and practiced it. Still, the development of inoculation emerged in the framework of preventive medicine. That is, there was an awareness that certain diseases could be prevented or stopped before they caused an infection, if people used proper methods of prevention. These methods might include reciting a mantra with meditations or specifically following some medicinal practices. As the *Four Tantras* points out in *The Subsequent Tantra*, smallpox could be prevented if proper behavioral changes were followed and medications were taken.

With these issues in mind, if we indulge in answering questions about origins, the earliest text that I am able to find that refers to a practice that we might call inoculation does not come from the *Four Tantras*. Rather, it could be found in a fourteenth-century text that Tibetans would call a treasure text, or *term*a (*gter ma*). This kind of text is believed to have been hidden somewhere by past saints and Buddhist masters. In later years, such texts were re-discovered or revealed by treasure revealers or *tertön*s (*gter ston*). Such treasure revealers were often regarded as exoteric, unusual, and sometimes deemed as "crazy." Many medical texts—including the *Four Tantras*—are often considered to be treasure texts.[43] Thus, it is no surprise that the earliest mentions of inoculation might have occurred in this type of text. This text is known as *The Hundred Thousand Protections of Dorje's Beads* (*srung 'bum rdo rje phreng ba*), which is part of the *Summary of the Lama's Intentions* (*bla ma dgongs 'dus*).[44]

The author, or *tertön*, of this text is Tertön Sangye Lingpa (1340–96), who is regarded as one of the most important *tertöns* in Tibet. During his lifetime, he revealed many important texts. Among them are several Dzogchen texts and an extensive biography of Padmasambhava known as *The Golden Garland Chronicles* (*bka' thang gser phreng*). He also became the teacher of many important lamas—including the Fifth Karmapa Deshin Shekpa (1384–1415). When he was invited by Ming Emperor Yongle (1402–24) to come to China, he took this *Summary of the Lama's Intentions* to China as a gift for the emperor.[45]

Like the preventive medicine in the *Four Tantras*, this text describes how a specific *tsakra* (a secret Sanskrit mantra) along with particular medical remedies could prevent specific illnesses. Altogether, there are one hundred and nine different *tsakras* accompanying medical remedies listed in the text. Among these, the seventy-fourth is a *tsakra* for the prevention of smallpox. Its description is only a few sentences,

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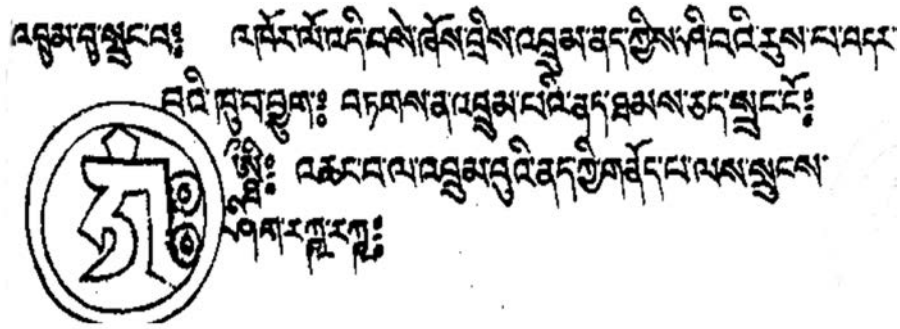
43 Janet Gyatso 2015, 107–108.

44 Sangye Lingpa 1972.

45 For a detailed biography of this lama see, Dudjom Rinpoche 1991, 784–87. Jamgon Kongtrul Lodrö Thaye 2011, 153–58.

but it describes how smallpox-affected body parts could be used to prevent smallpox by employing this smallpox *tsakra.*

Before translating this paragraph into English, we have to deal some philological issues. Some words and phrases have different meanings depending on how they are translated, even if the overall



principle applies. Here is the paragraph with the *tsakra*:[46]

The title of this section is '*brum bu srung ba,* which means "protecting from smallpox." To show that this is a treasure term, it is marked with a *ter tsek* (*gter tshegs*), the symbols of a treasure break ꠸. It goes on to describe the method of inoculation. The first sentence is easy to understand. *'khor lo 'di* means this the wheel; *bse zhos bris* means that it needs to be written with the sap of the *bse* tree; *brum nad* refers to smallpox. The next word *kyis* is used to indicate the genitive or a connecting word. Next, we have *shi ba*, which means dead. If we translate these words literally into English, it means "smallpox's death." This would imply the substance must have come from someone who had been killed by smallpox. The word *rus pa* means bone, and *brdar* means to sharpen or invoke something. Finally, we have *khu bas byugs*, which means anointed with fluid or liquid; *btags na* means to carry it. Thus, *'brum pa'i nad thams cad srung ngo* means that it would protect against all smallpox diseases. Next, is the word *i thi*, which means authentic; then, the term is marked by the treasure break.

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[46] I have consulted two different versions of this work. In each version, there are slightly different words in the phrase discussed here. The version I have quoted above has: *'brum nad kyi shi ba'i rus pa brdar*; the other version has: '*brum nad kyi shi ba'i bum pa brdar*. The word *rus pa* in the version I have used means bone; the word *bum pa* in the other version refers to a ritual vase, and sometimes it also refers to a woman's breast. Thus, there are slightly different contexts determining which body parts need to be used. In either case, the principle ideas of inoculation are not changed.

The second phrase starts with the words *'chang n*a, which means to hold, and *rak+Sha*, which means to protect or guard in Sanskrit. Again, it is marked with the treasure break.

After considering various meanings of the words in these sentences, this is how I would translate this passage into English:

> For the prevention of smallpox [marked with the treasure break] This wheel will be written with the sap of the *bse* tree and will be anointed with smallpox fluid [pus or blood] that has been taken from the crushed bone of a person who died from smallpox. If [a person] carries it, it will protect against all smallpox diseases. It is authentic [marked with the treasure break]. If [a person] held it, this would protect from smallpox. *rak+Sha*, [marked with the treasure break].[47]

Sanggye Lingpa did not include any explanation about how it would provide immunity to someone or how it was administered. Thus, we do not know his rationale for how material that came from smallpox victims would prevent smallpox. Still, what he describes is the principle idea of inoculation.

After Sanggye Lingpa, the other Tibetan who is mentioned in relation to inoculation appears to have been Gongmen Konchok Delek (1477–1506), an important Sakya physician. He writes:

> *'brum bu bsrung na/ go phye'i nang gi khrag smin mtshams su dum gcig byugs sngags 'di sum brgya bzlas/ badz+ra ha ra badz+ra na hi badz+ra/ zhes smin mtshams su btab pas 'brum bu shar 'ongs/ de'i rigs 'brum nag thub nges so*
>
> In order to prevent smallpox, after ripped blood(matured juice) comes from the *bse* tree, it is applied between the eyes, and this mantra is repeated three hundred times, *badzra ha ra badzra na hi badzra*, (*badz+ra ha ra badz+ra na hi badz+ra*). After applying it, smallpox appears, and this type of [pox] will destroy the black smallpox."[48]

Like Sanggye Lingpa, Gongmen Konchok Delek also did not provide a detailed rationale. However, the principle remains the same: after getting smallpox, a substance from the *bse* tree is applied between the eyes . Then if someone applies it, it could prevent the serious and dangerous form of black smallpox. In short, both methods may seem rudimentary, as they do neither explain how this method could prevent or protect against smallpox nor do they detail its practical application. Nevertheless, they convey the principal ideas of smallpox

[47] Sangye Lingpa 1971, 716.
[48] Gongmen KonchI Delek 2013, 2: 1666.

inoculation. First, this method is clearly referred to as *drum sung*, meaning a preventive method for smallpox. It is not a treatment for those experiencing smallpox symptoms; rather, it is purposefully used to prevent the disease. Therefore, it aligns with the definition of smallpox inoculation. Second, the material used for this preventive method must come from someone who had died from smallpox, implying that the substance must have been affected by smallpox. It was a well-known fact that some corpses of smallpox victims contained the smallpox virus and that smallpox materials could be preserved for a long time for the purpose of inoculation.[49] Third, after undergoing this preventive method, a person would not contract any form of smallpox. This description aligns with historical practices and developments, and it essentially mirrors the inoculation methods practiced in other parts of the world.

The methods of inoculations

From the seventeenth century onwards, we not only have medical works that talk about methods and practices of inoculation; we also have historical records to show how it was practiced and by whom. There were many records of outbreaks of smallpox, medical works, monastic chronicles, biographies, and government records were filled with many of these occurrences. Although the principle is the same, different methods of inoculation emerged in Tibet by using various body parts of smallpox victims. One of the earliest seventeenth-century scholars to talk about inoculation was the famous physician Lobzang Chodrak, who is mentioned briefly above. He authored several important medical and historical works including the famous medical work *Darmo's Secret Instructional Work* (*dar mo sman rams pa'i gdams ngag bka' rgya ma bzhugs so*). In this medical text, he describes using smallpox scabs and fluid to treat and prevent smallpox. He writes:

'brum nag bsrungs na de'i rkang dmar//
tshad ma smos rnams thur 'go re//
'di rnams rtsi bzhin legs par btags//
dngul chu zho gang btsun mo phyed//
drod ldan btags la dri chus sbyar//
gong gi sman btab 'dag pa de//

[49] For a recent study of the well-preserved tissue material that might contain smallpox virus, see Andrea M. McCollum, Yu Li, Kimberly Wilkins, Kevin L. Karem, Whitni B. Davidson, Christopher D. Paddock, Mary G. Reynolds, and Inger K. Damon, "Poxvirus viability and signatures in historical relics," *Emerging Infectious Diseases* 20, no. 2 (2014): 177.

nyin gcig 'dam btags zhib par byas//
de nas ril bu sran 'phos tsam//
legs par dril la mi yal cing //

For the prevention of black smallpox, its marrow [referring to the white fluid from a smallpox blister], which would be measured using the size of a head-stick [an instrument for measuring medicine], will be crushed just like painting powder. One *zho* [a measurement] of mercury and a half [*zho*] of sulfur would be used with a warming quality. Then it would be mixed with the above medicine [white fluid from a smallpox blister]. It is mixed with urine. After one day, it is mixed with mud and made into pills the size of a green bean. Then it is carefully wrapped up so the power could not be lost.[50]

Here, he is talking about making pills that are made of white fluid from a smallpox blister that is mixed with other medicinal substances. Then, he talks about how the patient takes the pill. Before consuming it, the recipient should abstain from food for a day. In the evening, the recipient should drink a soup that is made of pepper. This would open the patient's channels so their body would receive the medicine effectively. The patient takes the pill the next day at noon. The following morning, the patient would drink melted butter, which helps stimulate the flow of bile. If the patient falls asleep during the day, this indicates that the pill did not have an effect on the body. Thus, the person needs to consume a second pill.[51]

One of the earliest Tibetan physicians to have used "planting smallpox"[52] in discussing inoculation appears to have been Tenzin Püntsok (commonly known as Deumar Geshe, 1665–?). Tenzin Püntsok traveled extensively—including to Mount Emei in Sichuan, China and to India. In his later years, however, he could not get along with a local ruler. The ruler not only threatened his life but also destroyed around forty-two volumes of his works.[53] After his death sometime in the 1720s, his disciples started to collect some of his writings and were able to compile over a hundred distinct works.

In another work, *Excerpt from the Original Source known as the*

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50 Lobzang Chodrak 2001, 244a.

51 Ibid., 244a.

52 The term "planting smallpox" (*'drum tsuk*) became more popular. This term also uses words that are very similar to the Chinese term used to describe inoculation: *zhongdou* 种痘 ("to implant the sprouts" or "planting smallpox"). Whether Tibetans adopted the Chinese term or the other way around needs to be further studied.

53 Tenzin Püntsok wrote on many topics from medicine to crafts. His collected works were published in Tibet in the 1990s. Many of his works were lost. Because this text does not have a colophon, some do not consider this section on smallpox to have been his work. This is why this piece is not included in the Beijing edition. However, I think it is his work, and there is no reason to doubt it.

Quintessential Secret Treatment of Smallpox (*'brum bcos gsang ba yang tig las ma yig gab pa mngon phyung*), Tenzin Püntsok uses the term "planting smallpox" (*drum dzuk)* for inoculation. While mentioning that he would provide detailed instructions for inoculation elsewhere, he says that the patient should not have eaten meat or garlic and should not have drunk alcohol; in addition, the patient should not have conducted any ritual prayers until the inoculation had been administered, because it would have negative effects on the patient.[54] He also warns: "If smallpox does not appear on the predicted day, the patient needs to be inoculated again with extreme caution."[55]

During the eighteenth century, there were writings about practices of inoculation. There were also mentions about new methods of inoculation imported from China as well as references to a Tibetan style method of inoculation in China. Chökyi Jungné (commonly known as the eighth Situ Panchen, 1700–1774) was a polymath known for his studies on Sanskrit, thangka paintings, and Tibetan grammar, Chökyi Jungné uses the term "planting smallpox" to describe inoculation in his medical text, *The Source of Happiness for the Tibetan and Chinese Treatment of Smallpox and a Variety of Other Diseases* (*'brum bcos sogs rgya bod kyi sman bcos sna tshogs phan 'de'i 'byung gnas*).[56] In referencing an unnamed Chinese medical work, he says it is not easy to inoculate people who drink alcohol often, who have dark and brown skin that has lots of scabs, and have foreheads with lots of wrinkles; such people would suffer terribly when inoculating them. Following this observation, he gives instructions on how to inoculate Tibetans whom he considered "oily": ten dry smallpox scabs mixed with other substances like a small amount of smelling musk can be put up a man's left nostril and a women's right nostril for one night, after all other necessary procedures have been completed.[57]

The Tibetan Buddhist scholar Lozang Tsültrim (1740–1810, also known as Chahar Geshe because he was from the Chahar region of Mongolia) wrote a booklet about smallpox inoculation and published it in Tibetan.[58] Chahar Geshe used the Tibetan term *lhadrum karpo* (the

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54 Tenzin Püntsok 1995, 277.

55 Ibid., 279.

56 The method he mentions here is similar to the methods for nasal inoculation that were recorded in 1739 in the *Yuzuan yizong jinjian*《御纂医宗金鉴》(Imperially Commissioned Golden Mirror of the Orthodox Lineage of Medicine).

57 Chökyi Jungné 1990, 212.

58 Lozang Tsültrim 2007. Recently, this work was translated into English as "An Eighteenth-Century Mongolian Treatise on Smallpox Inoculation: Lobsang Tsültrim's 'The Practice of Preparing Medicine for the Planting of Heaven's White Flower'" in Norov, Wallace, and Usukhbayar 2019, 33–37. They mistranslate

god's white smallpox) when he described the procedure, preparation, and methods of inoculation: "The boys need to inhale (it) through their right nostril and the girls should inhale (it) through their right nostril. [This is] the practical knowledge of Guru Lama."[59] The final statement indicates that he learned this practical knowledge from his own teacher.

In the early nineteenth century, the fourth Tsenpo Nomönhen also introduced Edward Jenner's smallpox vaccination to Tibet.[60] He wrote detailed instructions on inoculation and encouraged Tibetans to get an inoculation. He writes:

> *'brum dkar shun skogs nus ldan phon chen dang / /*
> *cu gang chu rtsa gnyis po de dang mnyam/ /*
> *sa skya nas tsam 'di kun zhib par btags/ /*
> *'debs yul snga dro zas la ma zhugs gong / /*
> *skyes ba yin na sna bu ga g.yas pha dang / /*
> *bud med yin na sna bug g.yon par 'then/ /*
>
> Plenty of the healthy dry white smallpox powder, bamboo manna, and ginger the size of barely are ground into power. In the morning, before having any food, this powder will be put inside of right nostril for men and the left nostril for women.[61]

Like Tsenpo Nomönhen, his contemporary, Wangchen Gargyi Wangchuk Gyérap Dorjé (or Lap Kyapgön, 1832–88), the holiness from the Lap region of Kham, also describes a totally different method of inoculation: eating drying smallpox scabs as medicine. He writes:

> *'brum dkar thar phyir bgo ba 'di ltar bya//*
> *khams mthun bdun zur min pa'i mi zhig gis / /*
> *'brum skogs blangs la nyer gcig 'o mar spang//*
> *gla rtsi gi wang rgya tsha shing mngar btab//*
> *zhag gcig lto sbyang tho rangs g.yer ma dang//*
> *shing mngar lcam pa 'u su thang btab ba'i//*
> *nyi shar dus su 'brum skogs sman bcas 'thung //*
> *gnyid nyid mi log rul skyur rwa mi za//*
> *spyod lam drag shul spang ba'i lnga bdun nam//*
> *zhag dgu'i mtshams nas ldang bar lag blang yin//*
> *zas dang spyod lam tsha ba spyi dang 'dra //*

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lhadrum karpo as "Heaven's White Flower," the Mongolian term for smallpox. Importantly, the translators omitted the phrase that indicates the sources of this method, "the practical knowledge of Guru Lama" (*bla ma dam pa'i phyag len no*).

59 Lozang Tsültrim 2007, 109.

60 See, Yongdan 2016.

61 Tsenpo Nomönhen 2007, 212.

> In order to be freed from white smallpox, this is how to infect [the person]. For the person, who has similar Kham (*khams*) and is not infected by seven angles (*bdun zur*), take the dry smallpox scabs and mix them with milk for twenty-eight days; then, mix this with musk, bezoar, al ammoniac as well as liquorice. [The people who received remedies], cannot eat for one night. In the morning as the sun rise, (the person) needs to consume this dry smallpox scab with a decoction. This [decoction] must be made from liquorice, *cham pa* (*lcam pa*), and coriander seeds. The person should not sleep during the daytime, and neither [should they] consume foods that are rotten or made of something sour or salty; moreover, the person should not engage in ferocious behaviors. After five or seven or nine days, the marks of smallpox appear and it is [evidence of] the actual experience of the practice. Then food and behavior should be consumed and conducted according to [what is advised for] the general hot diseases.[62]

Later in the nineteenth century, another physician, Gangba Chödzé Köchok Tsokpel from the Ngawa region of Amdo, wrote a booklet, *Practical Manual for the Prevention of God's Smallpox through Experience* (*lha 'brum 'gog thabs lag len myong grub*/).[63] As the title indicates, he describes the technique of nasal inoculation and adds that it was written from his personal experience. According to Gangba, drying scabs should be "collected from a child who had smallpox" and the collected scabs must be protected from wind and wetness.[64]

Practices of inoculation

In general, people did not want to get smallpox. When hearing that smallpox had broken out in a particular region or village, people would quarantine themselves at home or run away to the mountains and other isolated places to avoid the epidemic. They also would prevent all outsiders from entering their area. Even after taking these preventive measures, inoculation was still considered. If they could, they would avoid it. However, when people heard about an outbreak of white smallpox, a mild version of smallpox, many would get an inoculation. During my research for this paper, I came across a lot of works that mention how a particular person was inoculated and what their experience was like. Sumpa Khenpo Yéshé Paljor (1704–88), an important Gelugpa polymath in the Amdo region, described how he inoculated Tibetans. Then, he mentions how its practices spread to China and Mongolia. According to his autobiography, after hearing

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62 Pel Wangchen Gargyi Wangchuk Gyérap Dorjé 2007, 135.
63 Gangba Chödzé Köchok Tsokpel 1993.
64 Ibid., 186.

that white smallpox had infected people in the Tsongön region in 1760, he sent one of his trusted agents to collect the pus. He writes:

> *lcags 'brug lor mtsho sngon du 'brum pa dkar po lha thor du grags pa byung tshe de rgyun kho bos mi mngags nas blangs te rang gi gsol dpon zhi dar on po la bgos pa las spel rgyun hor bod rgya sog yul du khyab nas khri lhag srog byin dang mtshungs ba'i dge ba'ang bgyis shing da dung de ltar byed bzhin pa yin/*
>
> In the Iron Dragon year (1760), the existence of white smallpox, known as *lha tor* (*lha thor*), was reported in Tsongön (Chi., Qinghai; Blue Lake). After sending people to collect its material (smallpox scabs), I anointed (*bgos pa*) it on my master chief, Zhidar. Subsequently, this lineage spread to Tibet, Hor, and China, as well as Mongolia. Saving tens of thousands of lives, I have been continuously practicing this to the present day.[65]

Sumpa Khenpo did not write or reveal what kinds of methods he used or what he would mention in public.[66] Since he used the word anointed (*bgos pa*), the method appears to have been this anointing method.

Lobzang Gyeltsen Sengge (1757–1848), a leading scholar from Tsö (*gtsos*) in Amdo, described how he was inoculated in his autobiography. He writes:

> *rang lo bcu gsum pa la 'brum bu'i nad kyis ma thar ba la brten/nye 'khor pa rnams sems las che zhing mo rtsis byed mkhan rnams nas kyang re zhig 'brum pa bgos na mi 'gab tshul mang po smras kyang /nub gcig kho bo'i rmi lam du shar lho mtshams nas mi dkar gos dkar gyon zhing /rta dkar zhon pa zhig mgyogs par rgyug byung ste da lo 'brum pa bzhes na legs zer ba zhig byung /sang nyin rmi lam byung tshul mol ba la brten dpon rgan de yang snying stobs che ba'i dbang gis cis kyang 'brum pa 'debs dgos zhes tshe ring rdo rje zer pa'i bu tsha zhig la thor ba byung ba las bgos te cung zad lci tsam byung yang rim dwangs bcas 'brum rjes tsam yang mi mngon par byung /*
>
> When I was thirteen years old (1770), I was still not freed from smallpox. My manager worried about the situation; so he consulted with the people who specialized in divinations. According to them, it might be good idea to undertake inoculation at this moment. One night, I had a dream about a white person who was riding a white horse from the southeast side and telling me that I should be inoculated. After telling this dream to my manager, with encouragement, he agreed to my undergoing the preceding. I was inoculated, and the material came from a nephew—someone named Dorjé Tsering. Initially, the

[65] Sumpa Khenpo 2015, 1: 784.
[66] Ibid., 19: 401.

> symptoms were serious, but soon there was nothing that I needed to fear.[67]

The most informative case involving mass inoculation occurred during the Sixth Panchen Lama's (1738–80) visit to China in 1778. For fear of contracting smallpox in China, a team of Tibetan physicians including the high-ranking lama, the second Jamyang Zhépa Künkhyen Jikmé Wangpo (1728–91) from Labrang Monastery, inoculated three hundred of the Panchen Lama's entourage in Alasha (today's Inner Mongolia). They even asked to inoculate the Panchen Lama himself. However, the Panchen Lama did not listen to his advisers. This resulted in his tragic death from smallpox in Beijing in 1780.[68] In the early twentieth century, in some parts of Tibet, the same people still practiced this type of inoculation. According to the biography of Kelzang Lodrö Künga Lungtok Gyatso (1905–20), an important reincarnation lama from the Ngawa region of Amdo, in 1909, a monastic official asked the physician named Chöjor Gyatso to inoculate the young tulku. After this doctor inoculated the tulku, he suffered terribly, but he survived. At the same time, the doctor inoculated several thousand children in the region. Among these children, one died from the procedure.[69] All of these reports suggest that the theories and methods of inoculation did not just stay inside the medical works; rather, they were widely practiced throughout Tibet over the course of its history.

Conclusion

In spite of the availability of many materials on smallpox in Tibet, until recently, scholars have not been interested in studying the history of smallpox in Tibet. Thus, many scholars formed an unsubstantiated history of smallpox in Tibet. Indeed, some have even claimed that Tibetans had not practiced inoculations at all. In the early twentieth century, a few scholars, including MacGowan, Seiffert, and Du Dscheng-Hsing have asserted Tibet as the origin of Chinese

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[67] Lobzang Gyeltsen Sengge 2024, 14 b, 15a.

[68] For detailed information, refer to Yongdan 2021. Recently, after reading the collective works of Tatsak Yéshé Lozang Tenpé Gönpo (1760–1810, also known as the Kundeling Regent Tulku), I noticed the existence of an inoculation manual titled "*lha 'brum dkar po 'dzug pa'i thabs shin tu zab pa dang 'brum srung nyer mkho bcas*" (The Manual of How to Protect Against Smallpox: The Goddess of Plants White Smallpox, Deep and Necessary for Protection). According to this manual, it was transcribed by the Kundeling after learning methods from the chief Tenpa Dargyé, who inoculated three hundred attendants of the Panchen Lama. The method employed by Tenpa Dargyé was nasal inoculation, which he learned from a Chinese source (Tatsak Yéshé Lozang Tenpé Gönpo, 4b-7a).

[69] Mipam Yangchen Gyépé Dorjé 2007, 521.

knowledge about smallpox inoculation. More recently Mercer and Hopkins have agreed with this assertion. Still, the fact that that inoculation was an integral part of Tibetan medical history is not well known. This paper does not systematically survey Tibetan medical, historical, and religious works that mention inoculation. Nevertheless, from the selected examples drawn from these works, it is evident that inoculation was not only discussed in Tibetan medical texts; it was also practiced throughout Tibet. At least since the fourteenth century onwards, Tibetans had written records that state that samples from body parts infected by smallpox could provide protection from smallpox. Importantly, Tibetans had the concept of *drum tar* or the idea of immunity. That is, they understood that if someone had survived smallpox, such a person would be freed or liberated from smallpox. This understanding can be found in many medical works and became common knowledge about smallpox.

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